ANIMAL HEALTH STATUS AND DISEASE CONTROL METHODS
(PART ONE: REPORTS)

Reports are presented in English, French or Spanish
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Section 1: REPORT ON THE DISEASE STATUS WORLDWIDE IN 1991
The most significant events to have occurred in the world in 1991 in the field of epidemiology are described hereafter. This analysis is based on information received from Member Countries of the OIE and non-member countries.

It should be noted that no information was received from the following OIE Member Countries on the health status of their livestock in 1991:

Africa: Benin (except rabies), Central African Republic (except contagious bovine pleuropneumonia), Gabon, Lesotho, Libya, Sierra Leone, Somalia.

Americas: Peru.

Middle East: Iraq.
I. LIST A DISEASES

1. Foot and mouth disease

1.1. Africa

Virus O was reported in all North African countries, with the exception of Libya, for which the OIE has no information. An initial outbreak was observed in the west of Morocco at the beginning of January. The preventive vaccination measures applied from 1990 in a buffer zone along the border with Algeria proved unable to prevent the disease spreading to the remainder of Moroccan territory from May 1991. In addition to the slaughter of infected or in-contact animals, ring vaccination operations were organised around the outbreaks, followed by a decision to vaccinate the entire national bovine population (November). In Egypt, only sporadic outbreaks were observed and only a very low percentage of the national bovine population was affected.

In the rest of Africa, FMD virus type O was also reported in Burundi, Kenya and Uganda.

Virus type SAT 2 continued to circulate in Western Africa (Cote-d'Ivoire, Ghana, Mali), Eastern Africa (Burundi, Ethiopia, Kenya) and Southern Africa (in Eastern Caprivi in Namibia, in the preventive vaccination zone in Zimbabwe).

Virus type SAT 1 was identified in Kenya, and in Zimbabwe in a sentinel herd of cattle within the Hurungwe wildlife zone. Types A and C were observed only in Kenya and type SAT 3 was observed only in Zimbabwe, in the central province of Mashonaland, where the disease was introduced through the transport of bovine carriers infected during the FMD episode which occurred in May 1989 in the province of Midlands.

The following countries also reported the presence of FMD on their territory, though the virus type was not determined: Chad, Djibouti, Niger, Nigeria, Rwanda, Senegal, Tanzania, and Togo.

1.2. Americas

The countries of North America, Central America and the West Indies, as well as the Guyanas and Chile, remained free from the disease without vaccination.

In Uruguay, thanks to the implementation of the national FMD control programme based on the vaccination of the entire national bovine population using an oil adjuvant vaccine, no outbreak of the disease has been reported since 18 June 1990. The favourable evolution in the situation in the Rio de la Plata region is the result of concerted action by Argentina, Brazil, Uruguay and the Pan American Foot and Mouth Disease Center.

The regions of Choco in Colombia and Patagonia in Argentina were also free from the disease.
However, virus types O and A were isolated in Argentina, Brazil, Colombia, Ecuador, Paraguay and Venezuela, whereas type C was found only in Argentina and Brazil.

Compared to the previous year, the number of outbreaks counted in Argentina fell sharply (-83%).

1.3. Asia

Foot and mouth disease was enzootic in the major part of this region, with types O and Asia 1 predominating. Type A was reported in India, Myanmar, Pakistan and Thailand, and type C in Bhutan and the Philippines.

1.4. Europe

Foot and mouth disease was observed only in Eastern Europe: Armenia (virus A), Georgia and Bulgaria (virus O).

In Bulgaria, the outbreak reported near the border with Turkey remained isolated, as a result of the implementation of the following health and medical measures: slaughter of all infected and in-contact animals, and vaccination in the zones surrounding the outbreak using a monovalent O1 vaccine.

As a precautionary measure, the Turkish Veterinary Authorities decided to carry out limited vaccination of susceptible animals in Thrace, along the border with Bulgaria, using a bivalent O1, A22 vaccine.

Following the adoption of harmonised FMD control measures in the European Economic Community (EEC), FMD vaccination was officially halted in Spain on 31 December 1990, the Netherlands on 1 March 1991, Germany and Belgium on 31 March 1991, France on 1 April 1991, Portugal on 30 June 1991 and Italy on 11 August 1991.

Like those of the EEC, other European countries have stopped all vaccination: Austria (31 March 1991), Czechoslovakia (5 September 1991) and Romania (1 November 1991).

At the end of 1991, therefore, there were no longer any countries in Europe where FMD vaccination was systematically practised, with the possible exception of certain European Republics in the USSR for which no precise information is available.

1.5. Middle East

Virus O was the predominant type encountered in this region: it was isolated in samples collected in Bahrain, Israel, Oman, Saudi Arabia, Syria and Turkey (Anatolia).

Type A, which had not been reported in Anatolia during the second half of 1990, was again identified every month from March 1991. It was also found in Saudi Arabia, where no outbreaks attributed to this type had occurred since 1986, and Iran.

The OIE World Reference Laboratory for FMD isolated virus type Asia 1 in samples taken from cattle in September and October 1991 in Saudi Arabia.
2. Vesicular stomatitis

In South America, vesicular stomatitis was chiefly diagnosed in Colombia, where 636 establishments were infected, including 305 infected with New Jersey serotype and 301 with Indiana serotype.

In Brazil, a single outbreak caused by Indiana serotype was reported in the State of Ceara, whereas New Jersey serotype was identified in a single herd in Ecuador and in five herds in Venezuela.

Further north, vesicular stomatitis was observed in all Central American countries and Mexico.

3. Swine vesicular disease

Only Hong Kong, Italy and Laos reported this disease to the OIE in 1991. In Italy, the six outbreaks recorded were all located in the southern part of the country (Calabria, Campania and Sicily regions).

4. Rinderpest

4.1. Africa

Rinderpest was reported only in Ethiopia (13 outbreaks), Kenya (one outbreak), Uganda (four unconfirmed outbreaks) and Sudan (one outbreak). In all these countries, vaccination operations were organised within the outbreaks and the surrounding areas.

As in 1989 and 1990, no outbreaks were reported in West Africa.

4.2. Asia

Only India, Mongolia, Sri Lanka and the USSR reported the presence of rinderpest on their territory.

In Mongolia, it involved transhumant cattle from the Soviet Union near the border in the Bayan-Uul district of Mongolia. Of the 1,400 bovines present, 200 died. Their carcasses were incinerated. The remaining animals were reintroduced into USSR, where they were slaughtered. Their meat was used in the manufacture of sausages.

Following these events, three million animals were revaccinated against rinderpest in USSR, along the border.

The investigations subsequently carried out by an OIE expert led the Mongolian Veterinary Authorities to conclude that it did not, in fact, involve rinderpest, but was in all probability bovine viral diarrhoea.

In the USSR, the animals reported as being infected were yaks reintroduced into the Tuvinian Republic following a period of transhumance in Mongolia.
4.3. **Middle East**

Rinderpest reappeared in Turkey after an absence of over 20 years. The epizootic was first recorded in the middle of October in two south-eastern provinces, after which provinces situated farther west were in turn affected; a total of 19 outbreaks were recorded in seven provinces of Anatolia.

Cattle present in the outbreaks were slaughtered (a total of 3,700 animals) and ring vaccination measures were swiftly introduced to set up buffer zones around the outbreaks. A mass vaccination campaign covering the entire national bovine population was set up throughout the territory of Turkey and involved the formation of nearly one thousand vaccination teams.

Outbreaks of rinderpest were reported in Oman and the United Arab Emirates.

5. **Peste des petits ruminants**

No particular changes occurred in the Middle East in the epidemiology of this disease compared to 1990.

In Chad, an outbreak of peste des petits ruminants was reported for the first time. The disease is believed to have been introduced into the country by a transhumant herd. Vaccination was not applied. From October 1991, no new cases having been observed, the restriction measures applied in the outbreak were lifted.

6. **Contagious bovine pleuropneumonia**

6.1. **Africa**

This disease affects all parts of the African mainland except North Africa. There were few discernible changes compared to 1990, apart from a quadrupling, or more, in the number of outbreaks reported in Uganda, and the occurrence of an outbreak, controlled by vaccination, in the east of the Central African Republic.

6.2. **Europe**

Only two outbreaks were observed in the north of Spain at the beginning of 1991, in the provinces of Oviedo and Santander.

In Italy, the pleuropneumonia episode which occurred in November 1990 in the province of Bergamo continued throughout 1991. Most of the outbreaks were located in the north of the country, chiefly in the Lombardy region.

In Portugal, the number of outbreaks remained stable compared to 1990.

7. **Lumpy skin disease**

Lumpy skin disease is currently circulating in all parts of Africa, with the exception of North Africa.
A comparison of the number of outbreaks registered in Southern Africa in 1990 and 1991 leads to the conclusion that the incidence of this disease increased markedly from one year to the next. In addition, Rwanda reported an epizootic in the east and north-west of the country. This subsequently extended to the whole of the country. A vaccination campaign was organised and the number of outbreaks had fallen considerably by the end of the year.

No cases were observed in Egypt, where over one and a half million head of cattle were vaccinated intradermally using a locally produced sheep pox vaccine.

8. Rift Valley fever

The presence of Rift Valley fever was reported to the OIE only in countries in Southern Africa and in Madagascar, though the disease was suspected in central southern Mauritania.

9. Bluetongue

No significant events were reported to the OIE in 1991 regarding this disease.

10. Sheep pox and goat pox

An outbreak of goat pox was observed in Burundi for the first time.

Sheep pox reappeared in Côte-d'Ivoire and Togo after a year of remission. The same disease was reported in Israel and in the territories controlled by this country, after an absence of over four years. This episode remained isolated thanks to the ring vaccination operations carried out around the outbreaks.

In Morocco, where over nine million small ruminants were vaccinated, no outbreaks, were recorded in 1991.

11. African horse sickness

No outbreaks of African horse sickness were recorded in Spain in 1991. At the end of November, the zone considered to be infected was reduced to a protection zone covering all the provinces of the region of Andalusia, and a 50-km-wide surveillance zone surrounding this region.

However, a fresh epizootic occurred in Morocco. It began earlier (July) than in the two previous years and ended in October. It resulted in a rapid extension of the disease to most of the provinces of the Kingdom, posing a threat to the entire national equine population.

In view of this new epidemiological situation, the Moroccan Veterinary Authorities decided to extend compulsory vaccination and marking to all equids present on the territory. This allowed vaccinal cover of about 85%, and the satisfactory degree of protection afforded was verified by a serological survey conducted on a representative sample of the equine population.

Other countries reporting the presence of African horse sickness were all situated in Africa.
12. **African swine fever**

African swine fever was reported in several African countries, and in Europe, in countries of the Iberian Peninsula and in Italy (Sardinia).

In Spain, all the outbreaks were concentrated in the four south-eastern provinces (Badajoz, Cordoba, Huelva and Seville).

13. **Classical swine fever (hog cholera)**

13.1. **Africa**

Apart from Madagascar, which was already infected in 1990, the Congo reported the occurrence of an outbreak on its territory. The pigs which survived the disease were slaughtered and their carcases destroyed.

13.2. **Americas**

The number of recorded outbreaks in Mexico fell sharply between 1990 to 1991 (-70%).

13.3. **Asia**

There were no significant occurrences in this region.

13.4. **Europe**

Belgium remained free from classical swine fever in 1991. The remaining health measures still in force, following the epizootic which occurred in 1990, were all lifted at the beginning of the year.

In France, the only reported outbreak was in Corsica.

In Austria, Czechoslovakia and Germany, the majority of outbreaks recorded involved wild boar. In Germany, vaccination has been totally halted.

In Yugoslavia, the number of outbreaks rose in comparison with 1990 (+29%).

14. **Fowl plague**

No particular occurrences were reported to the OIE regarding this disease in 1991.

15. **Newcastle disease**

15.1. **Americas**

Immature double yellow-headed Amazon parrots were found to be suffering from Newcastle disease in four States of the United States of America (Illinois, Indiana, Michigan and Texas). The disease spread between these States through trading between aviaries. No contact occurred with poultry production units.
15.2. Asia

Several outbreaks of Newcastle disease were reported in Japan, either in small, family-run farms or in larger poultry farms. In most cases, affected poultry flocks had not been vaccinated.

15.3. Europe

Several outbreaks occurred in Ireland. All cases involved large-scale egg-laying units. In the Republic of Ireland, as well as in Northern Ireland, a total of almost 100,000 head of poultry were affected.

In Northern Ireland, apart from the increase in mortality, the principal signs observed were a sudden drop in egg yield, and the production of soft shelled and unpigmented eggs. Paramyxovirus type 1 of pigeons was shown to have been responsible; the virus was introduced into the production units through the use of feeding-stuff ingredients which had been stored at the docks, where contamination by infected pigeons probably took place. As a result, regulatory measures were taken to introduce compulsory heat treatment of all feedstuffs intended for poultry.

In Portugal, over 100,000 broilers died or had to be slaughtered and destroyed as a result of this disease. The large scale intensive production units affected had not been subject to preventive vaccination measures.

Lastly, this disease was identified in a breeding unit for doves in Italy, and in breeding units for hobby fowls in Germany and Holland (one outbreak in each country).

II. LIST B DISEASES

1. Anthrax

Anthrax, which had been absent from Canada since 1985, caused the death of 36 bison, in 1991, in a national park situated in the province of Alberta. In addition, in the same province, four cattle production units were affected.

An outbreak of anthrax was reported in the Central Java province of Indonesia and another in Tarlac province in the Philippines. The disease had not been observed in these provinces for 30 years and 24 years, respectively.

2. Leptospirosis

An "enzootic fever" type syndrome accompanied by abortions occurred in two pig production units in Norway. Serological studies carried out in one of the outbreaks allowed the syndrome to be attributed to the action of Leptospira interrogans, serovar australis. The second outbreak may have been due to the serovar canicola, but this could not be definitely proved.
3. Rabies

3.1. Africa

The national canine rabies control programme in Morocco continued, and a marked reduction in the number of cases of human rabies was noted.

3.2. Americas

In Canada, 500,000 units of bait, each containing a capsule of rabies vaccine, were dropped by air in the east of the province of Ontario, to control rabies in wild animals.

3.3. Asia

A case of rabies was reported in a dog in the north of Malaysia. No cases had been reported since 1985.

3.4. Europe

Several cases of rabies were reported in foxes in Bulgaria, where this disease had not been observed in wild animals for at least ten years.

Sylvatic rabies reappeared in Italy, in the province of Trieste, after a year of remission. The Italian Veterinary Authorities consider that the disease was probably reintroduced from a neighbouring country, where rabies is enzootic in vulpine populations.

The zones where oral immunization of foxes against rabies is practised have been considerably extended in several European countries (Austria, Czechoslovakia, France and Germany); in autumn 1991, they covered over 245,000 km² and followed three main axes: one axis extends from the Channel coast of France to the north-west of Switzerland, a second extends from the same Channel coast to the Baltic, passing through Belgium, Luxembourg and Germany, and the third, orientated north-south, links the Baltic coast of Germany to the south of Austria, passing through the western part of Czechoslovakia.

3.5. Middle East

Rabies was diagnosed for the first time in foxes in Oman in 1990. In 1991, the same problem was encountered in the western part of the territory of the United Arab Emirates (cases of rabies in foxes and camels).

In Israel, street virus, which had not been observed since 1978, reappeared in 1991, due to a rise in the number of stray dogs. The Veterinary Services, in association with municipalities launched vaccination operations and strengthened control measures against stray animals.

4. Screwworm

Operations involving the release of sterile flies imported from Mexico began in Libya in December 1990, to supplement controls and treatment carried out on livestock. Release operations were intensified during the first half of 1991, reaching a total of 40 million sterile flies released per week, from May onwards, in the zone at risk.
Only six cases of screwworm were diagnosed between January and April 1991, the last of which dated from 7 April 1991. The last capture of a fertile female fly of this species was on 27 April 1991, approximately 500 m from the site where the last case occurred. This marked the beginning of a crucial period. For screwworm to be considered as having been eradicated from Libya it was required that no fertile female flies be found during the period up to 15 October 1991 (a period covering nine reproductive cycles).

The above requirement was, in fact, met, and from 16 October 1991, the release of sterile flies was halted. Nonetheless, it was decided to maintain intensive surveillance operations in the field for a further 12 months, to check that no residual pockets of infestation had survived.

5. **Enzootic bovine leukosis**

With effect from 1 July 1991, all twelve regions of Denmark were recognised as being free from enzootic bovine leukosis, under the terms of the definition in force within the European Economic Community.

6. **Bovine tuberculosis**

In Canada, an outbreak of tuberculosis was observed in cattle in the province of Manitoba. This was the first such occurrence for 15 years. All cattle present on infected farms were slaughtered.

7. **Infectious bovine rhinotracheitis**

In 1991, the first episode of infectious bovine rhinotracheitis was reported in Finland. It was discovered during a survey carried out on pooled milk samples using an ELISA test. Blood samples were taken from all animals in the establishment concerned, of which three were considered to be reactors. The latter were slaughtered.

8. **Bovine spongiform encephalopathy**

Bovine spongiform encephalopathy (BSE) continued to circulate in the United Kingdom with a high incidence (20,404 cases, of which 145 in Northern Ireland). A study of the evolution of the incidence of the disease in this country since 1987, indicates a year on year slowing in the rate of increase in the number of cases.

As in the previous year, sporadic cases were reported in Ireland (17 cases) and Switzerland (8 cases). France joined the list of infected countries, with five cases being diagnosed in 1991.

9. **Scrapie**

Three countries reported cases of scrapie to the OIE: Norway, Switzerland (first proven case), and Czechoslovakia (five outbreaks). In these three countries, all sheep and goats present in the outbreaks were slaughtered and destroyed.

10. **Contagious equine metritis**

The Delegate of the United Kingdom informed the OIE in October 1991 that his country was free from contagious equine metritis. Nevertheless, this disease is still notifiable and the surveillance system for the disease has been maintained.
11. **Equine infectious anaemia**

In Uruguay, from October 1991 onwards, about twenty horses tested positive to serological tests for equine infectious anaemia, and were sacrificed.

One case of equine infectious anaemia was reported in Czechoslovakia. No previous cases had occurred since 1963.

Epidemiological investigations in Chile have confirmed the absence of equine infectious anaemia.

12. **Equine influenza**

In Colombia, an epizootic of equine influenza -serotype A equi 2 (Miami)- spread at the end of June and the beginning of July. Over 20,000 horses were affected, ten of which died.

13. **Venezuelan equine encephalomyelitis**

In Mexico, since 1984, all the investigations carried out following suspected cases of Venezuelan equine encephalomyelitis have given negative results. In accordance with the provisions of the OIE International Animal Health Code, over three years having expired since the last reported case in Mexico (19 September 1972), this country can be considered as free from the disease.

14. **Porcine brucellosis**

In Uruguay, an outbreak of porcine brucellosis was identified, following the diagnosis of several cases of human brucellosis attributed to *Brucella suis* biotype 1.

15. **Myxomatosis**

The outbreaks of myxomatosis reported in Uruguay in December 1990 in four family-run farms and a laboratory production unit were declared extinguished in February 1991. All the rabbits remaining in these outbreaks were slaughtered, and no new cases were diagnosed.

16. **Viral haemorrhagic disease of rabbits**

Viral haemorrhagic disease of rabbits was introduced into Israel in an imported consignment of laboratory rabbits from Europe. The disease was rapidly eradicated thanks to the elimination of all the rabbits housed in the infected unit of the laboratory concerned.

17. **Infectious haematopoietic necrosis**

An outbreak of infectious haematopoietic necrosis was reported in France, in the Aquitaine region. All eggs and fry in the infected establishment were destroyed, and only fish weighing between 200 and 250 g were released for human consumption.

18. **Bonamiosis**

Bonamiosis was reported for the first time in Australia, in experimental flat-oyster beds in two sites on the coast of the State of Victoria.
III. OTHER DISEASES

1. **Bovine ephemeral disease**

In Egypt, bovine ephemeral disease was the major pathological problem encountered in bovine production. About 250,000 bovines were seriously affected. Cattle of the Holstein breed, with a high production potential, were the most affected, whereas the disease passed almost unnoticed among local bovine breeds or buffalo.

2. **Intoxication of equids by *Stachybotrys atra***

During November 1991, over 200 equids died in Morocco after ingesting straw contaminated with mould, following a period of abnormally heavy rainfall in late summer.

Laboratory research revealed the presence of the fungus *Stachybotrys atra*, and its toxin was isolated. The situation returned to normal following the substitution of good quality straw.

3. **Porcine reproductive and respiratory syndrome**

Porcine reproductive and respiratory syndrome (PRRS) was observed for the first time in November 1990, near Münster in Germany. Within the space of a few months, PRRS had spread to a very large number of German pig production units (over 3,000 outbreaks registered in May 1991), then the disease regressed significantly (only 22 new outbreaks in October 1991).

A similar evolution was noted in the Netherlands: PRRS appeared in January 1991, and 1,347 outbreaks were registered in August 1991. By October 1991, only three establishments were still subject to quarantine measures.

In Belgium, the first case was recorded in March 1991. In April the number of reported outbreaks was at its highest. The number of establishments subsequently affected remained low (five between July and August). The last outbreak was declared extinguished in December 1991.

In the United Kingdom (Great Britain), PRRS was observed for the first time in May 1991. In spite of the restrictive measures applied in outbreaks and the neighbouring areas, it proved impossible to prevent the spread of the disease, principally within the county of Humberside. By the end of October 1991, a total of 58 outbreaks had been confirmed out of 99 suspected cases. Unlike to the countries previously mentioned, the monthly total of new outbreaks increased from July to October 1991.

Only three outbreaks were reported in Spain (two in the province of Huesca, and one in the province of Lerida. All the animals present in these outbreaks were very rapidly slaughtered, and since then no new cases of PRRS have been diagnosed.

In France, the first outbreaks of PRRS appeared in November 1991 in Brittany, in the Côtes-d'Armor department; the disease remained confined to this department until the end of the year.
4. Avian influenza

A strain of influenza virus of A type-H7N1 was isolated in samples collected from farmed ostriches in South Africa. Morbidity and mortality remained low (2.4% and 1.5%, respectively), and no other species was affected.

Laboratory tests showed that the strain involved was not highly pathogenic, confirming that South Africa had remained free from avian influenza.
Section 2: REPORTS OF THE COUNTRIES
In 1991, the activities of the Veterinary Services Department (VSD) were carried out as usual, and include the treatment and control of animal diseases.

Since last year's report was submitted, FAO project AFG/90/006 has been supporting the veterinary clinics technically and financially. UNDP/FAO assistance covers nine provinces in the north of the country, as well as the central Kabul province.

Anthrax, blackleg, enterotoxaemia, pasteurellosis, Newcastle disease, sheep pox and goat pox vaccines are provided by the VSD and distributed to all areas of the country.

Research work in the field is extremely difficult to carry out, due to the war situation existing at present. Blood samples are not available from the provinces.

For the time being, only three provinces out of thirty are able to provide blood samples for serological testing, due to the lack of the necessary facilities. The status of diseases in the country seems stable, although we have noted increases in the number of cases of anthrax and enterotoxaemia.

In Afghanistan, the only disease control method used is vaccination. Some animal vaccines, such as those for rinderpest, rabies, contagious caprine pleuropneumonia and foot and mouth disease, are imported or supplied with FAO technical assistance.
INTRODUCTION

Durant l'année 1991 de nouveaux textes réglementaires ont été élaborés. Il s'agit de :

- décret relatif aux inspections vétérinaires aux postes frontières ;
- décret relatif aux animaux interdits à l'abattage ;
- circulaire ministérielle relative à la mise en œuvre du dispositif de prévention contre l'introduction de la peste équine sur le territoire national, complétant l'arrêté interministériel de 1990 ;
- arrêté ministériel définissant le modèle normatif des autorisations de mise sur le marché des spécialités pharmaceutiques à usage vétérinaire.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

La maladie est toujours présente sur le territoire national (19 wilayas atteintes).

Les ovins sont plus réceptifs et plus sensibles que les autres espèces.

Le contrôle des déplacements des animaux reste toujours difficile du fait de l'élevage extensif et de l'étendue de la steppe.


Mesures prises : vaccination de 1 500 000 animaux (toutes espèces confondues).

2. Peste équine

L’Algérie est demeurée indemne de peste équine.

En 1989, suite à la déclaration officielle de la peste équine au Maroc, un dispositif de prévention contre l'introduction de la maladie a été mis en place. Ce dispositif a été renforcé en 1991. Une action de grande envergure a été lancée par la vulgarisation et la sensibilisation des éleveurs (articles de presse, radio, cassettes vidéo).

L’Algérie a bénéficié d'un programme d'aide de la FAO (TCP) pour la formation en matière de diagnostic sérologique et de fabrication de vaccins.
II. MALADIES DE LA LISTE B

1. **Bursite infectieuse (maladie de Gumboro)**

   On a observé une nette régression de la maladie au cours de l’année 1991. La vaccination du cheptel reproducteur est obligatoire.

2. **Myiase à *Cochliomyia hominivorax***

   Suite à la déclaration officielle de la maladie en Libye, un dispositif de surveillance et de prévention a été mis en place depuis 1989. Celui-ci consiste en des opérations systématiques d’inspection, de traitement des plaies avec recherche de larves, et des opérations de vulgarisation et de sensibilisation (affiches, spots...).

   Ce programme a bénéficié de l’assistance de la FAO, essentiellement : mission de consultants de la FAO, formation de quatre vétérinaires en Libye, acquisition de matériel de laboratoire et d’insecticides, brochures de vulgarisation et moyens de locomotion.
INTRODUCTION

A la suite de la réunification de l'Allemagne le 3 octobre 1990 et de la mise en place de nouvelles structures administratives dans l'ancienne RDA, les Services Vétérinaires ont été entièrement harmonisés sur l'ensemble du territoire fédéral.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse
   La vaccination a été suspendue en mars 1991.

2. Peste porcine classique
   En 1991, la vaccination contre cette maladie a été suspendue.

II. MALADIES DE LA LISTE B

Rage

La vaccination orale des renards s'est étendue sur tous les nouveaux Länder de la Fédération. Ainsi, le programme a couvert l'ensemble du territoire jusqu'aux frontières polonaises et tchécoslovaques.

III. AUTRES MALADIES

Syndrôme dysgénésique et respiratoire du porc

La maladie est apparue pour la première fois en Allemagne sous la forme d'une épidémie, qui a culminé aux mois d'avril et mai avec plus de 3 000 fermes atteintes.
Ensuite, le nombre de nouveaux cas et les signes cliniques ont nettement régressé. En décembre, 18 nouveaux foyers seulement ont été diagnostiqués.

L'état actuel des connaissances relatives à cette maladie permet de conclure qu'il ne justifie plus d'imposer des restrictions sur le commerce de porcins vivants ou de leurs produits.
INTRODUCTION

Une réorganisation du service de l'élevage et le renforcement des laboratoires vétérinaires ne devraient pas tarder pour assurer un encadrement du bétail et des éleveurs.

I. MALADIES DE LA LISTE A

1. Péripneumonie contagieuse bovine

Cette maladie continue à être un problème dans certaines régions du pays où l'on a signalé quelques foyers. La prophylaxie médicale est partielle et le traitement occasionnel. Le dépistage, l'isolement et l'abattage sont les mesures préconisées en prophylaxie sanitaire.

2. Peste porcine africaine

La fréquence de la maladie est faible et sporadique. Des études sérologiques sont prévues pour s'assurer de l'absence de cas sub-cliniques dans les zones où sont entretenus d'importants élevages de porcins.

3. Maladie de Newcastle

La maladie se manifeste sporadiquement grâce à la vaccination obligatoire avec des vaccins importés par le ministère de l'agriculture et du développement rural.

II. MALADIES DE LA LISTE B

1. Fièvre charbonneuse

L'incidence de la maladie continue à être faible. Les mesures de prophylaxie appliquées pour prévenir la propagation de la maladie sont les suivantes :

- vaccination gratuite et obligatoire, mais les chiffres des interventions restent très bas ;
- en prophylaxie sanitaire, le dépistage, l'isolement, l'abattage et l'incinération sont préconisés.

2. Rage

La situation demeure stable avec des foyers limités à certaines zones à l'intérieur du pays. Des dizaines de cas de rage canine ont été confirmés par le laboratoire. Des cas de rage humaine ont été signalés. La vaccination des chiens est obligatoire mais le nombre total de chiens vaccinés dans le pays reste très bas.
3. **Tuberculose**

Des contraintes d'ordre technique n'ont pas permis la mise en place d'un programme de tuberculination. Une surveillance continue repose sur l'inspection des viandes dans les abattoirs.

4. **Trypanosomose**

La maladie est transmise par des glossines. Bien qu'il soit difficile de déterminer la situation et l'évolution de cette maladie au cours des dernières années, il convient de signaler que le risque d'infestation auquel les troupeaux sont soumis est plus élevé, d'abord dans la zone centrale, suite aux implications socio-économiques qui découlent de l'expansion du "fly belt" de *Glossina morsitans centralis*, et ensuite dans quelques provinces du nord-est suite à une augmentation de l'incidence de la trypanosomose humaine.

Aucun programme de lutte à long terme couvrant le secteur n'a encore été envisagé outre quelques actions très localisées. La lutte contre la maladie proprement dite repose sur la chimiothérapie associée à la chimioprophylaxie ; les traitements trypanocides sont gratuits.

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**III. AUTRES MALADIES**

**Charbon symptomatique**

Le charbon symptomatique apparaît sporadiquement. Son diagnostic est fondé sur des observations cliniques et/ou anatomopathologiques. La maladie est contrôlée par la vaccination.

**BIBLIOGRAPHIE**


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AUSTRALIA

INTRODUCTION

In 1991 Australia commenced a major review of current and future requirements for animal health services. The development of a national animal health information system to provide high quality information on the occurrence of animal diseases in Australia is also seen as an important priority. A pilot trial to develop a system for collating data from a range of agencies, and to develop a uniform national reporting system, including a mapping capability, to provide relevant information in suitable formats, was completed in 1991.

In 1991 exotic disease preparedness continued to be a focus of animal health service activity. To safeguard Australia's disease status, considerable effort goes into development of contingency plans and training of personnel to deal with possible exotic disease outbreaks. These procedures are based on quarantine, movement controls and slaughter, and disinfection of premises.

Product quality and animal welfare are other areas currently receiving attention by animal health authorities in Australia.

Disease control schemes operate in one or more States or Territories for several other diseases, including ovine brucellosis (Brucella ovis), enzootic bovine leucosis and caprine retrovirus (caprine arthritis/encephalitis). These schemes range from voluntary accreditation to formal eradication programmes.

I. LIST A DISEASES

Australia remains free of all list A diseases, although bluetongue and Newcastle disease virus strains are present.

1. **Bluetongue**

   Bluetongue virus serotypes have been isolated from insects and healthy sentinel cattle in northern Australia. Comprehensive serological, virological and insect monitoring programmes are routinely carried out. These have shown that there has been relatively little bluetongue virus infection of cattle in 1990/91, compared to earlier years. There has never been any evidence of clinical bluetongue disease associated with natural infection of livestock in Australia. Considerable research is being carried out on improved diagnostic tests and vaccines of bluetongue in Australia, should clinical disease occur.

2. **Newcastle disease**

   Highly lentogenic Newcastle disease viruses are endemic in Australia. They are not associated with disease. Heat stable strains of these viruses are proving successful in food-based vaccines in South East Asia.
II. LIST B DISEASES

Australia is also free of many of the more important List B diseases. Because Australia is a large land mass extending over a number of climatic and geographical zones, diseases that are present tend to be regionally distributed (e.g. cattle tick and the tick fevers are a northern Australian problem while conditions such as ovine foot-rot and Johnne's disease are a problem in the south east).

1. Paratuberculosis

Bovine paratuberculosis (Johnne's disease) is currently being reviewed in Australia with the aim of achieving a more coordinated approach to control. Quarantine and movement controls are currently used but recent developments in testing using an enzyme linked immunosorbent assay (ELISA) offer the opportunity to develop a testing and accreditation programme.

2. Bovine brucellosis

Australia declared itself free of brucellosis in July 1989. There have been no recurrences of the disease. Abattoir surveillance will continue until December 1993.

3. Bovine tuberculosis

Australia is currently in the last stages of a national campaign, begun in 1970, to eradicate bovine tuberculosis. Currently, the only remaining foci of bovine tuberculosis are in the far north of the Northern Territory and Western Australia. Only some 200 properties with less than one million cattle remain to be confirmed free of the disease. The campaign is on target to achieve impending free status (i.e. no known infection) nationally by the end of 1992.

There will be on-going surveillance for the disease.

4. Bonamiosis

Bonamiosis was diagnosed in flat oysters *Ostrea angasi* in the State of Victoria in 1991. This is the first recorded occurrence of this disease in Australia. The disease has only been recorded in experimental groups of flat oysters in a growth rate trial and limited to Port Phillip Bay and Westport in the State of Victoria. Flat oysters are not commercially cultured or harvested in either location.

III. OTHER DISEASES

1. Mucosal disease

Australian scientists have recently developed an antigen-capture ELISA for pestiviruses, which cause mucosal disease (bovine viral diarrhoea), in cattle, border disease in sheep and hog cholera (swine fever) in pigs. Border disease and hog cholera do not occur in Australia. The new test enables differentiation of these agents by detecting them in the white blood cells of infected animals. It will significantly increase Australia's ability to rapidly detect any entry of hog cholera and differentiate it from cross-infection of pigs with bovine pestivirus.
2. **Ovine foot-rot**

Ovine foot-rot causes significant economic loss in southern Australia and several States undertake control programmes. Three States: New South Wales, Victoria and South Australia, with large numbers of sheep, have recently agreed to standard definitions for infected areas and coordinated their advisory and regulatory programmes.
AUSTRIA

I. LIST A DISEASES

In Austria, in 1991, the only List A disease which occurred was hog cholera, with 11 outbreaks.

The most recent reported occurrences of other List A diseases in Austria were as follows:

- Foot and mouth disease: 1981
- Swine vesicular disease: 1979
- Rinderpest: 1881
- Contagious bovine pleuropneumonia: 1921
- Sheep pox and goat pox: 1954
- Teschen disease: 1980
- Fowl plague: 1946
- Newcastle disease: 1990

The following diseases have never been recorded in Austria:

- Vesicular stomatitis
- Peste des petits ruminants
- Lumpy skin disease
- Rift Valley fever
- Bluetongue
- African horse sickness
- African swine fever

Hog cholera

In 1991, 11 cases of hog cholera were confirmed. Ten outbreaks were recorded in the Federal Provinces of Lower Austria and one in Upper Austria. All pigs present on the farms were destroyed. Clinical symptoms were mild. Two outbreaks were detected by serological testing in in-contact and neighbouring herds. Four outbreaks were recorded in wild boar in Lower Austria. Control of pig movements and serological testing were carried out.

II. LIST B DISEASES

1) Rabies

During 1991, 2,465 cases of rabies were reported in Austria. These were 2,341 cases in wild animals and 124 cases in domestic animals. Of the cases in wild animals, 1,967 were in foxes.

Austria started an oral immunization programme in the Federal Province of Vorarlberg in 1986.
In spring 1991, oral vaccination was carried out in Vorarlberg, Tyrol, Styria, Salzburg, Carinthia, Burgenland and Upper Austria by order of the province government. About 210,000 units of bait were placed manually by local hunters.

The vaccine used was produced at the Federal Research Centre for Animal Virus Diseases in Tübingen (Germany).

In autumn 1991, oral immunization of foxes took place in all rabies infected districts in Austria. During this campaign about 900,000 units of bait were distributed manually by order of the Minister for Health, Sport and Consumers Protection.

2) Aujeszky's disease

In November and December 1991, five cases of Aujeszky's disease were confirmed. All outbreaks were recorded in pigs in the Federal Province of Lower Austria. All pigs present on the farms were destroyed.

Whereas in the first outbreak clinical symptoms were found, the following four outbreaks were detected by serological testing in in-contact and neighbouring herds. Control of pig movements in the affected areas and serological screening were carried out.
BELGIQUE

I. MALADIES DE LA LISTE A

1. L'année d'apparition du dernier foyer en Belgique pour chaque maladie est :

- Fièvre aphteuse : 1976
- Maladie vésiculeuse du porc : 1979
- Péripneumonie contagieuse bovine : 1897
- Peste bovine : 1920
- Peste porcine africaine : 1985
- Peste porcine classique : 1990
- Maladie de Newcastle : 1989

Les maladies suivantes n'ont jamais été signalées :

- Stomatite vésiculeuse
- Peste des petits ruminants
- Dermatose nodulaire contagieuse
- Fièvre de la vallée du Rift
- Fièvre catarrhale du mouton
- Clavelée et variole caprine
- Peste équine
- Maladie de Teschen
- Peste aviaire

2. Peste porcine classique

La Belgique est à nouveau officiellement indemne de peste porcine classique.

Afin de prévenir toute nouvelle épidémie, un plan d'épidémio-surveillance renforcé à tous les niveaux de la filière a été mis en place.

Les grands axes de la restructuration du secteur porcin au niveau sanitaire sont les suivants :

- la loi relative à la santé des animaux du 24 mars 1987 a fait l'objet d'une adaptation dans le but de pouvoir intervenir de manière plus précise, plus efficace et de donner aux responsables de la santé animale plus de pouvoir dans le cadre de la prévention et de la lutte contre les maladies ;

- des mesures ont déjà été prises en ce qui concerne l'infrastructure des élevages porcins, le commerce, les rassemblements, les transports, le nettoyage et la désinfection des camions, le rôle du vétérinaire de l'exploitation, et l'enregistrement des porcs.
II. MALADIES DE LA LISTE B

1. Rage

Total des cas confirmés au cours de l'année 1991 :

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>Hainaut</th>
<th>Liège</th>
<th>Limbourg</th>
<th>Luxembourg</th>
<th>Namur</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMUNES</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bovins</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Equins</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Renards</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>14</td>
<td>29</td>
</tr>
</tbody>
</table>


2. Brucellose bovine

L'année 1991 a été marquée par un recul très net du taux d'infection. Seule une région de plus en plus réduite du sud-est du pays est encore infectée à un taux avoisinant les 2 % et est responsable de la recontamination de certains troupeaux (284 foyers pour l'ensemble du pays).

D'autre part, la procédure de délivrance des attestations sanitaires a été fondamentalement modifiée afin de réprimer les fraudes à la vente.

Enfin, des règles strictes en matière de transport, de nettoyage et de désinfection des camions et l'obligation pour tout détenteur de faire procéder à deux bilans sérologiques supplémentaires à tous les bovins de 12 mois et plus complètent ces mesures.

La situation générale et son évolution sont reprises dans le tableau suivant :

<table>
<thead>
<tr>
<th></th>
<th>PREVALENCE</th>
<th>INCIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flandre occidentale</td>
<td>22</td>
<td>0,17</td>
</tr>
<tr>
<td>Flandre orientale</td>
<td>33</td>
<td>0,23</td>
</tr>
<tr>
<td>Anvers</td>
<td>6</td>
<td>0,07</td>
</tr>
<tr>
<td>Limbourg</td>
<td>20</td>
<td>0,35</td>
</tr>
<tr>
<td>Brabant</td>
<td>6</td>
<td>0,26</td>
</tr>
<tr>
<td>Hainaut</td>
<td>9</td>
<td>0,11</td>
</tr>
<tr>
<td>Namur</td>
<td>50</td>
<td>1,19</td>
</tr>
<tr>
<td>Liège</td>
<td>56</td>
<td>0,77</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>191</td>
<td>3,51</td>
</tr>
<tr>
<td>PAYS</td>
<td>393</td>
<td>0,54</td>
</tr>
</tbody>
</table>
3. **Tuberculose bovine**

Le nombre de cheptels officiellement indemnes est supérieur à 99,9%. Le contrôle de la situation est assuré par la tuberculination systématique d'un tiers des cheptels par an et la tuberculination à l'achat des animaux d'élevage ou de rente.

4. **Leucose bovine enzootique**

Le taux d'infection du pays est très faible. Le plan de dépistage et d'éradication accélérée de la leucose bovine enzootique approuvé par la CEE et commencé en 1989 s'achève. Le dépistage est terminé et les derniers foyers seront épurés dans les mois qui suivent.

Au cours de l'année 1991, 152 foyers de leucose bovine enzootique ont été découverts. La majeure partie de ceux-ci a été dépistée par des analyses faites sur des mélanges de sérum. Les autres ont été découverts à l'occasion d'analyses à l'achat, analyses pour concours et marchés, voisinage d'un foyer de leucose, enquête épidémiologique, etc.

5. **Maladie hémorragique virale du lapin**

L'apparition dans le courant des mois d'octobre, novembre et décembre 1990, de foyers de maladie hémorragique virale a amené les services vétérinaires à prendre des mesures temporaires en vue de prévenir la dispersion du contagé.

Notamment, une interdiction de rassemblement sur les marchés, dans les concours, expositions, sauf pour les animaux vaccinés sous couvert d'un certificat officiel; une interdiction de transport de lapins vivants, sauf transport direct vers une tuerie, sous couvert d'une attestation officielle et sauf exportation sous couvert d'un certificat sanitaire.

A l'heure actuelle, 134 foyers de maladie hémorragique virale ont été diagnostiqués depuis l'apparition de la maladie dans le pays.

Le tableau suivant donne le nombre de foyers par province (1990-1991):

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>NOMBRE DE FOYERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anvers</td>
<td>3</td>
</tr>
<tr>
<td>Brabant</td>
<td>26</td>
</tr>
<tr>
<td>Limbourg</td>
<td>7</td>
</tr>
<tr>
<td>Flandre orientale</td>
<td>3</td>
</tr>
<tr>
<td>Flandre occidentale</td>
<td>24</td>
</tr>
<tr>
<td>Hainaut</td>
<td>49</td>
</tr>
<tr>
<td>Liège</td>
<td>8</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>8</td>
</tr>
<tr>
<td>Namur</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>134</strong></td>
</tr>
</tbody>
</table>

La législation de 1990 a été assouplie en 1991 et permet le rassemblement de lapins sur les marchés, expositions et concours, pour les lapins vaccinés avant le rassemblement depuis au moins sept jours et au plus six mois, au moyen d'un vaccin approuvé par les services vétérinaires. Ces animaux doivent être tatoués à l'oreille.
III. AUTRES MALADIES

Syndrome dysgénésique et respiratoire du porc

Le premier cas de syndrome dysgénésique et respiratoire du porc (SDRP) a été enregistré en Belgique le 19 mars 1991.

La déclaration de tout cas suspect est obligatoire, ce depuis le 22 mars 1991. Aucune entrée ou sortie de porcs n’est autorisée dans une exploitation suspecte, au cours des huit semaines qui suivent la disparition des symptômes.

D’autre part, les responsables d’exploitations porcines, d’élevage, d’engraissement et mixtes, sont tenus de faire examiner leur cheptel avant toute exportation, par un vétérinaire désigné par le service de l’inspection vétérinaire. Le transport des animaux exportés ne peut se faire que dans des véhicules scellés après le chargement.

En cas d’avortement, ou de mortalité chez des porcelets, les détenteurs doivent faire appel au vétérinaire d’exploitation. Celui-ci doit, transmettre des prélèvements à un des laboratoires des Fédérations provinciales de lutte contre les maladies des animaux.

De plus, les mesures d’hygiène imposées à tout responsable d’un cheptel suspect d’être atteint de SDRP sont les suivantes :

- destruction de tous les produits tels que placentas, foetus et porcelets morts provenant d’avortements spontanés, de naissances prématurées et de naissances normales, conformément aux instructions de l’Inspecteur vétérinaire ;

- nettoyage et désinfection des locaux de maternité après tout avortement spontané, naissance prématurée ou naissance normale ;

- installation aux entrées et aux sorties des locaux où sont logés des porcs d’élevage, d’un pédiluve rempli d’une solution à base d’un désinfectant autorisé.

Grâce à l’ensemble de ces mesures, la situation s’est progressivement améliorée au cours de l’année écoulée. Le dernier foyer s’est éteint en décembre 1991. La Belgique est donc indemne de syndrome dysgénésique et respiratoire du porc.

Le tableau suivant donne l’évolution de la situation depuis l’apparition du premier cas, en mars 1991 :

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>MARS</th>
<th>AVRIL</th>
<th>MAI</th>
<th>JUIN</th>
<th>JUIL</th>
<th>AOUT</th>
<th>SEPTE</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flandre occ.</td>
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<td>2</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Flandre or.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Anvers</td>
<td>1</td>
<td>19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
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<td>-</td>
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<td>3</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
</tbody>
</table>

Secteur avicole

Le secteur avicole vient après le secteur bovin et le secteur porcin au point de vue de son importance économique. L’état sanitaire du cheptel avicole est remarquablement bon depuis plusieurs années. La structure particulière des élevages avicoles n’y est pas étrangère, à côté d’une gestion sanitaire et zootéchnique rigoureuse. La durée de vie des volailles est brève et se passe quasi chez un seul...
détenteur, le plus souvent dans le même local. Cela tient essentiellement au fait de la dimension des exploitations pour la production d'œufs à couver, à la mise en lot de la naissance à l'abattage de telle sorte que les animaux d'un même lot sont soumis aux mêmes conditions de vie, aux mêmes risques et aux mêmes programmes sanitaires en même temps.

Notre pays ayant une excellente réputation en tant qu'exportateur de volailles et de produits avicoles, est tenu de conserver un statut sanitaire de haut niveau.
BOTSWANA

INTRODUCTION

Rabies continued to be rampant throughout the year while other animal diseases remained under control. Animal disease control strategies were unchanged from the previous years and were centred around prevention. This approach was based on:

1. **Vaccination**

   Mass vaccination of diseases such as blackleg, anthrax, brucellosis, rabies and foot and mouth disease (FMD) is carried out officially in strategic areas of the country, namely in high risk areas where the diseases are endemic or epizootic in nature. Livestock owners are recommended to carry out on an independent and voluntary basis vaccinations against such diseases as botulism, pasteurellosis, lumpy skin disease, enterotoxaemia and heartwater.

   Deworming and feed supplementation at strategic times are also management practices that farmers are recommended to carry out independently.

2. **Quarantine and movement control**

   The Department of Animal Health and Production maintains 20 disease control zones demarcated by cordon fences and 15 quarantine stations. Local and international movement of animals and their products is restricted and controlled by a permit system utilising the above structures plus the international boundary. Undisputed scientific evidence that the African buffalo is a carrier for the SAT FMD virus has led to active efforts to separate these animals from high risk domestic livestock such as cattle, goats and sheep. This has been achieved by buffalo cordon fencing and by designating certain areas stock-free zones (zone 16). Using this strategy together with mass vaccination as stated in item 1 above, the country has not experienced any FMD outbreaks since September 1980.

3. **Vector control**

   Control of vector borne diseases was maintained throughout 1991 by official and private spraying and/or dipping. The tsetse and control section of the department continued its official tsetse spraying and monitoring of the environment without interruption during the year. Quarantine stations continued to dip animals on entry and departure in an effort to control the spread of ticks. Farmers are also advised to dip their animals to reduce the tick burden during the rainy season.

4. **Extension**

   In cognizance of the fact that public participation is central to any realistic, sound, and successful disease control programme, the Department of Animal Health and Production continues to educate the public on sound livestock management practices via its extension field staff. This has borne fruit as demonstrated by the number of animals covered by official and voluntary vaccination.
I. LIST A DISEASES

1. **Foot and mouth disease**

   The last epizootic outbreak of this disease occurred in September 1980, mostly in the northern parts of the country. It has since been controlled through vaccination using a locally manufactured trivalent vaccine containing SAT 1, 2 and 3\textit{v}irus strains. A national campaign to vaccinate cattle at least twice a year continued smoothly during the year in the northern and north-western parts of the country. This is, approximately, the area north of the 21st parallel and to the west of $26^\circ 50^\prime$ E.

2. **Lumpy skin disease**

   The occurrence of this disease is sporadic in Botswana. In the last quarter of the reporting year a localised outbreak occurred in the southern part of the country. This was controlled through voluntary vaccination.

3. **Rift Valley fever**

   Serology revealed the presence of or exposure to the causative factor in a cow that had given birth to a weak calf on the fringe of the Okavango delta. Other similar evidence was that displayed by sera from Plapye and Mahalapye districts where insignificantly low \textit{titres} were detected. Prior to this finding there had never been any evidence pointing to the existence of the disease in Botswana. However, there has not been a sudden outbreak of abortions that could be associated with this disease.

4. **Bluetongue**

   Bluetongue (BT) was confirmed as being widespread in the country. Several veterinary districts (Gaborone, Kanye, Mahalapye, Maun, and Gantsi) revealed either serological and/or clinical evidence of the disease, mostly from goats. Most clinically normal goats in Botswana have antibodies against BT virus.

5. **African horse sickness**

   There were three recorded cases of this disease in 1991. Optional vaccination by farmers is the control strategy adopted by the Department.

   The remaining List A diseases have either not been recorded or have been brought under control since the last reported occurrence.

6. **Newcastle disease**

   The disease picture was unchanged from the previous year. It remains sporadic and causes high mortality in poultry farms, of which a majority are located in the more highly populated southern parts of the country.

II. LIST B DISEASES

1. **Anthrax**

   This disease was suspected after several cases of sudden death in cattle and sheep. Control strategy is an annual official vaccination using a killed vaccine.
2. **Echinococcosis/hydatidosis**

   Although the morbidity of hydatidosis is unknown, the disease is enzootic in the country.

3. **Heartwater and tick-borne diseases**

   The disease is still confined to the eastern hard veldt regions of the country. It causes great losses in sheep and goats. Dipping and infection-treatment using blood vaccine (1) are the currently used methods for controlling the disease.

   Other tick-borne diseases such as anaplasmosis, babesiosis and a benign form of theileriosis do occur sporadically and are treated whenever diagnosed.

4. **Leptospirosis**

   This disease was confirmed in the eastern part (Tuli Block) of the country last year, where an increase in abortions had been observed. Vaccination and treatment of individual animals was carried out to control the disease.

5. **Rabies**

   Vaccination of domestic dogs and cats and the elimination of strays remain the main strategies for controlling this disease. However, the disease continues to be rampant throughout most of the country and occurs in several domestic and wildlife species. In 1991, two humans died from this disease. One was bitten by a dog (from Mathangwane near Francistown) while the second was bitten by a honey badger in Jwaneng Veterinary District.

   There is a need to evaluate the effectiveness of the above control strategy. Alternative control strategies, such as oral vaccination of wild species and stray or untamed dogs, need to be considered.

Other diseases of importance in Botswana are pasteurellosis, botulism and blackleg. These diseases are enzootic and may cause high mortality. Therefore, they are controlled by *annual* vaccination. This is carried out independently by livestock owners.

**CONCLUSION**

Animal health status in Botswana was satisfactorily maintained throughout 1991. Although the portion of resources allocated by the Government to achieve this task has been adequate, its erosion by inflation, increased public demands and diminishing world resources cannot be ignored. Newer, more specifically targeted approaches to disease prevention and control based on epidemiological data and economic soundness need to be considered.

---

(1) Onderstepoort vaccine
I. ENFERMEDADES DE LA LISTA A

1. **Fiebre aftosa**

En 1991, se señalaron 744 focos de enfermedades vesiculares, registrándose una menor ocurrencia en relación a los años 1990 (989 focos) y 1989 (1.376 focos), mostrando una reducción del 24,77% y 45,93% respectivamente. Cabe destacar que a excepción de la Región Centro-Oeste, el número de focos decreció en todas las regiones brasileñas.

Solamente en los Estados de Amapá, Amazonas y Espíritu Santo no se señalaron focos.

En la Región Norte, se notificaron 35 focos, lo que representa un 63,15% de descenso en comparación con 1990 (95 focos).

En el Nordeste, se registraron 247 focos, que, comparados con los 315 que se señalaron en 1990, indican una reducción del 21,58%. Los Estados más afectados de esta región fueron Ceará, Paraíba, Pernambuco y Bahía. En el Estado de Ceará se registraron 66 focos de enfermedades vesiculares.

En el Sudeste, se notificaron 70 focos en 1991, contra 220 en 1990, lo que denota una marcada reducción del 68,18% en la tasa de ocurrencia en dicha región. En Minas Gerais, la reducción fue del 83,33%, del 64,70% en el distrito de Sao Paulo, del 20% en Río de Janeiro, y no se señaló en Espíritu Santo.

En 1991, se señalaron 247 focos en la Región Sur, con lo que la ocurrencia, en comparación con el año 1990 (307 focos), registra un descenso del 19,54%, a pesar del brote de fiebre aftosa que ocurrió de noviembre de 1990 a julio de 1991 en Santa Catalina, registrándose un total de 206 focos con la presencia del virus C3 Indaiá. Es importante destacar que hacía más de diez años que este tipo de virus no era diagnosticado en ese Estado. En el Paraná fueron notificados 17 focos durante los meses de noviembre y diciembre de 1991, y en Río Grande del Sur ocurrieron 24 focos contra 158 en 1990, observándose una reducción del 84,81% de la tasa de ocurrencia.

En la Región Centro-Oeste, hubo un incremento del 178,84% en el número de focos registrados en comparación con los 52 confirmados en 1990. Los Estados más afectados fueron Mato Grosso, donde, en el mes de noviembre, empezó un brote que totalizó 99 focos siendo notificados 88 de éstos durante los meses de noviembre y diciembre de 1991, y Mato Grosso del Sur con 27 focos en el mismo periodo. Resultamos que hacía 12 meses que no se registraban casos de fiebre aftosa en el Estado de Mato Grosso del Sur.

En el Distrito Federal se registró un foco de fiebre aftosa, después de siete años sin ocurrencias. Se debió a la entrada de animales del Estado de Goiás.

Como se mencionó anteriormente, la fiebre aftosa se registró menos durante 1991 que en los últimos años, a pesar de los brotes en Ceará, Mato Grosso y Santa Catalina.

En lo que concierne a otras especies animales, sólo se registraron un foco en equinos y siete en suinos.
Para una población bovina de 140.845.976 cabezas, se han obtenido las siguientes tasas:

<table>
<thead>
<tr>
<th></th>
<th>Morbilidad</th>
<th>Mortalidad</th>
<th>Letalidad</th>
<th>Tasa de ataque</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1,02</td>
<td>0,17</td>
<td>16,19</td>
<td>17,66</td>
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<tr>
<td>10.000</td>
<td>100.000</td>
<td>1.000</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

De los 744 focos se tomaron muestras en 255, representando el 34,27% del total. Fueron confirmados por el laboratorio 127 focos, o sea el 49,8% de los rebaños en donde se tomaron muestras, siendo los virus más frecuentes el C, con 64 diagnósticos positivos, el O, con 40, y el A, con 23. De los 64 diagnósticos de virus C, 55 ocurrieron en el Estado de Santa Catalina.

Atendiendo los decretos ministeriales n° 280 del 30/11/88, y 27 del 5/1/90, se realizó en octubre la última recolección de vacuna convencional para pruebas oficiales, ya que a partir de esa fecha ya no se produjeron más que vacunas capaces de conferir una protección mínima de seis meses. Las vacunas convencionales obtuvieron en las pruebas oficiales un índice de aprobación del 93,13%, y las de mayor duración de inmunidad un índice del 94,39%. La producción nacional de vacunas antiaftosas (convencionales o de larga duración) fue de 189.960.503 dosis en 1991.

2. **Estomatitis vesicular**

Se diagnosticaron 11 focos de estomatitis vesicular, de los cuales cuatro focos lo eran solamente de estomatitis vesicular, y siete en los cuales hubo ocurrencia simultánea de fiebre aftosa. En todos los focos, se diagnosticó el tipo "Indiana". El último foco registrado de esta enfermedad anterior a éstos fue en agosto de 1988, debido al mismo tipo de virus.

3. **Peste porcina clásica**


4. **Enfermedad de Newcastle**

Desde 1988 se está observando una neta disminución de la incidencia de esta enfermedad. Esta disminución se debe probablemente a las acciones profilácticas que vienen siendo ejecutadas en relación a esta virosis. Se señalaron 51 focos en 1991, mientras que se habían registrado 147 focos en 1990. La producción nacional de vacunas contra esta virosis fue de 1.926.620.452 dosis en 1991, o sea un número bastante superior al número de dosis disponibles en los dos años anteriores.

II. ENFERMEDADES DE LA LISTA B

1. **Enfermedad de Aujeszky**

Sólo se notificó un caso de enfermedad de Aujeszky en 1991 un vacuno.
2. **Rabia**

   a) en herbívoros

   No hubo cambios significativos en la situación de esta virosis durante el año 1991. Se continuó con las medidas profiláticas adoptadas que consistieron en la vacunación en las áreas de focos activos, la aplicación de pasta vampirícida en los murciélagos hematofágos capturados y en las heridas de los animales mordidos, y la inyección de warfarina en bovinos y équidos.

   b) en perros y gatos

   Se registró un mayor número de casos de rabia en perros y gatos en 1991, manteniéndose la misma tendencia observada en el año anterior. Se mantuvieron las actividades desarrolladas en las áreas urbanas por el Ministerio de Sanidad, y en las áreas rurales por el Ministerio y las Secretarías Estatales de Agricultura.

   La producción de vacunas antirrábicas se mantuvo aproximadamente igual que la de 1990 con un total de 38.324.404 dosis, todas sometidas a las pruebas efectuadas por los laboratorios oficiales.

3. **Brucelosis bovina**

   Se constató un aumento en el número de establecimientos afectados por esta zoonosis, así como un aumento en la cantidad de animales con reacción positiva a las pruebas de diagnóstico. Esto puede ser atribuido a la intensificación de las actividades profiláticas, caracterizadas por un aumento en la producción de vacuna elaborada con la cepa 19, hasta alcanzar un total de 5.205.980 dosis, de mucho superior al número de dosis producidas en los dos años anteriores, que fue de 2.814.110 dosis en 1989 y 3.347.395 dosis en 1990. Toda la producción fue sometida a las pruebas de control oficial. Se realizaron 731.852 pruebas de aglutinación rápida en suero sanguíneo, con 17.380 reacciones positivas (2,37%) y 11.578 reacciones sospechosas (1,58%).

4. **Tuberculosis bovina**

   También se aumentaron las actividades profiláticas con referencia a la tuberculosis bovina, especialmente en las granjas productoras de leche de tipo "A" y "B", en los Estados del sureste y del sur. Se tuberculizaron 359.762 bovinos, con 2.989 reacciones positivas (0,83%) y 1.365 sospechosas (0,38%).

5. **Anemia infecciosa equina**


**Enfermedades de los porcinos**

6. **Rinitis atrófica del cerdo**

   Se constataron 68 focos de esta enfermedad, con 1.564 animales afectados, observándose un leve descenso en el número de granjas afectadas y un aumento en el número de casos en relación a los años anteriores.

7. **Brucelosis porcina**

   En siete Estados se realizaron pruebas serológicas para el diagnóstico de la brucelosis porcina. En un total de 16.020 exámenes, hubo sólo tres reacciones positivas (0,02%) en dos piaras.
La situación sanitaria de la población avícola evolucionó favorablemente en el transcurso de 1991, con una reducción tanto del número de focos como del de casos en comparación con 1990, con excepción de la viruela aviar, con números más elevados, y de la micoplasmosis, que afectó un menor número de granjas pero un mayor número de aves.

El total de los casos debidos a enfermedades avíarias de las Listas A y B fue de 933.970 en 1991, mientras que había sido de 2.581.035 en 1990. La incidencia más elevada corresponde a la micoplasmosis, con 720.410 casos. Estas cifras tienen poco significado si tomamos en cuenta que la población avícola nacional monta a 552.263.819 aves.
INTRODUCTION

In 1991, as in previous years, the efforts of the Bulgarian State Veterinary Service were aimed at the permanent control of the health status of livestock in state and private farms and of wild animals. Special attention was given to the movement of animals throughout the country, to abattoirs, meat producing factories, dairies and markets.

I. LIST A DISEASES

1. Foot and mouth disease

At the end of July 1991, in Stephan Karadjovo village, district of Burgas, an outbreak of foot and mouth disease (FMD) occurred, caused by FMD virus type O₁. The origin of the infection was not determined. Affected and in-contact animals were slaughtered and buried in situ. A total of 44,895 cattle and 6,547 sheep and goats were vaccinated. Revaccination included a total of 24,150 cattle and 6,174 sheep and goats.

No new cases of FMD were recorded and the country was declared free from foot and mouth disease on 11 September 1991.

From 8 to 12 August 1991, a mission from the European Community came to Bulgaria to visit the area where the outbreak had occurred and the nearby frontier regions. Samples were taken of the field virus, O₁ Lausanne Bulgarian vaccine strain, used for animal vaccination in the country, and of O₁\(^{194}\) strain used for immunoprophylaxis and eradication of the disease.

Investigations carried out at the WRL in Pirbright (England) confirmed that O BUL/1/91 strain is genetically closely related to the type O viruses circulating in the Middle East. Antigenically O BUL/1/91 strain is closely related to the viruses of the O₁ subtype group. The vaccine prepared for O₁/BFS, O₁ Lausanne and O₁ Manisa strains would probably be successful in controlling this outbreak. A total of 112 samples were taken from sheep, goats and swine, bred in the infected zones and around the FMD outbreak. They did not show the presence of active infection.

On the proposal of the EC Veterinary Inspection, two specialists from the WRL in Pirbright visited Bulgaria in late October and took 520 blood samples from swine, sheep and goats and 100 probang tests from sheep, goats and calves. The examination of 1,159 sera from swine, sheep, goats and cattle and wild animals did not prove the presence of VIA antibodies. The conclusion is, therefore, that the infection has been eradicated from the country.

On 27 and 28 November 1991, a tripartite meeting of veterinary specialists from the EEC, FAO and OIE was held in Brussels, at which the epizootic situation in Eastern Europe was discussed. The presidents of the State Veterinary Services of the Republic of Bulgaria, Turkey and Greece, and specialists from the WRL in Pirbright (England), were present.
Following the decision of the EC to stop preventive immunization against certain infectious diseases (including FMD) in Member Countries, Bulgarian strategy was modified. It was decided to stop routine preventive immunization against FMD and apply a stamping out policy in the event of future FMD outbreaks. The importation of live animals vaccinated against FMD was prohibited. Animals exported from Bulgaria are guaranteed not to have been vaccinated.

2. Rinderpest

In October 1991 information was received about rinderpest outbreaks in the Republic of Turkey. In order to prevent the disease spreading to Bulgaria, border veterinary controls have been strengthened. All ruminants have been moved from 2 to 10 km away from Bulgarian-Turkish border. Ruminants within a 50 km zone along the border are under constant veterinary surveillance. Facilities are available for the rapid diagnosis of the disease.

A total of 150,000 doses FAO rinderpest vaccine have been made available and are kept in stock. A State Veterinary decision has been made not to vaccine at this stage.

On 27 and 28 December 1991, a meeting took place in Istanbul between the State Veterinary Services of Bulgaria and Turkey. The epizootic situation concerning rinderpest was discussed. Some joint measures for the control of the disease were adopted.

3. Newcastle disease

During the year, Newcastle disease was not diagnosed. Nevertheless, specific immunoprophylactic measures were applied. Immunity was checked using the haemagglutination inhibition test. In cases of low immunity, revaccination was carried out.

II. LIST B DISEASES

1. Rabies

In 1991, six cases of rabies in foxes were reported in five outbreaks. The disease was diagnosed in the Central Veterinary Scientific Institute in Sofia. In-contact animals were vaccinated. In the affected regions a shoot was organized to decrease the fox population. The intention is to import vaccine against rabies in foxes.

2. Bovine tuberculosis

During the year, two outbreaks of bovine tuberculosis were registered. Every year, all cattle over three months' old are given frequent diagnostic tests, aimed at the eradication of the disease. In 1991, a total of 1,372,408 cattle were examined. All positive reactors were destroyed. Quarantine was imposed upon the affected farms.

3. Enzootic bovine leukosis

Quarantine was imposed upon farms with infected animals, and reactors were isolated. Serological tests and the agar gel immunodiffusion test were applied. A total of 416,250 samples were tested.

Transit passage was granted to 116,200 cattle, horses, sheep and swine, 75,826 t of meat and meat products, 51,888 t of milk and milk products and 1,950 t of tins. All animals and animal products were checked by the frontier veterinary control service. Disinfection of incoming vehicles was carried out as follows: 665 ships, 769 aircraft, 1,083,119 trucks, buses and cars, 62,363 wagons.
BURKINA FASO

INTRODUCTION

La situation zoo-sanitaire est caractérisée en 1991 par une très nette régression de la fièvre aphteuse.

Les activités des Services Vétérinaires n'ont pas connu de modification notable.

Il est à noter l'installation progressive de vétérinaires exerçant à titre privé, ce qui doit à terme aboutir à une redistribution des rôles entre l'Etat et les vétérinaires privés.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

L'année 1990 avait connu une flambée épidémio-logique de fièvre aphteuse (virus SAT 2) avec 40 foyers sur l'ensemble du territoire.

L'année 1991 a vu une très nette régression des foyers qui ne représentent plus que quelques cas isolés.

Le mode d'élevage extensif transhumant rend difficile la détection des foyers, les éleveurs traditionnels considérant la maladie comme bénigne.

2. Peste bovine

La peste bovine n'a pas été constatée depuis 1988, mais sous l'égide du programme Campagne panafricaine de lutte contre la peste bovine, la vaccination se poursuit, de même que la surveillance sérologique.

3. Peste des petits ruminants

La maladie a connu une certaine accalmie, grâce notamment à la vaccination utilisant un vaccin hétérologue (peste bovine).

4. Péripneumonie contagieuse bovine

La maladie continue d'être observée de façon sporadique. La vaccination annuelle de tous les animaux avec du vaccin bivalent "Peste-péri" se poursuit.

5. Maladie de Newcastle

Elle reste enzootique et bénéficie d'un programme de lutte qui intéresse essentiellement la partie centrale du pays.
II. MALADIES DE LA LISTE B

1. Fièvre charbonneuse

Elle est essentiellement observée sur les bovins dans les régions centre-sud et sud-ouest du pays et cause parfois des mortalités chez l'homme. La vaccination est mise en œuvre en cas de foyers.

2. Rage

Elle reste toujours un problème important : 52 cas de rage canine ont été observés en 1991.

3. Trypanosomose

Elle sévit dans les régions sud et ouest du pays. Dans les méthodes de lutte, en plus des trypanocides, on note des programmes pilotes d'utilisation des insecticides contre les glossines.

CONCLUSION

La situation zoo-sanitaire reste satisfaisante en rapport avec le mode d'élevage extensif transhumant.

La régression de la fièvre aphteuse a permis de rétablir à un niveau normal les échanges d'animaux extra-territoriaux.

Avec l'installation de la médecine vétérinaire privée, une réflexion est en cours pour redéfinir le rôle de l'Etat (services vétérinaires officiels) par rapport au privé.
CAMEROUN

INTRODUCTION

Structure technico-administrative du ministère de l’élevage, des pêches et des industries animales (MINEPIA) :

* 10 délégations provinciales d’EPIA (1)
* 42 Secteurs départementaux d’EPIA
* 96 sous-secteurs d’EPIA
* 458 centres zootechniques et vétérinaires
* 58 postes de contrôles sanitaires
* 14 sections d’aménagement des pâturages et de l’hydraulique pastorale
* 10 postes de contrôle de pêches.

A cette structure viennent s’ajouter les organismes et missions spécialisés :

- L’Office Pharmaceutique Vétérinaire (OPV), organisme à caractère industriel et commercial chargé de l’approvisionnement des services publics et du secteur privé en médicaments, produits et instruments à usage vétérinaire ;
- La Mission Spéciale d’Éradication des Glossines ;
- Le Laboratoire National Vétérinaire de Garoua-Boklé (LANAVET), chargé du diagnostic, des analyses et de la fabrication des vaccins ;
- L’Office Nationale de Développement de l’Aviculture et du Petit Bétail (ONDAPB) ;
- Les Caisses de Développement de l’Élevage.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

Elle est signalée dans certaines provinces du pays. Cette année cinq foyers seulement ont été enregistrés contre sept l’année dernière causant une trentaine de morts surtout chez les jeunes sujets. Les types sérologiques sont le O et le A.

Des mesures sanitaires sont prises chaque fois qu’il y a un foyer, en particulier dans les mouvements du cheptel et la fermeture des marchés à bétail.

(1) EPIA = Elevage, Pêches et Industries Animales.
2. **Peste bovine**

Comme par le passé, la presque totalité du cheptel bovin a été vacciné contre cette maladie avec un vaccin mixte (peste bovine et péripneumonie) dénommé "Bivax" produit le Laboratoire National Vétérinaire de Garoua-Boklé (LANAVET).

Aucun cas de peste bovine n'a été signalé sur le territoire national depuis 1986.

Le Cameroun ne ménage aucun effort pour que la campagne panafricaine de lutte contre la peste bovine soit une réussite, aussi participe-t-il à toutes les réunions consacrées à cet effet aussi bien au niveau régional qu'international.

Grâce au laboratoire de diagnostic et de production de vaccins de Garoua, le Cameroun joue désormais un rôle de premier rang dans la lutte contre les épidémies en général et la peste bovine en particulier.

3. **Peste des petits ruminants**

En 1991, on a enregistré autant de foyers que l'année dernière soit deux, mais seulement 60 mortalités au lieu de 150.

4. **Péripneumonie contagieuse bovine**

La vaccination systématique s'effectue chaque année et est couplée avec celle contre la peste bovine. Un seul foyer a été enregistré cette année, avec 15 mortalités, contre 40 en 1990.

5. **Peste porcine africaine**

Le nombre de foyers est passé de cinq à trois, causant une centaine de morts.

Des efforts tendant à responsabiliser les éleveurs semblent donner des résultats encourageants.

6. **Maladie de Newcastle**

Elle est présente dans tout le pays et reste meurtrière en l'absence de vaccination. Le Laboratoire National Vétérinaire de Garoua fabrique un vaccin qui donne entière satisfaction.

**II. MALADIES DE LA LISTE B**

1. **Fièvre charbonneuse**

Le nombre de foyers est resté stationnaire (deux) et le nombre de morts s'est élevé à une quinzaine.

Des vaccinations se sont poursuivies dans les zones à risque avec un vaccin dénommé "Antivarax" produit par le Laboratoire National de Garoua.

2. **Rage**

On a observé une recrudescence de la rage canine dans le pays, une vingtaine de cas encore cette année.

Des séances de vaccination sont très souvent couplées à la destruction des chiens errants.
3. **Brucellose bovine**

Les études entreprises montrent une prévalence sur l'ensemble du territoire avec des variations d'une région à une autre et dans la même région très souvent.

4. **Dermatophilose**

Son incidence reste toujours très faible. Le passage d'animaux dans des bains détiqueurs réduit le risque de la maladie, tandis que des traitements aux antibiotiques, s'ils sont précoces, permettent la guérison.

5. **Septicémie hémorragique bovine**

Des vaccinations dans les zones d'enzooties au "Pastovax" vaccin produit par le Laboratoire National Vétérinaire de Garoua ont été entreprises encore cette année. Deux foyers et une vingtaine de morts ont été signalés cette année encore sur l'ensemble du territoire national.

6. **Hémoparasites**

La plus importante reste la trypanosomose. Elle est responsable de beaucoup de mortalités. Une trentaine de foyers ont été signalés encore cette année. La lutte contre cette maladie revêt deux aspects : traitement préventif des bovins au départ en transhumance et curatif au retour ; prospection et assainissement des pâturages par la Mission Spéciale d’Eradication des Glossines.

Autres hémoparasites importants : la babésiose et l'anaplasmose.

**III. AUTRES MALADIES**

1. **Charbon symptomatique**

Il est signalé dans tout le pays. On vaccine grâce à un vaccin dénommé "Symptovax" produit par le Laboratoire National Vétérinaire de Garoua. Cette année encore trois foyers ont été enregistrés.

2. **Rouget du porc**

En dehors de la peste porcine africaine, elle semble constituer à l'heure actuelle une entité assez fréquente dans les porcheries. On préconise l'antibiothérapie.

**CONCLUSION**

Grâce à des moyens de plus en plus performants mis en place par le Gouvernement, la protection sanitaire s'est considérablement améliorée pour le grand bien des éleveurs et de l'économie nationale.
INTRODUCTION

With the exception of events which have taken place within the captive ungulate population, the health status of Canadian livestock and poultry is essentially unchanged since the 1990 report.

Having achieved the eradication of brucellosis and the imminent eradication of tuberculosis from the national cattle herd, controlling brucellosis and tuberculosis in farmed game animal species is considered necessary to eliminate possible sources of infection for cattle. The Captive Ungulate Program that was implemented in 1989 has this mandate and in 1991 again uncovered a number of elk and deer farms infected with bovine tuberculosis. The popularity of bison, elk, deer and llama rearing is increasing steadily.

An important national animal health activity is the planned implementation of a Northern Bison Recovery Program. Over a ten year planning period, bovine brucellosis and bovine tuberculosis will be eradicated and healthy bison will be reestablished in Wood Buffalo National Park and across Northern Canada.

Development of the National Salmonella Control Program for poultry continues, with baseline data having been established for all but the feed sector. Interim protective measures specifically directed at Salmonella enteritidis in commercial layers remain in place. The initiative continues to enjoy full industry support.

Risk analysis methods are being used to assist the decision making associated with the numerous requests received annually for the importation of animals and animal products.

I. LIST A DISEASES

Domestic animals in Canada remained free from all List A diseases. List A diseases are prescribed as reportable diseases in Canada.

II. LIST B DISEASES

The following List B diseases are prescribed as reportable in Canada: anthrax, Aujeszky's disease, rabies, anaplasmosis, bovine brucellosis, bovine tuberculosis, cysticercosis (C. bovis), bovine spongiform encephalopathy, caprine and ovine brucellosis (B. melitensis), scrapie, contagious equine metritis, dourine, equine infectious anaemia, equine piroplasmosis (babesiosis), glanders, horse mange, porcine brucellosis (B. Suis), trichinellosis, fowl typhoid, pullorum disease and varroasis. Many of these diseases have never been reported in Canada or have been eradicated.
1. **Anthrax**

Attributable to climatic conditions, anthrax was diagnosed for the first time since 1985. An outbreak occurred in a national park in the province of Alberta. 32 bison died. Four outbreaks in cattle herds were observed in the same province.

2. **Rabies**

During 1991, 2,487 positive cases of rabies were reported in domestic and wild animals. Rabies in the red fox and the striped skunk represented the majority of the wild animal cases. However, rabies was also reported in bats, raccoons, coyotes, wolves, ground hogs, deer and polar bears. This was the third year of a project to assess the feasibility of large scale vaccination of wild animals. Over 500,000 baits with rabies vaccine and a tetracycline marker were dropped by airplane over wildlife habitats in the eastern part of the province of Ontario.

3. **Bovine brucellosis (B. abortus)**

No cases of bovine brucellosis have occurred since the isolation of an atypical biovar 5 B. abortus from a strain 19 vaccinated beef cow in 1989. Surveillance for brucellosis continued in 1991 with approximately 800,000 serological tests performed on market and slaughter cows and bulls. All dairy herds are subject to continuous milk ring testing, and additional testing is conducted for export purposes. There were 45 serological reactors and these were slaughtered but no B. abortus was detected. Only reduced dosage B. abortus strain 19 vaccine is approved for use. Less than 2% of heifer calves, many destined for the United States of America, are vaccinated.

4. **Bovine tuberculosis (Mycobacterium bovis)**

One outbreak of bovine tuberculosis in cattle occurred during 1991 in the province of Manitoba, for the first time in 15 years. The outbreak uncovered six related infected herds which were all subjected to whole herd depopulation. Investigation of the outbreak has involved the testing of more than 10,000 cattle thus far.

Surveillance for tuberculosis in 1991 included the submission of more than 700 suspect granulomatous lesions from cattle at slaughter for laboratory confirmation, and approximately 400,000 tuberculin tests conducted primarily for export purposes.

The outbreak of bovine tuberculosis in game ranched ungulates which was first reported in 1990, continued through 1991. In the past year, a further 14 herds of farmed elk, deer or bison were confirmed infected and subjected to whole herd depopulation. The epidemiological investigation showed each of the 14 herds to be related to one of five outbreaks. Exposed species on the infected premises which were included in the depopulation comprised cattle, pigs, sheep, equidae, llamas and felidae.

5. **Cysticercosis (C. bovis)**

Bovine cysticercosis has only an exceptional occurrence in Canada. During 1991, 32 cases were detected at abattoirs and traced to 18 premises. This number of cases represents about 0.0011% of the approximately 2.9 million cattle slaughtered annually and inspected for cysticercosis. For these premises, controlled removal of resident cattle for slaughter and treatment of the carcasses were undertaken. Research is continuing on the development of a serological test for cysticercosis.

6. **Scrapie**

Seven flocks experienced a total of 10 cases of scrapie in 1991. All cases were investigated and exposed animals were classified as high or medium risk. High risk animals were slaughtered and medium risk animals remain under observation for 42 months.
7. **Equine infectious anaemia**

   During 1991, 48 cases of equine infectious anaemia were detected. All cases either died or were slaughtered. Approximately 75,000 serological tests for this disease were performed in 1991 for routine domestic and international movement.

8. **Trichinellosis**

   Trichinellosis has not been detected in swine since 1985. At slaughter approximately 29,000 randomly selected swine and all horses (approximately 90,000) are tested annually for any evidence of trichinellosis using trichinoscopic and digestion techniques. Sera collected from 15,400 randomly selected sows at abattoirs in 1990 revealed no evidence of ELISA antibodies specific to the disease. Seropositive results for 19 sera were determined to be false-positive reactions through herd testing, following traceback to herd of origin.

9. **Pullorum disease (S. pullorum)**

   No cases of pullorum disease were detected during 1991.

   Surveillance of the national commercial poultry flock confirms its continued freedom from pullorum disease. The surveillance consists of regular testing of primary breeding flocks and hatchery supply flocks, culturing of fluff samples from hatcheries and testing of exhibition and game birds.

10. **Varroasis**

    During 1991, varroa mite infestation was detected in 49 apiaries comprising 611 colonies in the provinces of Manitoba, Ontario, Quebec and New Brunswick. All infested apiaries were located in close proximity to the United States of America. Varroasis is known to be endemic in some areas that border Canada. No infested apiaries were detected in surveys further from the border. The varroa outbreaks were eradicated through the destruction on-site of all colonies in infested apiaries.

Non-reportable List B diseases which have not been known to occur in Canada include: echinococcosis/hydatidosis, heartwater, screwworm, babesiosis of cattle, dermatophilosis, haemorrhagic septicaemia, theileriosis, trypanosomiasis, contagious agalactia, contagious caprine pleuropneumonia, Nairobi sheep disease, epizootic lymphangitis of horses, horse pox, Japanese encephalitis of horses, surra, Venezuelan equine encephalomyelitis, cysticercosis of swine (C. cellulosae), myxomatosis, viral haemorrhagic disease of rabbits and leishmaniasis.

List B diseases that are considered enzootic in Canada include: leptospirosis, enzootic bovine leukosis, infectious bovine rhinotracheitis (IBR/IPV), Maedi-Visna, equine rhinopneumonitis and atrophic rhinitis.
INTRODUCCION

El país está haciendo importantes esfuerzos para erradicar la peste porcina clásica, ya que alcanzado este importante objetivo sanitario, quedaría libre de todas las enfermedades de la Lista A.

La favorable situación de la fiebre aftosa en la República Argentina ha disminuido el riesgo de introducción a nuestro país, de allí que en 1991 haya sido un año tranquilo.

Durante 1991, se ha seguido ampliando la cobertura de ganaderos que quieren sanear sus rebaños para obtener la certificación oficial de libres de brucelosis y tuberculosis.

Respecto del proyecto de control de la brucelosis, se realizó un muestreo muy importante que servirá de base a un proyecto de largo plazo que tendrá como objetivo final la erradicación.

I. ENFERMEDADES DE LA LISTA A

1. Fiebre aftosa

La enfermedad estuvo erradicada en 1981. El último foco fue en agosto de 1987, cuando se reintrodujo el virus al país a través de animales de contrabando.

La condición actual en relación a esta enfermedad es de país libre sin vacunación; con un programa de vigilancia en puertos, aeropuertos y veranadas en la Cordillera de los Andes, complementándose con un estricto cumplimiento de los requisitos sanitarios para la importación de animales, productos y subproductos pecuarios, a territorio nacional.

En la prevención merece especial preferencia el programa de vigilancia en los campos de pastoreo de la alta Cordillera de los Andes (veranadas); programa que significó una vigilancia sobre 254.454 animales (44.161 bovinos, 48.409 ovinos, 161.185 caprinos y 699 porcinos), pertenecientes a 2.149 propietarios.

El volumen de inspecciones realizadas alcanzó a 1.077.400 (tres inspecciones por animal).

Para las actividades indicadas se instalaron 24 barreras y se emplea 52 veterinarios y 90 técnicos. La prevención de la fiebre aftosa le significó para el país USD 488.100 en gastos.

2. Peste porcina clásica

Del grupo de enfermedades de la Lista A, sólo se ha registrado esta enfermedad con tres focos, en las regiones VII y IX; en la primera de ellas afectó a un plantel industrial de 200 hembras reproductoras, en la región IX, la enfermedad hizo su aparición en un plantel de acopladores y engorderos.
3. **Enfermedad de Newcastle**

La enfermedad no se presenta en planteles industriales desde 1976, tampoco se ha detectado en planteles caseros ni en aves ornamentales. Sin embargo, se continua la vacunación para los tipos velogénicos y mesogénicos, sólo con vacunas lentogénicas.

En relación a la enfermedad de Newcastle *viscerotrópico* el territorio nacional se considera libre, situación que ha sido reconocida oficialmente por Estados Unidos con fecha 16 de enero de 1992.

La producción de vacuna contra esta enfermedad para el presente año fue de 31.014.000 dosis.

**II. ENFERMEDADES DE LA LISTA B**

1. **Carbunco bacteridiano**

La enfermedad es endémica en varias regiones del país, afectando principalmente a la IX (La Araucanía), X (Los Lagos), VIII (Bío-Bío), VII (Maule), Región metropolitana y IV (Coquimbo).

Durante el presente año, las especies animales afectadas fueron los bovinos, suinos y cánidos. Hubo también dos personas muertas. La profilaxis de la enfermedad se hace en base a vacunas. La producción de éstas alcanzó a 809.990 dosis.

2. **Equinococosis/hidatidosis**

Se mantiene un proyecto de control de esta parasitosis en las dos regiones ovejeras del país (Aysén y Magallanes). Las prevalencias han llegado a bajar en Magallanes a un 10% y en Aysén a un 36%. Ambas regiones habían partido con elevados porcentajes de infección. En los perros de ambas regiones la prevalencia fluctúa alrededor del 5%. Los bovinos están afectados en porcentajes siempre algo inferiores a los ovinos.

3. **Rabia**

La enfermedad fue diagnosticada en la región VIII (Bío-Bío) en murciélagos insectívoros. Las medidas tomadas fueron: vacunación de gatos, perros y personas expuestas.

4. **Brucelosis bovina**

Se estima que la prevalencia de brucelosis, en hembras bovinas mayores de 18 meses, fluctúa alrededor del 2%, después de 11 años de vacunar con cepa 19.

En el transcurso de 1991, se realizaron dos estudios serológicos, cuya cobertura abarca prácticamente todo el país. Estos estudios están dirigidos a conocer la prevalencia: en el área de vacunación con cepa 19 y en la región XI (Aysén) en la cual no se vacuna. Entre ambos estudios se analizaron más de 30.000 sueros.

Durante 1991, en el país se analizó un total de 99.736 sueros, el 1,92% de ellos resultó positivo (Rosa de Bengala, Rivano y prueba de fijación del complemento).

Durante este año se certificaron 654 predios libres de brucelosis, y hay 505 en proceso de saneamiento.
5. **Anemia infecciosa equina**

El último caso de anemia infecciosa equina se registró en 1988. Los estudios epidemiológicos llevados a cabo durante el año permiten ratificar la ausencia de la anemia infecciosa equina en la masa equina nacional, refrendada la condición de libre por resolución N° 17.018 del 22 de octubre de 1991.

6. **Arteritis infecciosa equina**

La detección durante la cuarentena de un potro FSC procedente de Estados Unidos en marzo de 1991, positivo a la prueba de seroneutralización para arteritis viral hizo necesario la aplicación de la medida de sacrificio de dicho ejemplar. Al mismo tiempo, y como complemento a lo anterior, se realizó un estudio epidemiológico retrospectivo en caballos reproductores importados. El estudio abarcó desde el año 1985; a raíz de él se detectaron tres equinos positivos, dos machos y una hembra también importados desde Estados Unidos.

Por antecedentes epidemiológicos, así como pruebas biológicas, examen de semen, serología y test reproductivo, con resultados negativos, se concluye que dichos ejemplares en el caso de los dos potros no son excretores y que la seropositividad es vacinal. En el caso de la hembra, también habría sido vacunada antes de su internación al país.

7. **Tifosis aviar (S. gallinarum)**

Durante 1991 se diagnosticó *Salmonella gallinarum* en un plantel de postura en la VII Región (Maule), provincia de Curicó. Se practica el sacrificio sanitario de la totalidad de las 77.772 aves. La enfermedad no se había presentado en el país desde 1979.
INTRODUCTION

Le cheptel national n'a pas bénéficié de soins médicaux rationnels à cause non seulement du manque d'intrants médicamenteux fortement ressenti mais aussi de la divagation des bêtes abandonnées à elles-mêmes.

Les élevages porcins, considérablement réduits à cause du manque d'aliments, n'ont pas connu d'épizooties redoutables. Les mesures de prophylaxie sont orientées contre toutes les maladies des animaux. Certaines font l'objet de mesures spéciales de contrôle.

I. MALADIES DE LA LISTE A

1. Peste porcine africaine
   Aucun cas n'a été signalé.

2. Peste porcine classique
   Un foyer a été signalé dans la région de la Bouenza (NKayi). La maladie n'a pas été confirmée par le laboratoire. Toutefois le cheptel a été détruit et les mesures sanitaires appliquées.

3. Maladie de Newcastle
   Un foyer a été signalé. Nombre de morts : 40. La maladie est maîtrisée par la vaccination : 6 000 oiseaux ont été vaccinés.

II. MALADIES DE LA LISTE B

1. Rage
   Au cours de l'année, 577 animaux (chiens, chats, singes et chevaux) ont été vaccinés contre la rage. 924 cas de morsure parmi lesquels deux cas suspects qui se sont révélés négatifs par examen de laboratoire. Les principales méthodes de contrôle de la maladie sont la vaccination annuelle des animaux et l'élimination des animaux errants.

2. Brucellose
   On ignore la fréquence de cette maladie dans les milieux paysans.
Dans les élevages privés, sur 419 sérum testés au Rose bengale, 190 se sont révélés positifs, soit 45,3 %. La propagation rapide de cette pathologie dans le troupeau de Ngol'Odoua a nécessité l'utilisation de 524 doses de vaccin. Dans les élevages contrôlés par l'Etat, deux cas positifs ont été décelés.

3. **Tuberculose**

Dans la zone de Mindouli, la prévalence de la tuberculose bovine reste faible (6 %) mais non négligeable.

Dans la région de la Cuvette, 524 animaux ont été soumis à la tuberculination ; 27 ont réagi positivement, soit un pourcentage de 5,15%.

4. **Dermatophilose**

La recrudescence des tiques dues à l'irrégularité des bains déteinteurs favorise l'augmentation des cas d'hémoparasitoses, de dermatophilose, de plaies et d'abcès.

La dermatophilose constitue la principale cause de la diminution du cheptel.

Dans certaines unités, les animaux sont régulièrement baignés à l'asuntol (1 kg/1 000 l).

5. **Trypanosomose**

La répartition des glossines en République du Congo est uniforme bien que leur densité varie d'une zone à une autre. On rencontre au Congo les trypanosomes suivants :

<table>
<thead>
<tr>
<th>TRYPANOSOMES</th>
<th>Niari</th>
<th>Ile M'Bamou</th>
<th>M'Bono</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. congoense</td>
<td>0,18 %</td>
<td>0,3 %</td>
<td>1,5 %</td>
</tr>
<tr>
<td>T. vivax</td>
<td>1,91 %</td>
<td>10 %</td>
<td>3,2 %</td>
</tr>
<tr>
<td>T. brucei</td>
<td>0,15 %</td>
<td>-</td>
<td>1,6 %</td>
</tr>
</tbody>
</table>

Il n'existe pas de programme national structuré en matière de trypanosomose animale. Toutefois le rôle des réservoirs animaux domestiques (porcs, petits ruminants, carnivores) préoccupe les chercheurs qui utilisent des pièges pyramidaux et des écrans imprégnés de deltaméthrine pour lutter contre les vecteurs. Dans le même contexte, l'étude de la trypanotolérance des ovins D'Jallonké s'effectue dans la vallée du Niari.

L'élevage des animaux de races trypanotolérantes (N'Dama et Lagune) constitue l'une des méthodes de lutte.

La déforestation pratiquée par les paysans contribue dans une certaine mesure à la baisse de la pression glossinienne.

La chimiothérapie et la chimioprophylaxie se font avec l'utilisation du Bérénil (15 ml/300 kg), du Trypanimidium (0,5 mg/kg) et de l'Ethidium (1 cp 250 mg/250 kg).

6. **Variole aviaire**

Trois foyers ont été enregistrés ; 30 oiseaux sont morts.
7. **Typhose aviaire**

Un foyer a été signalé aux environs de Brazzaville ; 600 oiseaux sont morts.

8. **Bursite infectieuse (maladie de Gumboro)**

Aucun cas n'a été signalé. 1 000 oiseaux ont été vaccinés.

**Mesures sanitaires**

Aucune mesure sanitaire nouvelle n'a été adoptée. Les échanges internationaux d'animaux vivants et de produits animaux demeurent réglementés par la loi n° 76/89 du 19 juillet 1989 portant réglementation zootechnique et zoo-sanitaire au Congo respectivement en ses articles 46 à 57 et 176 à 191, dont les dispositions générales sont conformes à l'esprit de Code zoo-sanitaire international de l'OIE.

Le cadre général de la législation et de la réglementation sanitaire à l'intérieur du pays est défini par la loi citée précédemment et qui est relativement récente.

Toutefois, il convient de noter l'implantation, ces trois dernières années, de postes de contrôle zoo-sanitaire à certains points frontaliers entre les circonscriptions administratives du pays.
CÔTE-D'IVOIRE

INTRODUCTION

En 1991, les statistiques donnent 1 121 000 bovins contre 1 083 000 en 1990. Par contre l'effectif des petits ruminants n'est pas encore établi mais nous pensons qu'il atteindra les 2 100 000 têtes.

S'agissant de la situation zoo-sanitaire, elle est satisfaisante grâce à la poursuite des campagnes de prophylaxie contre les grandes épidémies et à la surveillance accrue des foyers de maladies.

Cependant il est important de souligner que l'année 1991 a été une année économiquement difficile pour un grand nombre de projets d'encadrement qui ont vu leurs activités diminuer voire même s'arrêter. Il est certain que les informations sur certaines activités ont été difficiles à obtenir.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

Malgré les mesures sanitaires appliquées à partir du foyer primaire de 1990 dû au virus SAT-2, quelques foyers secondaires se sont encore manifestés dans la région du Centre sur des bovins et des petits ruminants. Ces foyers ont entraîné l'abattage de 133 animaux, et ont fait l'objet d'une vaccination systématique.

2. Peste bovine


Au cours de l'année 1991, seuls les animaux jeunes et les animaux adultes non vaccinés lors de la précédente campagne ont été vaccinés, soit 630 170 bovins.

Le contrôle de l'immunité post-vaccinale (épreuve ELISA indirecte) montre que 88 % des bovins sont bien protégés contre la peste bovine.

3. Péripnénomie contagieuse bovine


En 1991, la vaccination a concerné les jeunes animaux et tous les adultes, soit 780 000 bovins.

4. Clavelée

5. **Peste des petits ruminants**

Cinq foyers en 1991 dans la région du Centre et du Sud ont entraîné la mort de 259 animaux. La situation connaît une certaine amélioration grâce à un programme de vaccination systématique mis en place depuis 1990 avec un taux de couverture vaccinale de 73,8 % avec les vaccins hétérologue et homologue. Le bilan donne 491 000 ovins et 237 000 caprins vaccinés.

Parallèlement à l'évaluation de l'immunité antibovipestique chez les bovins, une étude sur la circulation du virus de la peste des petits ruminants et/ou de la peste bovine a été menée dans la zone forestière. Elle a démontré que le taux de protection contre ces deux épizooties est très bas : 23,23 %.

6. **Maladie de Newcastle**

Ce qui a été écrit en 1990 reste valable pour l'année 1991, c'est-à-dire que la lutte contre cette maladie est maîtrisée dans les élevages modernes et industriels.

**II. MALADIES DE LA LISTE B**

1. **Rage**

La lutte contre ce fléau constitue une des missions importantes des services vétérinaires en Côte-d'Ivoire.

En attendant la mise en place d'une vaste campagne nationale de lutte contre la rage canine, les cliniques vétérinaires ont vacciné cette année 12 152 chiens sur 19 455 animaux présentés.

2. **Fièvre charbonneuse**

Malgré l'existence des champs maudits dans les régions du Nord et du Centre, on note une régression sensible de cette maladie grâce aux mesures de prophylaxie appliquées chaque année dans les foyers et alentours, soit 11 551 animaux vaccinés en 1991.

3. **Brucellose bovine**

La brucellose bovine se maintient et devient de plus en plus préoccupante en raison de son incidence économique. Une enquête sommaire a été réalisée par le Laboratoire de pathologie animale de Korhogo et révèle une augmentation sensible de la prévalence de la maladie. Un programme de prophylaxie prévoit la vaccination des jeunes au moyen du vaccin B 19 à partir de 1992.

4. **Tuberculose bovine**

Aucun foyer n'a été déclaré. Cependant les abattoirs de Côte-d'Ivoire ont signalé comme chaque année des cas de saisies pour tuberculose sur des zébus en provenance de pays voisins.
Transcurrió el tercer año de puesta en vigor del sistema para la vigilancia de enfermedades vesiculares (fiebre aftosa y estomatitis vesicular), así como para el de enfermedades rojas del cerdo (peste porcina africana y peste porcina clásica), siguiendo la metodología orientada por el Centro Panamericano de Fiebre Aftosa OPS/PAHO, Brasil.

En julio, y auspiciado por el referido centro, se celebró un seminario de vigilancia epidemiológica con la participación de especialistas de los servicios veterinarios de República Dominicana, Costa Rica, Panamá, Chile, Argentina, Honduras, México, Guatemala y Cuba.

El seminario sirvió de marco a los efectos de intercambiar experiencias y materializar la voluntad de fortalecer sus sistemas a nivel local en forma gradual, progresiva y determinada, considerando que el hecho de contar con buenos mecanismos para la vigilancia es la vía para ejercer la prevención y eventual control de las enfermedades emergentes y prioritarias.

En agosto se celebraron los XII Juegos Panamericanos con amplia participación del deporte ecuestre, siendo consideración de los países concurrentes el elevado nivel de atención de salud a los ejemplares, así como el cumplimiento de las regulaciones sanitarias internacionales que se establecen para tales eventos.

I. ENFERMEDADES DE LA LISTA A

El año 1991 transcurrió sin modificaciones en el estatuto epidemiológico de las poblaciones animales, manteniendo el país la condición de libre de las 16 enfermedades que integran la lista.

El sistema de vigilancia permitió descartar sospechas de 44 enfermedades endémicas con entidades vesiculares exóticas resultando ser 38 extima contagioso, 3 mamilitis ulcerativa de los bóvidos, 3 rinotraqueítis infecciosa bovina (IBR), mientras de las 124 sospechas en el bloque de entidades rojas del cerdo, 69 correspondieron con el mal rojo (erisipela porcina), 53 con salmonelosis porcina, 1 con estreptococosis porcina, 1 con pasteurelosis porcina.

II. ENFERMEDADES DE LA LISTA B

1. Leptospirosis

La ocurrencia de focos se redujo comparativamente con el año anterior, tanto en la especie bovina como en el porcino, salvo la letalidad cuya tendencia aumentó en el bovino.
2. **Paratuberculosis**

No se registraron focos en bovinos. En el ovino el comportamiento focal fue muy similar al año precedente, a pesar de intensificarse el programa de pesquisas con tuberculina aviar, en aquellos lugares donde se presume la infección.

3. **Babesiosis**

El cuadro epidemiológico no sufrió grandes variaciones con respecto a 1990.

4. **Brucelosis**

En el año se registraron grandes cambios en la reducción de focos en la especie bovina. Se detectaron sólo 20 nuevos brotes, de igual forma la incidencia se redujo al 50% de los casos aparecidos en 1990.

En cerdos, se acentuó el programa de pesquisas hacia territorios no examinados con anterioridad, detectándose 217 brotes con una población de 1.100 enfermos. Con regularidad se concentran en el sector de la crianza familiar y no en las explotaciones intensivas, las cuales mantienen su condición de libre.

5. **Tricomonosis**

La enfermedad se detectó en tres rebaños y desde 1989 no había vuelto a incidir.

6. **Encefalopatía espongiforme bovina**

A comienzos del año se impartió seminario y bibliografía específica a todo el personal de salud animal del país. Se incluyó dentro de la lista de enfermedades de declaración obligatoria.

No se registró ninguna sospecha, por lo que se considera como enfermedad nunca constatada.
INTRODUCTION

There were no outbreaks of sheep pox or Newcastle disease in 1991. The last outbreaks of these diseases were in 1989. Vaccinations against sheep pox was continued in 1991 and covered the entire sheep population. Other preventive vaccination in 1991 was that against Newcastle disease, enzootic abortion of ewes, swine erysipelas, fowl pox, enterotoxaemia in sheep, goats and pigs, and paratuberculosis in sheep and goats.

I. LIST A DISEASES

Bluetongue

During 1991, there was serological evidence of bluetongue with no clinical disease. Out of 2,182 sheep and goats sera tested, 444 (20.4%) were positive. The enzyme-linked immunosorbent assay (ELISA) was used. It is believed that the bluetongue virus has not been present in the areas accessible to Government control for the last 5-6 years.

No outbreaks of other List A diseases were reported in 1991.

II. LIST B DISEASES

1. Echinococcosis/hidatidosis

1985 was the final year of the campaign which was started in 1971 and totally eliminated the disease from dogs, food animals and man. All slaughter is carried out in approved abattoirs, stray dogs are eliminated and enlightenment maintained. In 1991, 637 stray dogs were eliminated and 126 bitches spayed. From all species of animals slaughtered in 1991, i.e. approximately 180,000 sheep, 133,000 goats, 391,000 pigs and 50,000 bovines, none was found to be infected with hydatids.

2. Q fever

Q fever is sporadic in sheep and goats. Serological screenings were carried out as well as treatment. Control of non-vertebrate vectors (ectoparasites) was also applied.

3. Brucellosis

The campaign against this disease (B. melitensis) from 1973 to 1985 achieved total elimination. After a test and slaughter policy vaccination was halted. Sheep and goats were first screened with an intrapalpebral allergic skin test (AST) with reacting flocks being bled and serologically tested. Cattle were bled directly. In 1985 the AST was replaced by the examination of a representative
blood sample from one third of the animals of each flock. In cattle, serological examinations were continued. In 1991, 14,148 blood samples from cattle, 3,801 from sheep and 1,774 from goats were serologically tested with negative results.

4. **Enzootic bovine leukosis**

All dairy cattle were tested for enzootic bovine leukosis, and positive reactors were slaughtered on a voluntary basis. Movement restrictions were placed on infected animals and all animals to be sold for breeding or fattening purposes were tested. In 1991, there were four cases and seven animals were slaughtered. The results of this programme are very encouraging and it is expected that the disease will be eradicated in the next few years.

5. **Scrapie**

Fourteen outbreaks (in 14 flocks) with 60 cases in sheep and nine in goats were reported in 1991. Quarantine measures were introduced for infected zones and herds movement restrictions were applied. A control programme was started in 1987 based upon a modified stamping-out policy. During 1991, a total of 140 sheep and goats, positive or suspected for scrapie, were slaughtered.

**Other List B diseases**

The country continued to be free from rabies, anthrax and leptospirosis.

No outbreaks of babesiosis and bovine genital campylobacteriosis were recorded; infectious bovine rhinotracheitis (IBR) was sporadic: in 1991 there were five outbreaks of IBR, with 26 cases.

Avian infectious bronchitis, avian infectious laryngotracheitis, fowl pox, Marek’s disease and Gumboro disease were sporadic.
DENMARK

I. LIST A DISEASES

None of the List A diseases occurred in Denmark in 1991; the year of last outbreak is shown in brackets:

- Foot and mouth disease (1983)
- Vesicular stomatitis (never recorded)
- Swine vesicular disease (never recorded)
- Rinderpest (1782)
- Peste des petits ruminants (never recorded)
- Contagious bovine pleuropneumonia (1886)
- Lumpy skin disease (never recorded)
- Rift Valley fever (never recorded)
- Bluetongue (never recorded)
- Sheep pox and goat pox (1879)
- African horse sickness (never recorded)
- African swine fever (never recorded)
- Hog cholera (classical swine fever) (1933)
- Teschen disease (never recorded)
- Fowl plague (never recorded)
- Newcastle disease (1972)

Serological surveys, to ascertain that subclinical cases of hog cholera and swine vesicular disease do not occur in the Danish pig population, were carried out on 33,275 and 2,392 blood samples, respectively.

The surveys for antibodies against hog cholera virus and swine vesicular disease virus were carried out using the ELISA test. The surveys showed that these diseases are not present in Denmark.

II. LIST B DISEASES

For information on the occurrence of List B diseases the reader is referred to The Animal Health and Diseases Control Position in Denmark in 1991, a booklet which will be published in spring 1992 and forwarded to all OIE Member Countries.
I. LIST A DISEASES

1. Foot and mouth disease

This notorious disease still appears from time to time in Egypt. From January to May 1991, the disease appeared in seven Governorates. Only 29 sporadic outbreaks were recorded. The total number of bovines affected was 1,071, representing a negligible percentage of the bovine population (0.018%). The clinical picture of the disease was mild and no other animal species were affected. The causative virus isolated was type O, sub-type Ov.

Control measures implemented include vaccination of dairy animals every four months, and of steers for fattening every six months. Affected animals are treated. Restrictions have been placed on animal movements. Importation of susceptible animals from infected countries is prohibited. Imported animals from FMD-free countries are subjected to vaccination against the disease during the quarantine period.

In accordance with OIE recommendations, the Egyptian laboratory for vaccine production will use ethylene imine for inactivation instead of formalin.

For the period from 1 January to 30 November 1991, the number of animals vaccinated with either monovalent FMD vaccine type Oj, or vaccine imported from France, was as follows:

<table>
<thead>
<tr>
<th>Animal</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>2,512,811</td>
</tr>
<tr>
<td>Buffalo</td>
<td>2,298,590</td>
</tr>
<tr>
<td>Sheep</td>
<td>1,295,429</td>
</tr>
<tr>
<td>Goats</td>
<td>209,082</td>
</tr>
<tr>
<td>Camels</td>
<td>517</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6,316,429</td>
</tr>
</tbody>
</table>

2. Rinderpest

In 1991, rinderpest was neither observed clinically nor by laboratory investigations. Egypt participates in the Pan African and West Asia Rinderpest Campaigns. Through these projects we hope to be able to eradicate rinderpest from Egypt. The policy of compulsory annual vaccination is still in force in Egypt.

For the period from 1 January to 30 November 1991, the number of bovines vaccinated was as follows:

<table>
<thead>
<tr>
<th>Animal</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>2,576,671</td>
</tr>
<tr>
<td>Buffalo</td>
<td>2,415,047</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,991,718</td>
</tr>
</tbody>
</table>
3. **Peste des petits ruminants**

Since 1987, when sheep and goats were vaccinated with rinderpest vaccine in the area surrounding an outbreak of the disease, no further vaccination has been carried out and there have been no further outbreaks.

4. **Lumpy skin disease**

This disease, which is exotic to Egypt, appeared in this country for the first time in 1988. It spread extensively during 1989, whereas in 1990, the severity of the disease and the number of cattle affected declined significantly.

No cases of lumpy skin disease were recorded in 1991. This result was due to the strict control measures applied, based on intensive studies relating to the nature of the virus, the climate, the arthropod vector, and the most suitable vaccine and route of vaccination. Almost the entire cattle population is vaccinated intradermally, on an annual basis, using a locally produced sheep pox vaccine.

In 1991, the number of cattle vaccinated was as follows: 1,527,880.

5. **Rift Valley fever**

The situation regarding Rift Valley fever (RVF) has not changed since the 1990 report. Additional information is that a laboratory experiment was carried out to mix locally produced RVF and FMD vaccines to be administered to animals in one shot. This method will greatly facilitate the task of the vaccinators.

The number of animals vaccinated in 1991 was as follows:

<table>
<thead>
<tr>
<th>Animals</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>593,333</td>
</tr>
<tr>
<td>Buffalo</td>
<td>625,301</td>
</tr>
<tr>
<td>Sheep</td>
<td>656,483</td>
</tr>
<tr>
<td>Goats</td>
<td>79,603</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1,954,720</td>
</tr>
</tbody>
</table>

6. **African horse sickness**

Egypt is considered to have been free from this disease since 1960. Vaccination is still compulsory in the three southern Governorates of Aswan, Qena and Sohag, with restrictions on the movement of equines from these Governorates to the north. In the future it is hoped to use an inactivated polyvalent vaccine instead of a live attenuated vaccine. In 1991, the number of equines vaccinated was as follows:

<table>
<thead>
<tr>
<th>Animals</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses</td>
<td>3,209</td>
</tr>
<tr>
<td>Mules</td>
<td>536</td>
</tr>
<tr>
<td>Donkeys</td>
<td>15,545</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19,290</td>
</tr>
</tbody>
</table>
II. LIST B DISEASES

1. Brucellosis

The incidence of brucellosis is fairly low in Egypt. A national programme is in progress for diagnosis and prevention, with vaccination for 3-7 month old heifers, using Strain 19 vaccine. The policy of test and slaughter of positive reactors with compensation to the owners, is applied for animals in herds and to the entire bovine population in some Governorates. Importation of live pregnant cattle into Egypt is restricted to countries or territories considered to be free from brucellosis according to the relevant OIE recommendations.

All the official regulatory measures applied in Egypt help to control the disease and minimise the occurrence of brucellosis in the country.

The following table represents the number and percentage of positive reactors:

<table>
<thead>
<tr>
<th>ANIMAL SPECIES</th>
<th>NO. OF ANIMALS TESTED</th>
<th>POSITIVE CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>72,244</td>
<td>351</td>
<td>0.48%</td>
</tr>
<tr>
<td>Buffalo</td>
<td>27,517</td>
<td>64</td>
<td>0.23%</td>
</tr>
<tr>
<td>Sheep</td>
<td>43,322</td>
<td>188</td>
<td>0.43%</td>
</tr>
<tr>
<td>Goats</td>
<td>26,453</td>
<td>129</td>
<td>0.48%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>169,536</td>
<td>732</td>
<td>0.43%</td>
</tr>
</tbody>
</table>

2. Tuberculosis

Egypt started a national programme to control this zoonotic disease in 1981. The system is based on the testing of female bovines over six months' old and bulls for breeding, using a single intradermal tuberculin test. All positive reactors are slaughtered and their owners compensated.

The incidence of the disease was high when the project was started, but due to this policy the incidence of the disease has now declined, as shown in the following table:

<table>
<thead>
<tr>
<th>ANIMAL SPECIES</th>
<th>NO. OF ANIMALS TESTED</th>
<th>POSITIVE CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>58,794</td>
<td>315</td>
<td>0.54%</td>
</tr>
<tr>
<td>Buffalo</td>
<td>38,470</td>
<td>39</td>
<td>0.10%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>97,264</td>
<td>354</td>
<td>0.36%</td>
</tr>
</tbody>
</table>

III. OTHER DISEASES

Ephemeral fever (three-day sickness)

Although this disease is not of very great epidemiological importance, it represented the major problem facing the bovine population in Egypt in 1991.
The disease was described in Egypt from 1895, and a clinical syndrome in bovines resembling ephemeral fever occurred in 1959 and 1960 without laboratory confirmation. In 1990-1991, the disease appeared in an endemic form, along the whole of the Nile Valley.

Both native and exotic breeds of cattle in Egypt were affected with the clinical disease. However, the pure, highly productive dairy Holstein cattle were more susceptible, whereas many of the indigenous cattle were probably subclinically affected.

Few buffalo manifest clinical signs of ephemeral fever, and these were relatively mild and of short duration. Although the morbidity rate was extremely high, the mortality rate was very low, not exceeding 1% of affected animals. The economic effects were due to decreased milk and beef production.

The following table represents the ephemeral fever epizootic in Egypt. These records mainly concern intensive dairy farms and feedlot systems. Estimates suggest that 250,000 cattle may have been quite severely affected. In addition, a very large number of milder cases have also occurred.

Diseased animals were treated by complete rest, cold applications on the head, antipyretics, anti-inflammatory drugs, and calcium for hypoglycaemic cases, with good results. The wave of infection appears to have passed, and no information on the notification of new cases is available at present.

<table>
<thead>
<tr>
<th>GOVERNORATE</th>
<th>DATE OF 1ST OCCURRENCE</th>
<th>NO. OF CASES</th>
<th>NO. OF DEATHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cairo</td>
<td>13/08/91</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>Alexandria</td>
<td>17/08/91</td>
<td>1,741</td>
<td>62</td>
</tr>
<tr>
<td>Port Said</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ismailiya</td>
<td>17/04/91</td>
<td>113</td>
<td>-</td>
</tr>
<tr>
<td>Suez</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Damietta</td>
<td>05/12/90</td>
<td>2,016</td>
<td>-</td>
</tr>
<tr>
<td>Gharbiya</td>
<td>14/07/91</td>
<td>443</td>
<td>-</td>
</tr>
<tr>
<td>Qalyubia</td>
<td>18/07/91</td>
<td>353</td>
<td>-</td>
</tr>
<tr>
<td>Minufiya</td>
<td>22/07/91</td>
<td>1,255</td>
<td>-</td>
</tr>
<tr>
<td>Beheira</td>
<td>24/06/91</td>
<td>218</td>
<td>-</td>
</tr>
<tr>
<td>Dakahlia</td>
<td>13/07/91</td>
<td>526</td>
<td>9</td>
</tr>
<tr>
<td>Sharkia</td>
<td>09/01/91</td>
<td>1,142</td>
<td>33</td>
</tr>
<tr>
<td>Kafr el Sheikh</td>
<td>03/05/91</td>
<td>858</td>
<td>-</td>
</tr>
<tr>
<td>El Giza</td>
<td>14/08/91</td>
<td>40</td>
<td>-</td>
</tr>
<tr>
<td>El Faiyum</td>
<td>02/05/91</td>
<td>971</td>
<td>9</td>
</tr>
<tr>
<td>Beni Suef</td>
<td>28/07/91</td>
<td>26</td>
<td>-</td>
</tr>
<tr>
<td>El Minya</td>
<td>20/07/91</td>
<td>188</td>
<td>-</td>
</tr>
<tr>
<td>Asyut</td>
<td>26/08/91</td>
<td>236</td>
<td>-</td>
</tr>
<tr>
<td>Sohag</td>
<td>25/08/91</td>
<td>566</td>
<td>-</td>
</tr>
<tr>
<td>Qena</td>
<td>1990</td>
<td>not recorded</td>
<td>-</td>
</tr>
<tr>
<td>Aswan</td>
<td>1990</td>
<td>not recorded</td>
<td>-</td>
</tr>
<tr>
<td>New Valley</td>
<td>20/07/91</td>
<td>2,373</td>
<td>-</td>
</tr>
<tr>
<td>Matruh</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Red Sea</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>North Sinai</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South Sinai</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>13,073</td>
<td>113</td>
</tr>
</tbody>
</table>
INTRODUCTION

The Veterinary Services Department is restructuring itself to cope with the economic policy launched by the Transitional Government of Ethiopia. To this effect it is participating in promoting the involvement of the private sector in order to improve animal health services rendered to the livestock industry.

The Veterinary Epidemiology and Economics Unit is encouraging the implementation of the new standardised system for disease outbreaks by the Veterinary field services.

I. LIST A DISEASES

1. Foot and mouth disease

Foot and mouth disease (FMD) cases were reported from Adis Abeba, Sidamo, South and West Shewa administrative regions during the months of April, August and September 1991. FMD-SAT2 was confirmed by the WRL Pirbright, UK, for the case reported from Adis Abeba. The others were suspected cases. As the area of occurrence of SAT2 is expanding, the epidemiological studies have been strengthened to identify the disease situation in the country. As a result the appropriate prophylactic measures will be taken.

2. Rinderpest

Several pockets of outbreaks of the disease have been observed in Arsi, South and East Shewa, Welega, East Harerge, North Gonder and Welo administrative regions during the months of February, March, April, September, October and November 1991. Most of these cases were confirmed in the Regional Veterinary Laboratories although one suspected case from South Shewa has been included. Ring vaccination has been carried out to prevent the spread of the disease to adjacent cattle populations.

3. Peste des petits ruminants

The disease has not been reported since 1990. Ring vaccination using rinderpest tissue culture vaccine has been carried out to prevent its spread.

4. Contagious bovine pleuropneumonia

Six confirmed outbreaks occurred in different localities of Sidamo, Arsi, Welo and Gojam administrative regions. Measures were taken to prevent the spread of the disease, through vaccination of healthy cattle in the area around the outbreaks.
5. **Lumpy skin disease**

Outbreaks were reported from Gojam, Gonder and Illubabor administrative regions. Healthy cattle were vaccinated to prevent its spread.

6. **Sheep pox and goat pox**

Suspected cases of sheep pox and goat pox were reported from Gonder administrative region. Vaccination of healthy animals was carried out to control the spread of the disease.

7. **African horse sickness**

African horse sickness was reported in the town of Dire Dawa and also in Sidamo administrative region. Equines in the area surrounding the outbreaks were vaccinated to control its spread.

8. **Newcastle disease**

An outbreak of this disease was observed in Adis Abeba. No information is available concerning the population at risk and the control measures employed.

**II. LIST B DISEASES**

1. **Anthrax**

Outbreaks occurred in Gojam, Gonder, Welo, Arsi, Sidamo and Bale. Vaccination has been carried out to prevent the disease spreading.

2. **Echinococciosis/hydatidosis**

Slaughterhouse reports indicate that this disease is widespread throughout the country. Control measures are limited to informing farmers about the means by which the disease is spread. Treatment of the definitive hosts is not widely practiced due to drug shortages.

3. **Heartwater**

This disease was reported from Arsi administrative region. It occurred in improved cattle breeds. Affected animals were treated and tick control measures taken to control its spread.

4. **Rabies**

In September 1991, a dog from Dire Dawa administrative region was reported to be positive for rabies.

5. **Anaplasmosis and babesiosis**

Reports from Regional Veterinary Laboratories indicated the presence of these diseases in Illubabor, Shewa, Welo, Gojam and Sidamo administrative regions. Improved cattle breeds suffer more severely from babesiosis than local ones. Tick control combined with treatment of affected animals has been carried out.
6. **Bovine brucellosis**

   Serological tests carried out in diagnostic laboratories have confirmed the presence of brucellosis around Adis Abeba, Bahrdar, Metekel, Adami Tulu, Holeta and Western Harerge.

7. **Bovine tuberculosis and cysticercosis**

   Slaughterhouse reports indicate that these diseases are prevalent in different regions of the country. Control measures include mass education and proper inspection of meat.

8. **Theileriasis**

   Non-virulent species of *Theileria* were observed in Ilubabor and Shewa administrative regions.

9. **Trypanosomiasis**

   African trypanosomiasis transmitted by tsetse flies occurred in the fertile valleys of the south-western and western parts of the country. The number of outbreaks of the disease, the population affected and the morbidity and mortality rates are not available. Chemotherapeutic drugs were used for prophylaxis and treatment of cases diagnosed at veterinary centres in these regions. Tsetse fly control was further carried out in a pilot scheme using odour-baited and insecticide impregnated traps set up with FAO/UNDP support.

10. **Contagious caprine pleuropneumonia**

    This was reported from Boran and Omo administrative regions. Ring vaccination was carried out to prevent the spread of the disease.

11. **Dermatophilosis**

    Samples examined at the Shola, Kembolcha and Dire Dawa Veterinary Laboratories were found to be positive for dermatophilosis.
I. LIST A DISEASES

No cases or outbreaks of List A diseases occurred during 1991.

II. LIST B DISEASES

1. Aujeszky's disease

Aujeszky's disease in animals has never been recorded in Finland. No clinical signs of Aujeszky's disease have been observed.

In order to verify that Aujeszky's disease is not present in swine, a serological survey was carried out in 1991. Sera from 800 adult sows or boars, from different parts of Finland were collected, and analysed with ELISA for Aujeszky's disease antibodies.

No positive reactors were found.

2. Rabies

No cases of rabies were detected during 1991. The last case was recorded on 16 February 1989. A total of 505 animals from the whole country, including 277 raccoon dogs, 129 foxes, 20 dogs, 20 cats, 1 wolf and 19 wild predators of other species, were examined for rabies by immunofluorescence on brain tissue.

In an attempt to prevent the reintroduction of rabies from the USSR, 80,000 Tübingen vaccine baits were distributed by air at the turn of August-September in a zone 20-25 km wide and 250 km long, constituting a land area of 4,000 km², along the south-eastern national border.

This immune barrier is intended to be maintained by annual vaccinations.

3. Infectious bovine rhinotracheitis (IBR/IPV)

In 1990 the first case of IBR/IPV in Finland was confirmed and the serologically positive animals were slaughtered.

In order to clarify the IBR/IPV situation, bulk tank milk samples from all dairy herds in Finland (40,000 samples) were tested with the ELISA test for IBR/IPV. In this test two herds were found to be positive, of which one is still under restrictions.
4. **Bovine brucellosis (B. abortus)**

Bovine brucellosis was introduced into Finland at the end of the 18th century. An eradication programme was initiated in 1928 and the last case of bovine brucellosis was recorded in 1960.

Until 1986 every dairy herd was tested annually with the ABR test. From 1987 to 1989 about 500 ABR tests and about 2,300 sera from cattle were analysed annually for antibodies to *B. abortus* and found to be negative.

In order to clarify whether the national herd was still free from brucellosis, 10,000 bulk tank milk samples were tested in 1990 for brucellosis using the ELISA test. All samples were negative. In 1991, bulk tank milk samples from all the dairy herds in Finland (40,000 samples) were tested with the ELISA test and no positive reaction was found.

These surveys confirm that Finland is free from bovine brucellosis.

5. **Enzootic bovine leukosis**

During recent years enzootic bovine leukosis (EBL) has been found in a few dairy herds and all positive animals have been slaughtered.

In order to clarify the situation regarding EBL in dairy herds, bulk milk samples from all dairy herds in Finland (40,000 samples) were tested for EBL. The samples were tested with the ELISA test and individual blood samples of suspected positive herds were tested with the AGID method. Positive animals were found in nine herds. All serologically positive animals were slaughtered and new blood samples taken three months after the slaughtering of the reactors.
FRANCE

I. MALADIES DE LA LISTE A

Fièvre aphteuse : arrêt de la vaccination

La France est indemne de fièvre aphteuse depuis 1981.

Avant le 1er avril 1991, tous les bovins âgés de plus de quatre mois étaient vaccinés annuellement contre cette maladie.

Par arrêté en date du 29 mars 1991, la vaccination contre la fièvre aphteuse est interdite sur tout le territoire et chez toutes les espèces. Cette mesure a été prise dans le cadre de la transposition de la Directive 90/423/CEE qui modifie notamment la Directive 85/511/CEE établissant des mesures communautaires de lutte contre la fièvre aphteuse.

A compter du 1er avril 1991, la France n'importe plus d'animaux vaccinés antérieurement à cette date, conformément à la Décision de la Commission 91/177/CEE.

En cas de foyer, le décret n°91/1318 du 27 décembre 1991 relatif à la lutte contre la fièvre aphteuse, prévoit :

- l'abattage de tous les animaux (malades ou non) des espèces sensibles présents sur l'exploitation infectée et la destruction des cadavres ;

- la délimitation d'un périmètre interdit sur une largeur de 10 km autour du foyer, dans lequel la circulation des animaux est interdite ou réglementée pendant 30 jours;

- la désinfection du foyer par des procédés agrémentés.

II. MALADIES DE LA LISTE B

1. Rage

La recrudescence de la rage constatée en 1989 ne s'est heureusement pas poursuivie : un ralentissement sensible de l'incidence de la maladie a commencé à se dessiner en 1990 et s'est poursuivi pendant l'année 1991 aboutissant à un rétrécissement géographique de la localisation des cas de rage.

Le net recul de la rage s'explique par les résultats parfaitement démonstratifs de l'intensification des programmes de vaccination antirabique des renards.

Après la progression de l'enzootie rabique de 1989, la vaccination orale des renards contre la rage par largage d'appâts à partir d'hélicoptères, s'est portée en 1990 sur le front de la rage en créant
une barrière immunitaire continue du littoral de la Manche à la frontière suisse sur une superficie totale pour l'ensemble de l'année de 106 000 km².

En 1991 le programme de vaccination a poursuivi ces objectifs en menant les opérations de vaccination sur près de 160 000 km², et en libérant de la vaccination pour la première fois, des régions situées dans le Jura et en Bourgogne où le front a fortement reculé.

Cette évolution favorable a permis de déclarer de nouveau indemnes les départements de l'Isère, de la Savoie et de la Haute-Savoie qui n'ont pas connu de cas de rage depuis plusieurs années et qui se situent maintenant à une distance respectable du front.

En 1992, les campagnes de vaccination concerneront une surface totale de 194 000 km² portant les opérations à tout le territoire contaminé.

2. **Leucose bovine enzootique**

Depuis le 1er janvier 1991, la prophylaxie de la leucose bovine enzootique est rendue obligatoire sur l'ensemble du territoire national (dépistage annuel de la maladie et abattage systématique des bovins révélés infectés).

3. **Encéphalopathie spongiforme bovine**

Au cours de l'année 1990, un certain nombre de mesures préventives ont été mises en place tant à l'importation que sur le territoire national.

Les importations de bovins vivants et de viandes bovines en provenance du Royaume-Uni sont limitées depuis le 21 juin 1990 aux présentations suivantes :

- les veaux de moins de six mois non issus de vaches suspectes ou atteintes d'encéphalopathie spongiforme bovine (BSE) et destinés à être abattus avant l'âge de six mois;
- les viandes fraîches en carcasses issues de bovins provenant de cheptels où la BSE n'a pas été diagnostiquée depuis deux ans ;
- les viandes désossées, découpées, dénervées dont on a retiré les noeuds lymphatiques.

Sur le territoire national,

- la BSE est inscrite à la nomenclature des maladies à déclaration obligatoire depuis le 12 juin 1990,
- l'utilisation de farines de viandes et d'os produite à partir de cadavres ou d'abats de ruminants est interdite pour l'alimentation des bovins depuis le 24 juillet 1990;
- les contrôles et le suivi sur le territoire français des veaux importés du Royaume-Uni ont été renforcés;
- un réseau d'épidémiomosurveillance de la BSE consistant en la surveillance systématique des bovins présentant des troubles neurologiques, la collecte et l'examen histopathologique de l'encéphale des bovins suspects (notamment suspects d'être atteints de rage) a été progressivement mise en place, et a été officialisé réglementairement au mois de décembre 1990.

Par ailleurs, des mesures conservatoires, applicables en cas de confirmation de BSE, ont été prévues par un texte réglementaire du mois de décembre 1990 :

- le marquage, l'interdiction de déplacements et l'élimination des animaux malades, suspects ou contaminés dans le cas où la maladie apparaîtrait dans un élevage;
- l'éradication de la maladie dans les éventuels foyers par élimination totale immédiate ou différée des bovins des exploitations concernées;

- la possibilité d'acquisition d'animaux suspects ou atteints par le CNEVA - Laboratoire de pathologie bovine, centre national de référence en matière de BSE.

En 1991, le réseau national d'épidémiosurveillance de la BSE reposant sur une collaboration étroite du ministère de l'agriculture et de la forêt avec l'ensemble des vétérinaires sanitaires et le CNEVA - Laboratoire de pathologie bovine, a révélé cinq cas de BSE.

Les mesures réglementaires conservatoires prévues en pareilles circonstances ont aussitôt été mises en œuvre, et une enquête épidémiologique visant à déterminer l'origine de la maladie a été réalisée dans chaque élevage concerné.
GREENLAND

I. LIST A DISEASES

Foot and mouth disease never recorded
Vesicular stomatitis never recorded
Rinderpest never recorded
Contagious bovine pleuropneumonia never recorded
Bluetongue never recorded
African swine fever never recorded
Hog cholera never recorded
Teschen disease never recorded

II. LIST B DISEASES

Anthrax never recorded
Brucellosis never recorded
Bovine tuberculosis never recorded

Rabies

This disease was first diagnosed in Greenland in 1959 but had been reported to occur among sledgedogs as early as 1850. Rabies is considered endemic among polar foxes, especially in northern districts of Greenland (Sisimiut to Thule). During the period 1975-1991 a total of 170 foxes, 397 dogs, 3 cats, 3 reindeer, 1 muskox, and 1 wolf were examined for rabies at the State Veterinary Serum Laboratory, Copenhagen, Denmark (since 1990). In 1991, a total of 22 animals were examined consisting of 12 foxes, 7 dogs, 1 reindeer, 1 muskox and 1 wolf. Six foxes were found to be positive for rabies, while the remaining animals examined were all negative.

Information on the location of rabies cases during the period 1975-1991 is given in Appendix 1 and 2. Information on vaccination of dogs against rabies is presented in Appendix 3.
Location of Rabies in Greenland
1975 - 1991

Kalaallit Nunaat
(Greenland)

Sheep farming districts
Non - sledge dogs districts
Sledge dogs districts
Rabies positive 1991:
R = ræv, polar fox
H = hund, dog
## RABIES IN GREENLAND 1975 - 1991

### RABIES POSITIVE IN SLEDGEDOG DISTRICTS

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<thead>
<tr>
<th>DISTRICTS</th>
<th>DOGS</th>
<th>FOXES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holsteinsborg / Sisimiut</td>
<td>5</td>
<td>20</td>
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<tr>
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</tr>
<tr>
<td>Godhavn / Qeqertarsuaq</td>
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</tr>
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<td>Umanak / Uummanaq</td>
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<tr>
<td>Upernavik</td>
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<td>Ammassalik / Tasilaq</td>
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<td>Scoresbysund / Ittoqqortoormiit</td>
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<tr>
<td>Station Nord</td>
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<td>2</td>
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<tr>
<td><strong>TOTAL</strong></td>
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### RABIES POSITIVE IN NON-SLEDGEDOG DISTRICTS

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### TOTAL NUMBER OF CASES IN GREENLAND 1975 - 1991

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Appendix 3

INFORMATION ON RABIES VACCINATION OF DOGS IN GREENLAND
1991

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<tr>
<th>NON-SLEDGEDOG DISTRICTS</th>
<th>NO. OF DOGS (VARIOUS BREEDS) VACCINATED AND REGISTERED</th>
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<td>69</td>
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<td>Narssaq</td>
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<td>Frederikshåb / Paamiut</td>
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<td>Godthåb / Nuuk</td>
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<td>Sukkertoppen / Maniitsoq</td>
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<tr>
<th>SLEDGEDOG DISTRICTS</th>
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<th>NO. OF SLEDGEDOGS VACCINATED IN 1991</th>
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<td>Jakobshavn / Ilulissat</td>
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<td>Thule / Qaanaaq</td>
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<tr>
<td>Scoresbysund / Itoqqortoormiit</td>
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<td>127</td>
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<tr>
<td>Station Nord, Sirius</td>
<td>78</td>
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</table>

Sledgedogs total approx. 27,917 4,788

Total dog population approx. 28,455
INTRODUCTION

The activities of the Veterinary Services in 1991 remained largely unchanged from previous years. They included the following: import and quarantine controls for exotic and notifiable diseases; the prevention, control and where appropriate the treatment of livestock diseases (notifiable and non-notifiable diseases); rabies control activities; licensing and supervision of dairies, animal trading, riding and boarding establishments and animal exhibitions; certification of livestock health and meat and animal products.

The current status of animal health in Hong Kong is similar to the previous year. There are no major changes in disease prevalence affecting international trade in animals and animal products. General control strategy for the named notifiable diseases remains in force to reduce economic loss as far as possible.

I. LIST A DISEASES

1. Foot and mouth disease

FMD is a notifiable disease in Hong Kong. The territory has experienced little change in the prevalence of the disease. Virus types isolated were limited to two serotypes, namely O BFS 1860 and OHK 6/1983.

Control is effected through vaccination. Imported pigs other than those transported directly to abattoirs are also vaccinated during their one-month quarantine in the territory.

2. Hog cholera (classical swine fever)

Hog cholera is a notifiable disease. There was a reduction in the prevalence of this disease during the year. The fluorescent antibody test was introduced to complement histopathology and the immuno-peroxidase test in diagnosing the disease. Control is effected through vaccination.

3. Newcastle disease

Newcastle disease is notifiable in Hong Kong. Despite routine vaccination, Newcastle disease remained the major threat to the local poultry industry. The disease was particularly noticeable during the winter months and was more widespread in younger flocks.

Among the current outbreaks, there was evidence to suggest that the disease may be linked with infectious bursal disease, immunosuppression caused by the latter disease leading to vaccination breakdown and the subsequent outbreak of Newcastle disease in young chickens.

Control of the disease is by flock/breeder vaccination; diagnosis is by chick embryo inoculation and histopathology.
II. LIST B DISEASES

1. **Aujeszky's disease (pseudorabies)**

   Aujeszky's disease is not a notifiable disease. In 1991, the disease remained prevalent in the territory. Diagnosis is made by chick embryo inoculation (for the antigen) and ELISA (for antibodies), and control is effected through vaccination.

2. **Rabies**

   Rabies is a notifiable disease in Hong Kong. No cases of indigenous rabies have been reported since July 1987.

   Stringent anti-rabies control measures remained in force to prevent a resurgence of the disease. These included compulsory free inoculation and licensing of dogs, regular and programmed visits of inoculation teams to villages in the New Territories, observation of biter animals, intensive catching and elimination of stray dogs.

   Action was also taken to expedite the drafting of the new Rabies Bill and Regulations with a view to their becoming law in the near future. The new legislation will extend rabies control measures to other mammals.

3. **Infectious bursal disease**

   Control of the disease is by flock/breeder vaccination; diagnosis is by chick embryo inoculation and histopathology.

4. **Pullorum disease**

   Pullorum disease is not notifiable in Hong Kong. The agglutination test was routinely conducted to identify carriers. In 1991, 16.5% of chickens tested were positive and were culled.

III. OTHER DISEASES

Other non-notifiable diseases or conditions of particular importance are gastroenteritis and pneumonia in pigs and chronic respiratory disease, infectious laryngotracheitis and salmonellosis in poultry. Poor flock management is believed to be the most common cause.

Cattle and goats are usually kept in very small herds. Gastro-intestinal dysfunction and leg problems were the most commonly encountered symptoms. Reproductive tract disorders including abortion and retention of placenta were occasionally reported.
I. LIST A DISEASES

There was no marked change in respect of such List A diseases as hog cholera, fowl plague and Newcastle disease.

African horse sickness has not been reported since 1965. Lumpy skin disease, swine vesicular disease, Rift Valley fever, Teschen disease and fowl plague have never been reported in the country.

1. **Foot and mouth disease**

   This disease still occurs in enzootic form throughout the country. But its impact is mainly felt on exotic and crossbred high-yield indigenous milch animals and exotic and crossbred sheep. There were 1,373 outbreaks during 1991, affecting 165,194 animals (bovine and ovine species). Taking into account the country's total susceptible livestock population, the incidence of this disease is very low. For prophylactic vaccinations, polyvalent vaccine incorporating O, A, C and Asia 1 strains is produced in the country by four biological production centres.

2. **Rinderpest**

   During 1991, rinderpest outbreaks occurred in only the five southern States of India, i.e. Tamil Nadu, Karnataka, Kerala, Andhra Pradesh and Maharashtra, and the disease was not reported in the rest of the country, i.e. nineteen States and six Union Territories. The disease has not been reported in fourteen States for the last three years. The Government of India is considering declaring the north-eastern States and Andaman and Nicobar islands rinderpest free. A programme has been launched with EEC assistance to eradicate this disease within 6 years.

   During 1991 there were 95 outbreaks, affecting 5,835 animals (bovine, ovine and caprine species).

3. **Contagious bovine pleuropneumonia**

   This disease is confined to only three districts of Assam, though there were no cases in 1991.

4. **Bluetongue**

   There was an increase in the incidence of bluetongue in 1991. It was restricted to the States of Karnataka, Andhra Pradesh and Maharashtra.

5. **Sheep pox and goat pox**

   In 1991, 344 outbreaks occurred, affecting 4,594 sheep and goats. The disease is controlled by vaccination and animal movement restrictions.
II. LIST B DISEASES

The incidence of equine infectious anaemia, which was first reported in 1989, was considerably reduced. In 1991, there were only two positive reactors to Coggin’s test in the organised sector (thoroughbred horses and horses connected with equestrian events). Control measures include stamping-out and restrictions on the movement of horses and the holding of equestrian events. The National Research Centre on Equines, Hissar, Haryana, is the recognised laboratory for carrying out Coggin’s test.

III. ANIMAL QUARANTINE, DISEASE SURVEILLANCE AND LEGISLATION

There are currently four quarantine stations in operation in India, at the four major international air- and seaports: Bombay, Calcutta, Delhi and Madras. Two more will shortly be set up at Cochin and Kandla. More units will be required according to the work load at other import and export points.

A Central Animal Disease Surveillance Cell and epidemiological units in the States monitor disease status in respect of 39 major diseases and disseminate the information in the form of State and Central Disease Surveillance Bulletins. The Division of Epidemiology at the Indian Veterinary Research Institute (IVRI), Epidemiology Departments of Agricultural Universities, Animal Disease Surveillance units of the NDDB and BAIF also carry out disease surveillance activities on a regional/national basis. Monthly incidence of the following major livestock and poultry diseases in 1991 is given in Appendix 1.

Disease control legislation at the State level is rarely invoked at present and would require drastic revision to render it more effective. The Indian government has taken steps to introduce a uniform Animal Disease Control Act.

IV. DISEASE CONTROL

Since animal husbandry is a State responsibility, disease control activities are basically carried out by State governments through the Veterinary Hospitals, Dispensaries and Aid Centres. However, the Indian government supplements these activities with some centrally sponsored schemes, including the following:

1. Foot and mouth disease

The main objective of this programme is to protect valuable high-yield indigenous, cross-bred and exotic livestock belonging to the economically weaker section of society for the areas covered by milk sheds of the intensive cattle development programme and areas under cross-bred calf rearing schemes for small scale farmers, smallholders and agricultural labourers. The yearly incidence of foot and mouth disease in India is given in Appendix 2.

2. Rinderpest

With the aim of eradicating rinderpest from the country within six years, the Indian government has initiated a project, in collaboration with the European Economic Community (EEC), having the following components:
a) Sero-monitoring

Under this component about 0.01% of the bovine population, both vaccinated and non-vaccinated groups, would be screened. A Central ELISA Training Laboratory at Bangalore has been selected for this purpose. In addition, 32 laboratories in the States will be strengthened by the project to undertake the sero-surveillance work.

b) Production of rinderpest vaccine

Ten State Units are currently engaged in the production of tissue-culture rinderpest vaccine (TCRV). These centres will be strengthened to meet the total vaccine requirement for this project. In addition, Indian Immunologicals and BAIF will also be requested to participate in the supply of TCRV in accordance with the agreed programme.

c) Quality control laboratory

This laboratory will be set up at the IVRI, Izatnagar, as a part of the central Project Management Unit (PMU). All production units will be required to obtain clearance from this laboratory before issuing the vaccine in the field. This laboratory will provide central quality control for the vaccine to be used in the project.

d) Communication campaign

Considerable efforts have been made to increase awareness among livestock owners of the vaccination programme and its benefits, to ensure their active participation. The information campaign will be launched using electronic media, press publicity material and literature.

e) Research programme

Under this component, three areas have been identified to be supported by the Project:

- epidemiological studies on rinderpest and rinderpest-like diseases in small ruminants, in view of the role of these animals in the spread of the disease;
- improvement of rinderpest vaccine production using vero-cell and training in production techniques. The laboratory at IVRI, Izatnagar, has been selected for this purpose and this laboratory will also be a part of the central PMU;
- development of a field test for rinderpest diagnosis.

f) Vaccination campaign and sero-surveillance

Strategy for vaccination has been developed taking into account the disease status in the country. This component will be implemented by integrating the infrastructural facilities available in the States. However, additional personnel will be mobilised for completion of the vaccination programme in one year, in those States which have to undertake 100% vaccination. Mortality due to rinderpest in India was 1,426, 1,797, 1,138 and 1,589 per one million population in 1976, 1980, 1985 and 1990, respectively (see Appendix 3).

3. Systematic control of livestock diseases of national importance

Under this programme, control of important diseases, such as bovine tuberculosis, brucellosis, contagious bovine pleuropneumonia, swine fever, canine rabies and pullorum disease in poultry, has been initiated during the 6th Plan Period and is continuing. Under this programme, a disease-free zone is also being established in the southern tip of the country, where mass rinderpest and FMD vaccination of cattle and buffaloes is carried out, so as to boost external trade. During the last decade, the export of meat and meat products from India has doubled.
## INCIDENCES OF MAJOR LIVESTOCK AND POULTRY DISEASES IN 1991

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<tr>
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<td></td>
<td>O*</td>
<td>A*</td>
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</tr>
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</tr>
<tr>
<td>1973</td>
<td>898</td>
<td>71,658</td>
<td>283</td>
</tr>
<tr>
<td>1974</td>
<td>1,702</td>
<td>99,325</td>
<td>155</td>
</tr>
<tr>
<td>1975</td>
<td>2,643</td>
<td>276,209</td>
<td>709</td>
</tr>
<tr>
<td>1976</td>
<td>2,988</td>
<td>285,609</td>
<td>839</td>
</tr>
<tr>
<td>1977</td>
<td>2,546</td>
<td>137,530</td>
<td>518</td>
</tr>
<tr>
<td>1978</td>
<td>2,476</td>
<td>189,459</td>
<td>592</td>
</tr>
<tr>
<td>1979</td>
<td>2,572</td>
<td>104,853</td>
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<tr>
<td>1980</td>
<td>2,640</td>
<td>192,116</td>
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</tr>
<tr>
<td>1981</td>
<td>4,472</td>
<td>364,632</td>
<td>4,724</td>
</tr>
<tr>
<td>1982</td>
<td>2,900</td>
<td>220,000</td>
<td>2,900</td>
</tr>
<tr>
<td>1983</td>
<td>2,500</td>
<td>200,000</td>
<td>2,500</td>
</tr>
<tr>
<td>1984</td>
<td>2,964</td>
<td>211,621</td>
<td>1,643</td>
</tr>
<tr>
<td>1985</td>
<td>2,156</td>
<td>180,157</td>
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</tr>
<tr>
<td>1989</td>
<td>720</td>
<td>39,185</td>
<td>245</td>
</tr>
<tr>
<td>1990</td>
<td>4,540</td>
<td>532,914</td>
<td>13,810</td>
</tr>
<tr>
<td>1991</td>
<td>1,373</td>
<td>165,194</td>
<td>11,967</td>
</tr>
</tbody>
</table>
Mortality due to rinderpest in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>1,424</td>
</tr>
<tr>
<td>1980</td>
<td>1,797</td>
</tr>
<tr>
<td>1985</td>
<td>1,138</td>
</tr>
<tr>
<td>1990</td>
<td>1,589</td>
</tr>
</tbody>
</table>
INDONESIA

INTRODUCTION

1. Livestock

Livestock still plays an important role in the Indonesian rural economy. It provides power, food, income, employment, and capital reserve for smallholders.

Most livestock production systems in Indonesia are characterized by a dualistic structure of production where a large sector using traditional husbandry systems coexists with a small modern sector oriented towards urban markets and export.

Cattle and buffaloes are mostly produced under the traditional small holder system with a high labour/capital ratio, few, if any, purchased inputs and very low productivity levels. There is limited beef cattle ranching in Kalimantan (Borneo), Sulawesi (Celebes), and Nusa Tenggara Timur and some feed lot in Lampung as well as West-Central-East Java.

Sheep and goats are produced under semi-confinement and full-confinement systems.

Swine production is dominated by the traditional sector based on small numbers of animals, but some piggeries (modern and large farms) are being developed in Batam, Sumatra and West Kalimantan (Borneo) for export purposes.

Native chickens are kept in small flocks (40 to 2,000 birds) which are managed as commercial layers. Ducks are kept in flocks of 50 to 200 birds which are fed by being herded through harvested rice fields.

Commercial broiler and layer chicken production has grown rapidly in recent years, giving rise to a modern, commercial, factory-based animal feed industry.

2. Current achievements in livestock development

With regard to livestock development, the National State Guidelines (GBHN) indicate that livestock development in the fifth Five Year Development Plan (1988-1993) should be focused on:

a) increasing production through the development of both existing production areas and new production areas

b) making use of appropriate technology to increase livestock populations and production, maintaining animal health status, extension services, improving infrastructure, and the utilisation of agricultural by-products.

c) developing the smallholders through the increasing role of cooperatives and the involvement of the private sector.

During the implementation of the development plan, considerable investments have been made in building the infrastructure and other supporting services. As a result, livestock populations have increased quite significantly. From 1989 to 1991, production of milk, meat and eggs steadily increased by 16.01%, 11.10% and 4.74%, respectively, while consumption of these products increased by 4.50%, 6.70% and 15.90%, respectively.
To cope with the increasing demands of livestock production, the following strategies are being implemented in the livestock development programme:

a) to maintain and protect present and future livestock against diseases and reproductive disorders;

b) to improve feed and feeding management;

c) to improve the genetic potential by the implementation of appropriate breeding programmes;

d) to improve skills and know-how through extension services;

e) to improve infrastructure and facilities for farm supplies, processing and marketing of livestock and livestock products.

The general policies for developing population and genetic potential of large ruminants are:

a) to prevent the slaughter of productive females, by means of law enforcement;

b) to select a good quality bull to be distributed among a group of farmers;

c) the use of the best bull for artificial breeding programmes;

d) to develop the genetic potential of local breeds through village breeding improvement programmes;

e) to distribute cattle and buffaloes from the densely populated area to other areas through the procurement and distribution of livestock;

f) to import breeding stock;

g) to import proven bulls and their progeny and tested frozen semen and embryos to meet the demand for high quality semen for AB programmes;

h) to increase the birth rate through pregnancy diagnosis and sterility control;

i) to decrease mortality through appropriate animal health management programmes (quarantine, disease surveillance and investigation, vaccination programmes, disease eradication and control programmes);

j) to establish adequate animal health laboratories and animal health services in rural areas.

3. Animal health status

The disease status in Indonesia varies between islands and ranges between free, sporadic and enzootic areas. Livestock movements are controlled by animal quarantine at every port of departure and arrival.

The disease control programme is carried out mostly by intensive vaccination, treatment and isolation of sick animals, with slaughter being used, if necessary, to reduce incidence to the lowest possible level.

Improvement of disease recording and reporting system is in process.

Supporting facilities such as disease investigation centres, animal health posts, veterinary drug assay laboratories, research institutes for veterinary science, and centres for biological products are gradually being improved.
I. LIST A DISEASES

Indonesia is free from all List A diseases, except bluetongue and Newcastle disease.

1. Bluetongue
   
   Virus types 1, 6, 7, 9, 12, 14 and 23 were isolated from cattle blood samples.
   
   Only bluetongue virus type 6 was isolated from culicoides.
   
   No clinical cases were reported.

2. Newcastle disease
   
   Newcastle disease is enzootic and continues to pose a major threat to native chickens.
   
   A vaccination programme was carried out by farmers under the supervision of the staff of the veterinary services.
   
   Research on an oral vaccine is in progress. Laboratory trials have indicated that the vaccine is promising. Field trials are being carried out in some provinces.

II. LIST B DISEASES

Several List B disease were reported in the country, including haemorrhagic septicaemia, anthrax, brucellosis, trypanosomiasis, bovine viral diarrhoea, infectious bovine rhinotracheitis and certain poultry diseases.

1. Anthrax
   
   There was no significant incidence of anthrax reported in 1991. Surveillance and annual vaccination were focused on the area of highest incidence. The disease is under control.

2. Rabies
   
   The zone free of rabies consists of the provinces of Bali, East and West Nusa Tenggara, Maluku and Irian Jaya.
   
   A progressive eradication programme against rabies, covering eight provinces in Java and Kalimantan (Borneo), started in 1988.
   
   Depopulation of stray dogs and mass vaccination are carried out.
   
   Surveillance and a ban on movements of dogs, cats and monkeys are strictly implemented.
   
   Five provinces in Java reported rabies cases in dogs, decreasing from 24 cases in 1990 to 14 in 1991. However, the number of cases did not significantly decrease in Kalimantan (Borneo).
3. **Brucellosis**

Brucellosis was reported from most provinces with different levels of prevalence. Three provinces, Bali, Maluku and Central Kalimantan did not report any cases of brucellosis.

Control policy is based on vaccination, a ban on infected livestock and the compulsory slaughter of reactors.

An intensive and progressive control programme has been carried out in South Sulawesi and has successfully decreased the abortion rate. This approach will be extended to East Nuga Tenggara province.

4. **Haemorrhagic septicaemia**

Haemorrhagic septicaemia is the most common disease among draught cattle and buffaloes in Indonesia. The incidence of haemorrhagic septicaemia varies between islands. In 1991 no increase in prevalence was reported. Cases diagnosed early were quite easily treated by antibiotics. Intensive vaccination in the outbreaks covered 60% of susceptible ruminants, and annual vaccination of about 30-40% maintained the prevalence at a low level.

5. **Infectious bovine rhinotracheitis**

Infectious bovine rhinotracheitis (IBR) diagnosed by serological assay and clinical evidence has been reported among buffaloes, but abortion has never been reported. Of samples tested in a serological survey, 66.7% of buffalo samples and 7% of samples from cattle proved positive. Bulls at insemination centre are routinely examined and to date have been found to be free from IBR.

6. **Bovine malignant catarrh**

Research work on bovine malignant catarrh suggests that the causal agent is Lentivirinae (lentivirus group).

7. **Infectious bursal disease (Gumboro disease)**

Infectious bursal disease appeared in late 1991 among breeding poultry in commercial farms. Stamping-out, sanitary measures and vaccination were implemented.

A total of 700,000 chickens died, and 6,000,000 other head of poultry, consisting of layers and broilers at different farms and locations, were suspected of being infected.

A classical strain of IBD virus was isolated (Intervet, Holland ?). An epidemiological survey concluded that the main cause of the outbreak was incorrect vaccination.

### III. OTHER DISEASES

#### Cattle diseases

1. **Bovine viral diarrhoea**

Increasing incidence of bovine viral diarrhoea occurred during 1991. Vaccination, treatment and improvement of farm management are being implemented. The disease is under control. Investigations showed the increased incidence to be due mainly to a long period of drought.
2. **Jembrana disease**

Research into Jembrana disease has indicated that the causal agent of Jembrana disease in Bali is a retrovirus.

Blood parasitoses of livestock, such as trypanosomiasis, babesiosis, anaplasmosis and theileriosis, were reported in 1991, though at a low prevalence.

**Poultry diseases**

Poultry diseases, such as infectious laryngotracheitis, infectious bronchitis, fowl pox, and Marek's disease are under control. Poultry breeding stock is free from *Salmonella pullorum*.

**Bee diseases**

Traditional apiculture is still being practised in many parts of Indonesia, people collecting honey from the neighbouring forest or bush. In Java, since the 1980s, bee-keeping on a small scale has been practised as a home industry.

Not many disease problems have been reported as yet, except for varroasis in Irian Jaya province (1990).

**Fish diseases**

The fish industry is growing in importance. *Aeromonas hydrophila* was reported and caused losses in fresh water fish. Vaccine production against *A. hydrophila* is being prepared. No diseases of shrimps or prawns have yet been identified.
Iran has continued to be free from most List A diseases. Foot and mouth disease, sheep pox, goat pox and Newcastle disease occurred in 1991, as indicated below.

1. Foot and mouth disease

About 250 outbreaks of foot and mouth disease in cattle, sheep and goats were reported from different regions of the country.

Out of the samples tested during this period, 97 were identified as of type O and there was only one sample, from western Azarbaijan, which proved to be of type A.

FMD VIRUS ISOLATIONS IN 1991

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of samples</th>
<th>Type O</th>
<th>Type A Mardabad</th>
<th>No virus isolated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>36</td>
<td>18</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>Feb</td>
<td>66</td>
<td>32</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td>Mar</td>
<td>31</td>
<td>5</td>
<td>-</td>
<td>26</td>
</tr>
<tr>
<td>Apr</td>
<td>16</td>
<td>2</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>May</td>
<td>22</td>
<td>1</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Jun</td>
<td>40</td>
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<td>-</td>
<td>33</td>
</tr>
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<td>Jul</td>
<td>39</td>
<td>11</td>
<td>-</td>
<td>28</td>
</tr>
<tr>
<td>Aug</td>
<td>31</td>
<td>4</td>
<td>-</td>
<td>27</td>
</tr>
<tr>
<td>Sep</td>
<td>14</td>
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<td>-</td>
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<tr>
<td>Oct</td>
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<td>5</td>
<td>1</td>
<td>10</td>
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<tr>
<td>Nov</td>
<td>14</td>
<td>3</td>
<td>-</td>
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</tr>
<tr>
<td>Dec</td>
<td>14</td>
<td>2</td>
<td>-</td>
<td>12</td>
</tr>
</tbody>
</table>

LOCATION OF OUTBREAKS

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of provinces affected</th>
<th>Number of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Feb</td>
<td>7</td>
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</tr>
<tr>
<td>Mar</td>
<td>9</td>
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<td>Apr</td>
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<td>May</td>
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<td>Jun</td>
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<td>20</td>
</tr>
<tr>
<td>Nov</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Dec</td>
<td>9</td>
<td>22</td>
</tr>
</tbody>
</table>
Control measures:

- vaccination of susceptible animals with polyvalent vaccine types A, O and Asia 1, produced by the Razi Institute. A total of 3,160,170 cattle and 4,356,870 sheep and goats were vaccinated;
- disinfection and control of animal movements in infected farms;
- animal importation is only permitted from countries which are free from foot and mouth disease.

2. Rinderpest

In 1991 the country was free from rinderpest. However, because Iran is located in the Middle East, where some of the neighbouring countries are experiencing problems with rinderpest, the following measures are being taken to keep the country free from the disease:

a) Vaccination of susceptible animals: all susceptible animals, including cattle, calves and buffaloes, are vaccinated annually with the Razi Institute tissue culture vaccine. Number of doses used in 1991: 5,894,000.

b) Serological study: in order to measure the level of immunity of cattle vaccinated against rinderpest, serum samples were collected and tested for neutralization antibodies.

c) Differential diagnosis between rinderpest and rinderpest-like diseases.

d) Quarantine measure at borders.

3. Sheep pox and goat pox

These diseases were reported from most sheep and goat raising parts of the country. About 335 outbreaks of sheep pox and 41 outbreaks of goat pox were reported in 1991.

These diseases are controlled by vaccination. A total of 30,958,300 sheep were vaccinated with attenuated lyophilized vaccine, while a total of 9,970,390 goats were vaccinated with live virus (isolated from the region of Gorgan) attenuated through several passages and lyophilized.
4. **Newcastle disease**

In 1991, vaccination using oil emulsified with live attenuated vaccine, resulted in satisfactory control of Newcastle disease.

**II. LIST B DISEASES**

1. **Anthrax**

In 1991, about 68 outbreaks in cattle, sheep and goats were reported from 12 provinces. The disease was controlled through vaccination of susceptible animals. A total of 31,620,000 vaccinations were carried out in 1991. Vaccine used is local *Bacillus anthracis*, prepared according to Sterne methods, with the addition of saponine.

![Incidence of anthrax in 1991](image)

2. **Rabies**

This notifiable disease was reported from certain regions, and an epidemiological survey showed the highest incidence to be in the northern part of the country.

A continuous control programme including vaccination of pets, sheepdogs and guard dogs, and destruction of stray dogs and bitten animals are the essential control measures used against this disease.

The vaccine used is inactivated sheep brain BPL, produced by the Pasteur Institute of Iran. Vaccination in 1991 included 14,808 dogs and cats. Out of about 285 cases of rabies confirmed by the Pasteur Institute of Iran, 113 occurred in cattle, sheep and goats, 113 in cats and dogs and 59 in wolves, foxes and jackals.

3. **Babesiosis**

The situation of the disease was more or less the same as in previous years. It was reported from most parts of the country in cattle, sheep and goats, especially in hot and temperate areas. Control measures are based on combating the vector ectoparasites plus treatment of sick animals with
Acaprine. The total number of animals treated was as follows: 15,660 cattle and 1,648,940 sheep and goats.

4. **Bovine brucellosis (B. abortus)**

In 1991 the national programme undertaken against the disease continued in a satisfactory manner.

However, the measures implemented, based on the provisions of the programme, include vaccination of cattle (3 to 6 months of age) with strain S19 vaccine, serological testing in dairy farms and slaughter of reactors, and control of movement and disinfection of contaminated premises.

**Brucellosis control measures in cattle:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cattle tested:</td>
<td>542,636</td>
</tr>
<tr>
<td>Number of positive cases:</td>
<td>4,744</td>
</tr>
<tr>
<td>Number of calves vaccinated:</td>
<td>315,698</td>
</tr>
</tbody>
</table>

The percentage of positive reactors was 0.87%, which shows a remarkable decrease compared to previous years.

**Bovine brucellosis: percentage of positive cases from 1980 to 1991**

<table>
<thead>
<tr>
<th>Year</th>
<th>Positive cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>600</td>
</tr>
<tr>
<td>1981</td>
<td>500</td>
</tr>
<tr>
<td>1982</td>
<td>400</td>
</tr>
<tr>
<td>1983</td>
<td>300</td>
</tr>
<tr>
<td>1984</td>
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<tr>
<td>1985</td>
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</tr>
<tr>
<td>1987</td>
<td></td>
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<td>1988</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td></td>
</tr>
</tbody>
</table>

5. **Bovine tuberculosis**

The national eradication programme by test and slaughter in dairy cattle is at an advanced stage. In 1991, the tuberculin test with both avian and mammalian tuberculin was applied to 717,667 animals present in cattle farms. The percentage of positive cases was 0.52%, which shows a decrease compared to 1990. Reactors were slaughtered and contaminated farms disinfected.

**PERCENTAGE OF POSITIVE CASES FROM 1987 TO 1991**

<table>
<thead>
<tr>
<th>Year</th>
<th>Positive cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>1.45%</td>
</tr>
<tr>
<td>1988</td>
<td>0.9%</td>
</tr>
<tr>
<td>1989</td>
<td>0.65%</td>
</tr>
<tr>
<td>1990</td>
<td>0.87%</td>
</tr>
<tr>
<td>1991</td>
<td>0.52%</td>
</tr>
</tbody>
</table>
6. **Haemorrhagic septicaemia**

About 40 outbreaks involving cattle were reported from Gilan, Markazi, Mazandaran and Khuzestan provinces. Control measures were taken, including immunization of susceptible animals with antipasteurella vaccine in the contaminated areas.

7. **Theileriosis**

The disease was reported from most parts of the country. Control measures based on spraying of premises, anti-tick dips, vaccination and treatment of sick animals. The type of vaccine used is strain 15 prepared by the Razi Institute. The vaccination method is by single dose, and the optimal seasons for vaccination are autumn and winter. Total number of vaccinations in 1991: 112,000 doses.

![Incidence of theileriosis in 1991](image)

8. **Caprine and ovine brucellosis** (*B. melitensis*)

This disease was prevalent in different parts of the country and was the major cause of abortion in ewes. In order to keep the disease under control, a programme including mass vaccination of lambs and goats using Rev, vaccine and test and slaughter in affected herds was continued in 1991.

- Number of lambs and goats vaccinated: 10,295,300
- Number of animals tested: 265,530
- Number of positive cases: 12,406

9. **Contagious agalactia**

In 1991 about 300 outbreaks were reported from most parts of the country. Annual vaccination of susceptible animals using a vaccine prepared by the Razi Institute, was carried out.

10. **Contagious caprine pleuropneumonia**

The situation regarding this disease was more or less the same as in the previous years. The disease was mainly reported from goat raising areas, such as Hormozgan, Bushehr, Kerman and Khorasan provinces.
IRELAND

INTRODUCTION

In 1991 Ireland undertook to monitor the national herd for enzootic bovine leukosis in order to illustrate the status of country freedom under Directive 64/432/EEC.

I. LIST A DISEASES

Newcastle disease

There were two outbreaks of Newcastle disease (pigeon strain PMV 1) in April 1991. All restrictions were removed on 6 May 1991.

All breeding stock are tested at least annually for Newcastle disease.

No other List A disease occurred in Ireland in 1991.

II. LIST B DISEASES

1. Enzootic bovine leukosis

Since the start of the monitor of the national herd in August 1991 (see above), a total of 45,124 dairy herds were subjected to a bulk milk ring test. In addition, blood tests are being carried out on other herds. As expected, all tests to date have proved negative for enzootic bovine leukosis.

2. Bovine spongiform encephalopathy

There were 17 cases in Ireland in 1991. All cases were in different herds and each case involved a cow of four years of age or older. A scheme of voluntary depopulation continues, and has been availed of in every case.

3. Contagious equine metritis

The last case of contagious equine metritis (CEM) occurred in Ireland in 1982. As a precautionary measure, a voluntary code of practice is followed and all mares are tested before mating. We have now had nine consecutive years without a single case of CEM, despite a high level of testing.
I. LIST A DISEASES

1. **Foot and mouth disease**

Foot and mouth disease (FMD), type O_1_, caused two outbreaks during March 1991: the first involved one two-year-old dairy cow in a farm with 109 bovines. Not a single additional case was observed in this farm, apparently thanks to satisfactory immune status following the recently performed annual vaccination. The farm is located 7 km from the Israeli-Syrian-Jordanian border. Two weeks later, an outbreak of FMD was reported in a village approximately 20 km to the west of the first outbreak, on the opposite side of the Sea of Galilee. In this village, 11 bovines out of 120 in a housed dairy herd and 50 sheep out of 200 in a grazing flock were found to be clinically affected. The animals had been vaccinated 12 months before. Clinical signs were mild, no mortality was recorded, and no further spread occurred.

The virus was isolated by the Kimron Veterinary Institute (KVI) and found to be related to other FMD O_1_ virus strains recently isolated in the Near East. The disease is controlled in Israel by mass annual vaccination of the entire cattle, sheep and goat population. In the event of an outbreak, the spread of the disease is prevented by strict quarantine measures, including the slaughter of in-contact animals, animal movement control and ring revaccinations. The details of bovine vaccinations are documented on the animals' individual identification certificates, compulsorily issued by the State. Other measures, including modified stamping out, are decided upon in selected situations.

2. **Vesicular stomatitis**

This disease has never been diagnosed in Israel.

3. **Swine vesicular disease**

This disease has never been diagnosed in Israel.

4. **Rinderpest**

Israel has remained free of rinderpest since the eradication of the limited outbreak in August 1983.

5. **Peste des petits ruminants**

This disease has never been diagnosed in Israel.

6. **Contagious bovine pleuropneumonia**

This disease has not been diagnosed in Israel since 1941.

7. **Lumpy skin disease**

Israel has remained free of lumpy skin disease since the eradication of the outbreak in Peduyim in September 1989.
8. **Rift Valley fever**

   This disease has never been diagnosed in Israel.

9. **Bluetongue**

   The disease is confined to foreign breeds of sheep and is seasonally restricted (between July and December with peaks in October and November).

   A total of 23 outbreaks were reported during the fall of 1991: two in October, seventeen in November and four in December. The outbreaks were confirmed by isolation and characterization of the bluetongue virus, carried out by KVI. All the isolates were found to be bluetongue virus type 4.

   Annual vaccination of sheep of exotic breeds is carried out upon request with an attenuated quadrivalent vaccine, including serotypes 2, 4, 6 and 10, produced by the Onderstepoort Veterinary Institute. This vaccine has been found to confer good protection during the last 18 years. All the cases observed in 1991 involved unvaccinated animals.

10. **Sheep pox and goat pox**

    During 1991, six outbreaks of sheep pox occurred in Israel and nine in the Controlled Territories. Vaccination with a tissue culture vaccine was carried out in the affected areas, and quarantine measures were adopted.

    Goat pox has not been reported in Israel or the Controlled Territories since 1968.

11. **African horse sickness**

    This disease has been absent from Israel since 1944. No vaccination has been carried out since 1960, and is prohibited. Importation of equines from infected countries is also prohibited.

12. **African swine fever**

    This disease has never been reported in Israel.

13. **Hog cholera**

    This disease has not been recorded since 1948. Clinical suspected cases in 1959 were not confirmed in the laboratory.

14. **Teschen disease**

    This disease has never been reported in Israel.

15. **Fowl plague**

    This disease has not been reported in Israel since 1948.

16. **Newcastle disease**

    No case of Newcastle disease has been recorded in Israel since 1987, and in the Controlled Territories since 1988.
II. LIST B DISEASES

1. Rabies

1991 was the first year since 1978 in which rabies in Israel was "urban" rather than "sylvatic". Out of 46 confirmed cases of rabies, 31 involved dogs and only 9 were in fauna (all foxes). In comparison, during the previous 12 years, namely 1979-1990, 66.2% of the mean annual cases of rabies were recorded in fauna, mainly in foxes. This change was combined with the spread of rabies into an area which had been practically free of rabies for thirty years, namely the densely populated central coast area around Tel Aviv. The outbreak occurred mainly during the last quarter of 1991.

This outbreak is assumed to be the outcome of an increase in the number of stray dogs in the above area. This may be explained by the deplorable neglect and abandonment of many pets during the Gulf War, in particular as a result of the Scud missile attacks on the Tel Aviv area in January/February 1991. Indeed, most of the reported cases in dogs involved young, unvaccinated strays.

The State Veterinary Services, cooperating with the local municipalities, who are directly responsible for rabies control in the urban areas, carried out an extensive vaccination and control campaign for strays, accompanied by the successful use of the media. The number of dogs vaccinated during 1991 reached 133,000, an increase of more than 30% compared with previous years. Annual vaccination of dogs in Israel is compulsory. The vaccination of farm animals is voluntary.

No cases in humans have been recorded in Israel since 1960.

2. Screwworm (Cochliomyia hominivorax)

This disease has never been reported in Israel.

3. Bovine brucellosis (B. abortus)

The dairy cattle herds in Israel have been considered brucellosis free for more than twenty years. This is confirmed by routine periodic testing of all dairy cattle by the Milk Ring Test (ABR), which is performed two to four times annually in each dairy farm, followed by supplementary serological tests in suspected animals. S19 vaccination is carried out in 2-6 month old female calves.

No cases of bovine brucellosis were recorded during 1991 in dairy cattle in Israel.

4. Bovine tuberculosis

In January 1991, the stamping out of the bovine tuberculosis focus discovered in 1990, was accomplished by the slaughter of the remaining 32 cows. In addition, two calves, originating from the infected farm on the Golan Heights, were detected in two fattening units and slaughtered. The said two units were tuberculin tested three times and found negative.

In 1991, 65,000 tuberculin tests were carried out throughout the country. Twenty-three bovines which reacted positively were slaughtered but found to be uninfected.

Israel has maintained its status as a country officially free from bovine tuberculosis, according to the OIE International Animal Health Code, Article 3.2.3.10.
5. **Enzootic bovine leukosis**

Tumorous cases were reported in seven farms in 1991.

The two artificial insemination centres are free from enzootic bovine leukosis. At present, eradication is carried out, on a voluntary basis, in selected dairy farms.

6. **Bovine spongiform encephalopathy**

Israel is free of scrapie, which is a notifiable disease, and of bovine spongiform encephalopathy (BSE). To maintain their absence, the use of imported meat and bone meal of mammal origin in animal feed for food animals, including poultry, was discontinued in July 1990. This step was temporarily adopted until more knowledge is obtained about the epidemiology of prion diseases in man and animals. The ban on the use of imported meal of mammal origin for the feeding of avians was introduced in light of the frequent use, in Israel, of recycled poultry manure in feed for cattle and sheep.

Israel imports 70% of the beef consumed, representing approximately 40,000 tons of frozen beef annually. Generally, the EC measures regarding BSE have been endorsed. However, the importation of BSE target organs, such as brain, thymus, tonsils, intestines and spleen, is not at present allowed from BSE infected countries nor from other countries if originating from animals which have been fed with ruminant proteins.

7. **Caprine and ovine brucellosis (B. melitensis)**

Vaccination with Rev 1 vaccine is carried out in female ovine and caprine offspring, 2-6 months old. The number of human infections decreased from 296 in 1989 to 196 in 1990, and 184 in 1991 (preliminary data). Most of the human cases were caused by foodborne infection.

In 1991, control activities were adopted on a regional basis, as a first step towards the implementation of a detailed, general eradication programme. Consequently, 867 sheep and 771 goats in 49 flocks, found to be positive during the serological surveillance operation, were compulsorily slaughtered. The owners were compensated as prescribed by law; the total amount of compensation, paid by the State during 1991, was 235,370 Shekel (approximately 100,000 US$). Flocks found to be infected at a rate higher than 10% were slaughtered in their entirety; other flocks were placed under quarantine and are subject to a test and slaughter scheme.

In addition, public education activities are being adopted in collaboration with the public health authorities to prevent the distribution of milk products of undefined origin.

8. **Caprine arthritis/encephalitis**

A voluntary scheme to control caprine arthritis/encephalitis has been introduced in selected breeding dairy goat farms.

9. **Maedi-Visna**

This disease, with special reference to its epidemiology in dairy sheep, is under investigation.

10. **Infectious bursal disease (Gumboro disease)**

During 1991, there was a considerable decrease in the occurrence of this disease, probably due to the use of a potent vaccine. It has also been suggested that there is a decreased pathogenicity of the field strain.
11. Varroasis

This disease was recorded for the first time in Israel in October 1984. In 1991, damage was negligible.

III. OTHER DISEASES

1. Border disease

This disease of sheep, initially suspected in Israel in 1989, was confirmed in 1990 by the Kimron Veterinary Institute. Clinical and serological studies in 1991 showed that the disease existed in several flocks of the Assaf breed, in central and northern Israel.

2. Avian ascites

An unusual occurrence of morbidity and mortality in goslings and, to a lesser extent, in young broilers, suspected to have been caused by feed intoxication was reported in southern Israel in May-June 1991. It was characterized mainly by ascites and multifocal liver necrosis and was suspected to have resulted from with use of imported maize from a particular boat consignment. In some cases, histological examinations also revealed lymphoid depletion in the spleen and, to a lesser extent, tubular degeneration of the kidneys. Though ochratoxin was identified in some of the maize and concentrate samples examined by the KVI, no definitive diagnosis could be established. An experimental feeding trial with certain suspected samples brought about similar clinical and post-mortem findings, including significant weight loss, ascites and mortality. The discontinuation of the use of the suspected maize was followed by the disappearance of the syndrome.

IV. MISCELLANEOUS

The beginning of 1991 was characterized by the Gulf War and the missile attacks upon Israel. Measures were taken to protect, to some extent, pets and food animals against chemical and biological warfare, including the maintenance and distribution of atropine and other preventive and curative medicaments and extension to veterinarians and the public. One of the Scud missiles landed in the vicinity of the main office of the Veterinary Services and the KVI, causing material damage.
ITALY

I. LIST A DISEASES

1. Foot and mouth disease

In 1991, as in 1990, no outbreaks of foot and mouth disease were reported. The last outbreak was recorded in July 1989. The Ministry of Health ordered compulsory vaccination against foot and mouth disease for bovines, buffalos, sheep and goats over 3 months of age. A trivalent O, A, and C, vaccine was used.

Bovines and buffalo vaccinated for the first time were revaccinated after 20-40 days. Only sheep and goats were vaccinated during the spring-campaign (1 April - 31 May 1991). EEC Council Directive 90/423/EEC, modifying Directive 85/511/EEC, established community rules against foot and mouth disease and imposed a ban on vaccination in all EC Member States from 1 February 1992. In application of this EEC Directive, the Ministry of Health decreed an end to vaccination through a Ministerial Decree of 5 August 1991 which came into force on 11 August, bringing the policy of Italy into line with that of other EC Member States.

The Ministry of Health has also prepared an emergency plan for foot and mouth disease according to Art. 5 of Directive 90/423/EEC. This emergency plan, containing all the measures to be introduced in the event of an outbreak, is currently being examined by the EEC Commission.

From 1 January the number of animals vaccinated was as follows: 6,650,700 bovines and buffalo (national or imported) and 1,750,000 sheep and goats.

As in previous years, the veterinary services of the local sanitary units provided bovine samples in order to verify the presence of antibodies against foot and mouth disease.

2. Swine vesicular disease

In 1991, 6 outbreaks of swine vesicular disease were reported, after about an 18-month remission from the disease.

All the outbreaks were located in pig production units in the southern regions, as listed below:

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Local Sanitary Unit No.</th>
<th>No. of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sicily</td>
<td>Messina</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>46</td>
<td>1</td>
</tr>
<tr>
<td>Campania</td>
<td>Napoli</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>Calabria</td>
<td>Cosenza</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

All the swine present in the farms were destroyed.
In 1991, following the assessment of the first outbreak of contagious bovine pleuropneumonia, which occurred in October 1990, after a 92 year absence, the following measures were introduced or modified: serological controls in farms and the anatomopathological examination of slaughtered animals were intensified, in order to check the occurrence, distribution and spread of the disease in the Italian bovine population.

In 1991, 43 outbreaks were reported, distributed as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Local Sanitary Unit No.</th>
<th>No. of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lombardy</td>
<td>Bergamo</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Brescia</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Mantua</td>
<td>44</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Cremona</td>
<td>46</td>
<td>2</td>
</tr>
<tr>
<td>Venetia</td>
<td>Treviso</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Padua</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Piedmont</td>
<td>Turin</td>
<td>41</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Cuneo</td>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td>Friuli-Venetia-Giulia</td>
<td>Pordenone</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Udine</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>The Marches</td>
<td>Pesaro</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Ascoli-Piceno</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Apulia</td>
<td>Foggia</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

In the infected herds there were more than 8,000 cattle, of which 539 were destroyed.

The outbreaks are being extinguished by slaughtering all cattle present, in accordance with a scheme coordinated by the Ministry of Health. A rigorous post-mortem examination is conducted by a commission including a biologist from the competent Animal Disease Control Institute and experts from the University Institute of infectious diseases and pathological anatomy. If the result of the post mortem is favourable, meat is accepted for human consumption with no other restrictions than destruction of the head, lungs and all other viscera, including the kidneys. In the event of an unfavourable result, all the animals have to be destroyed.

Of the 43 infected herds, 35 were dairy herds, and the remainder were fattening stock.

Of the outbreaks 72% occurred in Lombardy, 7% in Venetia and Friuli-Venetia-Giulia and 5% in Piedmont. In these regions, at least half the Italian bovine population is reared, and there is a constant and significant movement of animals, including imported livestock.

The appearance of the disease in the centre and south of the Italian peninsula is due to the movement of animals from the infected areas.

An eradication plan presented to the EEC and approved by Decision 91/348/EEC (17 June 1991) is currently in progress, with the financial aid of the EC.
4. African swine fever

As stated in the 1990 report, African swine fever is confined to the territory of the Sardinia region, where 64 outbreaks were reported. The distribution was as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Local Sanitary Unit No.</th>
<th>No. of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sardinia</td>
<td>Nuoro</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Cagliari</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
<td>4</td>
</tr>
</tbody>
</table>

In the outbreaks there were about 2,000 pigs present, all of which were destroyed.

An eradication plan has been prepared along the lines of EEC Commission Decision 90/217/EEC (25 April 1990).

We confirm that since March 1978, a ban has been in force on exporting or sending out of Sardinia live swine, fresh pig meat or pig meat products, even to the rest of the Italian territory.

5. Hog cholera (classical swine fever)

In 1991, the disease was reported in domestic pigs and wild boars. The total number of outbreaks was 15, distributed as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Local Sanitary Unit No.</th>
<th>No. of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscany</td>
<td>Grosseto</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Livorno</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sardinia</td>
<td>Nuoro</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Sassari</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Emilia-Romagna</td>
<td>Parma</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

a) including a wild boar which was shot
b) in a wild boar breeding farm

All swine present in infected farms were destroyed and all the veterinary police measures described in the 1990 animal health report were enforced.

Since 1 January 1991, in accordance with the 4-year eradication plan for hog cholera in Italy, approved by the EEC Commission by Decision 89/346/EEC, serological controls were started on a statistically representative part of the swine population on Italian territory except for the Sardinia region, where vaccination is still carried out, to verify that the end of vaccination imposed the year before was being respected.

Related to the detection of hog cholera in wild boars in previous years in some local sanitary units in Tuscany, the competent sanitary authority prepared a surveillance plan which was carried out during the hunting season (1 November 1990 - 31 January 1991).
This plan involved serological and virological examination of blood or tissue samples from wild boar shot by hunters. The results of the virological tests were all negative, but some blood samples were found to be positive for hog cholera.

II. LIST B DISEASES

1. Anthrax

In 1991, 16 outbreaks of anthrax were reported in the following regions:

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Local Sanitary Unit No.</th>
<th>No. of outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calabria</td>
<td>Catanzaro</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Apulia</td>
<td>Bari</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Foggia</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Campania</td>
<td>Salerno</td>
<td>57</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Caserta</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Piedmont</td>
<td>Cuneo</td>
<td>58</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Asti</td>
<td>68</td>
<td>1</td>
</tr>
<tr>
<td>Sicily</td>
<td>Agrigento</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Catania</td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Enna</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Palermo</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>Basilicata</td>
<td>Matera</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Sardinia</td>
<td>Nuoro</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition to all the sanitary measures adopted, control is based on the vaccination of animals in the zones at risk, that is all the areas in which cases of anthrax have been reported in recent years. Vaccination must be authorized by the Ministry of Health.

2. Rabies

After two years of absence, rabies reappeared in the region of Friuli-Venetia-Giulia, in August 1991, when a fox which had been shot was found to be positive on serological and histological examination for the disease. The animal was shot in the province of Trieste close to the border with Slovenia. It would, therefore, seem probable that it came from the infected areas of that country. Up to the end of the year, a further four cases were found in foxes shot or found dead in the Trieste province, again near the border.

The fox-II rabies virus was isolated from the infected foxes.

In Friuli-Venetia-Giulia, due to the presence of the disease in adjoining countries, compulsory vaccination against rabies is in force for dogs and all other domestic animals.

Following the detection of the infection in wild foxes, the region is preparing an experimental plan for oral vaccination of foxes, to be set up in spring 1992.

In 1991, Italy presented to the EEC Commission a pilot study to control rabies in foxes, prepared in collaboration with Slovenia and Austria, and involving oral vaccination.
LIST A DISEASES

1. Hog cholera

An outbreak of hog cholera occurred in October 1991. A total of 179 cases were reported on one farm. Disinfection of the affected farm and its surroundings was carried out. Restrictions on the movement of swine were imposed on the farm and the surrounding area. The infected animals, none of which had been vaccinated prior to the outbreak, were slaughtered.

2. Newcastle disease

Outbreaks of Newcastle disease occurred in January, February, April and May. A total of 57,912 cases were reported in 11 production units. Disinfection of the units affected and the surrounding area within a 2-10 km radius was carried out. Restrictions on the movement of poultry were imposed within a 2 km radius of affected farms. All infected birds were slaughtered. No vaccination had been carried out at affected production units before the outbreak occurred.
I. ACTIVITIES OF THE VETERINARY SERVICES

1. An outline of the Veterinary Services

The national Veterinary Services are organised on both the central and local government level.

A. Central Veterinary Service

a) Organisation of animal services

The overall responsibility for the Veterinary Services in Korea, including animal health and veterinary public health, is entrusted to the Animal Health Division, which is attached to the Ministry of Agriculture, Forestry and Fisheries.

The main subsidiary organisations include the national Animal Quarantine Service and Veterinary Research Institute under the Office of Rural Development, and the National Livestock Research and Breeding Station.

b) Organisation of public health services related to veterinary medicine. Veterinarians are also involved in the public health service under the Food Sanitary Division of the Ministry of Health and Social Affairs.

B. Local Veterinary Service

In provincial government, under the responsibility of either a Mayor or Governor, the Veterinary Affairs section attached to the Bureau of Agricultural Production is responsible for veterinary matters, including the provincial Animal Health Laboratories, which are themselves in charge of animal disease control and the sanitary control of food of animal origin produced in each of the regions.

Each province has one main Animal Health Laboratory and three or four subsidiary units that carry out periodical surveys for major infectious animal diseases, diagnostic services and sanitary inspection of livestock products in each locality.

2. Domestic disease prevention and control system

A. Mandatory reporting system

The prevention and control of livestock diseases are carried out according to the Livestock Epidemic Prevention and Control Act.

There are two categories of notifiable infectious animal diseases. Under existing legislation, all animals in danger of infection with first category diseases may be ordered to be destroyed.

Category one includes 29 notifiable diseases, such as foot and mouth disease, African swine fever, rinderpest, glanders, contagious bovine pleuropneumonia, equine infectious anaemia, African horse sickness, hog cholera, swine vesicular disease, rabies etc.
B. Disease Surveillance and Forecasting Committee

To control and eradicate animal diseases, a national network for disease surveillance and forecasting was set up in 1981 within the Veterinary Research Institute. Since then, the Central Committee, which communicates with a local Committee in each province and city, has increased its functions and members. Currently, the Central Committee includes members from the Veterinary Research Institute, the Ministry of Agriculture, Forestry and Fisheries, 15 provincial Animal Health Laboratories, the Livestock Experiment Station, the National Federation of Livestock Cooperatives, the Rural Development Administration, the Korean Veterinary Medical Association, and related industrial associations such as the Dairy Cattle Producers' Association, the Pig producers' Association and the Poultry Producers' Association.

The local Committees comprise 54 provincial Animal Health Laboratories, including 14 Animal Disease Diagnostic Laboratories and accredited veterinary practitioners in the region. Specific preventive and disease control measures are prepared after analysis of the information collected through the activities of the Local and the Central Task Forces. The measures are then transmitted to the provincial government authorities, and also publicised through various mass communication channels.

II. LIST A DISEASES

1. Hog cholera

Hog cholera (HC) is still one of the most important notifiable diseases of swine in the country. The disease is most frequently diagnosed in small rural farms not implementing a proper vaccination programme. In 1991, a total of 26 outbreaks (1,794 pigs) were diagnosed, and affected animals were destroyed with compensation. For the Laboratory diagnosis of the disease, the fluorescent antibody (FA) tests, utilising both polyclonal and monoclonal anti-HC virus, are widely used. Recently, a new tissue culture technique for producing an attenuated live vaccine has been developed, and is now being marketed.

2. Newcastle disease

Newcastle disease (ND) is one of the most destructive poultry diseases in Korea. A total of 48 outbreaks (125,359 chickens) were diagnosed in 1991. An epidemiological study indicated that outbreaks of the disease occurred most frequently in broiler and layer farms where ND vaccination was not practiced. Conventional vaccination against ND does not appear to give a good level of protection in areas highly contaminated with a very virulent ND virus (NDV). Therefore, farms considered to be in contaminated areas have been advised to use a modified vaccination method, day-old chickens being vaccinated simultaneously with B1 vaccine by the eyedrop method and an oil adjuvant vaccine by the subcutaneous or intramuscular route. Utilising the modified vaccination method, 70 to 100% of chickens are protected from challenge indicating the effectiveness of the method. This modified method is recommended for farms at risk located in the contaminated area.

As no other OIE List A diseases are present in Korea, strict quarantine measures are applied to prevent their being introduced into the country.
III. LIST B DISEASES

Animal health status of List B diseases:

<table>
<thead>
<tr>
<th>Disease</th>
<th>No. of outbreaks</th>
<th>(cases)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brucellosis</td>
<td>269</td>
<td>(437)</td>
<td>under eradication</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>50</td>
<td>(63)</td>
<td>under eradication</td>
</tr>
<tr>
<td>Aujeszky's disease</td>
<td>-</td>
<td>(-)</td>
<td>under eradication</td>
</tr>
<tr>
<td>Transmissible gastroenteritis</td>
<td>2</td>
<td>(315)</td>
<td>incidence reduced</td>
</tr>
<tr>
<td>Avian infectious laryngotracheitis</td>
<td>5</td>
<td>(22,880)</td>
<td>incidence reduced</td>
</tr>
</tbody>
</table>

Other diseases in cattle, pig and poultry were not detected or not present in Korea, except for certain poultry diseases. Only a small number of outbreaks of other List B diseases in other species have occurred, and although it is recognised that their economic damage is small, Korea has endeavoured to survey and control the diseases for the benefit of animal health.

1. Aujeszky's disease

The first outbreak of Aujeszky's disease was identified in a medium-sized farm located in the southern part of the country in July 1987. Since then, a systematic serological survey has been conducted to identify infected herds. In 1990, it was reported that a total of 190 pigs in two farms had antibodies against Aujeszky's disease virus by serum neutralization test. However, thanks to an effective eradication programme, no outbreaks were reported in 1991. The programme included periodic testing in breeding units, registered farms, abattoirs etc., and the implementation of a system of monitoring.

In 1992, 190,000 swine are due to be tested in the above farms and abattoirs. The test and slaughter method with compensation is the current strategy to control the disease.

2. Bovine brucellosis

The first outbreak of bovine brucellosis in Korea was reported in 1958. Since then, sporadic outbreaks of the disease have been reported, infected herds being placed under quarantine and then slaughtered, with compensation being paid to owners, under the national Test and Slaughter Programme aimed at eradicating bovine brucellosis. This Programme has resulted in a reduction of herd infection rates from 20% in the 1950s to around 0.01% by the mid 1980s.

Nevertheless, a serological survey of cattle conducted in 1984 in Jeju province, an island located in the southern part of country, indicated the presence of a serious level of infection. Out of a total of 10,000 cattle tested throughout the country under a special scheme, 134 cattle were positive, and of these, 115 were from Jeju island.

Since then, a systematic eradication programme including native Korean cattle herds, has been carried out on this island. However, the infection rate has not been reduced. At the beginning of the 1990s, in order to achieve effective and complete eradication of brucellosis, the government set up a 5 year plan: "Special Brucellosis Eradication Programme on Jeju island (1991-1995)".

The plan includes animal movement restrictions on the island, the slaughtering of animals testing positive, implementation of special tests and diagnosis, including improved test methods. The rose bengal plate and complement fixation tests have been replaced with the plate agglutination test and serum agglutination test.
3. **Bovine tuberculosis**

As in the case of the brucellosis eradication programme, a national test and slaughter programme to eradicate bovine tuberculosis has been in progress over the last 30 years. Testing is conducted on the farm by the provincial authorities and the emphasis is placed on tracing back when reactors are found. Tuberculin testing for dairy cattle is mandatory and reactors are slaughtered with compensation. This programme provides for the testing of 250,000 head per year.
I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

La directive 90/423/CEE prévoit l'abandon de la vaccination annuelle préventive dans tous les pays membres. Cette vaccination a été pratiquée systématiquement dans notre pays depuis 1964. La campagne de vaccination qui s'est déroulée pendant l'hiver 1991/92 a été la dernière.

Néanmoins, la même directive prévoit des mesures à mettre en œuvre pour maintenir le territoire de la Communauté économique européenne (CEE) indemne de cette maladie : conditions et contrôles très sévères lors de l'importation dans la Communauté ; fermeture de la plupart des centres de production de vaccin manipulant le virus ; constitution d'un stock de vaccin communautaire pour le cas où la reprise de la vaccination deviendrait inévitable dans une région déterminée ; élaboration par chaque État membre d'un plan d'urgence à mettre en œuvre au cas où un foyer de fièvre aphteuse serait diagnostiqué.

En plus, une participation financière allant jusqu'à 70 % des frais pour l'abattage et la destruction des cheptels atteints et contaminés en provenance du Fonds vétérinaire a été consentie par la Commission des Communautés européennes au cas où un foyer de fièvre aphteuse serait constaté.

En contrepartie, l'abandon de la vaccination mettra sur un pied d'égalité tous les membres de la CEE et facilitera les échanges intracommunautaires et les exportations d'animaux vivants et de viandes fraîches vers des pays-tiers qui ne vaccinent pas.

2. Peste porcine classique

Le dernier foyer dans notre pays remonte à 1987.

II. MALADIES DE LA LISTE B

1. Maladie d'Aujeszky

En août 1990, la maladie d'Aujeszky avait été diagnostiquée dans une exploitation d'engraissement à la suite de l'importation de porcelets en provenance d'Allemagne. L'année suivante, également à l'occasion de l'importation de porcelets d'engraissement, quatre autres exploitations porcines ont été contaminées, dont trois situées à Ospern et une exploitation située à Wahl.

Pour éviter la dissémination du virus dans notre cheptel porcin, l'Administration des services vétérinaires a procédé en 1991 à l'abattage de 699 porcins, nécessitant la somme de 2 714 133 francs pour indemniser les propriétaires.

Ces incidents démontrent que l'importation de porcelets d'élevage constitue le principal danger pour la contamination de notre cheptel. Malheureusement, nous ne pouvons pas nous opposer à ces...
importations, car pour le moment il n'existe pas de garanties communautaires pour cette maladie et la politique suivie en matière de lutte contre cette maladie dans les différents États membres est très divergente.

Néanmoins l'Administration des services vétérinaires a pris des mesures immédiates pour éviter dans la mesure du possible la répétition de ces événements catastrophiques pour les éleveurs de porcelets d'engraissement, un accord sur base volontaire a été conclu avec les importateurs qui se sont engagés à placer les porcelets d'engraissement importés dans des porcheries situées dans des villages où il n'y a plus d'élevages porcins.

En plus les producteurs de porcelets qui approvisionnent le marché de porcelets organisé par la Fédération des Herdbooks à Gralingen se sont engagés à remplir les conditions prévues pour obtenir le statut d'"officiellement indemne". C'est alors seulement que nous aurons le droit d'exiger des garanties supplémentaires lors de l'importation de porcelets d'engraissement. L'Administration des services vétérinaires a préparé un plan pour atteindre ce but, qui devra être soumis à la Commission des Communautés européennes pour approbation.

2. Rage

Pendant l'année 1991 la situation sanitaire concernant la rage s'est encore améliorée.

En effet, si en 1989 un total de 140 cas de rage avaient été diagnostiqués au Laboratoire de médecine vétérinaire, ce nombre était tombé à 64 cas en 1990 pour tomber à 16 cas seulement en 1991, dont 8 renards, 7 bovins et 1 cheval.

La somme de 388 000 francs a été versée à titre d'indemnisation aux propriétaires des animaux morts de rage.

En 1991, deux campagnes de vaccination par voie orale des renards ont été organisées pendant les semaines du 6 au 11 mai et du 23 au 28 septembre. La distribution des appâts contenant le vaccin a été réalisée par hélicoptère.

Le coût des deux campagnes de vaccination par hélicoptère, appâts compris, a été de 6 331 028 francs; la moitié de ce montant sera remboursé par la CEE.

A côté de la vaccination orale des renards, il faut en réduire le nombre par le tir au fusil pour maintenir la population vulpine à un niveau supportable. La réintroduction de la prime de 1 000 francs par renard abattu en 1990 contribue à atteindre ce but.

Pour 1992, deux nouvelles campagnes sont prévues et nous espérons réduire encore d'avantage le nombre de cas de rage pour arriver finalement à son éradication complète.

3. Paratuberculose

Cette maladie s'est fortement propagée durant les dernières années surtout par l'augmentation du nombre des vaches allaitantes et les importations massives de France de bovins de races à viande.

En 1991, 15 bovins ont été abattus d'office, nécessitant une dépense de 408 967 francs pour l'indemnisation des propriétaires.

Depuis l'année 1990, l'Administration des services vétérinaires n'accorde des indemnités qu'aux exploitations qui établissent un plan de lutte sur base volontaire, approuvé par le vétérinaire-inspecteur compétent.
4. **Brucellose**

La forte recrudescence de la brucellose en 1989, quand huit foyers avaient été constatés, avait déterminé l'Administration des services vétérinaires à renforcer les mesures de détection et de surveillance et à prendre des mesures de lutte plus énergiques.

Il semble que ces actions aient porté leurs fruits, car en 1990 quatre foyers seulement avaient été enregistrés.

La situation s'est encore améliorée en 1991, puisqu'un seul foyer a été diagnostiqué à Hamiville, nécessitant l'abattage de 175 bovins de tous âges et le versement d'une indemnité de 3 843 568 francs.

Les mesures de surveillance mises en œuvre comportent un test de dépistage ELISA sur le lait livré aux laiteries trois fois par an. Dans le canton de Clervaux ce test est répété six fois par an.

Pendant l'hiver 1991-92 des échantillons de sang sont prélevés sur tous les bovins âgés de plus de 18 mois par les vétérinaires praticiens dans toutes les exploitations qui ne livrent pas de lait aux laiteries, pour être soumis à un test pour la recherche de la brucellose et de la leucose.

Dès la constatation d'un résultat douteux ou positif, une enquête est faite par le vétérinaire-inspecteur compétent et l'animal suspect est abattu d'office pour prévenir l'éclosion de nouveaux foyers.

D'autre part les efforts faits par nos voisins laissent espérer que la situation va continuer de s'améliorer.

5. **Leucose bovine enzootique**


Les résultats de toutes les analyses sérologiques ont été négatifs.

Ces résultats favorables nous ont permis de qualifier tous nos cheptels bovins comme étant indemnes de leucose et d'obtenir pour notre pays entier le statut de "pays officiellement indemne", ce qui facilite beaucoup nos exportations de bovins d'élevage, surtout vers l'Allemagne et le Danemark.

Pour maintenir ce statut, nous devons soumettre chaque année un tiers de nos cheptels à un test de dépistage.

6. **Maedi-Visna**

Le "flock-book" luxembourgeois, en collaboration avec les services vétérinaires, a mis sur pied, sur base volontaire, un programme de dépistage et d'éradication de cette maladie à évolution lente.

L'action commencée en 1990 a été poursuivie en 1991, et 546 moutons, appartenant à 25 cheptels, ont été soumis à une prise de sang pour détecter la présence d'anticorps contre le virus Maedi-Visna.

Treize réactions positives et une réaction douteuse réparties sur cinq cheptels ont été enregistrées.

Les éleveurs qui participent au programme ont décidé de poursuivre l'action visant à éradiquer cette maladie dans leurs cheptels. Pour arriver à ce but, au moins quatre prises de sang, espacées d'environ six mois, doivent être pratiquées et analysées sur tous les moutons de plus de six mois, avec élimination des séropositifs après chaque test.
7. **Maladie hémorragique virale du lapin**

Cette maladie très contagieuse et très meurtrière affecte surtout les lapins domestiques des petits élevages traditionnels.

Les premiers cas dans notre pays ont été diagnostiqués au Laboratoire de médecine vétérinaire au début de l'année 1990.

Par règlement ministériel du 9 août 1990, cette maladie a été ajoutée à la liste des maladies à déclaration obligatoire afin de permettre à l'Administration des services vétérinaires de prendre des mesures de lutte. Ainsi il a été décidé que tous les lapins des élevages qui participent aux expositions avicoles et cunicoles doivent être vaccinés contre cette maladie.

En 1991, onze foyers de maladie hémorragique virale ont été diagnostiqués, et 36 lapins ont été sacrifiés d'office, nécessitant le montant de 8 000 francs pour indemniser les propriétaires.

8. **Loque américaine**

Deux foyers de loque américaine ont été diagnostiqués dans le canton de Remich et l'Administration des services vétérinaires a dû procéder à l'élimination de 34 colonies d'abeilles, exigeant la somme de 234 600 francs pour l'indemnisation des propriétaires, car il ne suffit pas d'éliminer les colonies d'abeilles, mais il faut détruire également la plus grande partie du matériel apicole.

Cette maladie doit être combattue énergiquement car il n'existe aucun traitement médicamenteux valable et seule l'application de mesures hygiéniques par des apiculteurs qualifiés et motivés peut venir à bout de ce redoutable fléau.

Pour cette raison, la Fédération des Unions d'Apiculteurs Luxembourgeois (FUAL) a recours aux services d'un vétérinaire, qui est lui-même un fervent apiculteur, et qui a acquis la compétence nécessaire pour conseiller et guider les apiculteurs à travers tout le pays.

L'Administration des services vétérinaires félicite la FUAL pour cette heureuse initiative et l'assure de son soutien et de son concours, car il existe une tendance générale dans la CEE qui consiste à faire assumer certaines responsabilités dans le domaine sanitaire par les fédérations de producteurs ou éleveurs.

9. **Varroase**

Tout comme en 1990, la varroase a continué à être présente à l'état enzootique, et il faut s'apprêter à vivre avec cette maladie qui provoque des pertes, surtout indirectes, par l'affaiblissement des colonies d'abeilles, les rendant ainsi plus réceptives à d'autres maladies.

Pour cette raison il est fortement recommandé de soumettre les colonies à un traitement préventif en automne et d'appliquer surtout des mesures hygiéniques.

Ainsi en 1991, un montant de 1 547 770 francs a été dépensé par l'Administration des services vétérinaires pour l'acquisition de médicaments de la nouvelle génération, médicaments qui ont été distribués aux apiculteurs par l'intermédiaire des experts apicoles et des délégués de la FUAL. De leur côté, les apiculteurs ont contribué au coût des médicaments à raison de 50 francs par colonie traitée.
MALAWI

I. LIST A DISEASES

Malawi maintained its freedom from foot and mouth disease, rinderpest and bovine pleuropneumonia.

1. Lumpy skin disease

The 1990 epizootic of lumpy skin disease continued throughout 1991, especially in the northern districts. Indigenous cattle usually suffered mild disease, but severe lesions were occasionally seen, with several mortalities per herd. However, the distribution of the disease was so sporadic that vaccination was not carried out.

2. Rift Valley fever

No outbreaks of Rift Valley fever were reported, although a serological survey showed that there had been virus activity in many areas of the country.

3. African swine fever

African swine fever continued to cause severe problems in the southern region. Serological surveys showed that around 5% of pigs in affected areas were carriers of the virus, and the disease appears to be established there, even in the absence of the vector tick. Outbreaks continued to occur in the endemic area (Central Region) where *O. moubata* exists.

II. LIST B DISEASES

1. Anthrax

Malawi appears to be free of anthrax. Surveillance in cattle is good because blood or other smears are routinely submitted for laboratory examination from a high percentage of dead animals.

2. Rabies

Rabies is enzootic throughout Malawi. Only 5-10% of the dog population is thought to be vaccinated. A proposal to increase vaccinal cover, and reduce expenditure on control/shooting of stray dogs is being considered.

3. Bovine brucellosis

Bovine brucellosis appears to be absent, or to be present at a very low level. *Brucella abortus* has not been isolated from abortion material for over 15 years. However, the interpretation of serological tests has been confused by late vaccination of cattle with S 19 vaccine. The department is considering a possible ban on the use of vaccine to clarify the disease status.
4. **Enzootic bovine leukosis**

A serological survey of the dairy cattle population showed that all herds which have bought in Holstein-Friesians are infected with enzootic bovine leukosis virus. Relatively few smallholder herds appear to be infected. A test and slaughter policy has been started for infected government herds, and is recommended for commercial herds, though without compensation.

5. **Infectious bursal disease (Gumboro disease)**

This disease continues to cause severe losses in broiler and layer production units. It is probably the single most important disease in the poultry industry. Vaccination is still not wholly effective in preventing deaths and it has proved difficult to make generalised recommendations on control strategy.

### III. OTHER DISEASES

1. **Tick-borne diseases**

The weekly dipping of Malawi zebu cattle in arsenic trioxide is being phased out. Alternative tick and tick-borne disease control strategies are being evaluated.

2. **Blackquarter**

Blackquarter continues to be a major cause of mortality in cattle in northern and central regions. A total of 47 diptanks (out of about 330) reported 246 cases. Cattle owners are now being asked to meet part of the cost of vaccination.

3. **Gizzard erosion**

Gizzard erosion has been the cause of death of a significant number of growing chickens. The erosion has been attributed to toxic agents in overheated fish meal.
INTRODUCTION

The livestock industry in Malaysia continues to grow in response to economic expansion and the increase in the human population. The Department of Veterinary Services (DVS) is the sole government agency responsible for the development of the livestock industry and all aspects of animal health. Due to the low incidence of serious animal diseases, the industry is capable of supplying a significant source of protein for human consumption especially in terms of poultry meat, eggs and pork which also contribute to Malaysia's export earnings. This is also enhanced by the continual adoption of improved technology and animal husbandry practices, as well as active vertical and horizontal integration of agro-based enterprises.

The DVS, through its 200 veterinary centres, provides nationwide services for disease eradication, prevention, control and treatment. The Regional Veterinary Diagnostic Laboratories (RVDL) network in 1970, the department has been able to provide diagnostic and epidemiological services, meat and milk inspection services, herd health services, disease surveillance as well as technical advisory services for livestock commodity and feed/fodder production. The responsibility for veterinary research and the production of vaccines and other biological products is undertaken by the Veterinary Research Institute (VRI) at Ipoh.

I. ANIMAL HEALTH DIVISION

The division is entrusted with carrying out all activities pertaining to animal health, including research, diagnostic and epidemiological services, surveillance, quarantine and veterinary inspection services and treatment and preventive medicine services.

The DVS is currently intensifying its food quality control and monitoring programmes with respect to contaminants and residues in meat, milk and other animal products. To strengthen these capabilities, the present facilities in the Central Veterinary, Public Health Laboratory at Petaling Jaya will be expanded to all seven RVDL through the acquisition of equipment, more personnel and specialized training. Meat inspection services have been upgraded to cover product and plant inspection. Veterinary inspection logos are subsequently issued when the DVS code of practice requirements are fulfilled.

The DVS also regulates the import and export of animals and animal products, quarantine, the control of animal movements and animal slaughter. Action is being taken to reorganise the network of abattoirs to cater for the needs of the country. It is planned that the existing 220 abattoirs will eventually be replaced with only 60 ruminant and 19 swine abattoirs. Where these facilities can feasibly be commercially operated, they will be privatised. Currently, the poultry slaughter facilities are managed by the private sector. However, all regulatory functions including meat inspection remain within the DVS as part of the Veterinary Public Health Services. Such procedures are being implemented to ensure high standards of safety and quality in foods of animal origin and, indirectly, the control and eradication of zoonotic diseases.
The treatment and preventive medicine services will continue to play an active role in the prevention, treatment and eradication of diseases in the field. The services are available throughout all the states and 114 districts in Peninsular Malaysia. In each state, the service comes directly under the control of the State Veterinary Director. There are two main activities carried out by this service in each state, namely herd health and clinical and ambulatory health care. The former is a yearly planned programme of disease control and eradication based upon a proactive type of activity, whilst the latter is a day-to-day activity based upon reports and requests by the public. The herd health programmes include: pullorum disease control, eradication of brucellosis, paratuberculosis, tuberculosis, rabies, and hog cholera (classical swine fever).

To achieve a wider and more thorough impact of the programmes planned, the Treatment and Preventive Medicine Unit has developed computerised information systems codenamed GEISHA, (Gerompok Information System and Health Analysis), and PROMPT (Program Mengawal dan Membasmi Penyakit Ternakan), which is an Animal Disease Control and Eradication Programme.

II. ANIMAL HEALTH STATUS

Malaysia remains free of major epizootic diseases such as rinderpest, contagious bovine pleuropneumonia, African swine fever, swine vesicular disease, African horse sickness, equine encephalitis, duck plague, sheep pox, goat pox, scrapie and peste des petits ruminants. Diseases which are currently covered by national eradication programmes include brucellosis, tuberculosis, paratuberculosis (Johne's disease), pullorum disease, rabies and hog cholera (classical swine fever). Bluetongue as a clinical disease is absent from Malaysian livestock in spite of extensive serological evidence of the disease. Intensive surveillance and vaccination programmes are being continued to control rabies, classical swine fever, haemorrhagic septicaemia and Newcastle disease, which occur sporadically. Nevertheless, it is expected that paratuberculosis (Johne's disease), brucellosis and tuberculosis in cattle and pullorum disease in poultry will be eliminated in all breeder herds or flocks in the near future.

III. LIST A DISEASES

Except for bluetongue, hog cholera (classical swine fever) and Newcastle disease, Malaysia is now free from List A diseases. The country has been free of foot and mouth disease (FMD) since 1987. The last reported case was in 1990, involving a group of 29 bovines in confinement at the Rantau Panjang Quarantine Station. To date, no outbreak has been reported. Malaysia is currently applying for declaration of FMD-free status.

1. Foot and mouth disease

Foot and mouth disease (FMD) has been successfully controlled and probably eradicated due to the strict control, surveillance and regulatory measures adopted by the DVS. When a large number of clinical cases were reported, the slaughter and stamping out policy was changed to one of vaccination and associated control measures. However, in situations where only a few clinical cases were observed, the slaughter policy was instituted. The vaccination programme is currently restricted to the border areas, as all outbreaks which have occurred were traced to cattle imported or smuggled from Thailand. The border states include Perlis, the northern parts of Kedah, Perak, Kelantan and the Setiu District of Trengganu. In addition, all susceptible animals being transported to these areas will be vaccinated upon arrival.
The experience in many countries, including Malaysia, indicates that unless vaccination programmes are supplemented with other measures, effective control of the disease is impossible. The DVS recognises this and has considered augmenting the vaccination programme with other supplementary measures, which include restrictions on the movement of animals both from outside and within the country and subjecting them to compulsory vaccination and quarantine. Nevertheless, of utmost importance is the implementation of the regional cooperative programme and agreement with Thailand, which should be closely and faithfully adhered to by other parties, if the current FMD-free status is to be sustained in Malaysia.

2. **Bluetongue**

Bluetongue (BT), as a clinical disease, is absent from local livestock. However, there is extensive serological evidence of the infection. Exogenous sheep from non-infected countries are particularly susceptible. Bluetongue virus type 1 was isolated from an outbreak in imported sheep in 1987, and serological evidence from various parts of the country indicates that a large percentage of local sheep, goats and cattle have antibody titres to the disease, although none exhibited any clinical signs. Serological studies also indicate the presence of BT virus types 1, 3, 8, 9, 15, 16, 20, 21 and 23. *Culicoides orientalis* and *Culicoides shortii* seem to be the most probable vectors of the BT virus in the country. Control measures taken include disinfection of infected premises, fogging of sheds and their vicinities, testing and the destruction of seriously affected animals due to secondary infection.

3. **Hog cholera (classical swine fever)**

Hog cholera has been successfully kept under control through the use of GPE-vaccine, which is prepared locally at the VRI in Ipoh. The vaccine appears to be well accepted by the pig farming community at large for its lack of side effects. It has generally provided adequate protection to farms that use it on a regular basis. Where sporadic outbreaks have occurred in farms using the vaccine, closer investigation is likely to reveal that its usage had been irregular and erratic. As hog cholera is one of the OIE List A diseases, the DVS, through the Animal Health Division, has adopted strict monitoring and surveillance of its incidence. Efforts are being consolidated to control and possibly eradicate the disease in the near future.

4. **Newcasde disease**

Newcastle disease is enzootic in Malaysia. Immunization with live and inactivated vaccines are now routine procedures in poultry farms. In 1991, a total of four outbreaks, involving 17,200 cases and 5,120 deaths, were reported. Outbreaks occurred in situations where farmers had failed to carry out proper immunization procedures, or where interference in the normal passive or active immunity had occurred.

**IV. LIST B DISEASES**

1. **Rabies**

Rabies continues to be a disease of some concern to Malaysia. In 1991, there was a case of rabies in a stray dog in the state of Kedah, which was confirmed by the Institute of Medical Research using the fluorescent antibody test (FAT), but without virus isolation. The case status is considered doubtful. Nonetheless, immediate control actions and strict surveillance were undertaken. The success of rabies control in Malaysia is the result of a national effort to eradicate the disease through a programme of destruction of stray dogs, mass vaccination and licencing of dogs, as well as a nationwide awareness campaign. Strict vigilance against the disease continued to be maintained especially in the immune belt area and at all entry points into the country.
Close cooperation with Thailand is vital in the control of the disease in Peninsular Malaysia. The annual Border Health Committee meetings between the two countries continue to look at ways and means of reducing the incidence of the disease and eventually eliminating it, especially in southern Thailand.

2. **Haemorrhagic septicaemia**

Haemorrhagic septicaemia, which has become enzootic in the country, continued to be a problem, causing losses among susceptible livestock. In 1991, there were four outbreaks, involving 225 mortalities in cattle and buffalo. Control measures including vaccination and treatment are routinely carried out to keep the disease in check.

3. **Tuberculosis**

Tuberculosis in animals is rare in Malaysia. However, in early 1990, tuberculosis was detected in a group of Samba deer imported into Perak from Taiwan. The diagnosis was based on the presence of gross lesions and isolation of the causative organism, *Mycobacterium bovis*. More recently, several animals in a group of Sika deer in the states of Negeri Sembilan, Selangor and Penang gave positive results to the tuberculin screening test. Positive reactors were subsequently culled under veterinary supervision. An interesting finding is that all the deer cases appear to be of an imported Taiwan breed. Further action is being taken to investigate the status of the disease in all other deer of Taiwanese origin distributed to farms in all states.

The DVS is continuously taking positive steps to introduce new programmes and upgrade the present disease control and disease information systems. Added service elements such as epidemiology and surveillance will be emphasized. With all these efforts, the DVS is confident that the improved animal health services will boost the growth of the livestock industry and minimize public health hazards through strict food safety and quality measures.
INTRODUCTION

Les activités des services vétérinaires en 1991 ont été caractérisées par l'importance accrue accordée au contrôle des foyers de fièvre aphteuse, de péripneumonie contagieuse bovine et l'assainissement des élevages laitiers périurbains de la brucellose et de la tuberculose bovines.

La stratégie adoptée était fonction de la situation épidémique et des modes d'élevage dans les zones affectées.

I. MALADIES DE LA LISTE A

1. **Fièvre aphteuse**

   Maladie longtemps non enregistrée au Mali, elle a été signalée en 1991 dans 38 localités dans lesquelles 10 863 bovins malades et 39 morts ont été observés.

   Des prélèvements (liquide des vésicules, couches épithéliales des lésions vésiculeuses, lambeaux d'épithélium nécrotique encore attachés aux bords des vésicules rompues, échantillons de sang entier mélangé à l'EDTA, échantillons de sérum et de liquide pharyngo-oesophagien) envoyés au Laboratoire de référence de Pirbright (Grande-Bretagne) ont permis d'isoler et d'identifier le virus de sérotype SAT2 de la fièvre aphteuse dans les différentes localités.

   Au nombre des mesures de lutte adoptées, il faut noter : la déclaration obligatoire de la maladie aux autorités vétérinaires et administratives, l'isolement et le traitement symptomatique des malades, les mesures de quarantaine et de contrôle des déplacements à l'intérieur du pays, la confirmation de toute suspicion de foyer par l'expédition d'échantillons au Laboratoire de référence de Pirbright, le renforcement de l'inspection sanitaire au niveau des marchés à bétail et d'autres points de concentration, et la vaccination des animaux de haute productivité, notamment au niveau de la ceinture laitière péri-urbaine de Bamako.

2. **Peste bovine**

   Aucun foyer de cette maladie n'a été signalé en 1991. Il faut noter que les derniers cas de cette maladie datent de 1986. La stratégie de lutte contre la peste bovine est celle de la Campagne Panafrique (renforcement de la couverture sanitaire par la vaccination des animaux-cibles, exécution des programmes de surveillance épidémique à travers la séro surveillance, etc.). 1 656 780 bovins ont été vaccinés contre la peste bovine en 1991.

3. **Péripneumonie contagieuse bovine**

   Les prélèvements (fragments de poumons, liquide pleural) effectués sur des animaux malades ont permis par l'isolement et l'identification de *Mycoplasma mycoides* var *mycoides* de confirmer 12 foyers dans lesquels 366 bovins malades et 182 morts ont été enregistrés.
Comme mesures de lutte adoptées, il faut signaler : la vaccination obligatoire une fois par an à l'aide du vaccin Péri T1, la déclaration obligatoire de la maladie, l'identification, l'isolement et l'abattage des malades.

3. Clavelée

Elle a été signalée dans trois secteurs, faisant 108 malades et 20 morts.

Les mesures de lutte ont été basées entre autres sur : la déclaration obligatoire de la maladie, la mise en quarantaine des troupeaux infectés, le contrôle des mouvements des animaux, l'isolement des malades du reste du troupeau, l'incitation des éleveurs à abattre les ovins malades.

II. MALADIES DE LA LISTE B

1. Fièvre charbonneuse

Deux foyers de cette maladie ont été enregistrés, dans lesquels 26 malades et 11 morts ont été dénombrés.

Comme mesures de lutte contre cette maladie, il faut signaler : la déclaration de la maladie, la vaccination obligatoire dans les zones d'enzooties, l'isolement et le traitement précoce des malades, la destruction des cadavres.

2. Rage canine

Six cas ont été confirmés dans deux localités. La vaccination des chiens contre la rage est obligatoire dans les centres urbains.

Aussi tout chien mordeur après la période d'observation clinique est-il également à vacciner.

3. Brucellose bovine

Le dépistage sérologique effectué sur 3 758 sérums de bovins des différentes région d'élevage a permis de déceler un taux moyen de séropositifs de 17,24 % (648 sérums positifs).

Au niveau des fermes d'Etat et des centres de recherche, une politique d'assainissement (abattage des animaux brucelliques) est adoptée.

Dans les élevages laitiers privés contrôlés, la stratégie de contrôle est la suivante : sensibilisation pour l'élimination des bovins brucelliques après test sérologique, et vaccination des velles de quatre à six mois au B19.

4. Tuberculose

Les saisies totales pour motif de tuberculose ont concerné 194 carcasses de bovins et 13 carcasses d'ovins et caprins.

De 1 412 bovins tuberculinés, 268 ont réagi positivement, soit un taux moyen de 18,98 %.

La lutte contre la tuberculose a été basée sur : l'intradermotuberculation des bovins dans les élevages laitiers et dans les fermes où l'insémination artificielle était effectuée ; l'élimination des animaux réagissants à la tuberculine de ces élevages ; la sensibilisation et l'incitation des éleveurs
à éliminer tout bovin qui a réagi à la tuberculine et qui a présenté des signes cliniques de la maladie.

5. Trypanosomose

Les traitements contre la trypanosomose ont porté sur 430 315 bovins, 31 706 ovins et caprins, 934 camelins, 2 743 équins et 6 347 asins.

Outre la chimioprévention et la chimiothérapie de la trypanosomose, des méthodes non polluantes (écrans imprégnés d’insecticides) de lutte contre les glossines (vecteurs des *Trypanosoma*) sont appliquées dans des zones à fortes densité glossinienne.

III. AUTRES MALADIES

1. Charbon symptomatique

Quinze foyers ont été signalés. La maladie a été constatée sur 150 bovins, parmi lesquels 103 ont succombé.

La vaccination contre cette maladie est obligatoire au Mali.

En cas d’éclosion d’un foyer de charbon symptomatique, les mesures à prendre sont les suivantes : déclaration de la maladie aux autorités vétérinaires et administratives, contrôle des mouvements des troupeaux infectés, identification, isolement et traitement des animaux malades.

2. Pasteurellose bovine

Dix foyers (110 malades et 65 morts) ont été enregistrés.

Les mesures de lutte appliquées sont entre autres les suivantes : déclaration obligatoire de la maladie, contrôle des mouvements des troupeaux atteints, isolement et traitement des malades, vaccination (deux fois par an) à l’aide d’un vaccin inactifié au formol avec comme adjuvant l’alun de potassium.

3. Pasteurellose des petits ruminants

Sept foyers (173 malades et 53 morts).

Les mesures de lutte sont les mêmes que celles adoptées contre la pasteurellose bovine. Il faut cependant noter que si le vaccin contre la pasteurellose bovine au Mali est préparé à partir de *Pasteurella multocida* Type E, celui contre la pasteurellose des petits ruminants est fait à partir des sérotypes A et D de *Pasteurella multocida*.
MAROC

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

Le 24 mai 1991, un foyer de fièvre aphteuse est apparu dans un troupeau ovin de la province de Taza, limitrophe à la zone tampon de vaccination établie en 1990 le long de la frontière maroco-algérienne. La maladie a par la suite évolué dans les communes rurales attenantes de la même province, puis sous forme de poussées successives entrecoupées de périodes de rémission n'excédant pas trente jours vers les provinces avoisinantes d'Oujda et de Fès au mois de juin, Taounate et Nador en juillet, Al Hoceima en août, Khémisset en septembre, Ifrane et Boulemane en octobre, Khénifra et Larache en novembre, et un nouveau foyer dans la province d'Ifrane en décembre.

Tous les cas suspectés ont été confirmés par la technique ELISA au Laboratoire mondial de référence de l'OIE à Pirbright (Royaume-Uni), et le virus de la fièvre aphteuse de type O, sous-type O1 Manisa a été identifié.

Cliniquement, les ovins semblent plus atteints par la maladie que les bovins et les caprins. A la différence du foyer apparu en décembre 1990, aucune mortalité n'a été observée. Le taux de morbidité dans les exploitations est de 14 % chez les ovins, 7,6 % chez les bovins, et 3,2 % chez les caprins.

Les mesures de lutte adoptées jusqu'à présent sont, en matière de prophylaxie sanitaire, la destruction des animaux atteints et contaminés : 7 160 ovins, 101 caprins et 16 bovins ont ainsi été détruits, et, en matière de prophylaxie médicale, la vaccination en anneau autour des foyers a permis de vacciner 3 852 412 ovins et 498 622 caprins à l'aide d'un vaccin monovalent de type O, et 213 369 bovins à l'aide d'un vaccin bivalent A, O. Une campagne généralisée à l'ensemble du cheptel bovin à l'aide du vaccin bivalent a été lancée à partir du mois de novembre 1991.

Une pré-enquête épidémiologique a été menée en collaboration avec le laboratoire de référence de Pirbright dans les zones récemment infectées et où des cas n'étaient plus recensés. Elle était basée sur la collecte de prélèvements par la méthode de la curette oesophagienne ("probang") afin de mettre en évidence d'éventuels portage et circulation du virus sous forme inapparente chez les bovins et les ovins vaccinés. Les premiers résultats se sont révélés négatifs mais les investigations seront étendues à l'ensemble du territoire national.

D'autres études épidémiologiques, basées sur la sérologie, sont en cours dans les zones indemnes et les zones infectées. Elles ont pour objectifs :

- l'évaluation de l'immunité conférée par la vaccination chez les espèces sensibles, afin de juger du rythme des interventions (rappels) ;

- l'étude du sérotype O et de sa circulation dans les populations sensibles, notamment chez les bovins ;

- de s'assurer de l'absence d'autres sérotypes (A), notamment chez les ovins et les caprins, en vue d'adopter la stratégie de vaccination adéquate et le choix du vaccin à utiliser, les bovins étant jusqu'à présent annuellement vaccinés à l'aide du vaccin de type A5.
2. Peste équine

Suite à la résurgence de la peste équine en 1990, le cordon sanitaire de vaccination avait été étendu jusqu'à la barrière de l'Atlas, englobant 23 provinces, et 1 012 902 équidés furent vaccinés. L'effectif total vacciné au 5 mai 1991 fut de 72,7 % (1 454 597 équidés) de l'ensemble du cheptel national.

Une enquête sérologique, visant d'une part à évaluer le degré de protection conféré par la vaccination après sept à neuf mois, et d'autre part à étudier la cinétique des anticorps par suivi sérologique sur des animaux vaccinés à différentes périodes, a été entreprise. Les résultats ont révélé une bonne protection contre la peste équine avec un titre fort (2,5 log) chez 95 % des animaux testés. Ce titre est atteint à partir du vingtième jour chez le cheval et le mulet, et à partir du quarantième jour chez les asins.


Le 7 juillet 1991, un foyer est déclaré dans la wilaya de Marrakech à la lisière du cordon sanitaire de vaccination et de la zone de surveillance. Dès la confirmation du diagnostic par le laboratoire et le typage du virus (virus de la peste équine type 4), une campagne de vaccination de rattrapage et d'extension de la zone vaccinale a été entreprise le long du cordon vaccinal de 1990.

La maladie a par la suite évolué très rapidement sous forme de cas isolés (animaux ayant échappé à la vaccination) au long du cordon de vaccination et vers les provinces situées à l'est de celui-ci. Le 20 juillet 1991 une campagne de vaccination de rappel (sept mois après la primovaccination) et de rattrapage a été lancée dans les provinces vaccinées du cordon de 1990.

Le 10 septembre 1991, il a été décidé de généraliser la vaccination à l'ensemble du territoire national.

Ces différentes opérations de prophylaxie médicale (rappels, rattrapages, extension et généralisation), immédiatement suivies du marquage des animaux par apposition de la lettre "V" à l'azote liquide au niveau de l'encolure gauche, ont permis de couvrir 90 % des effectifs nationaux d'équidés.

L'application rigoureuse des mesures de prophylaxie sanitaire (abattage de 235 équidés atteints et contaminés), la rapidité du diagnostic réalisé par la technique ELISA, et la rapidité de l'exécution de la prophylaxie médicale, ont permis de diminuer significativement l'incidence de la peste équine au Maroc (0,2 ‰ en 1991 contre 1,4 ‰ en 1990 et 7,2 ‰ en 1989).

Le bilan final fait état de 177 équidés atteints dont 88 morts dans 41 foyers à travers 20 provinces. Le dernier cas a été enregistré le 10 octobre 1991.

Une campagne généralisée de vaccination de rappel est programmée pour le mois d'avril 1992.

3. Clavelée


En 1991, la vaccination a touché plus de 9 079 012 ovins, soit un taux de couverture vaccinale de l'ordre de 65 ‰.
II. MALADIES DE LA LISTE B

1. **Rage**

La dernière phase du programme national de lutte contre la rage (PNLR) se poursuit et touche à sa fin.

Pour un grand nombre de provinces, les résultats des opérations de prophylaxie sanitaire et médicale ont été satisfaisants d’après les objectifs du PNLR. Pour d’autres provinces, bien que tous les chiens présentés aux lieux de rassemblement aient été vaccinés, les objectifs chiffrés du programme n’ont été que partiellement atteints.

Du point de vue de l.incidence de la rage après la mise en place du programme, une diminution des cas de rage a été enregistrée et son taux reste stable dans le temps.

Malgré une atteinte partielle des objectifs chiffrés, le PNLR a eu des conséquences positives, à savoir :

- une nette diminution des cas de rage humaine au cours du programme ;
- un taux de confirmation de la rage par le laboratoire plus important qu’avant le PNLR ;
- la réalisation d’une infrastructure régionale de diagnostic et la maîtrise des différentes techniques de diagnostic, ainsi que la réalisation d’une unité de production de vaccin antirabique à usage vétérinaire, jusque là importé ;
- la connaissance des aléas du programme tels la nécessité de l’étude de l’écologie canine (à cet égard, plusieurs études écologiques ont été menées, notamment en milieu rural, où se répartissent 95 % de la population canine), la sous-déclaration de la rage animale, la coordination et la collaboration inter-sectorielle ;
- un impact pédagogique important, par la sensibilisation des différents acteurs et de la population aux problèmes engendrés par la rage.


2. **Brucellose bovine**

Cette maladie existe à l’état enzootique au Maroc et y est à l’origine de pertes économiques importantes.

La situation épidémiologique se caractérise par l’atteinte plus importante des troupeaux de race améliorée de grands effectifs et élevés en système intensif et un groupe peu atteint ou non atteint regroupant les élevages extensifs de race locale de faibles effectifs. La répartition de ces troupeaux dégage trois zones à l’échelle du Maroc : une zone de prévalence supérieure à 2 %, une zone de prévalence inférieure à 2 %, et une zone indemne.

Les études menées chez les petits ruminants se sont révélées négatives.

Un programme spécifique de lutte a été lancé en 1989. Il vise à la réduction de la prévalence de la brucellose bovine par la vaccination des velles dans les régions contaminées ; la surveillance des zones indemnes par la non-introduction d’animaux brucelliques dans la région, et l’instauration d’un système de contrôle des troupeaux pour préserver leur statut indemne.

3. **Tuberculose bovine**

Cette maladie existe à l’état enzootique au Maroc et y est à l’origine de pertes économiques importantes. Elle se caractérise par un taux d’infection global de 1,82 % du total des bovins
laitiers, dont 0,49 % chez la race locale. Les saisies aux abattoirs pour motif de tuberculose représentent environ 18 % des saisies totales.

Un programme national de lutte sera mis en place en 1992 et s'étalera sur dix années. Il intégrera progressivement le cheptel bovin jusqu'à encadrement total. Le programme est basé sur l'identification des troupeaux, l'instauration de cartes sanitaires et sur l'allègement des procédures d'indemnisation des bovins réagissants et abattus.
1. **Le service de l'élevage**

Le service de l'élevage est depuis quelques années en profonde mutation. Les systèmes de traitement et de prophylaxie tendent vers une privatisation. Les soins de santé animale, avec comme principale innovation l'institution du paiement des médicaments et des vaccins, sont dévolus progressivement aux agents des collectivités d'éleveurs regroupés en associations pastorales. Ces associations au nombre de 115, dont une trentaine formellement constituées, devront prendre en charge dans un proche avenir la gestion de leur terroir et celle de l'abreuvement des animaux.

Cette nouvelle orientation a eu pour conséquence une augmentation des soins individuels mais aussi une diminution très sensible des vaccinations ; les éleveurs ne sentant pas la nécessité de faire vacciner leur bétail quand la maladie est absente.

Toutefois la couverture administrative du service de l'élevage est relativement complète : il y a 13 inspections régionales, 23 sous-secteurs d'élevage et 9 postes vétérinaires.

Le service est renforcé par le Centre national d'élevage et de recherche vétérinaire (CNERV) et plusieurs projets de développement, tel que le projet "Elevage II" qui couvre la totalité du territoire et le représente quasiment à lui seul et d'autres de moindre importance comme le projet "Trarza" qui a plutôt un impact régional.

2. **La situation zoo-sanitaire**


Il y a moins de foyers de maladies, mais une recrudescence sérieuse du botulisme due à la sécheresse partielle. Quelques cas de clavelée et de charbon symptomatique ont été signalés, avec une importance relative sur le cheptel, mais aussi sept foyers de rage, dont un très important ayant atteint une vingtaine d'animaux de différentes espèces.

L'importance de la tuberculose bovine est sérieuse, mais c'est surtout à l'abattoir qu'elle est décelée.

La pathologie aviaire est dominée par les affections respiratoires, surtout dans les élevages semi-industriels.

**Vaccinations 1991 (période octobre 1990 à mars 1991) :**
- Peste bovine et périrpneumonie contagieuse bovine : 482 080

**Interventions particulières du service de l'élevage :**
- Déparasitages internes : 48 208
- Déparasitages externes (détiquage et gale des camelins) : 9 085
- Traitements de la trypanosomose cameline : 10 983
I. MALADIES DE LA LISTE A

Elles ont eu une faible incidence économique sur le cheptel.

1. **Fièvre aphteuse**

La fièvre aphteuse n'a plus été signalée en Mauritanie depuis 1984.

2. **Peste bovine**

La peste bovine n'a plus été signalée en Mauritanie depuis 1986.

3. **Peste des petits ruminants**

Il y a eu des petits foyers de peste des petits ruminants dans le centre-sud du pays.

4. **Péripneumonie contagieuse bovine**

La péripneumonie contagieuse bovine n'a plus été signalée en Mauritanie depuis 1983.

5. **Dermatose nodulaire contagieuse**

Un cas de dermatose nodulaire contagieuse a été signalé dans le sud du pays.

6. **Fièvre de la Vallée du Rift**

La fièvre de la Vallée du Rift est très fortement suspectée dans le centre-sud du pays.

7. **Variole caprine**

Il y a eu quelques cas de variole caprine dans le centre-sud.

8. **Maladie de Newcastle**

La maladie de Newcastle sévit à l'état enzootique dans toutes les régions mais uniquement dans les petits élevages familiaux.

II. MALADIES DE LA LISTE B

On remarque également une diminution de l'incidence économique de ces maladies.

1. **Fièvre charbonnueuse**

Cette maladie est en régression.

2. **Rage**

La rage est quasiment endémique ; on a noté sept cas isolés dont l'apparition d'un gros foyer, dans la zone de l'Assaba, ayant atteint plusieurs espèces ; les six autres cas étaient des cas de rage canine.
3. **Tuberculose bovine**

Elle reste importante. Une enquête du CNERV réalisée sur 166 animaux a révélé 23 % de réagissants à la tuberculine.

4. **Trypanosomose**

Elle existe uniquement chez les camelins. Elle est souvent dépistée par le test à l'hématocrite.

5. **Bronchite infectieuse aviaire**

Elle constitue l'une des principales maladies aviaires. Les vaccinations sont peu nombreuses.

### III. AUTRES MALADIES

La pathologie générale est surtout due aux carences et à la malnutrition.

1. **Charbon symptomatique**

Le charbon symptomatique est en régression.

2. **Botulisme**

Le botulisme reprend de l'importance malgré (ou avec pour conséquence) une augmentation sensible des vaccinations (payantes).

3. **Maladies aviaires**

Les maladies aviaires sont dominées par des affections respiratoires (MRC...), mais les vaccinations sont peu nombreuses.

4. **Parasitoses**

Les maladies parasitaires internes (pulmonaires, digestives, sanguines) et externes sont en nette recrudescence mais ne sont que faiblement notifiées.
MONGOLIA

INTRODUCTION

Mongolia is currently undergoing a transitional stage towards a market economy, and a fundamental change will be required in the activities of the country's Veterinary Services which, until now, have been carried out on a centralised basis.

During the period when veterinary measures regarding animal disease control were centralised, quality was low and not cost-effective.

In future, we shall be carrying out measures by contract with farmers and companies based upon the incidence of animal diseases. Such measures should allow certain infectious and parasitic diseases to be quickly eradicated.

The Mongolian Veterinary Services will be paying special attention to animal health and the hygiene of animal products, the promotion of veterinary science, the training of specialists, and the supply of veterinary drugs and equipment.

As a result of veterinary measures, the percentage loss of animals has fallen from 30% in 1960 to 7%, comprising 3% from infections and 4% from parasitic diseases.

1. LIST A DISEASES

In general, Mongolia has been free from such communicable animal diseases as foot and mouth disease, rinderpest, contagious bovine pleuropneumonia, sheep and goat pox for between 15 and 57 years.

1. Foot and mouth disease

Enzootic outbreaks of foot and mouth disease (FMD) were reported in 1944, 1964, 1966 and 1974. The last enzootic outbreak in Mongolia, which was due to virus type O, was recorded in 1974 in the East district, and was quickly eradicated thanks to strict quarantine.

Since 1974, we have produced and stocked up to 10,000 doses of monovalent FMD vaccine each year at the Veterinary Research Institute for emergency purposes. However, FMD vaccine has never been used in Mongolia. In recent years we have been working on improving vaccine quality through the use of cell culture techniques.

2. Rinderpest

Rinderpest has not been recorded in Mongolia since 1935. To prevent any possible introduction of the disease, the country has been producing approximately 10,000 doses yearly for the emergency reserve.
3. **Contagious bovine pleuropneumonia**

   This disease has not been recorded during the last twenty years.

4. **Sheep pox and goat pox**

   Most outbreaks took place in the period from 1930 to 1940. Aluminium hydroxide vaccine started to be used in 1947. The last sporadic outbreaks were noted in 1964.

   At present we are producing cell culture vaccine against sheep pox, which is used only for the vaccination of animals for export.

No other List A diseases have ever been reported in Mongolia.

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**II. LIST B DISEASES**

1. **Anthrax**

   This disease is sporadic in certain areas with black soil and high air humidity. Incidence of the disease has fallen considerably in recent years due to compulsory annual vaccination of all susceptible animals throughout the national territory.

2. **Brucellosis**

   Bovine brucellosis is a serious problem in Mongolia. A brucellosis eradication programme was begun in 1960 and, as a result of mass vaccination, brucellosis in small ruminants has fallen to a low level. The control and eradication programme for brucellosis in cattle has been given the Government's highest priority in the field of animal health. The brucellosis control programme is currently entering a new phase, involving the collaboration of the Ministry of Public Health.

3. **Bovine tuberculosis**

   No clinical evidence of bovine tuberculosis has been observed in Mongolia for more than 20 years.

4. **Enzootic bovine leukosis**

   Enzootic bovine leukosis (EBL) was diagnosed in an imported dairy herd. However there have been no cases of EBL in local Mongolian cattle.

   A new control and eradication programme of EBL in purebred cattle was begun last year.

5. **Contagious caprine pleuropneumonia**

   Since the last outbreak in 1962, the country has remained free from contagious caprine pleuropneumonia.

6. **Equine infectious anaemia**

   No clinical evidence of equine infectious anaemia has been observed in Mongolia for more than 20 years.
III. OTHER DISEASES

Tetanus and black leg (*Gangraena emphysematosa*) are both endemic diseases though their incidence is sharply declining due to prophylactic and curative measures.

Mongolia has experienced sporadic outbreaks of bovine, caprine and ovine haemorrhagic septicaemia, ovine and caprine contagious ecthyma, and ovine enterotoxaemia. Each year different vaccines are produced locally and their use has enabled these diseases to be successfully controlled.

Some viral diseases, such as rota- and coronavirus infections and bovine virus diarrhoea, were recorded among high-yield dairy cows.

In Mongolia, vaccines and curative sera, which are used against common bacterial and viral diseases of animals, are produced in the Songino bio-factory. Although many of the major communicable diseases are absent from Mongolia, vaccines against them are prepared for the emergency reserves. Cell culture vaccine against sheep pox is used only for the immunisation of animals for export.

Research is currently being carried out in veterinary and industrial organisations to apply improved technology to the production of cell culture vaccines, with the aim of providing reliable and prolonged protection of animal health.

Considerable attention needs to be paid to differential diagnostic methods for animal diseases, with the support of developed countries, since only the most basic diagnostic methods are currently in use.
INTRODUCTION

In order to improve the animal health status, the Department is undertaking an animal health surveillance programme within the country, and along the western border areas with the cooperation of the Department of Livestock Development of Thailand and the Department of Veterinary Services of Malaysia.

The Ministry of Livestock Breeding and Fisheries wishes to harmonise its animal health and production legislation to be in line with the Government's economic policy. The Ministry is currently reviewing, updating and drafting the national legislation regulating animal health as well as other legal instruments related to the development of animal production.

The research units operating under the Livestock Breeding and Veterinary Department have been strengthened and technical training for the staff is carried out systematically and regularly in order to promote their technical abilities.

LIST A DISEASES

1. **Foot and mouth disease**

   In 1991, foot and mouth disease outbreaks occurred sporadically throughout the year, and virus type A was identified in a disease outbreak area by complement fixation test. In most of the disease occurrences, the virus was not typed.

2. **Rinderpest**

   In order to support the claimed rinderpest-free status, random serological surveys in non-vaccinated cattle were conducted, and there was no indication of any occurrence of rinderpest in 1991.
THE NETHERLANDS

I. LIST A DISEASES

1. Foot and mouth disease
   As from 1 March 1991 the Netherlands discontinued and prohibited the preventive vaccination of
cattle against foot and mouth disease.

2. Newcastle disease
   There was one outbreak of Newcastle disease on 24 December. This outbreak occurred in an
isolated flock of hobby fowl. All 52 birds present were removed for destruction: pheasants,
peacocks, ducks and hobby hens. Control measures were taken according to national law:
standstill, tracing-back and serology. The Central Veterinary Institute determined the ICPI as 1.76.
No further outbreaks have occurred.

II. LIST B DISEASES

1. Anthrax
   Anthrax was diagnosed on one farm with breeding and beef cattle. Movement of animals to and
from the farm is restricted and all animals have been vaccinated.

2. Rabies
   Rabies was diagnosed in 12 bats. The oral vaccination campaign in foxes was carried out for the
sixth time in autumn 1991 in the south of the province of Limburg. The vaccinated area covers
265 km². Serological tests were carried out to determine the vaccination status of foxes and
badgers in the area. Nearly 60% of the animals examined had a titre due to the uptake of the
vaccine.

3. Bovine brucellosis
   Bovine brucellosis was diagnosed on 12 farms. Movement of animals to and from these farms was
restricted and, after confirmation, all cattle present on these farms were slaughtered. Some of these
cases could be traced back to importation.

4. Bovine tuberculosis
   The yearly surveillance was carried out in a quarter of the cattle population. Three animals on
three farms had a positive reaction. All three animals were slaughtered, of which only one
exhibited macroscopic lesions.
5. **Enzootic bovine leukemia**

Enzootic bovine leukemia was diagnosed in 20 animals, all imported.

After the first testing in 1990 all herds (>60,000) were tested again in 1991. An ELISA was used and the results were confirmed with an AGID test. Fifteen farms each had one animal which proved positive, and one farm had five positive reactors. All infected animals were slaughtered and the herds monitored. To date, no new indigenous cases have been encountered.

6. **American foul brood**

American foul brood was diagnosed in two bee colonies in the province of Limburg. The infected colonies were killed and burned. Movement of bees in a designated area was prohibited. Screening in the same area was carried out. The disease is notifiable and the strategic policy is stamping out.
The Veterinary Services of the New Zealand Ministry of Agriculture and Fisheries maintain a programme of active surveillance and animal health monitoring for a number of diseases believed not to occur in New Zealand.

During 1991, surveys or on-going surveillance activities were initiated to look for evidence of the following diseases, pathogens or vectors: bluetongue virus, epizootic haemorrhagic disease virus, Culicoides species, Borrelia burgdorferi, Q fever, scrapie and bovine spongiform encephalopathy. All results obtained so far have been negative.

Serological surveys indicated that two non-pathogenic viruses, porcine circovirus and bovine lentivirus (synonyms: bovine immunodeficiency-like virus, bovine Maedi-Visna virus), are present in New Zealand.

A survey to determine the seroprevalence of enzootic bovine leukosis is being conducted.

The results of New Zealand's disease monitoring activities are published in the Ministry of Agriculture's quarterly magazine *Surveillance*.

I. LIST A DISEASES

No occurrence of any List A disease was recorded in 1991.

II. LIST B DISEASES

1. **Aujeszky's disease**

The South Island of New Zealand remains free from Aujeszky's disease. An eradication programme against the disease has been operating in the North Island since December 1989.

Herds infected with Aujeszky's disease are detected by a system whereby all culled breeding pigs are tested at slaughter using an ELISA disc method. In addition, all herds within a 1 km radius of each infected herd are monitored by on-farm testing.

Infected herds are quarantined. Aujeszky's disease is eliminated from them either by test and removal, total depopulation and restocking, or a programme of vaccination using a gl-deleted vaccine followed by test and removal using a complementary gl ELISA.
Only three herds infected with Aujeszky's disease were detected during 1991. This is far fewer than in the previous year and fewer than anticipated. The year began with 23 herds under quarantine. Infection was eliminated from eight herds during the year leaving 19 still quarantined for Aujeszky's disease at year's end. Nine of these herds are authorised to use gl-deleted vaccine.

2. Echinococcosis/hydatidosis

*Echinococcus granulosus* infestation was endemic in New Zealand for many years. The parasite is known to have been present since the late 1800s. By 1959, 80% of the national sheep flock of 56 million were believed to carry the cystic stage of *E. granulosus*. A national eradication campaign was begun in that year. Regular dog treatments, strict dog control, a prohibition on the feeding of uncooked offal to dogs and regulations governing on-farm slaughter of animals have all contributed to the virtual eradication of *E. granulosus*.

During 1991 only 13 aged cattle beasts were found to be infested at slaughter. All cysts were sterile and/or calcified. The 34 infested sheep detected during 1991 all came from the same property. This property was also responsible for the majority of sheep infestations detected in the previous year. The property has been subject to quarantine since 1990.

All infestations detected in sheep during 1991 were considered to be more than five years old.

*E. granulosus* infestation is now considered to be exotic to New Zealand. Surveillance is to continue until no further infestations are reported.

3. Bovine tuberculosis (*M. bovis*)

At 30 June 1991 there were 1,292 (2.7%) cattle herds under quarantine because of tuberculosis. During the preceding 12 months, 588 herds were removed from quarantine and 619 herds placed under quarantine.

A total of 2.72 million cattle were tested during the 12 month season to 1 July 1991, and 5,313 positive reactors to the caudal fold skin test were identified and slaughtered. An additional 7,414 cattle that were considered to be non-specific reactors to the caudal fold test were given a comparative cervical test (CCT). There were 587 (7.9%) reactors to the CCT and these were all slaughtered. Thus in total, 5,900 reactor cattle were slaughtered giving a reactor rate of 0.2%. A further 831 (0.04%) tuberculous cattle were detected during routine meat inspection of the 2.15 million cattle sent for slaughter during these 12 months. The period prevalence of tuberculosis (including reactors and infected cattle found during routine slaughter) for the 1990-91 season was 0.075%.

Eighteen zones have been identified within New Zealand where tuberculosis is endemic due to the presence of the disease in a varying mix of wild and feral animals (pigs, deer, cats, possums, stoats and ferrets). Possums (*Trichosurus vulpecula*) are considered the main wildlife reservoir and source of tuberculosis for cattle.

For tuberculosis management purposes New Zealand has been categorised into Special Tuberculosis Control Areas (STCA), where tuberculosis is endemic, and Tuberculosis Free Areas. An STCA is a geographically defined area containing a central endemic zone, a surrounding fringe zone and an outer enclosing non-endemic zone. There are 12 STCAs that together cover approximately 35% of the land area of New Zealand.

Controlling possum numbers in endemic zones, together with a test and slaughter policy produces a decrease in the number of infected cattle and herd reinfections. In a few small endemic zones control has reduced possum numbers below the threshold for disease transmission and tuberculosis appears to have been eradicated from the possum population.
As a consequence, possum control operations have become an integral part of the tuberculosis scheme. Possum control strategies are aimed at eradicating tuberculosis from the possum population, containing the infected population, or localised targeted control to reduce number of infected cattle and herds.

However, it is not possible with current knowledge and funding to eradicate tuberculosis from all infected wild and feral animal populations, or prevent their spread from some endemic areas. Research programmes have been initiated which will lead to a better understanding of the problem of tuberculosis in possums and may ultimately provide a means of eradicating the disease from all possum populations in endemic areas.

4. **Cervine tuberculosis (M. bovis)**

The second full year of the compulsory deer tuberculosis control scheme saw a significant reduction in the prevalence of tuberculosis in the farmed deer population in New Zealand. The main reason for this improvement was the removal of accumulated infection from herds previously untested under the voluntary accreditation scheme.

At the end of December 1991, 6,430 herds, comprising in excess of 95% of the total deer herds in New Zealand, had at least completed their first whole herd test. Of these, 3,697 (57.5%) were accredited, having completed three consecutive whole herd tuberculin tests over a two year period free of reactors. This compares to 2,565 accredited herds out of a total of 6,000 (42%) at the same time the previous year.

The number of herds under quarantine because of tuberculosis dropped to 252 (3.9%) compared with the same period in 1990 when 277 (4.4%) were under quarantine.

During 1991, 384,470 deer were tested with the standard intradermal cervical tuberculin test (ST) and 1,103 reactors were identified and slaughtered. In addition, 13,862 deer were tested with the comparative cervical tuberculin test, either as a supplementary test or as an initial test in herds with a history of non-specific ST reactors. Of these, 114 were positive and were slaughtered as reactors. A modified lymphocyte transformation test was applied to 728 deer considered to have exhibited a non-specific reaction to the ST, or as an initial test, and 53 of these deer were found to be positive and were slaughtered.

Thus, in total, 1,270 deer (0.33%) were considered positive to tests for tuberculosis and were slaughtered. This constitutes a reduction both the number of reactors slaughtered and the prevalence of test positive animals when compared with 1990.

In addition, 228 (0.1%) deer were found to have lesions of tuberculosis during routine slaughter. For the calendar year 1991, a total of 225,924 farmed deer were slaughtered throughout the country (figures are provisional).

5. **Enzootic bovine leukosis**

In 1979 a serological survey for bovine leukaemia virus antibody was carried out on 6,000 sera, using the gel diffusion test. Only three (0.05%) seropositive animals were found.

Serological evidence of the prevalence of the disease after 1979 has been through testing of cattle for export certification and animals tested for entry into artificial breeding (AI) centres. In 1988 25,780 animals were tested with 69 (0.27%) positive, in 1989 14,188 were tested with 40 (0.28%) positive and in 1990 11,357 were tested with 10 (0.09%) positive.

Tracing reactors to their herds of origin has been successful in most cases and has identified 12 infected properties. Two are located in the South Island and the others in the North Island. The majority of infected herds are located in the central part of the North Island.
The prevalence of enzootic bovine leukosis in New Zealand is low and it is confined to a small number of farms scattered throughout the country. An extensive survey of dairy cattle based on an ELISA of milk samples commenced in 1991.

6. **Brucellosis**

Since the revised voluntary *Brucella ovis* accreditation scheme was introduced five years ago, it is estimated that more than 90% of breeding flocks have become accredited free of the disease. Only a small number of commercial flocks are officially accredited, but about 30% are disease-free.

The voluntary accreditation scheme is organised jointly by the New Zealand Veterinary Association, the sheep breed societies and the Ministry of Agriculture and Fisheries.

The official test is a complement fixation test (CFT) and an indirect ELISA and gel diffusion precipitation test (GDT) are used as ancillary tests. Heat extracted antigen is used in both the CFT and ELISA. In the GDT a sonicated antigen which has different major antigenic components is used.

At present around 80,000 samples are tested annually, with 56% coming from breeding flocks and 44% from commercial flocks. The rates of anti-complementary, positive and suspicious reactions among these samples has remained constant throughout the last three years and are respectively 0.8%, 5% and 0.5%. The flock prevalence rate is estimated at 4% in breeder flocks and 12% in commercial flocks.

In the last three years, the number of breakdowns in accredited *Brucella ovis* free status of breeding flocks has been about 1% per annum, with usually only one or two reactors involved. In commercial flocks the number of breakdowns has been slightly higher, as has been the number of reactors involved.

Vaccination is still practised in a few flocks. It is estimated that about 25,000 rams are still vaccinated annually. The flocks still vaccinating are believed to be mainly large extensively managed ones.

The Central Animal Health Laboratory has taken over the production and supply of *B. ovis* vaccine from the commercial producer who formerly supplied this vaccine. This change became effective in late 1991.

The original objective of the *B. ovis* flock accreditation scheme was to have all breeding flocks accredited. This objective has almost been reached. The direction and future objectives of the scheme are now under discussion.

7. **Caprine arthritis/encephalitis**

Caprine arthritis/encephalitis (CAE) virus in goats was first isolated in New Zealand in 1981. In 1983 a national survey revealed a seroprevalence of 1.5% in 6,551 goats tested. The prevalence rate was 2.27% in 4,230 dairy goats and only 0.04% in 2,321 angora goats. Clinical manifestations are seen very rarely.

In 1984, the Ministry of Agriculture and Fisheries, in consultation with the major industry groups in New Zealand, launched a voluntary accreditation scheme for the control of CAE. The scheme has been one of a number of successful voluntary disease control schemes which have been operated in New Zealand. In 1988 there were about 1,000 goat flocks accredited free of CAE and to date about half a million goat sera have been tested for CAE.

During the last two years, the number of samples tested for CAE has decreased dramatically. This partly because the farmers are reassessing the cost of testing and partly because many accredited flocks now only have to be tested triennially. Goat flocks accredited free of CAE qualify for
triennial testing once they have satisfactorily completed two annual retests. By September 1991 there were 333 accredited flocks and 96% of these were on a triennial testing regime. Most of these accredited goat flocks are elite breeding stock bred for high quality fibre production.

8. Infectious arteritis of horses

Infectious arteritis of horses (IAH) was made a notifiable disease in September 1989. An equine industry control scheme was subsequently established. The scheme involves the annual serological testing of all breeding stallions prior to the start of the breeding season. Exceptions are shedder stallions, seropositive non-shedder stallions and vaccinated stallions. To identify stallions shedding the virus in their semen, all seropositive stallions must be either test mated to two seronegative mares or semen tested for virus isolation. Mares are not required to be tested.

Shedder stallions may still be used for breeding but under controlled conditions, to prevent the spread of the disease to seronegative stallions. Vaccination is by official permit and only seronegative stallions standing at stud with shedder stallions are vaccinated.

Testing for evidence of IAH indicates that 30% of standardbred stallions, 1.5% of thoroughbred stallions and 0% of other breeds have been infected. Nineteen chronic semen shedders (all standardbreds) have been identified.

No clinical disease attributable to IAH virus has been recorded in New Zealand.
NIGER

INTRODUCTION

La campagne pastorale est satisfaisante dans l'ensemble car son évaluation a donné un bilan fourrager positif.

La situation sanitaire du cheptel quant à elle demeure préoccupante. En effet, le nombre de foyers de pérïpneumonie contagieuse bovine est passé de 2 en 1990 à 8 en 1991 ; les foyers de clavelée et variole caprine de 82 à 147 foyers en 1991.

Par contre, les foyers de fièvre aphteuse ont sensiblement diminué : 21 foyers contre 114 en 1990.

Les maladies pseudotelluriques sévissent d'une manière constante d'une année à l'autre.

Aucun cas de myiase à Cochliomyia hominivorax n'a été enregistré.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

   Le nombre de foyers est de 21. Ils ont été localisés dans les départements de Tillabéri, Dosso, Tahoua et Maradi.

2. Peste bovine

   Aucun foyer de peste bovine n'a été enregistré. Le dernier foyer remonte à 1984. La campagne de vaccination contre cette maladie se fait tous les ans (effectif vacciné : 930.734 bovins).

3. Peste des petits ruminants

   Deux foyers de peste des petits ruminants ont été signalés en 1991 dans le département de Diffa.

   La vaccination contre la maladie s'effectue chaque année (effectif vacciné : 1.681.770 têtes ovins/caprins.

4. Pérïpneumonie contagieuse bovine


   La campagne de vaccination contre la maladie se poursuit normalement (effectif vacciné : 930.734 têtes).
5. **Clavelée et variole caprine**


**Maladies aviaires**

Les maladies aviaires suivantes continuent de sévir dans les élevages avicoles fermiers :

<table>
<thead>
<tr>
<th>Maladies</th>
<th>Nombre de cas</th>
<th>Effectif vacciné</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maladie de Newcastle</td>
<td>6</td>
<td>9 217</td>
</tr>
<tr>
<td>Peste aviaire</td>
<td>4</td>
<td>9 345</td>
</tr>
<tr>
<td>Variole aviaire</td>
<td>7</td>
<td>...</td>
</tr>
<tr>
<td>Gumboro</td>
<td>1</td>
<td>9 217</td>
</tr>
</tbody>
</table>

**II. MALADIES DE LA LISTE B**

1. **Fièvre charbonneuse**

Elle sévit dans tous les départements du Niger. Le nombre de foyers enregistrés est de 64.

<table>
<thead>
<tr>
<th>Espèce</th>
<th>Effectif vacciné</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovins</td>
<td>36 883</td>
</tr>
<tr>
<td>Ovins</td>
<td>22 479</td>
</tr>
<tr>
<td>Caprins</td>
<td>5 860</td>
</tr>
</tbody>
</table>

2. **Rage**

Cette zoonose se rencontre dans la communauté urbaine de Niamey, 4 cas confirmés par le laboratoire central de l'Elevage. Ailleurs, elle sévit dans les départements de Dosso et Tahoua.

<table>
<thead>
<tr>
<th>Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primo</td>
</tr>
<tr>
<td>Chiens</td>
</tr>
<tr>
<td>Chats</td>
</tr>
</tbody>
</table>

3. **Myiase (**Cochliomyia hominivorax**)

Aucun cas n'a été enregistré. La surveillance se poursuit.

4. **Brucellose**

1 cas a été signalé

5. **Tuberculose bovine et helminthiases**

Font l'objet de plusieurs saisies d'organes dans les abattoirs. Des déparasitages internes sont individuellement opérés chez les espèces domestiques.
6. **Pasteurellose**


<table>
<thead>
<tr>
<th>Espèce</th>
<th>Effectif vacciné</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovins</td>
<td>60 862</td>
</tr>
<tr>
<td>Ovins</td>
<td>54 514</td>
</tr>
<tr>
<td>Caprins</td>
<td>35 225</td>
</tr>
</tbody>
</table>

7. **Trypanosomose**

Elle sévit dans les régions du sud du Niger (Say, Gay), le long du fleuve Niger, dans la Komadougou (Lac Tchad) : 4 cas ont été enregistrés.

<table>
<thead>
<tr>
<th>Chimioprévention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Espèce</td>
</tr>
<tr>
<td>Bovins</td>
</tr>
<tr>
<td>Camélidés</td>
</tr>
<tr>
<td>Equidés</td>
</tr>
</tbody>
</table>

**III. AUTRES MALADIES**

1. **Charbon symptomatique**

Signalé en juillet-août-septembre sur l’étendue du territoire national. Nombre de foyers enregistrés : 57

<table>
<thead>
<tr>
<th>Espèce</th>
<th>Effectif vacciné</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovins</td>
<td>64 945</td>
</tr>
<tr>
<td>Ovins</td>
<td>12 996</td>
</tr>
<tr>
<td>Caprins</td>
<td>6 021</td>
</tr>
</tbody>
</table>

2. **Rickettsiose**

Deux foyers ont été enregistrés dans le département de Tillabéri (Filingué).

3. **Diarrhée des chamelons**

La maladie se rencontre dans le département de Diffa chaque année sans que son étiologie ait été élucidée ; 2 cas ont été enregistrés en 1991 à Diffa.

4. **Ecthyma contagieux**

1 foyer dans le département de Tahoua.

Le botulisme (2 cas), la pèripneumonie caprine (1 cas) et la spirochetose (1 cas) ont été également signalés en 1991.
CONCLUSION

Les maladies de la liste A, notamment la péripneumonie contagieuse bovine, la clavelée et variole caprine et la fièvre aphteuse sont les dominantes pathologiques de cette année au Niger.

Les maladies pseudotelluriques viennent en seconde position.

L'insuffisance des moyens des services de l'élevage et la grande mobilité des troupeaux ont entravé l'exécution du programme national de protection sanitaire du cheptel. Ceci s'est traduit par une baisse notable de la couverture vaccinale en 1991 : 37,01 % bovins vaccinés contre 60 % en 1990.

Il y a lieu aussi de préciser que la prise en charge des coûts de vaccination par les éleveurs est généralisée sur le territoire national. Le lent changement de mentalité des éleveurs traditionnels face à ces nouvelles mesures explique en partie la baisse des taux de vaccination.
INTRODUCTION

The Director of the Federal Department of Livestock and Pest Control Services continues to be the officer responsible for the administration of the Veterinary Services, including legislation at the Federal level in the Federal Republic of Nigeria, which now comprises 30 states and Federal Capital Territory (F.C.T.).

He has exclusive authority on all aspects of the import and export trade in livestock, animal products, veterinary health products and biological products.

I. LIST A DISEASES

1. Foot and mouth disease

   Foot and mouth disease is notifiable. Control is by a prohibition on imports, animal movement restrictions during outbreaks and the implementation of animal health measures.

2. Rinderpest

   Rinderpest is a notifiable disease. Control is carried out by monitoring the immune status of the national herd and by mass vaccination, especially along frontiers, using Tissue Culture Rinderpest Vaccine (TCRV).

3. Peste des petits ruminants

   Peste des petits ruminants is a notifiable disease. Control is by mass vaccination using TCRV.

4. Contagious bovine pleuropneumonia

   Contagious bovine pleuropneumonia (CBPP) is a notifiable disease. Control is by mass vaccination using $T_1$ strain CBPP Vaccine.

5. Newcastle Disease

   Newcastle disease is a notifiable disease. Control is by immunisation of birds using $B_1$ strain, Lasota strain and Komarov strain.
II. LIST B DISEASES

1. **Rabies**

Rabies is a notifiable disease. Immunisation is carried out chiefly in dogs and cats, and in other species where necessary. Stray dogs and cats are destroyed. Public enlightenment campaigns are conducted.

2. **Screwworm (Cochliomyia hominivorax)**

There have been no reported outbreaks in Nigeria. Preventive measures include:

   a) enforcement of regulations on livestock trade and livestock movements;
   b) public education and extension services to livestock producers.

3. **Bovine trypanosomiasis**

Vector control is carried out through the selective application of pesticides, using ground and aerial spraying techniques. Preventive and curative treatment are used for exposed cattle.
The Veterinary Services were reorganized in 1991. The Laboratory Services and the Field Services were separated to form two bodies, each with its own management which is responsible to the Chief Veterinary Officer. This new organisation came into effect on 1 January 1992.

Within the Field Services extra resources have been transferred into the organization. The total number of District Veterinary Officers has been increased from 203 to 222. A reorganization of the veterinary districts has also taken place, to take into account the increased demand for veterinarians in the expanding fish-farming industry and the decline in the number of traditional livestock.

At a regional level, the Field Services have also been strengthened, with two additional Regional Veterinary Officers (1990 and 1991). Norway now has nine Regional Veterinary Officers, and their staff has been increased from approximately 30 to 50.

As a consequence of the reorganization of the Veterinary Services, the Veterinary Authorities have taken on the responsibility for organizing a 24-hours round the clock official service.

The system under which field veterinarians report all diseases, including infectious diseases are reported to a central database, was further developed during 1991. The ability to combine data on production/disease/health now exists for cattle.

For several years, the veterinary authorities have been intensifying a coordinated approach to deal with the control of multifactorial diseases, often related to environmental factors such as high production and yield. The intention is to incorporate official and private responsibilities into an agreement and use this as a basis for common control programmes. Ongoing programmes for cattle and swine have been further developed, and an agreement has been signed for a coordinated programme in the control of fish diseases. A similar programme for small ruminants and poultry is in progress.

I. LIST A DISEASES

Norway remained free from List A diseases during 1991.

New instructions concerning control and eradication in the event of any future outbreak of foot and mouth disease were completed in 1991.
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II. LIST B DISEASES

1. **Paratuberculosis**

   Vaccination of all kids less than 4 weeks' old is no longer compulsory. Clinical cases were reported from a few herds, and antibodies to *Mycobacterium paratuberculosis* were found in contact herds. As paratuberculosis in goats is confined to certain regions in the western part of Norway, the Regional Veterinary Officers decide on a local basis, whether vaccination is to be made compulsory or not.

2. **Tuberculosis**

   A routine test for tuberculosis from a swine herd about to deliver boars to the artificial insemination centre at Bjørke, disclosed positive reactors. Final examinations disclosed only one positive animal. Restrictions on movement of livestock were implemented.

3. **Leptospirosis**

   Until 1991, leptospirosis had never been diagnosed in Norway. During the first half of 1991, however, antibodies were detected in two swine herds in Hedmark and Oppland county (five and three serologically positive animals, respectively), with clinical signs of reproductive disorders attributable to the infection. Blood samples from other swine herds were all negative.

4. **Scrapie**

   One outbreak of scrapie was diagnosed in Hordaland county. The same farm had an outbreak in 1987, and this may be the cause of the 1991 outbreak.

   Severe measures have been initiated to stop the spread of the disease; all animals (70 sheep and 80 goats) on the holding were destroyed, and the movement of small ruminants into and out of the region is banned.

5. **Caprine arthritis/encephalitis**

   The disease was first diagnosed in the mid-1970s. Subsequent serological examinations have shown the disease to be quite widespread in the goat population. Clinical symptoms, which are seldom seen, usually involve a single animal which may have arthritis and/or paralysis.

**Poultry diseases**

Marek's disease was the most important problem in Norwegian poultry farming during 1990/1991. White hens are most often affected, and vaccines other than turkey herpes virus are being tested.

Parent animals are vaccinated experimentally against infectious bursal disease (Gumboro disease).

**Fish diseases**

Bacterial kidney disease is diagnosed in several fish farms along the coast. As of 31 December 1991, there were restrictions on 77 farms.
Serological surveys on List B diseases

A serological survey of enzootic bovine leukosis was carried out on bulk milk samples from approximately 1,500 dairy herds. No positive reaction was demonstrated. During routine surveillance testing of breeding animals for Aujeszky's disease (swine), brucellosis (bovines, swine), enzootic bovine leukosis, and infectious bovine rhinotracheitis (IBR/IPV), no positive reaction has been demonstrated to any of the diseases. Routine surveillance testing for mycoplasmosis in poultry flocks revealed no positive reaction in commercial flocks, whereas some positive reactors were found in non-commercial flocks.

III. OTHER DISEASES

1. Listeriosis

This disease causes problems in a minority of herds. Disease outbreaks are often associated with the feeding of silage of poor quality. In addition to good management, prevention is based on voluntary vaccination. The live vaccine used is produced in a new production unit in Norway.

2. Borreliosis

A seroepidemiological study of *Borrelia burgdorferi* infection in sheep in Norway showed that 10% of the rams were seropositive. The examined sera were collected from 327 rams from 15 counties. The distribution of seropositive animals was generally in agreement with the distribution of *Ixodes ricinus*, which is considered to be the major vector in Norway.

3. Mucosal disease/Bovine virus diarrhoea (MD/BVD)

Serological investigations of herds in different parts of Norway showed that an average of 6.5% of the animals had antibodies to the virus.

In Norway, MD/BVD is a List B disease, and restrictions of movement on livestock are enforced until all viruspositive animals in affected herds are slaughtered, and the holding has been disinfected.

4. Furunculosis in fish

The disease is enzootic along the coast. Great emphasis has been put on prophylactic measures in order to reduce economic losses and use of antibiotics. Prophylaxis has been based on sanitary measures, reduced density in the sea cages, improved management and vaccination. More than 50 million smolt were vaccinated in 1991. The losses due to furunculosis and the consumption of antibiotics were both reduced in 1991 in relation to the previous year.

5. Infectious salmon anaemia

This disease has also been diagnosed in all coast counties from Rogaland to Troms. A major obstacle to efficient control of this disease is the lack of accurate diagnostic methods. So far all attempts at in vitro cultivation of the agent causing the disease have been unsuccessful. Control is based on sanitary measures and restrictions on movement of live material.
DISEASE CONTROL

1. **Equine influenza - Type A**

As a general control measure, importation of equids from neighbouring countries was suspended due to an outbreak of influenza in these countries. This measure has been temporarily lifted. From now on it is the responsibility of the various Horse Organisations to inform their members immediately of an outbreak of the disease in a neighbouring country. Horses coming from an area where there has been influenza within the previous three weeks, shall be held in an officially approved stable for 14 days after their return home. Owners are recommended to protect their animals by ensuring an optimum vaccination status.

2. **Other diseases**

Porcine reproductive and respiratory syndrome (PRRS) and bovine spongiform encephalopathy (BSE) do not occur in Norway. These diseases were made notifiable last year.

IMPORT/EXPORT

Norway has a general ban on the import of live animals and animal products. Exemptions have been granted, however, after application to the Ministry of Agriculture, and once all requirements have been met.

In connection with the on-going negotiations between EFTA and the EC, the Ministry of Agriculture is considering possible consequences for animal health status, disease control and trade in animals and animal products in Norway, which would result from an eventual EEA agreement. This work will continue in 1992.

A general agreement on trade in live cattle, embryos from cattle, live pigs and chicken/eggs, between Iceland, Denmark, Finland, Sweden and Norway was reached.

A new law banning the importation of dangerous dogs was passed. This category of dogs includes the following breeds: pit bull terrier, fila Brasileira, Toso Inu, dogo Argentino.
NOUVELLE-CALÉDONIE

INTRODUCTION

Les faits importants en 1991 sur le Territoire de la Nouvelle-Calédonie sont les mesures concernant la prophylaxie de la babésiose et les enquêtes épidémiologiques sur les cerfs et les bovins.

I. MALADIE DE LA LISTE B

Babésiose bovine

Après une occurrence pathologique mortelle chez deux vaches en janvier 1990 dans un troupeau ayant accueilli des vaches importées d'Australie, des mesures d'isolement ont été prises dans l'élevage infecté, et dans les élevages ayant importé du bétail d'Australie au cours des deux dernières années, ou ayant commerçé avec l'élevage infecté.

Les traitements piroplasmicides, la lutte contre les tiques, la séquestration des animaux ont été à la base de la campagne de prophylaxie.

Après deux années sans réapparition de babésiose, ni dans les élevages contrôlés ni ailleurs, les mesures quarantaières ont laissé la place à des mesures de surveillance, dans le cadre d'échanges d'animaux à partir des propriétés en cause.

II. ENQUETES EPIDEMIOLOGIQUES

1. Cervidés

Mille six cents cerfs parmi les quatorze mille actuellement en élevage ont fait l'objet de prélèvements pour confirmer une précédente enquête sur la brucellose, la fièvre catarrhale du mouton, la maladie hémorragique du cerf, la fièvre Q, la chlamydiose et la paratuberculose.

Les inspections sanitaires en abattoir d'une part, et les recherches parasitaires d'autre part, ont permis de constater l'absence de tuberculose et d'Elaphostrongylus cervi.

Ainsi, pour toutes les maladies mentionnées, à l'exception de la paratuberculose, les sérologies, les contrôles sanitaires et les réactions allergiques se sont tous avérées négatifs, ce qui, au risque 5 % chiffrerait à 0,16 % le taux de prévalence de telles pathologies chez le cerf, sans considération des autres enquêtes.

Pour la paratuberculose, 19 sérologies positives révèlent un taux de prévalence de 7 %, identique à celui constaté sur les bovins aux limites de la méthode de fixation du complément.
2. **Bovins**

Une nouvelle enquête est en cours d’analyse avec plus de 2 500 prélèvements réalisés pour tester la brucellose, la fièvre Q, la fièvre catarrhale du mouton, la paratuberculose et l’IBR.

A ce jour, seules les épreuves vis-à-vis de la brucellose et de l’IBR sont terminées. Aucune séropositivité n’a été décelée vis-à-vis de la brucellose, confirmant la précédente enquête zoo-sanitaire, alors que plus de 50 % des sérums sont positifs en IBR, sans pour autant que l’on ait décelé le moindre cas clinique, peut-être en relation avec le type extensif de l’élevage calédonien.

**CONCLUSION**

La poursuite de l’enquête sur les bovins et le développement des études sur le cerf sont les objectifs pour 1992.
I. LIST A DISEASES

1. Foot and mouth disease

During 1991, a total of 371 outbreaks of foot and mouth disease (FMD) were reported (252 in cattle, 95 in goats and 24 in sheep) affecting a total of 7,418 cattle, 8,751 goats and 590 sheep. Confirmed deaths included 6 bovines, 73 goats, and 2 sheep. Only virus of type O was confirmed. A trivalent A, O and A, vaccine was used for disease control. However, only 24,959 cattle were vaccinated.

2. Rinderpest

As with FMD, very few cattle (17,639) were vaccinated in 1991. As a result, eight outbreaks were reported, at Buraimi, Naaman, Nakhl, Manuma, Ar Rustaq and Barka. A total of 26 cattle were reported to be sick, of which 23 died.

3. Peste des petits ruminants

A total of 118 outbreaks (115 in goats and 3 in sheep), affecting 5,043 goats and 60 sheep, were reported. Approximately 508 goats and sheep were reported dead. A total of 25,213 goats and sheep were vaccinated.

4. Sheep pox and goat pox

A total of 47 outbreaks, affecting 459 goats and 23 sheep, were reported. At least 19 deaths were confirmed. A total of 25,232 animals (18,164 goats and 7,068 sheep) were vaccinated using Kenyan strain goat pox vaccine.

II. LIST B DISEASES

1. Rabies

Rabies continued to spread and cases were reported in almost all regions. Foxes were still the main reservoir of the disease with 101 confirmed cases. However, the disease was clinically confirmed in ten cattle, nine goats, one sheep, one camel, two dogs, one mongoose, one jackal and one wolf. A number of domestic animals also died from rabies; however, this was not confirmed by laboratory analysis. Shooting of stray animals was increased, and 1,612 dogs and 1,078 cats were vaccinated in 1991.

2. Paratuberculosis

Eight cattle and one goat were confirmed to have died of paratuberculosis. Most of the cases were from the Seeb and Rumais areas.
3. **Anaplasmosis, theileriosis and babesiosis**

Twenty-seven bovines, fifteen goats and two sheep were confirmed positive for anaplasmosis and 236 cattle, 1 goat and 9 sheep for theileriosis. Only one bovine was confirmed for babesiosis. Affected animals were given specific chemotherapeutic agents, and tick control programmes were undertaken in infected farms.

4. **Brucellosis**

The status of brucellosis in animals remained the same as in previous years. At least 183 human cases of brucellosis were confirmed.

5. **Dermatophilosis**

Approximately five cases of streptotrichosis were reported among goats.

6. **Bovine spongiform encephalopathy**

As in 1990, no cases of BSE were reported in 1991.

7. **Contagious caprine pleuropneumonia (CCPP)**

At least 292 outbreaks of CCPP were reported. Affected animals included 16,101 goats and 945 sheep. At last 237 deaths were confirmed. Affected animals were treated symptomatically.

8. **Surra**

A total of 1,525 camels were clinically sick, and were treated specifically for trypanosomiasis (*T. evansi*)

**Poultry diseases**

9. **Fowl pox**

A total of seven outbreaks of fowl pox, affecting a total of 1,568 birds, were reported in 1991. Outbreaks were reported at Seeb, Saham, Buraimi and Bahlat.

10. **Avian infectious bronchitis**

In July 1991, 80 birds were reported to have suffered from avian infectious bronchitis at Saham.

11. **Fowl typhoid (S. gallinarum)**

Fowl typhoid was reported and confirmed for the first time in Oman. Three outbreaks, affecting a total of 10,730 birds, occurred at Rumais, Bidbid and Al Harm. About 825 birds are believed to have died.

12. **Marek's disease**

One outbreak, affecting ten birds in a back-yard farm, was reported at Seeb.

13. **Mycoplasmosis**

The disease is present throughout Oman and causes moderate mortality. Infected birds are usually treated.
III. OTHER DISEASES

1. **Blackleg**

   A total of 192 bovines in Dhofar suffered from blackleg. A total of 18,018 cattle were vaccinated.

2. **Botulism**

   Severe outbreaks of botulism resulting from the feeding of dead sardines to livestock were reported in Dhofar. Approximately 987 cattle, 705 goats and 120 camels were reported to be infected. 18,018 cattle were vaccinated during the year.

3. **Tetanus**

   A total of 34 goats and 3 bovines died of tetanus in the areas of Sohar, Saham, Shinas, Seeb and Izki. 165,327 goats and sheep were vaccinated.

4. **Contagious pustular dermatitis**

   A total of 1,444 cases of contagious pustular dermatitis (1,406 goats and 38 sheep) were reported. Nine goats are reported to have died. Sick animals were treated symptomatically.

5. **Enterotoxaemia**

   A total of 6,869 cases of enterotoxaemia were suspected in sheep and goats. One case was also reported in cattle. At least 403 deaths were reported among goats.

6. **Cowpox**

   One suspected but unconfirmed case of cowpox was reported at Barka.

7. **Camel pox**

   A total of 109 cases of camel pox were reported. All were from Dhofar and Sinaw. Infected camels were treated symptomatically.

8. **Ephemeral fever (three-day sickness)**

   A total of 15 bovines were suspected of having 3-day sickness. All were from Al Khaburah.

9. **Actinobacillosis**

   Two bovines from Seeb suffered from actinobacillosis, and were treated symptomatically.
INTRODUCTION

1991 marked the start of the provision of new veterinary services in the country. The enactment of the Local Government Code on 10 October 1991 will lead to changes in the current veterinary structure. The existing agricultural services, integrating the veterinary services with crops and fishery services at the provincial level, will be reorganised. Under the new Code, each province will have its own Provincial Veterinarian under the Provincial Governor.

The Bureau of Animal Industry (BAI) will remain a staff bureau with the mandate to formulate and coordinate plans, programmes and policies in the national provision of veterinary services. Under the new Code, the BAI will deal directly with the newly appointed Provincial Veterinarians. The change is expected to be fully implemented by 1 July 1992.

Under the auspices of the Philippines Animal Health Centre, a UNDP/FAO-assisted BAI project, several field agricultural technologists were trained in the recognition of priority diseases and in disease surveillance and monitoring. This project also includes animal disease research.

The Farm Integrated Animal Health and Production Project, a GTZ-assisted BAI project, started in 1991. Two consultants were sent to assist with the project. A number of barangays (villages) in Bulacan were surveyed to evaluate which are to be included in the 15-barangay pilot study.

1. LIST A DISEASES

1. Foot and mouth disease

An outbreak of foot and mouth disease (FMD) type C virus was reported in swine in the FTI abattoir in Taguig, Metro Manila. Apart from this, no other confirmed case was reported, although there were unconfirmed field reports from provinces near Metro Manila of the sporadic occurrence of this disease.

The eradication programme in Masbate and South Cotabato is continuing. Mass vaccination is regularly conducted in these provinces, coupled with strict quarantine and surveillance measures. Since the start of the campaign in 1988, no cases have been reported from these provinces.

Four provinces were officially declared by ASEAN as FMD-free zones in 1991, namely the island provinces of Basilan, Sulu and Tawi-Tawi in the south and Batanes of the north. The disease-free status of the previously declared FMD-free zones was maintained. Serological surveys were conducted in these areas to monitor the FMD virus titre of the livestock population.
2. **Hog cholera**

In 1991, no major outbreaks occurred though several sporadic cases were reported. Vaccination is the primary control measure being implemented. A research programme aimed at investigating the course of the disease and explaining the changes in its epidemiology was started by PAHC. Initial findings are that the disease is present in almost all provinces.

3. **Newcastle disease**

In 1991, no major outbreaks occurred, though sporadic cases were reported throughout the country. Vaccination is the major control measure being implemented. There is an ongoing research programme, jointly supported by ACIAR, on the use of oral V4 vaccine.

The Philippines remained free from the remaining List A diseases.

II. **LIST B DISEASES**

1. **Anthrax**

Two provinces were affected in 1991: Isabela in the north and Tarlac in the Central Luzon. The outbreak in Tarlac is noteworthy because this was the first case since an outbreak in 1967. Three animals were affected, and eleven people who consumed meat from these animals succumbed to a cutaneous form of anthrax. No human mortalities were reported.

2. **Aujeszky's disease**

There is an ongoing research programme to determine the serological status of Aujeszky's disease in swine. This survey is being conducted throughout the country, both in the commercial and backyard piggeries. Initial results show a positive titre to the disease using ELISA and the agar-gel precipitation test.

Control measures consist of vaccination and quarantine. The use of killed gene-deleted vaccines is allowed in selected areas. Breeding animals for shipment are tested for Aujeszky's disease titre and only those animals found to be negative are allowed to be shipped.

3. **Rabies**

Of the 1,995 samples submitted to the National Animal Disease Diagnostic Laboratory, BAI, 478 samples of dog brains were found to be positive for rabies. The positive cases came from 30 different provinces. Unlike the previous year, when an epidemic occurred in Albay, only sporadic cases were reported in 1991. The October 1990 outbreak in Albay was brought under control as early as January 1991 and only one case was diagnosed by NADDL from this province in 1991.

The rabies control and eradication programme is being coordinated and implemented by an inter-agency committee. The National Rabies Committee comprises the BAI, the Department of Health, the Department of the Interior and Local Government, the Department of Education, Culture and Sport, and the Private Veterinary Practitioners' Association. This group meets regularly and formulates programmes and policies for the control and eradication of rabies. It has targeted 33 provinces for priority rabies control and eradication.
4. **Bovine brucellosis (B. abortus)**

No cases of bovine brucellosis were reported. A serological survey, with the support of IAEA/FAO, is being conducted to determine the serological status of cattle and buffalo in regard to brucellosis.

5. **Haemorrhagic septicaemia**

This remained an enzootic disease of large ruminants. No major outbreaks occurred in 1991, but several sporadic cases were reported. The primary form of control is mass vaccination before the onset of the rainy season.

A research programme is being conducted by PAHC to determine if the cause of haemorrhagic septicaemia in the Philippines is still Carter's B strain of *Pasteurella multocida*. Investigation of previous outbreaks in the past two decades showed B strain to be the cause. However, present investigators suspect that other strains may also cause the disease.

There were no significant changes in other List B diseases.
HOG CHOLERA

Based on field reports
NEWCASTLE DISEASE

Based on field reports

Deaths

Cases

Based on field reports
I. LIST A DISEASES

1. **Foot and mouth disease**

   Foot and mouth disease was not recorded in Poland in 1991. The last reported case was in 1971. Vaccination has been prohibited since 1 July 1991.

2. **Hog cholera**

   The last reported case of hog cholera was in December 1989. Vaccination on a voluntary basis, using lapinized vaccine, has been carried out at the fattening units.

3. **Newcastle disease**

   The last case of Newcastle disease was recorded in 1975. Vaccination using La Sota type vaccine has been carried out on a voluntary basis.

II. LIST B DISEASES

1. **Rabies**

   In 1991 a total of 2,287 rabies cases were diagnosed in animals. This represents an increase of 11.8% on 1990 (2,045 cases) and 20.9% on 1989 (1,891 cases).

   The disease was predominantly in wildlife (81.5% of all cases). Of 1,864 rabid wild animals there were 1,513 foxes (66.1% of all cases), 170 raccoon dogs (7.4%), 94 deer (4.1%), 44 maritons (1.9%), 17 badgers (0.7%) and 15 polecats (0.6%).

   Of 423 rabid domestic animals (18.5% of all cases) 143 were dogs (6.5%), 138 cats (6%), 137 cattle (6%), 3 sheep, 1 horse, 1 goat and 1 pig.

   Vaccination of dogs has been compulsory in Poland since 1949. In 1991, 2,583,042 dogs were vaccinated against rabies.

2. **Bovine brucellosis (B. abortus)**

   Poland has been officially free of bovine brucellosis since 1980. A serosurvey was carried out in 1991. Blood samples from 1,793,495 animals were tested. No positive reactors were found. Vaccination is prohibited in Poland.
3. **Bovine tuberculosis** (*M. Bovis*)

Poland has been officially free of bovine tuberculosis since 1975. A surveillance survey is carried out annually. A total of 3,223,667 cattle were tested in 1991 and reactors to the intradermal tuberculin test were identified and slaughtered. 262 reactors were found positive in the bacteriological tests.

4. **Enzootic bovine leukosis**

Enzootic bovine leukosis has been notifiable in Poland since 1980. A total of 138 tumorous cases were registered during the year. A programme of testing and elimination of reactors was carried out using the AGID test in 41 out of the 49 provinces. A total of 2,456,094 cattle were tested in 1991. Fifteen provinces have been declared officially free of enzootic bovine leukosis. These are: Bialystok, Lomza, Biala Podlaska, Lublin, Kraków, Siedlce, Kielce, Ostroleka, Łódz, Radom, Bielsko-Biała, Tarnów, Warsaw, Chelm and Krosno.
PORTUGAL

I. LIST A DISEASES

1. **Foot and mouth disease**

   In accordance with Article 4 of Directive 90/423/EEC of 26/06/90, FMD vaccination was suspended in the whole of Portugal on 30 June 1991. A surveillance scheme was therefore needed after that date so that, in the event of a fresh outbreak of foot and mouth disease, fast and effective action can be taken to eradicate the disease quickly. With this objective, and as laid down in the above Directive, Portugal like other EEC countries developed a "Foot and Mouth Disease Eradication Alert Programme", according to the rules laid down by the Commission of the European Communities.

   The above Programme, drawn up by the Animal Health Department of the General Directorate, has already been submitted to the EC Commission Headquarters in Brussels, Belgium, for comparison with other EEC Programmes, aimed at harmonizing the measures to eradicate the disease. After this, the Programme will be distributed to veterinarians in the country, and meetings are planned in each of the seven Regional Directorates to present and discuss the twelve articles which it contains.

2. **Contagious bovine pleuropneumonia**

   The actions programmed in the "Contagious Bovine Pleuropneumonia Eradication Plan", and approved by Council Decision 89/145/EEC are being continued.

   During 1991, 870,025 animals were tested, of which 2,744 bovines were found to be positive, mostly in the Regional Directorates of Entre Douro e Minho and Beira Litoral.

   A total of 1,120 outbreaks occurred in the Regional Directorates of Entre Douro e Minho and Beira Litoral, affecting progressively smaller areas.

   The specific plan carried out in Bunheiro-Murtosa (Beira Litoral), where all the herds were slaughtered (2,100 animals), has continued and, after restocking, which started in December 1990, no new cases were found in the area covered by the plan.

   It should also be mentioned that the number of cases of contagious bovine pleuropneumonia in the municipality of Murtosa was 13 in 1991, compared with 146 in 1990.

   Similarly, since it was found that 55% of the 736 outbreaks in the Regional Directorate of Entre Douro e Minho occurred in the municipality of Barcelos (407 outbreaks), preventive actions defined in the eradication programme were intensified and a health education campaign for farmers was carried out, in which two teams spent one month and a half in Barcelos, presenting videotapes and leaflets on the disease.

3. **African horse sickness**

   The last case of African horse sickness (AHS) was detected on 2 December 1989 and the last vaccination took place on 2 December 1990.
The new sanitary policies were defined by law (public announcement of 2 January 1991) and remained in force until 2 December 1991. Since this date Portugal has been considered free from the disease.

The importation of horses was subject to restrictions up to the end of 1991. This was aimed at preventing the importation of animals from the neighbouring areas of Spain, which were still infected and controlling the importation of non-vaccinated horses from AHS-free countries that transitted through the infected areas of Spain during summer time.

The exportation of horses to other EC countries was allowed (Decision 91/93/EEC of 11/02/91) between 1 February and 30 April, which is considered to be the period of low activity for the vector Culicoides imicola.

The scientific basis of this decision lies in the study performed by researchers working on the research project under the direction of the LNIV, aimed at studying the taxonomy, biology and ecology of the AHS vector.

Taking advantage of this situation, 76 animals were exported as follows:

<table>
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<th>Number</th>
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<tr>
<td>Spain</td>
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</tr>
<tr>
<td>France</td>
<td>36</td>
</tr>
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<td>Belgium</td>
<td>17</td>
</tr>
<tr>
<td>Great Britain</td>
<td>12</td>
</tr>
</tbody>
</table>

In accordance with Directive 90/426/EEC of 3/12/91, two years after the last outbreak of African horse sickness and one year after the last vaccination, Portugal finally fulfilled the conditions to be considered free from the disease.

The Permanent Veterinarian Committee approved unanimously, on 7 November 1991, a decision whereby, from this date, Portugal was considered free from the disease.

Nevertheless, in accordance with a public announcement, there is a small surveillance area, near the Spanish border, where the movement of animals is still subject to restrictions.

The above surveillance area, in Portuguese territory, is south of Monsaraz, and is the area between the Portuguese border and the following: the Guadiana river until Mértola, the road between Mértola and S. Bartolomeu, the road between Giões and Cachopo, and the road between Cachopo and Tavira.

4. **African swine fever**

The programmed actions of the Eradication Programme are being continued. During 1991 only 15 outbreaks were registered, affecting a total of 8,992 animals.

5. **Hog cholera**

There have been no outbreaks of hog cholera in Portugal since 1986. In the first semester of 1991, and as programmed under the present plan, 110,000 serological tests were carried out in pigs slaughtered in a random sample (10%) of abattoirs. By Decision 91/378/EEC of 1/07/91, Portugal was declared officially free from hog cholera.

6. **Newcastle disease**

In 1991, five outbreaks were confirmed. During the same period, 121,000,000 birds were vaccinated.
II. LIST B DISEASES

1. **Aujeszky's disease**
   
   Vaccination of suckling pigs and breeding stocks is being continued. During 1991, 31 cases were confirmed in the laboratory.

2. **Echinococcosis/hydatidosis**
   
   An Echinococcosis/hydatidosis Control Programme is being developed mainly in sanitary education establishments and involving students.

3. **Rabies**
   
   The country continues to be free from the disease, although sanitary and medical prophylactic measures have not been forgotten. The catching and slaughtering of abandoned and stray dogs have been greatly intensified.

**Sheep and goat diseases**

4. **Caprine and ovine brucellosis (B. melitensis)**
   
   In pursuance of the eradication and control of this disease, Decision 91/217/EEC approved the "Caprine and Ovine Brucellosis (B. melitensis) Eradication Programme".

**Fish diseases**

5. **Viral haemorrhagic septicaemia and infectious haematopoietic necrosis**
   
   The "Plan for the Epidemiological Study of Infectious Haematopoietic Necrosis and Viral Haemorrhagic Septicaemia" was approved by Decision 92/45/EEC of 16/12/91. This plan came into operation in January 1992, and will take place in the 50 salmonidae pisciculture establishments registered in Portugal.

   As determined by the above Plan, captures will take place over a period of four years, between September and March. The ultimate aim is to allow Portuguese pisciculture establishments to be considered free from these diseases, so as to allow unrestricted exportation to EEC countries and other countries of eggs, fry and other products.

**Apicultural prophylaxis**

In the first semester of 1992, the Animal Health Department of the General Directorate of Forestry and Apiculture Organisations will start the registration of all beekeepers.

This will provide initial data on Portuguese apiculture, a precondition for developing an effective programme to control bee diseases. The main purpose of this programme is to provide administrative support for sanitary actions, namely: laboratory diagnosis, sanitary control of apiaries or endemic areas and compulsory disinfection and treatment.

All these measures will be carried out with the support of beekeepers' organisations, to whom technical information will be supplied.
1. **Peste bovine**

Quelques foyers de peste bovine ont été enregistrés en 1978, sur des troupeaux en transhumance dans la région de Saint-Louis et depuis, aucun foyer n'a été signalé. Cependant, le cheptel bovin reste toujours sous la menace de cette affection comme le montrent bien les résultats de la sérosurveillance.

La vaccination du cheptel bovin contre la peste et la péripnéumonie contagieuse bovines continue d'être organisée annuellement avec l'utilisation du vaccin bivalent "BISSEC" ; en 1991, le taux de couverture vaccinale a été de 74 %, soit inférieur d'un point à celui de l'année 1990.

2. **Péripnéumonie contagieuse bovine**

Depuis 1977, le Sénégal n'a pas enregistré de foyer de cette affection.

3. **Peste des petits ruminants**

Maladie enzootique au Sénégal et souvent associée à la pasteurellose comme maladie de sortie ; vingt et un foyers ont été enregistrés dont aucun dans les régions de Tamba et de Saint-Louis. La couverture vaccinale est de 1 % (60 461 vaccinés sur une population estimée de 5 800 000 petits ruminants). Il y a une diminution de la prévalence par rapport à l'année 1990.

4. **Dermatose nodulaire contagieuse**

Elle est devenue enzootique au Sénégal depuis 1988, année où elle a été diagnostiquée. Les mesures prophylactiques consistent en l'utilisation d'un vaccin hétérologue antivariolique. Des recherches sont en cours pour la fabrication d'un vaccin homologue.

5. **Fièvre de la Vallée du Rift**

Elle est apparue en 1987 dans la région de Saint-Louis et depuis le laboratoire national d'élevage et de recherches vétérinaires de Dakar a installé le long du fleuve Sénégal des troupeaux sentinelles ovins, caprins et bovins. En 1991, la prévalence de la maladie est revenue à un niveau avant épizootie. Ce qui suppose que des risques d'apparition de nouvelles épizooties de la maladie lors de l'hivernage prochain sont à craindre.

Des enquêtes épidémiologiques seront menées dans les régions de Louga, de Tambacounda, dans un proche avenir par le laboratoire national en collaboration avec l'ORSTOM et l'Institut Pasteur.

6. **Clavelée et variole caprine**

7. **Peste porcine africaine**

Elle est enzootique. Les seules mesures prophylactiques actuelles sont la désinfection, le vide sanitaire, l'isolement des malades.

8. **Peste aviaire**

Elle est enzootique. Elle est la cause principale des importantes pertes enregistrées en aviculture traditionnelle.

**II. MALADIES DE LA LISTE B**

1. **Fièvre charbonneuse**

Elle est présente dans toutes les régions du Sénégal mais avec une incidence plus marquée dans la zone septentrionale du pays. La prophylaxie consiste en la vaccination et en l'incinération des cadavres d'animaux atteints.

2. **Septicémie hémorragique**

Enzootique dans les régions septentrionales du pays en raison de la forte pluviométrie ; prophylaxies médicale appliquée annuellement.

3. **Trypanosomose bovine**

On la rencontre au Sénégal en zone soudano-sahélienne et en zone soudanienne.

La lutte contre les glossines se pratique, mais à petite échelle. *Trypanosoma congolense, T. vivax* et *T. Brucei* ont été mis en évidence.

4. **Rage canine**

Elle est enzootique dans de nombreuses régions.

Aucun cas de rage humaine n’a été signalé en 1991. La lutte contre les chiens errants est régulièrement menée avec l'aide des collectivités locales.

Exceptées la peste et la péripneumonie contagieuse bovines, dont la vaccination est prise en charge par l'Etat, la vaccination contre les autres maladies est supportée par les éleveurs. Le taux de couverture vaccinale est généralement très faible. Une plus grande sensibilisation des éleveurs en matière de médicalisation du cheptel doit être menée car la prophylaxie médicale constitue la base d'une intensification des productions animales.


Le Sénégal est divisé administrativement en dix régions et trente départements (trois départements par région). Chaque service départemental est dirigé par un ingénieur des travaux d'élevage, sauf dans deux
départements où l'on trouve un docteur vétérinaire. Chaque poste vétérinaire est occupé par un agent technique d'élevage chargé de l'encadrement à la base et des opérations vaccinales.

Chaque région organise la campagne de prophylaxie en fonction de sa spécificité. Aux niveaux régional, départemental et local, les services vétérinaires définissent :

- la formation des équipes et la programmation des centres de vaccination ;
- l'évaluation des moyens à mettre en œuvre ;
- les modalités de participation des éleveurs aux frais de la campagne ;
- l'appui attendu des collectivités locales, des sociétés et des projets de développement rural.


Effectif estimé : 2 311 000  
Effectif visité : 1 863 535  
Effectif vacciné : 1 719 463

Les régions de Saint-Louis et de Tambacounda ont obtenu des taux de couverture vaccinale respectifs de 78 et 84 %.

La participation des éleveurs aux frais récurrents de la campagne de vaccination a été plus importante qu'au cours des années précédentes (8,70 F par bovin vacciné en 1991 contre 7,50 F par bovin en 1990).

L'idée de faire supporter progressivement le coût du vaccin "BISSEC" aux éleveurs se développe de plus en plus, la dose vaccinale valant 17 F (prix laboratoire).


Sur une commande globale de 1 715 000 doses de vaccin "BISSEC", 36 % en a été satisfaite pour le moment.

La couverture vaccinale est provisoirement de 35,50 % pour cette présente campagne de prophylaxie.

IV. RESULTATS DE LA SERO-SURVEILLANCE ET PERSPECTIVES DE REORGANISATION DE LA STRATEGIE VACCINALE.

1. Objectifs

Il s'agit d'évaluer les acquis en matière de vaccination contre la peste bovine depuis le PC 15, de définir une stratégie d'éradication de cette maladie au Sénégal, d'établir une base de données pour améliorer le système d'information zoo-sanitaire avec les pays voisins.

2. Méthodologie

Les enquêtes de sérosurveillance ont été menées dans 240 communautés rurales sur les 317 que compte le Sénégal. Un troupeau de bovins est tiré au hasard dans chaque village, également tiré au hasard dans chaque communauté rurale.
Les prélèvements ont concerné 10 animaux dans chacune des classes d’âges suivantes et ce, pour chaque troupeau tiré :

- de 0 à 1 an
- entre 1 et 2 ans
- entre 2 et 3 ans
- au-delà de 3 ans.

Au total 8 312 prélèvements ont été réalisés.

Le test ELISA de compétition a été utilisé pour la recherche des anticorps de la peste bovine.

Deux départements ont été tirés au hasard dans chaque région. Dans chaque département toutes les communautés rurales ont été visitées.

3. Résultats

D’une manière générale, les bovins âgés de plus de 3 ans ont un taux d'immunité supérieur à 80 % ; chez les autres catégories d'âge, ce taux varie entre 0 et 100 % selon les localités avec une moyenne en dessous de 80 %. Dans de nombreuses localités frontalières, on a noté un taux d'immunité faible. Cette enquête a permis de montrer que dans 85 % des cas, l'immunisation se traduit par une immunité effective.

Diverses raisons permettent d'expliquer les faibles taux d'immunité enregistrés, parmi lesquelles :

- la difficulté d'appréciation de l'âge des animaux et surtout pour les jeunes animaux de 0 à 1 an ;
- la qualité du vaccin liée à une rupture de la chaîne de froid ;
- la non présentation des jeunes catégories d'animaux à la campagne de vaccination ;
- divers facteurs liés à l'agent vaccinateur.

Sur l'ensemble du territoire national, la possibilité de développement de foyers sporadiques, voire de véritables épizooties de peste bovine, n’est pas à écarter.

A la lumière de ces résultats et en attendant que la seconde phase du programme "séro-surveillance" vienne les confirmer, une réorganisation de la stratégie vaccinale est en cours d’étude. Les perspectives suivantes sont envisagées :

- l’arrêt de la vaccination des bovins âgés de plus de 3 ans ;
- une campagne massive de vaccination de tous les animaux âgés de 4 mois à 3 ans ;
- un démarrage précoce de la campagne de vaccination dans les zones où le déficit fourragier s’installe tôt, entraînant ainsi le déplacement des animaux ;
- une identification systématique des animaux vaccinés par marquage indélébile ;
- la mise en place d'une surveillance épidémiologique basée sur une meilleure mobilité du service et sur l'amélioration des capacités de diagnostic de la maladie.
### CAMPAGNE DE VACCINATION 1990-1991

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<th>BISEC</th>
<th>Cheptel</th>
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<td>Présentés</td>
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<td>110 000</td>
<td>99 954</td>
<td>94 517</td>
<td>67,51</td>
</tr>
<tr>
<td>Louga</td>
<td>200 000</td>
<td>332 000</td>
<td>221 120</td>
<td>197 439</td>
<td>59,47</td>
</tr>
<tr>
<td>Fatick</td>
<td>190 000</td>
<td>174 000</td>
<td>163 152</td>
<td>153 890</td>
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<tr>
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<td>320 000</td>
<td>409 000</td>
<td>335 509</td>
<td>284 375</td>
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<td><strong>Total</strong></td>
<td>2 079 320</td>
<td>2 311 000</td>
<td>1 863 535</td>
<td>1 719 463</td>
<td>74,40</td>
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<tr>
<td><strong>1990</strong></td>
<td>2 056 301</td>
<td>2 338 893</td>
<td>1 941 944</td>
<td>1 767 378</td>
<td>75,56</td>
</tr>
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(*) Taux 1 = vaccinés/estimés  
(**) Taux 2 = vaccinés/présentés
RESULTATS DE LA SEROSURVEILLANCE
(POURCENTAGE DE SEROPOSITIVITE)

<table>
<thead>
<tr>
<th>Départements</th>
<th>&lt; 1 an</th>
<th>1 &lt; 2 ans</th>
<th>2 &lt; 3 ans</th>
<th>&gt; 3 ans</th>
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<td>Oussouye</td>
<td>42</td>
<td>70,4</td>
<td>85</td>
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<td>64,3</td>
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<tr>
<td>Thies</td>
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<tr>
<td>M'Bour</td>
<td>35</td>
<td>54</td>
<td>89</td>
<td>87,5</td>
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<tr>
<td>Bakel</td>
<td>48,4</td>
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<td>Kafrirne</td>
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<td>89</td>
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<tr>
<td>Louga</td>
<td>35,8</td>
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<td>Linguère</td>
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<td>85,3</td>
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<td>Dagana</td>
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<td>70,5</td>
<td>83</td>
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<tr>
<td>Podor</td>
<td>32</td>
<td>54</td>
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<td>82</td>
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<td>Diourbel</td>
<td>34</td>
<td>33</td>
<td>68</td>
<td>87</td>
<td>55,5</td>
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</tr>
<tr>
<td>M'Backé</td>
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<td>17</td>
<td>46</td>
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<td>Pikine</td>
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<td>81</td>
<td>85</td>
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<td>Dakar</td>
</tr>
<tr>
<td>Moyenne</td>
<td>37</td>
<td>51</td>
<td>73</td>
<td>85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SLOVENIA

I. ORGANISATION OF THE SERVICE

The Veterinary Service of the Republic of Slovenia is organised along contemporary lines in accordance with the standards of the European Community. Proposed legislation provides for similar organisation to that existing in Italy, Bavaria and Denmark. The ratio between state and private services is 40:60, that is, there are 150 graduate veterinary surgeons in the state service and 342 in private practice.

The different organisations units and qualified staff meet all the necessary professional, organisational, personnel and hygienic technical conditions to ensure the safe and professional execution of veterinary services. In accordance with the provisions of European Community regulations, the state institutes will ensure intra-laboratory controls, in cooperation with other laboratories in countries of the European Community, together with intra-laboratory controls of diagnostic laboratories.

Supervision of the work of Veterinary Service operatives is the responsibility of the Republican Veterinary Inspectorate, which is headed by the Republican Veterinary Service, an agency within the Ministry of Agriculture, Forestry and Food.

II. VETERINARY - SANITARY CONTROL OF FOODSTUFFS OF ANIMAL ORIGIN

Ante-mortem inspection, meat inspection and examination of other foodstuffs of animal origin - milk products, meat products, eggs, fish and honey - is obligatory in the Republic of Slovenia and is performed in all food processing plants which process food for public consumption. The inspection of meat and other animal products is performed by graduate veterinary surgeons permanently stationed in food processing plants. They are employed by the regional state veterinary institutes, which are financed from the state budget. The examination of meat for trichinae is performed by veterinary technicians under the supervision of graduate veterinarians, who are responsible for ensuring that professional examinations are carried out in accordance with existing legislation.

The regulations governing the inspection of meat and other animal products are those issued by the Federal Secretariat for Agriculture of the former Yugoslavia. On independence, the Republic of Slovenia took over all veterinary regulations and continues to apply them. It must be stressed that all regulations for the examination of livestock are in accordance with the directives of the European Community. The Veterinary Service of the Republic of Slovenia regularly adapts its own regulations to new regulations of the European Community in the sanitary control of foodstuffs.
At present, the number of export food processing plants in the Republic of Slovenia are as follows:

- 6 exporting abattoirs registered for trade in the European Community,
- 1 exporting abattoir registered for export to the United States of America,
- 4 exporting abattoirs for poultry meat,
- 3 plants for the export of smoked ham,
- 4 exporting plants for durable preserves,
- 1 exporting plant for processing fish,
- 3 exporting plants for game,
- 1 plant for the export of natural intestines,
- 1 plant for the export of honey,
- 6 exporting dairies.

The number of graduate veterinarians performing animal health inspections in the exporting plants are as follows:

- in exporting abattoirs: 36
- in other exporting plants: 26.

Examinations for trichinae in exporting abattoirs are performed by 9 veterinary technicians. Examinations for trichinae are performed in all exporting plants by the method of artificial digestion with magnetic mixing.

Supervision of the work of meat inspectors in exporting plants is performed directly by the Veterinary Inspectorate, Republican Veterinary Service, under the control of the Ministry of Agriculture, Forestry and Food. The Republican Veterinary Service issues instructions to inspectors for the uniform implementation of legislation and other regulations on the health inspection of livestock and foodstuffs of animal origin. A programme of systematic monitoring of bioresidues is also in operation, which is performed uniformly over the entire territory of Slovenia in all food processing plants, not only those concerned with exports.

Testing of samples of individual tissues and organs for bioresidues and other chemical and microbiological analyses is carried out by state laboratories: the Institute for Hygiene of Foodstuffs of the Veterinary Faculty, the Jozef Stefan Institute and the University Institute for Health-related Safety, all of which are based in Ljubljana.

III. THE EPIDEMIOLOGICAL SITUATION

The epidemiological situation is shown in Figure 1. It can be considered as very favourable, since, apart from 50 outbreaks of Newcastle disease introduced from the southern republics, there were no outbreaks of List A diseases.

With the introduction of veterinary controls on trade in livestock at the southern borders, the epidemiological situation is expected to improve considerably this year. Detection and elimination of individual infectious diseases, such as tuberculosis, brucellosis, leptospirosis and similar diseases, are the subject of a special Ministerial Order, requiring measures to be listed by disease including details of their extent. Vaccinations against hog cholera are performed only in production units with more than one thousand animals. We envisage the abolition of this measures as of 1 January 1993.

Vaccination against foot and mouth disease and Aujeszky's disease is forbidden in the Republic of Slovenia, as is vaccination of breeding/pedigree stock against IBR-IPV, since the Veterinary Service wishes to have a clear view of the situation regarding natural infections.
Figure 1. - ANIMAL HEALTH STATUS IN SLOVENIA

1990 - 1991

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1991</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of outbreaks</td>
<td>No. of cases</td>
<td>No. of outbreaks</td>
</tr>
<tr>
<td><strong>List A diseases</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hog cholera</td>
<td>1</td>
<td>220</td>
<td>0</td>
</tr>
<tr>
<td>Newcastle disease</td>
<td>45</td>
<td>856</td>
<td>51</td>
</tr>
<tr>
<td><strong>List B diseases</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echinococcosis</td>
<td>776</td>
<td>9,342</td>
<td>482</td>
</tr>
<tr>
<td>Leptospirosis</td>
<td>36</td>
<td>141</td>
<td>18</td>
</tr>
<tr>
<td>Q fever</td>
<td>1</td>
<td>52</td>
<td>37</td>
</tr>
<tr>
<td>Paratuberculosis</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Bovine tuberculosis</td>
<td>3</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Bovine cysticercosis</td>
<td>81</td>
<td>52</td>
<td>62</td>
</tr>
<tr>
<td>Infectious bovine rhinotracheitis</td>
<td>22</td>
<td>135</td>
<td>19</td>
</tr>
<tr>
<td>Brucella ovis infection</td>
<td>8</td>
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</tr>
<tr>
<td>Equine infectious anaemia</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Trichinellosis</td>
<td>5</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Avian tuberculosis</td>
<td>8</td>
<td>50</td>
<td>7</td>
</tr>
<tr>
<td>Fowl typhoid</td>
<td>2</td>
<td>1,801</td>
<td>0</td>
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<tr>
<td>Pullorosis (S. pullorum)</td>
<td>48</td>
<td>494,174</td>
<td>19</td>
</tr>
<tr>
<td>Viral haemorrhagic disease of rabbits</td>
<td>138</td>
<td>3,344</td>
<td>32</td>
</tr>
<tr>
<td>Varroasis</td>
<td>All Republics infected</td>
<td>All Republics infected</td>
<td></td>
</tr>
</tbody>
</table>
The major problem in the Republic of Slovenia has been, and remains, rabies. Through a rigorous action of elimination, by consistently vaccinating dogs and pasture animals, and especially through the oral vaccination of foxes, sylvatic rabies has been successfully reduced to almost one quarter of all positive cases. The programme of oral vaccination is included in the European Community campaign for the elimination of rabies. The campaign began in 1988 and is due to end in 1992. In 1991, a total of 270,000 doses were administered (110,000 over 8,000 km² in spring and 160,000 over 10,000 km² in autumn).

In 1991, rabies was positively identified in 201 foxes, 15 cats, 1 dog, 1 badger and 1 marten.

IV. TRADE IN PHARMACEUTICALS FOR VETERINARY USE

Drugs for use in veterinary science are produced in two factories in the Republic of Slovenia: "Krka" Pharmaceuticals Factory in Nova Mesta and "Lek" Pharmaceutical Products in Ljubljana. Both these factories also produce medicines for human use and have FDA registration. Both are certified by the European Community as conforming to GMP norms. The capacity of the two factories is such that 10% of their production is sufficient for the needs of Slovenia, the remainder being exported.

There is no production of biological preparations or diagnostic materials in the Republic of Slovenia.

Veterinary drug registration is carried out by a special commission of the Republic of Slovenia. By decision of the commission, it is bound by directives of the European Community regarding documentation for registration. The use and registration of drugs are based on the European Pharmacopoeia.

Veterinary drug production and trade is under the permanent supervision of the Republican Inspectorate. The use of drugs is supervised by the Veterinary Service especially with regard to restraint. The use of non-steroid anabolics or hormone-based anabolics is forbidden in the Republic of Slovenia.

V. BORDER VETERINARY SERVICES

On independence, the Republic of Slovenia also took over the task of providing border veterinary services, both on the borders with Italy, Austria and Hungary and on the new state border with the Republic of Croatia. The Border Veterinary Services carry out all tasks in connection with import, export and transit in accordance with the veterinary legislation of the Republic of Slovenia, and the legislation of the former Yugoslavia, which Slovenia has temporarily adopted while its own is in preparation, and in accordance with international veterinary conventions, to which the Republic of Slovenia is totally committed.

The Border Veterinary Services are organised into six border posts, which perform their tasks at 29 international frontier road, rail, air and sea crossing points (Figure 2).

At border crossings with Italy and Austria, the veterinary inspectors employed by the Border Veterinary Services before independence of the Republic of Slovenia continue to carry out their duties. New inspectors, trained at previously existing border crossings, have been appointed for the new border crossings with Hungary and the Republic of Croatia. The Border Veterinary Services are a part of the Republican Veterinary Service of the Ministry of Agriculture, Forestry and Food.
Figure 2

Border veterinary stations and crossings

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LEGOEND:

▲ border veterinary station
▼ road frontier crossing
▲ rail frontier crossing
■ air frontier crossing
● sea frontier crossing

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Ljubljana-Centre
In carrying out their duties the Border Veterinary Services still use export certificates which were decreed by international convention for the territory of the former Yugoslavia, and Yugoslav seals of the Border Veterinary Services are still predominantly used, although Slovene seals are used with the agreement of certain countries. The way the Border Veterinary Services are organised and carry out their work ensures the fulfilment of all functions and obligations required by international convention.

VI. ORGANISATION

![Organisation Diagram]

(1) Including veterinary inspectorate
INTRODUCTION

In accordance with the recommendations of the OIE, the Directorate of Animal Health has started to train all State Veterinarians in the basic principles and applications of epidemiological techniques.

The Directorate has succeeded in instituting a Technikon course for Animal Health Officials to enable Pupil Animal Health Technicians as well as some of the Stock Inspectors, to obtain the National Diploma: Animal Health. The course consists of 12 subjects to be completed over an average period of four years. The subjects are: Administration, Animal Diseases I & II, Occupational Communication I & II, Agricultural Economics, Epidemiology, Laboratory Techniques, Zootechnology, Controlled Animal Diseases, Pasture Management and Anatomy and Physiology. Students receive in-service training and lectures under the guidance of State Veterinarians who act as mentors on behalf of the Technikon.

I. LIST B DISEASES

1. Rabies

A total of 1,497 suspected rabies samples were received during 1991 and 491 positive cases were identified. This is an increase of 24% compared with 1990. Dogs constituted 62% of the number of cases diagnosed positive for rabies.

Outbreaks of canine rabies remains a serious problem in Natal. Certain drastic steps are currently undertaken to increase the number of dogs vaccinated. It is estimated that 40 percent of dogs in Natal and Kwa Zulu are annually vaccinated against the disease.

A research project involving the oral vaccination of dogs and members of the viveridae family, as well as research into the ecology of the most important species responsible for the spread of rabies in wild animals are being conducted jointly by the Directorate of Animal Health and the Veterinary Research Institute at Onderstepoort.

2. Tuberculosis

Tuberculosis was diagnosed for the first time in buffalo in the National Kruger Park in 1990. *Mycobacterium bovis* was cultured from the infected animals. During the culling of buffalo in 1991 a total of 1,028 buffalos were examined to determine the prevalence of the disease in herds south of the Letaba river. A total of 32 herds were sampled and 13 herds had positive cases. The prevalence of the disease in the infected herds varied between 3% and 33%.

Lesions were mainly seen in the lungs and associated lymph nodes. The size of the lesions varied between pea size and the size of a chicken egg.

All movements of buffalo to farms in the rest of the foot and mouth disease control area were suspended and surveys are being conducted to determine the prevalence of the disease in buffalo outside the Kruger National Park.
3. **Avian influenza**

An influenza virus infection was diagnosed in ostriches which showed the following symptoms: listlessness, inappetence, a lime-green discoloration of the wine death and in many cases an ocular discharge. Birds between the age of 1 week and 12 months were affected with a mortality rate of 1.5 percent and a morbidity rate of 2.4 percent.

The virus was identified at the International Reference Laboratory at Weybridge in the United Kingdom as an Influenza A virus of the HZNI subtype.

Chickens were inoculated with the virus but did not develop any symptoms but all the chicken sero-converted. Egg production remained unchanged as well in commercial layers.

The source of the infection is unknown and wild, migratory birds could have played a role in transmitting the disease because the ostriches are raised in open camps. The severe drought in the areas where the chickens are raised, causing the farmers to confine their birds to small areas for feeding, may also play a role. A dramatic decrease in new cases were seen when good rains fell over these areas.

**II. OTHER DISEASES**

**Sheep scab**

A sharp increase in the prevalence of sheep scab was seen during 1991. A 48.4% increase in outbreaks was reported and a total of 728,251 sheep and goats were dipped or treated for the disease.

The severe drought and the poor economic situation of the farmer, resulted in the treatment of only visibly infected animals by some farmers; routine inspections by staff of the Directorate of Animal Health led to the discovery of these outbreaks.

The Animal Diseases Act (Act 35 of 1984) was amended during 1991 making notification of all abnormal skin conditions associated with symptoms of itchiness or wool loss compulsory.
I. MALADIES DE LA LISTE A

Aucun cas de maladie de la liste A n'est apparu en 1991.

La vaccination du cheptel bovin contre la fièvre aphteuse, pratiquée annuellement depuis 1967, a été abolie. Plus aucun animal n'a été vacciné depuis le 1er janvier 1991. Afin de pouvoir recourir à la vaccination en cas d'urgence, la Suisse s'est constitué un stock d'antigènes concentrés chez un producteur français. Cette réserve permet de formuler en temps utile 300 000 doses de vaccin contre chacun des types A, O, C et Asia1.

Péripneumonie contagieuse bovine

A la mi-décembre, les services vétérinaires italiens ont constaté la présence d'anticorps sur six bovins importés de Suisse trois semaines plus tôt. Les contrôles effectués dans tous les troupeaux d'origine n'ayant révélé aucun titre sérologique douteux ni aucune anamnèse suspecte, il a été admis que les vaches en question, dont quelques-unes présentèrent des lésions pulmonaires typiques à l'abattage en janvier 1992, s'étaient infectées après avoir passé la frontière.

II. MALADIES DE LA LISTE B

1. Maladie d'Aujeszky

Aucun cas n'a été diagnostiqué depuis deux ans. Toute vaccination reste interdite.

2. Rage

Cette zoonose a marqué une certaine recrudescence, le nombre de cas, essentiellement des renards, ayant passé de 24 en 1990 à 99 en 1991. Les cas restent limités à une région limitrophe avec la France. Des campagnes de vaccination orale des renards sont effectuées au printemps et en automne sur un territoire de 5 000 km² englobant la région infestée et les territoires directement menacés.

3. Brucellose et tuberculose bovines

La Suisse est officiellement indemne de brucellose depuis 1963 et de tuberculose depuis 1959. Un bovin a été éliminé en 1991 pour cause de réaction positive à l'épreuve de la tuberculine.

4. Leucose bovine enzootique

1991, 32 étables étaient encore en voie d'assainissement. Au cours de 1992, plus de 99,9 % des 70 000 troupeaux bovins rempliront les conditions pour être reconnus officiellement indemnes de leucose bovine enzootique.

5. **Rhinotrachéite infectieuse bovine (IBR/IPV)**

Les contrôles bisannuels des troupeaux (épreuve ELISA sur des échantillons de lait) ont permis de déceler un ou plusieurs animaux positifs dans 12 étables, dont sept dans le cadre d'un foyer local. Abstraction faite de cet incident, la situation concernant l'IBR/IPV reste très bonne, ce qui a permis de réduire la fréquence des contrôles à un examen annuel des troupeaux.

6. **Encéphalopathies spongiformes**

Suite à l'apparition du premier cas d'encéphalopathie spongiforme bovine (BSE) en novembre 1990, des mesures immédiates ont été ordonnées pour enrayer sa propagation et protéger le consommateur contre une éventuelle mise en danger de sa santé. Par la même occasion, des mesures ont également été prises pour lutter contre la tremblante au cas où cette maladie devait apparaître en Suisse. Les mesures de lutte contre la BSE comprennent en particulier l'obligation d'annoncer tout cas suspect, l'interdiction d'affourager des farines de viande et d'os aux ruminants, l'incinération des carcasses d'animaux atteints d'encéphalopathie, et l'interdiction de livrer à la consommation humaine le cerveau, la moelle épinière, la rate, le thymus et l'intestin des bovins âgés de plus de 6 mois.

106 bovins, 13 moutons, 185 chiens et chats, ainsi que 17 animaux divers présentant des symptômes neurologiques suspects ont fait l'objet d'un examen histologique du cerveau pour la recherche d'encéphalopathie spongiforme. Sur ce total, neuf vaches se sont révélées atteintes de BSE, et un mouton de tremblante. Il s'agit là du premier cas de tremblante diagnostiqué en Suisse depuis plus de 10 ans. Tous les moutons du troupeau atteint ont été tués et détruits. Pour plus de détail, nous renvoyons à notre rapport du 23 septembre 1991 consacré au thème technique I de la 60e Session Générale de l'OIE.

**Maladies des ovins et des caprins**

Une ordonnance fédérale régulant l'octroi de subventions au Service Sanitaire Caprin (SSC) est entrée en vigueur le 1er novembre 1991. Le SSC fonctionne sous forme d'une coopérative et vise en premier lieu l'éradication de l'arthrite-encéphalite caprine (AEC). L'adhésion des éleveurs est facultative. Ils doivent s'engager à assainir leurs troupeaux et à n'y introduire que des chèvres provenant d'élevages contrôlés quant à l'absence d'AEC. Le programme d'assainissement repose sur l'isolement des cabris nouveau-nés en vue de la constitution de troupeaux indemnes d'AEC et des contrôles sérologiques répétés pour confirmer l'absence de l'infection. A la fin 1991, près de 2 000 éleveurs avaient adhéré au SSC.

Les autres maladies de la Liste B n'ont pas été constatées en 1991 ou n'ont pas suscité de problèmes particuliers. Les mesures de lutte prises d'urgence en 1988 pour lutter contre la métrite contagieuse équine ont porté leurs fruits. Aucun cas de métrite contagieuse équine n'a été diagnostiqué en 1991. La Suisse n'importe que très peu de porcs vivants, raison pour laquelle nos élevages ont probablement été jusqu'ici préservés d'une contamination par le virus du syndrome dysgénésique et respiratoire du porc.
I. LIST A DISEASES

Sweden is free from all diseases on List A.

II. LIST B DISEASES

1. Aujeszky's disease

A voluntary programme regarding Aujeszky's disease was started in 1991. Approximately 1,000 herds were included in the programme during the year. The programme consists of a test at slaughter procedure. In large herds with a high prevalence of the disease, vaccination with a gI-negative vaccine is permitted.

2. Bovine tuberculosis

Sweden has been free from bovine tuberculosis in cattle since the 1950s. Only sporadic cases have been reported. The last recorded case in cattle was in 1978.

In 1991, tuberculosis due to Mycobacterium bovis was found in a herd of 500 farmed fallow-deer. A stamping-out policy was implemented. Autopsies were performed and the prevalence of infected animals appeared to be low (5%). All contact farms have been placed under restrictions. The source of infection is still not clear.

Since June 1991, all venison from farmed deer intended for sale must undergo meat inspection. The routines for meat inspection of farmed deer have also been extended.

3. Infectious bovine rhinotracheitis

During recent years, serological evidence of Infectious bovine rhinotracheitis (IBR) has been found in a few dairy herds. In order to clarify the prevalence of IBR in dairy herds a survey of bulk milk samples was performed.

In December 1990, bulk milk samples from 10% (2,385) of Swedish dairy herds were collected. The herds were selected at random. The milk samples were analysed with an ELISA test. Antibodies to IBR virus were found in four herds. This indicates that the prevalence of IBR-infected dairy herds in Sweden is between 0.04-4% (95% confidence level), and is therefore very low. No clinical signs of IBR have been seen in the country.

4. Salmonellosis

The situation in Sweden concerning salmonella in animals is very favourable. In order to document the situation screening has been carried out as follows:
Broilers

During 1988-89 samples were taken from 2,730 broilers after slaughter. The sampling was performed at the ten largest slaughterhouses. The prevalence of salmonella-infected broilers was 0.2-0.7%. In six out of ten slaughterhouses no salmonella was isolated.

Fattening pigs

During 1990-91 lymph nodes in the ileo-caecal region were collected at slaughter from 2,924 fattening pigs, originating from 1,195 different farms. The samples were collected in 13 slaughterhouses, representing 75% of the total slaughter of fattening pigs.

Salmonella was found in 22 (0.8%) of the 2,924 pigs. Pigs testing positive originated from three out of the 1,195 farms.

The situation regarding salmonellosis in Sweden is very good. It occurs predominantly in large herds.

Routine salmonella control in slaughter pigs

At slaughter, all pigs showing signs of disease are investigated for salmonella.

During the years 1987 to 1989, 33,899 sows/boars and 50,109 fattening pigs were tested at slaughter. Samples were taken from the liver and spleen. Three positive (0.008%) sows/boars and 360 positive (0.72%) fattening pigs were found. The majority of salmonella positive pigs came from a known salmonella infected herd.

This exceptionally low prevalence of salmonella in sows and boars indicates that weaner-pig-producing herds are practically free from salmonella.

5. Maedi-Visna

During 1989/90, serum-samples from sheep were collected at slaughterhouses. Out of 918 serum samples antibodies against Maedi-Visna virus were found in 63 (7%) cases.

Based on a serological investigation in six of the farms (that had slaughtered seropositive sheep) the intra-herd prevalence showed great variation.

A control programme will be organised based on the results of this investigation.

6. Avian infectious bronchitis

In order to determine the prevalence of avian infectious bronchitis (AIB) in Sweden, serological screening was carried out in 1991. Blood samples (1,100) were collected at four slaughterhouses. Ten samples were collected from 529 flocks of layers and 11 flocks of broilers.

Only one flock had antibodies against AIB.

The conclusion is that single cases of AIB infection occur in Sweden. Against this background, it is not considered necessary to vaccinate against AIB.
III. OTHER DISEASES

**Botulism**

In 1991 an outbreak of botulism was recorded in a stable. Six horses showed clinical signs of botulism. Five horses died. *Clostridium botulinum* toxin type B was identified by serum neutralisation in a sample from one horse. The source of infection was probably haylage (silage made from hay and packed in plastic).
SYRIA

LIST A DISEASES

1. Foot and mouth disease

A few cases were registered during the first quarter of 1991. All susceptible animals were vaccinated. The infected area was placed under quarantine, and a ban imposed on animal movements to and from the infected area.

The livestock is vaccinated annually. Imports of animals must be from countries which are free from foot and mouth disease virus SAT 1, SAT 2, SAT 3 and Asia 1.

2. Rinderpest

There is no risk of this disease spreading in our country, as, since 1983, we have been vaccinating all our herds and newly born calves up to three months of age. There is a strict supervision at borders. Moreover, we are carrying out a plan under the WAREC Project to check the level of immunity in vaccinated cows, and no clinical cases have been registered since 1983.

3. Peste des petits ruminants

Syria has remained free from peste des petits ruminants since 1987.
INTRODUCTION

The Republic of China on Taiwan has remained free from most of the epizootic diseases listed in OIE List A. The foot and mouth disease was eradicated in 1930, and the last case of rinderpest was reported in 1950. The preventive and control measures for the existing animal diseases have not been changed in the past years, but the incidences of most of the existing diseases have largely decreased year by year.

The expanding of intensive operation in domestic animals with the continuous increase in international trade as well as the increasing importance of aquaculture has made the policies for the prevention and control of animal diseases so urgent to meet the necessity that the Statute for Prevention and Control of Infectious Diseases in Domestic Animals was revised and the name changed into the Statute for Prevention and Control of Infectious Animal Diseases. This Statute will be put in force in the near future after the approval.

A computerized animal disease reporting and surveillance system, set up at the central office of Animal Health Division, Animal Industry Department, Council of Agriculture in 1985, has been gradually expanding its function. At present time, there are three major systems, namely (1) Animal Health Status in Taiwan, (2) Animal Health Status in Foreign Countries, and (3) Import/Export Animal Quarantine. Such systems have continuously provided one with fast and up-to-date information about animal disease situation as well as epidemiological data. Among them, data of Animal Health Status in Taiwan are distributed monthly to animal health offices of lower administrative levels and to Office International des Epizooties (OIE). Seminars were also held to instruct the public veterinarians to use the new system. To meet the resolution of Office International des Epizooties enforcing the animal disease reporting system, a national personal computer network has been set up in 1991 fiscal year, and its Chinese software package, Animal Disease Surveillance and Reporting System, is under testing.

I. LIST A DISEASES

1. Hog cholera

Sixty-four outbreaks (farms) occurred in 1991, which were not significantly different from that of last year. A national enforced control scheme, including the slaughter policy against the infected herds, has been carried out for effectively controlling the disease.

2. Newcastle disease

Three cases were reported. The diseased broilers were culled. The cooperative control program with Poultry Farmers Association was effectively carried out, and monitoring of serum titers against the disease was made to help the poultry farms to adjust their vaccination program.
II. LIST B DISEASES

1. *Auieszky's disease*

   Twenty-seven cases were recorded in 1991, which was about the same as that in 1990. A subsidiary project has been undergoing to help the purebred farms to build up their own specific-pathogen-free herds since 1989. The serological monitoring plan to provide the help to eliminate the positive from the herds have been continued. Only killed vaccines have been approved to be used in herds with the disease problem.

2. *Bovine brucellosis (B. abortus)*

   None were positive in all dairy cattle farms since January, 1989. 53,496 serum samples from all dairy farms were tested in 1991, and none were positive. A revised test and slaughter plan, covering beef cattle, was established.

3. *Bovine tuberculosis*

   The test and slaughter scheme and restriction of cattle movement of positive farms have been continuously implemented. In 1991, 66,725 dairy cattle were tested, and 145 positive reactors from 33 farms were verified.

4. *Infectious bovine rhinotracheitis*

   None were reported in 1991. The vaccination program using killed vaccine was recommended to control the disease.

*Fish diseases*

For further strengthen the fish disease control services, ten additional public aqua-veterinarian personnel will be staffed. Except the Monodon baculovirus infection, the diseases of economic importance in aquaculture include such as ich, streptococcosis and nocardiosis in marine fish culture. The diagnostic services and extension of disease prevention were still in force to minimize the economic losses.
INTRODUCTION

Dans le cadre de la nouvelle politique du secteur de l'élevage, l'accent est mis sur la diversification des activités des agents de l'élevage, la diversification des productions animales et l'augmentation des revenus des producteurs et de l'État.

Désormais les agents de l'élevage ne se bornent pas au traitement et à la prophylaxie, qui sont des activités habituelles, mais deviennent de véritables gestionnaires des services de terrain et des conseillers des éleveurs.

I. MALADIES DE LA LISTE A

Au cours de l'année 1991, la situation sanitaire a été satisfaisante sur l'ensemble du territoire national, en dépit de quelques enzooties saisonnières et de certaines suspicions donnant des inquiétudes temporaires dans le centre-est du pays.

1. Fièvre aphteuse


Il n'existe pas de prophylaxie particulière pour cette maladie, contre laquelle on ne vaccine pas depuis des années, compte tenu de la complexité de la nature. On utilise des antiseptiques pour la désinfection des aphtes, et des antibiotiques contre les complications bactériennes.

2. Peste bovine

Aucun foyer n'a été signalé depuis 1984. Cependant des mesures conservatoires sont maintenues chaque année sur toute l'étendue du territoire national. La vaccination antipestique est rendue obligatoire par le gouvernement.

Dans le cadre de la campagne panafricaine de vaccination contre la peste bovine (PARC), 40 équipes de vaccination motorisées vaccinent systématiquement tous les bovins avec un vaccin bivalent (néo-bisec), contre la peste bovine et la péripneumonie contagieuse bovine.

Au cours de l'année 1991, 2 035 939 têtes de bovins ont été vaccinées.

3. Peste des petits ruminants

Au cours de l'année 1991, cette maladie a été suspectée dans le secteur vétérinaire de Melfi au Guéra, dans la circonscription d'élevage du centre-est. Il semble que la maladie ait été amenée par des animaux d'un éleveur revenu de transhumance hors du Tchad au mois de juillet. Un
commerçant avait acheté trois moutons qu’il a introduits dans ce secteur. On a enregistré 1711 cadavres d’ovins et de caprins. Des prélèvements ont été effectués et envoyés au Laboratoire des recherches vétérinaires et zoo-techniques (LRVZT) de Farcha, mais les résultats n’étaient pas encore connus, et le foyer suscté s’est éteint au mois de septembre.

On n’a fait aucune vaccination, mais des traitements systématiques aux antibiotiques. Les animaux étaient isolés des autres troupeaux. On interdisait le déplacement dans d’autres zones des éleveurs dont les animaux sont atteints, pour une meilleur surveillance et un suivi des traitements.

Depuis le mois d’octobre 1991, aucun cas n’a été signalé et les mesures de restriction ont été levées.

4. Péripneumonie contagieuse bovine

Un seul foyer a été enregistré au cours de l’année 1991, au mois de mai, dans le secteur vétérinaire du Bol dans le nord-ouest du pays. Ce foyer a fait six malades et deux morts. Le foyer a été éteint au cours du même mois, par l’isolement et le traitement des malades et la vaccination des animaux indemnes. La vaccination est obligatoire contre cette maladie, avec le vaccin bivalent utilisé contre la peste bovine.

5. Maladie de Newcastle

Elle sévit particulièrement pendant les trois premiers mois de l’année (janvier, février, mars) dans la plupart des élevages avicoles.

Dans le cadre de trois projets de développement de l’élevage (Projet Elevage FAC/Chari-Baguirmi, Projet GDS-Groupement de Défense Sanitaire, Projet Aviculture Villageoise), une vaccination généralisée est organisée dans les villages avec le concours des éleveurs.

II. MALADIES DE LA LISTE B

1. Fièvre charbonneuse

De nombreux foyers ont été signalés par les secteurs vétérinaires, 25 malades et 10 morts dans la population bovine ont été enregistrés. La mort d’un âne et d’une personne a été notée par le secteur vétérinaire d’Ati.

La prophylaxie est basée sur une vaccination non obligatoire avec le vaccin Anthravac produit par le LRVZT de Farcha.

2. Dermatophilose bovine

Elle est enzootique et saisonnière dans la zone méridionale du pays. Un grand nombre de bovins manifeste cette maladie qui tue rarement, sauf complication bactérienne. On a enregistré 672 malades dont 9 sont morts par manque de traitement.

3. Trypanosomose

Cette maladie sévit de manière permanente dans la plupart des secteurs vétérinaires et frappe toutes les espèces sensibles. Des traitements préventifs et curatifs avec des produits chimiques sont organisés toute l’année, mais le caractère onéreux des traitements n’a pas milité en faveur du traitement systématique.
4. Pleuropneumonie contagieuse caprine

Cette maladie saisonnière sévit de manière enzootique pendant la saison froide dans le secteur vétérinaire de Biltine (214 malades et 128 morts à Am-Zoer) et Moïssala. On a enregistré au total 230 ovins et caprins malades, dont 132 morts.

III. AUTRES MALADIES

1. Charbon symptomatique

Il a sévi de manière sporadique dans toutes les circonscriptions d'élevage, sauf celle du nord. On a enregistré 220 malades et 130 morts parmi les bovins. La prophylaxie se fait par la vaccination non obligatoire avec le vaccin Sympatovac, produit par le LRVZT de Farcha.

2. Pasteurellose

Quelques foyers ont été observés dans les secteurs vétérinaires de Mongo, Melfi, Am-Timan, Goz-Béïda et Sarh, faisant 331 malades et 86 morts parmi les bovins. La vaccination non obligatoire se fait avec le vaccin Pastovac produit par le LRVZT de Farcha.

3. Piroplasmose

Cette épizootie s'est manifestée de manière significative au cours de l'année 1991. Elle a fait 713 victimes parmi les bovins. Plusieurs secteurs vétérinaires ont été touchés, notamment les secteurs de Melfi, Ati, Lai, Pla et Moundou.

Il n'existe pas, à l'heure actuelle, de vaccin contre cette maladie, cependant on fait un traitement curatif avec le bérénil qui est aussi efficace.

CONCLUSION

La situation sanitaire du cheptel a été satisfaisante au cours de l'année 1991, en dépit de l'importante mortalité enregistrée dans le secteur vétérinaire de Melfi, suite à la suspicion de peste de petits ruminants dont le foyer a été rapidement éteint. Les maladies telluriques ont été considérablement réduites par rapport aux années précédentes, grâce au programme de vaccination menée avec la participation des éleveurs.
I. LIST A DISEASES

1. Foot and mouth disease

Foot and mouth disease (FMD) is still the priority for eradication from the country. Last year the Department of Livestock Development (DLD) was allocated 40 million baht to conduct a Pilot Project for the feasibility study. The study areas were 16 provinces, 10 in the north and 6 in the central region. These areas were targeted for the study as a result of epidemiological information on FMD showing that the disease was mostly confined to the north, and that movement of animals from the north was the cause of outbreaks in the central region. The three main activities of the Project were: animal and carcase movement control, slaughter of sick animals and public relations.

The outcome of the Project was a significant decrease in FMD outbreaks in the 16 provinces, and especially in the provinces in the central region, demonstrating the effectiveness of the animal movement control strategy. This convinced the government of the high probability of successfully eradicating FMD.

In consequence, this year the DLD has been allocated 192.7 million baht to run Phase II of the Project. Phase II consists of the same activities as Phase I with the addition of the following: vaccination, veterinary epidemiology.

Strict control of animal movements from livestock markets is the main task of animal movement control measures, which are enforced by the Animal epidemic Act B.E. 2499 (1956). Animals must be vaccinated at least 15 days before being allowed to be transported to a market, and must have a health certificate and paint marking for animal identification. The authorized veterinary officer will issue animal movement permits only to animals meeting the above requirements. This should not inconvenience the farmers and livestock traders, but will create problems for those operating outside the law.

The vaccination campaign will start on 1 June 1992. Vaccination with trivalent FMD vaccine is scheduled twice a year over a period of two months throughout the country. This will build up immunity to FMD while reducing the risks from animal movements.

The DLD also set up an FMD Information Centre at the Division of Disease control in the last quarter of 1990. The DLD has encouraged its staff to report the disease, resulting in an increased flow of information to the Centre. This Centre shares disease information with the Veterinary research and Diagnostic Centres in the central, northern, north-eastern and southern regions and also performs epidemiological investigations and surveillance in collaboration with local veterinary officers. The aim of the Project is to eradicate FMD by the year 2000.

In 1991, the frequency of outbreaks was lower but the patterns of disease outbreaks was still the same as the year before. The highest number of FMD outbreaks still occurred in the north. The epidemiological study found that 50% of the outbreaks were due to animal movements, especially from the north. FMD virus type Asia 1 was present from the beginning of the year to the last quarter, and, from September until the end of the year, virus type O appeared in the north together with virus type Asia 1.
2. **Bluetongue**

   In 1991, serological tests were carried out on all imported livestock while they were held in quarantine stations, so as to prevent the disease being introduced into the country.

3. **Hog cholera**

   In 1991, only one outbreak was reported. It occurred in a smallholding and was rapidly extinguished.

4. **Newcastle disease**

   The DLD has been encouraging its staff to report any contagious disease outbreaks and, as a result, more information about Newcastle disease is expected to be available by 1992.

II. LIST B DISEASES

1. **Anthrax**

   In 1991, an outbreak of anthrax occurred in the north-east. This was caused by cattle being smuggled into the country from Laos. This disease occurs in sporadic form, often in the same areas. Whenever there is an outbreak, animals present in the areas at risk are vaccinated for at least the next three years, and an information programme is instituted for villagers.

2. **Aujeszky's Disease**

   Aujeszky's disease is endemic in Thailand but no official figure is available for reported cases. Positive cases are occasionally found in samples sent to the National Animal Health and Production Institute (NAHPI). Most farms use imported vaccine.

3. **Rabies**

   The Rabies Act, which was previously under the jurisdiction of the Ministry of Public Health, is being revised and, in the near future, will come under the responsibility of the Ministry of Agriculture and Cooperatives. In 1991, 95% of cases were in dogs, 4% in cats and 1% in other species. The main target animals for rabies control are both domestic and stray dogs and cats.

4. **Paratuberculosis**

   A research study on paratuberculosis has been undertaken at the NAHPI. No official report has yet been made on the number of positive cases found during the study.

**Cattle diseases**

5. **Anaplasmosis and babesiosis**

   Both anaplasmosis and babesiosis are enzootic in Thailand. The causal agent of these diseases has also been found in some imported cattle. The NAHPI is still conducting production trials for a vaccine against these diseases.
6. **Bovine brucellosis and bovine tuberculosis**

   These diseases are still found in some cattle farms where preventive measures are inadequate. No official figure is available for reported cases.

7. **Haemorrhagic septicaemia**

   Haemorrhagic septicaemia is endemic in Thailand but few outbreaks are officially reported. The disease is thought to occur every year during the rainy season, with higher mortality in buffalo than in cattle. The reason for under reporting is that local veterinary officers are often reluctant to report the disease without laboratory confirmation of diagnosis, and diagnostic laboratories are few in number.

**Pig diseases**

8. **Atrophic rhinitis**

   Atrophic rhinitis is found in some pig farms but is not a major problem. Some samples sent to NAHPI have proved positive but the number of cases is not available.

9. **Transmissible gastroenteritis**

   Transmissible gastroenteritis is the major problem in piglets in a number of farms. Hygiene and sanitation are essential in pig farms to reduce the risk of such a disease. Research work on a rapid diagnostic technique for the disease has been carried out at NAHPI.

10. **Trichinellosis**

    Trichinellosis occurred rarely, and chiefly in the north and north-east of the country, where people often eat semi-cooked or raw pork dishes. Most of the outbreaks originated in pigs belonging to hill tribes. Health education for people living in areas at risk is essential.

**Poultry diseases**

Certain of the poultry diseases listed in the FAO/OIE questionnaire are believed to occur in some poultry farms, but no official statistics are available.
INTRODUCTION

Une modification structurelle a été introduite; la Direction Générale de la Production Animale qui jouait le rôle de direction des services vétérinaires puisqu'elle était gérée par un médecin vétérinaire Inspecteur Général, a fusionné avec la Direction Générale de la Production Végétale pour former une Direction Générale de la Production Agricole dans laquelle les services vétérinaires ont été fondus.

I. MALADIES DE LA LISTE A

1. Fièvre aphteuse
   
   La quatrième campagne de vaccination contre la fièvre aphteuse a été terminée en 1991 ; la cinquième campagne a été entamée au dernier trimestre de l'année 1991.

   Le nombre de cas déclarés pour cette année est plus faible qu'en 1990.

   Tous les cas déclarés concernent les ovins et les caprins.

2. Clavelée et variole caprine
   
   Le nombre de foyers et de cas est plus important qu'en 1990. Ceci est probablement dû aux retards mis à déclencher la campagne annuelle du fait de la surcharge des services vétérinaires, et à la perméabilité des frontières.

II. MALADIES DE LA LISTE B

1. Fièvre charbonneuse
   
   Un seul cas déclaré.

2. Rage
   
3. **Myiase (Cochliomyia hominivorax)**

Aucun cas n’a été enregistré en Tunisie, les mesures de contrôle et de surveillance sont maintenus. Durant l’année 1991, 3.034.505 animaux ont été examinés, aucun cas de myiase due à *C. hominivorax* n’a été enregistré.

4. **Brucellose bovine**

Vaccination des jeunes femelles bovines.

5. **Tuberculose bovine**

Le programme national de lutte contre la tuberculose se poursuit avec abattage des animaux réagissants et indemnisation de leurs propriétaires.

6. **Theilériose**

Augmentation de la mortalité due à une diminution du nombre des animaux soumis à un traitement spécifique.

7. **Brucellose caprine et ovine**

Un foyer a été signalé en avril 1991 à Borj Akerma dans le gouvernorat de Gafsa. L’enquête sérologique a révélé un taux d’infection de troupeaux de 88 %, et un taux d’infection d’animaux de 30 % chez les ovins et de 61 % chez les caprins. Une enquête épidémiologique dans les différents gouvernorats est en cours de réalisation, elle est basée sur un dépistage sérologique (épreuves de séroagglutination et de fixation du complément)

Vaccination systématique de tous les ovins et caprins.
INTRODUCTION

The Animal Wealth Department carries out all activities related to animal health and production and veterinary public health. These include veterinary inspection services, preventive treatment and the control and eradication of animal diseases.

Disease control programmes are conducted mostly by intensive vaccination, treatment and isolation of sick animals. Livestock movement is controlled by animal quarantine facilities at every port of arrival or departure.

The situation in the UAE regarding zoonoses was quite satisfactory in 1991.

A survey of equine diseases was carried out in the UAE. In 1991, around 450 blood samples were taken and examined at a specialized laboratory in the United Kingdom. All samples proved to be negative to List A and B equine diseases.

I. LIST A DISEASES

1. Foot and mouth disease
   Foot and mouth disease is controlled by continuous vaccination every year.

2. Rinderpest
   Control of rinderpest is by annual vaccination.

3. Sheep pox and goat pox
   In 1991, a few cases of sheep pox and goat pox were reported in different Emirates. Diagnosis was based on clinical symptoms. The disease is controlled annually by mass vaccination.

II. LIST B DISEASES

1. Rabies
   The UAE was free from rabies until 1990. In 1991 two cases occurred in the western area in a fox and a camel. The disease was controlled by continuous vaccination of all animals, including camels, present in the area. Vaccination of dogs is carried out in the other Emirates.
2. **Brucellosis**

The occurrence of several cases of brucellosis in 1991 brought about the need for a survey on the incidence of brucellosis in different animal species, including camels. Strict control measures were applied all over the country. From the primary results the incidence of the disease is very low. The survey is due to be completed in the near future.
UNITED KINGDOM (GREAT BRITAIN)

I. LIST A DISEASES

African horse sickness and vesicular stomatitis have never been recorded in Great Britain.

1. Foot and mouth disease
   Foot and mouth disease was not recorded in Great Britain during 1991. The last recorded incident was a single outbreak in the Isle of Wight in March 1981.

2. Swine vesicular disease
   Swine vesicular disease was not recorded in Great Britain during 1991. The last recorded outbreak was in May 1982.

3. African swine fever
   It has never been recorded in Great Britain.

4. Hog cholera (classical swine fever)
   It was not recorded in Great Britain during 1991. The last recorded outbreak was in August 1987.

5. Teschen disease
   Enzootic porcine encephalomyelitis (Teschen disease) is notifiable in Great Britain but has never been recorded.

6. Fowl plague
   It is a notifiable disease and is dealt with by a policy of slaughter and compensation. The last recorded case was in 1979.

7. Newcastle disease
   Newcastle disease in all its forms is notifiable and is controlled by a policy of voluntary use of live lentogenic and inactivated vaccines and the imposition of movement controls on affected flocks. Disease was last recorded in 1984.

II. LIST B DISEASES

Dourine and Venezuelan equine encephalomyelitis have never been recorded in Great Britain.
1. **Anthrax**
   
   There were two confirmed outbreaks during 1991. Each involved the death of a single bovine animal.

2. **Aujeszky's disease**
   
   No cases of Aujeszky's disease occurred in Great Britain during 1991. The last recorded outbreak was in October 1989. Freedom from Aujeszky's disease in Great Britain was declared on 15th May 1991.

   A programme of blood sampling and testing breeding boars at slaughter continues, together with the screening of pig herds for Aujeszky's disease as part of routine diagnostic investigations carried out by Veterinary Investigation Centres.

3. **Rabies**
   
   Great Britain remained free from rabies - no cases have been recorded outside quarantine since 1970. The aim of the rabies policy is to keep rabies out of the country and to have well laid contingency plans to eradicate the disease effectively and swiftly should it occur again in Great Britain.

4. **Bovine brucellosis**
   
   Officially brucellosis free status was maintained; *Brucella abortus* was not isolated from any of the 19 reactor cattle nor from material submitted from cattle abortion enquiries. The last isolation of *B. abortus* took place in February 1990.

5. **Tuberculosis**
   
   Great Britain remained officially tuberculosis free with the incidence of disease continuing at previous levels. The majority of breakdowns occur in certain parts of southwest England and are mainly attributed to infection acquired from badgers.

   During 1991, tuberculosis was confirmed on two occasions in farmed deer. There were no confirmations in wild deer.

6. **Enzootic bovine leukosis**
   
   There were 60 suspected clinical cases reported during the year. All were investigated and found to be negative. Of the 104 tumour samples submitted from abattoirs for histological examination, 70 were diagnosed as lymphosarcoma but tracing revealed no enzootic bovine leukosis positive cattle in the herds of origin.

   Routine post-import testing revealed a single seropositive bull calf. The animal was slaughtered and the contacts re-tested after a further period of quarantine.

   Reactors were found on three premises previously known to have been infected. Herd restrictions were imposed. No reactors were found in Cattle Health Scheme herds at their routine periodic herd tests.

7. **Trichomoniasis**
   
   An isolate of *Trichomonas foetus* was made from a single sheath washing from a single bull following a pre test at an AI premises. The condition was last diagnosed in 1972.
8. **Bovine spongiform encephalopathy**

All cattle suspected of having BSE are slaughtered and compensation paid to the owners. During 1991, 22,612 cases were confirmed in Great Britain.

The probable source of BSE was cut off in July 1988, by a ban on the feeding of ruminant derived protein to cattle and other ruminants. The effect of the ban will not be seen until late 1992 when the number of cases confirmed is expected to drop.

9. **Contagious equine metritis**

The United Kingdom has been free of the contagious equine metritis organism (CEMO) since September 1990 when a single isolation was recorded in a non-thoroughbred horse; the last case involving a thoroughbred horse was in January 1986. The common Code of Practice, now also applicable to France, Germany, Ireland and Italy, continues to be followed within the United Kingdom and the Code is applicable to both the thoroughbred and non-thoroughbred sectors of the Industry.

10. **Equine infectious anaemia**

The last recorded case was in 1976.

11. **Salmonellosis**

Isolations of *Salmonella* spp. are reportable under the Zoonoses Order 1989 and led to 285 investigations of *Salmonella enteritidis* and 17 investigations of *Salmonella typhimurium* infections in birds in 1991. Twenty-nine broiler breeder, 7 layer breeder and 55 commercial laying flocks were compulsorily slaughtered during 1991, as part of the Government's programme for the control of *S. enteritidis* and *S. typhimurium* in poultry.

**Diseases of fish**

Infectious haematopoietic necrosis (IHN) and viral haemorrhagic septicaemia (VHS) are notifiable, as are certain other fish diseases (under the Diseases of Fish Acts 1937 and 1983), but neither have been recorded in Great Britain. As part of the package of measures on animal health to be adopted from 1 January 1993 under EC Directive 91/67, a survey for IHN and VHS is to be undertaken on salmonid farms which will be completed during 1992.

12. **Infectious pancreatic necrosis**

Infectious pancreatic necrosis is a notifiable disease and monitoring of salmonid hatcheries in Great Britain is undertaken to identify infected sites which are designated, but in England and Wales controls are applied only to Atlantic salmon.

13. **Spring viraemia of carp**

Spring viraemia of carp (SVC) was made notifiable in 1976 under an Amendment to the 1937 Diseases of Fish Act. There have been two outbreaks of SVC confirmed in 1991 at two unrelated sites in southern England.

14. **Renibacteriosis**

Renibacteriosis (caused by *Renibacterium salmoninarum*), also known as bacterial kidney disease, was made a notifiable disease in 1978 under the Diseases of Fish Act 1937. Although only two sites in England remain designated for renibacteriosis, it continues to be a problem in trout and salmon farms in Scotland, where over 20 sites are designated as infected or suspected as being infected.
Diseases of molluses

Bonamiasis

No new affected areas have been identified since 1986.

Diseases of crustaceans

None of the listed diseases is known to occur in the United Kingdom, and there are no control measures in force.

III. OTHER DISEASES

1. Sheep scab

In 1991, 116 outbreaks of sheep scab were confirmed, 21 more than in the previous year. Of the 116 outbreaks, 96 were in England, 15 in Wales and 5 in Scotland. The distribution of outbreaks affected fewer counties - 28 as compared with 32 in 1990; however, around half of all the confirmed cases in 1991 were in four main areas.

2. Warble fly

For the first time since the eradication scheme started in 1978 there were no clinical or serological cases reported and the only slaughterouse report involved imported meat. A further serological survey started in autumn 1991. The results will not be available until spring 1992.
UNITED KINGDOM (NORTHERN IRELAND)

I. LIST A DISEASES

The following List A diseases have never been recorded in Northern Ireland:

- Vesicular stomatitis
- Swine vesicular disease
- Peste des petits ruminants
- Lumpy skin disease
- Rift Valley fever
- Bluetongue
- African horse sickness
- African swine fever
- Fowl plague (avian influenza)
- Goat pox

The following List A diseases have not been recorded for many years:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Year last recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot and mouth disease</td>
<td>1941</td>
</tr>
<tr>
<td>Rinderpest</td>
<td>1877</td>
</tr>
<tr>
<td>Contagious bovine pleuropneumonia</td>
<td>1893</td>
</tr>
<tr>
<td>Sheep pox</td>
<td>1850</td>
</tr>
<tr>
<td>Hog cholera (classical swine fever)</td>
<td>1958</td>
</tr>
</tbody>
</table>

1. Teschen disease

The clinical syndrome of Teschen (Talfan infection), has never been suspected or diagnosed in Northern Ireland.

2. Newcastle disease

Northern Ireland experienced its first outbreak of Newcastle disease since 1973. The outbreak was caused by contamination of feed stuff constituents by the pigeon variant of paramyxovirus type 1. Although the intracerebral pathogenicity index of the virus was 1.66, the only apparent clinical signs in fowl was a slight drop in egg production and the production of soft shelled and unpigmented shelled eggs.

The application of standard disease control measures, including slaughter of affected flocks, decontamination of affected premises, movement restrictions and monitoring of contiguous flocks, together with the heat treatment of all poultry feed soon brought the outbreak under control.

New legislation was enacted requiring that all poultry feed be heat treated.

Northern Ireland is currently free of Newcastle disease.
II. LIST B DISEASES

1. Anthrax

Anthrax is rare in Northern Ireland. Exceptional cases have been confirmed in bovines from time to time; the last confirmed case was in 1990. The disease has not been recorded in any other species of animal for more than 26 years.

2. Aujeszky’s disease

A voluntary control register for herd owners wishing to establish or maintain freedom from the disease has been maintained and supervised by the Department of Agriculture for a number of years. It is proposed to implement a full eradication programme using G1 deletion vaccine in mid-1992.

3. Leptospirosis

Although infrequently diagnosed, there is serological evidence of Leptospira hardjo in dairy herds. Leptospira icterohaemorrhagiae infection in humans tends to be associated with recreational exposure to water.

4. Q fever

Although clinical syndromes are rarely detected there is serological evidence of widespread infection in animal species.

5. Rabies

Northern Ireland is well protected against the influx of wildlife rabies because of its geographical position. The last recorded case of rabies was in 1923.

6. Paratuberculosis

Paratuberculosis is notifiable in Northern Ireland and a control programme is in operation.

There is a very low incidence of the disease; 25 cases were confirmed during 1991, virtually all of them in a small nucleus of herds which initially became infected as a result of importations. Other confirmations have been in herds which purchased animals from one of the infected herds. The disease has been confirmed in sheep but not in goats, deer or other ruminants.

Cattle diseases

7. Babesiosis (B. divergens)

Sporadic cases occur, mainly in the west of the province, in cattle moved onto rough scrubland grazing.

8. Bovine brucellosis (B. abortus)

Three outbreaks, involving 11 herds, occurred during the year. The sources were not confirmed but are thought to be as a result of importation of heifers.
9. **Bovine tuberculosis (M. bovis)**

The incidence of bovine tuberculosis in Northern Ireland rose slightly during 1991. Some 2,000,000 animal tests were carried out revealing 4,064 reactors (1,539 confirmed at post-mortem examination), an animal incidence rate of 0.26% (0.096% confirmed). The majority of infected herds are located in the south-east of the province. Standard testing regimes are being maintained and, in addition, a series of new measures has been introduced so as to target resources on those herds and areas most likely to be infected and thus reveal infection before it has a chance to spread.

10. **Cysticercosis (C. bovis)**

In 1991, 681 cases were revealed during routine post-mortem examination. Most detections were associated with cattle grazing on land contaminated with human sewage.

No human infestations with *Taenia saginata* were detected.

11. **Enzootic bovine leukemia**

All bovine tumours detected at slaughter have been examined and investigated for the past 20 years. Large numbers of bovine sera samples have also been tested within the same period, all with negative results.

A survey of all adult cattle in all herds in the province was carried out over a two-year period ending December 1990. As a result Northern Ireland is now recognised as an EBL-free region within the EC. Annual monitoring of 20% of all herds is being carried out to assure continuing freedom from infection.

12. **Infected bovine rhinotracheitis**

Although there is little evidence of clinical disease there is serological evidence of infection in the cattle population. The Department of Agriculture proposes to set up a voluntary register of disease-free herds similar to that already in existence for Aujeszky's disease.

13. **Bovine spongiform encephalopathy**

All cattle suspected of having bovine spongiform encephalopathy are slaughtered and their owners compensated. No specified bovine offals, which include brain, spinal cord, intestines, spleen, thymus and tonsils, may be fed to any animal including poultry. Carcase meal, or meat and bone meal, containing protein of ruminant origin is prohibited from inclusion in ruminant rations.

The number of cases detected in the province this year rose as expected to 170 from 100 the previous year. This represents a very low incidence in a total cattle population which is in excess of 1,500,000. It is expected that this trend will continue until early 1993 when the effects of the ruminant offal ban become apparent.

**Sheep and goat diseases**

14. **Brucellosis**

*B. ovis* and *B. melitensis* infections have never been recorded in sheep or goats in Northern Ireland.

15. **Scrapie**

This condition is rare in Northern Ireland with most confirmations being in imported sheep. No cases were detected during 1991.
16. Maedi-Visna

Clinical evidence of Maedi-Visna, a notifiable disease, has not been observed in Northern Ireland. Infection was confirmed in imported sheep in 1981 but was eliminated after testing all traced animals. Further surveys have shown no evidence of infection.

The Department of Agriculture for Northern Ireland operates a voluntary Maedi-Visna control register for flockowners who wish to establish and maintain disease freedom. Such disease free flocks form a valuable nucleus for dispersal of breeding stock to other flocks.

During 1992 a testing programme will be introduced to demonstrate serological freedom in the Northern Ireland sheep population.

Horse diseases

17. Contagious equine metritis

This disease is notifiable in Northern Ireland. Isolation of *Taylorella equigenitalis* or any suspect organism must be notified. Only two cases have been detected since 1978, both in imported animals.

A Code of Practice has been operated within the thoroughbred industry for the past 13 years, which has resulted in elimination of the infection; all non-thoroughbred studs also adhere to this Code.

18. Equine infectious anaemia

This disease has never been recorded in Northern Ireland.

Pig diseases

19. Atrophic rhinitis

The levels and impact of this condition have been dramatically reduced due to strenuous efforts within the industry to eliminate infection.

20. Porcine brucellosis (*B. suis*)

Porcine brucellosis has never been recorded in Northern Ireland.

21. Transmissible gastroenteritis of pigs

Neither transmissible gastroenteritis nor respiratory coronavirus have ever been recorded in Northern Ireland.

22. Trichinellosis

Trichinellosis in pigs has been notifiable in Northern Ireland since 1973. Pigs are monitored at post-mortem (older animals and swill-fed pigs are targeted) and tested by the muscle digest technique. Results since sampling began in 1973 indicate that the province is trichinella free. During this time one outbreak (two positive pigs) was detected in 1975 and another (two positive pigs) in 1979. These were all from one farm which collected swill from a local army barracks. It is probable that the offending material had been imported. A sampling programme is currently being implemented in order to demonstrate freedom from trichinellosis.
Poultry diseases

23. **Avian infectious laryngotracheitis**

Infectious laryngotracheitis was first recorded in Northern Ireland in 1983. Subsequent surveys have revealed no evidence in commercial or breeding flocks. There is serological evidence of infection without clinical disease in some back yard flocks which are kept extensively.

24. **Infectious bursal disease**

The mild form of this disease exists in Northern Ireland and is controlled adequately by vaccination. The severe form of the disease which decimated the industry worldwide did not reach the province.

III. OTHER DISEASES

1. **Botulism (Clostridium botulinum)**

An outbreak of botulism, involving type C, caused the deaths of 29 cattle. The suspected source of the toxin was big bale silage which was of poor quality although neither toxin nor organisms were detected in the silage.

Staff from Veterinary Service, the Department of Health and Social Services and the Environmental Health Department liaised closely to ensure safe disposal of affected carcasses and to ensure that exposed animals did not enter the food chain until the risk of toxins being present had disappeared.

Outbreaks of botulism in cattle in Northern Ireland are uncommon; only four have ever been recorded.

2. **Warble fly infestation in cattle**

Warble fly infestation is a notifiable disease. The condition is now rare in Northern Ireland. Infestation levels were dramatically reduced following two compulsory dressings in 1966 and 1976; all confirmations in recent years have been traced to imported cattle. No infestations were detected this year despite close monitoring of herds by staff from Veterinary Service. Two outbreaks (three animals) last involved imported animals.

3. **Caseous lymphadenitis**

Caseous lymphadenitis has never been recorded in Northern Ireland.

4. **Sheep scab (mange)**

Sheep scab is a notifiable disease. There are two statutory compulsory dipping periods (summer and autumn) during which all sheep must be dipped in an approved acaricide. Despite these control measures the number of outbreaks in 1991 rose to 45 from 36 in 1990.
5. **Avian salmonellosis**

Northern Ireland has the advantage of being small, so that there tends to be close liaison and co-operation between the industry and the Department of Agriculture. Diagnostic services are free and fully utilised; the majority of submissions to laboratories are from the poultry sector. Following publicity elsewhere in the world the industry here began monitoring for the presence of *Salmonella enteritidis*. One infected broiler breeder flock was detected and slaughtered voluntarily at the owner’s expense. When *S. enteritidis* became a subject of media attention legislative control was introduced here in 1989.

Statutory monitoring has been carried since then and affected flocks have been slaughtered. Strict quarantine and intensive monitoring of poultry permits early identification and control of infection. All broiler and breeder flocks receive heat treated feed which reduces the risk of feed-borne infection.

Since 1989 the following outbreaks of salmonella infection have been detected to date:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NO. OF OUTBREAKS</th>
<th>CAUSATIVE AGENT</th>
<th>AFFECTED POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>2</td>
<td><em>S. enteritidis</em></td>
<td>83,000 layers</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>S. typhimurium</em></td>
<td>11,000 broiler breeders</td>
</tr>
<tr>
<td>1990</td>
<td>2</td>
<td><em>S. enteritidis</em></td>
<td>9,800 layers</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>S. typhimurium</em></td>
<td>1,600 broiler breeders</td>
</tr>
<tr>
<td>1991</td>
<td>3</td>
<td><em>S. enteritidis</em></td>
<td>3,700 + 3,500 broiler breeders</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>S. typhimurium</em></td>
<td>7,800 broiler breeders</td>
</tr>
</tbody>
</table>

The incidence of salmonellosis in humans has been contained at very low levels, possibly a reflection of the success in controlling salmonellosis in poultry.

6. **Psittacosis (ornithosis)**

Psittacosis is a notifiable disease. Incidents of enzootic abortion in sheep in the province are rare. Twenty-one cases of chlamydiosis were confirmed in humans during the year, most of these associated with psittacine birds rather than sheep.

7. **Porcine reproductive and respiratory syndrome**

This disease, which has devastated many swine herds in Europe and North America, has not been recorded in Northern Ireland.

**MEAT INSPECTION SERVICE**

The Department of Agriculture for Northern Ireland operates centralised meat inspection within the Veterinary Service. All meat premises in the province, except four, are EC licensed and operate to very high standards. These establishments are supervised by Veterinary Service staff who monitor standards, inspect meat and provide certification. As the province exports 80% of all meat and meat products, this service is a valuable one to the industry.
The Service is responsible for implementation of the residue monitoring programme. On-farm investigations follow and appropriate action is instigated when violations are detected.

Post-mortem findings and other disease information collected during post-mortem examinations is made available to pig producers so that preventive measures can be implemented.
UNITED STATES OF AMERICA

The zoosanitary situation in the United States of America is essentially unchanged since the last OIE Regional Commission of the Americas. There were no outbreaks of viscerotrophic Newcastle disease in commercial poultry, however six cases were discovered involving young pet birds which apparently entered USA contrary to regulations.

Progress continues in the control and eradication of several domestic diseases for which Veterinary Services maintains programmes. They include bovine and porcine brucellosis, pullorum disease in commercial poultry and Aujeszky's disease.

Trace-back of imported cattle possibly exposed to bovine spongiform encephalopathy continues with negative results.
I. ENFERMEDADES DE LA LISTA A

1. Fiebre aftosa

El Uruguay por primera vez en el historial de la sanidad animal del país lleva, en febrero de 1992, más de 19 meses sin casos de fiebre aftosa. El último foco data del 15 de junio de 1990. La estrategia se ha basado en asegurar excelentes coberturas de vacunación con vacuna oleosa en la especie bovina y en la vigilancia epidemiológica a nivel de campo. Las especies ovinas y suinas no son de vacunación obligatoria, cabiendo la posibilidad de su vacunación como medida táctica en situaciones de riesgo.

La situación sanitaria a nivel de la región de la Cuenca de la Plata, como fruto del programa conjunto desarrollado desde 1988, también es considerada como muy buena.

En base a la situación descrita, las autoridades veterinarias de Uruguay han programado iniciar en 1992 la primera etapa de la erradicación prevista en la ley respectiva. Fundamentalmente, esta etapa se caracterizará por mantener la estrategia de lograr máximas coberturas vacunales en la población bovina y aumentar la sensibilidad del aparato de vigilancia epidemiológica con la realización de muestreos serológicos en distintas áreas del país. Se prevé también para esta etapa, que los animales enfermos -en caso de producirse un foco de fiebre aftosa- tendrán como destino, el sacrificio. A esos efectos ya se dispone de un fondo de indemnizaciones operativo, con un monto actualmente cercano a los USD 1.500.000.

La vacunación general de bovinos en 1991 se efectuó en dos periodos: el primero, del 15 de febrero al 31 de marzo, con 7.912.159 bovinos vacunados y una cobertura poblacional del 93%, y el segundo periodo, del 15 de mayo al 30 de junio, con 7.612.919 bovinos vacunados y una cobertura poblacional del 95%, utilizándose vacuna de adyuvante oleoso únicamente.

Las vacunaciones fueron controladas por personal de campo de los Servicios Oficiales, mediante un calendario y rutas de vacunación.

La población bovina de aquellos predios considerados de mayor riesgo para la fiebre aftosa por sus antecedentes sanitarios fue vacunada por médicos veterinarios particulares acreditados por el Servicio Oficial. La población vacunada con esta modalidad fue de 505.178 bovinos en el periodo febrero/marzo y de 523.613 en el periodo mayo/junio.

Con respecto a la vigilancia epidemiológica, los Servicios Oficiales intervinieron en 27 oportunidades, por sospecha de fiebre aftosa. Las mismas fueron desestimadas desde los puntos de vista clínico-epidemiológico, anatomo-patológico y de laboratorio, ya que en todas se envió material adecuado para diagnóstico, resultando todas negativas a fiebre aftosa.

Entre los principales problemas diagnosticados, se encontraron: fotosensibilización, eczema facial (*Phydomyes chartarum*), diarrea viral bovina (un caso), bocopa (hongo, *Clavaria* spp.), panadizo, actinobacilosis, etc.
2. **Peste porcina clásica**

Se registró un total de nueve focos en los departamentos de Artigas, Canelones, Florida y Montevideo, en los meses de marzo (cuatro focos), agosto (un foco), octubre (tres focos) y un foco en noviembre, con una población total de 242 animales, enfermando 109 suinos. Las afectadas fueron todas explotaciones pequeñas, de tipo familiar.

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**II. ENFERMEDADES DE LA LISTA B**

1. **Equinococosis/hidatidosis**

La información sobre esta enfermedad se obtuvo por los inspectores veterinarios del Servicio Oficial, a nivel de las plantas de faena.

Sobre un total de bovinos faenados de 1.132,972, un 64,17% resultó con decomiso parcial por hidatidosis.

Sobre un total de ovinos faenados de 1.761,484, se decomisó parcialmente por hidatidosis un 36,34%.

Sobre un total de suinos faenados de 131.808, se decomisó parcialmente por hidatidosis un 32,27%.

2. **Paratuberculosis**

El laboratorio oficial de la Dirección de Laboratorios Veterinarios (DILAVE) trabajó un total de muestras de bovino de 153, resultando positivas 21 a baciloscopia.

3. **Anaplasmosis/Babesiosis**

De los 11 casos registrados de babesiasis, el diagnóstico del Laboratorio Oficial de la DILAVE fue de cinco casos a *Babesia bovis*, dos casos a *Babesia bigemina*, y cuatro casos a *Babesia spp.*

4. **Brucelosis bovina**

Sobre un total de 40.703 sueros procesados por la DILAVE, resultaron positivos a las pruebas complementarias 48, procedentes de 35 establecimientos (0,1%).

Los animales positivos fueron sacrificados.

Se encuentra en desarrollo el programa de declaración oficial de establecimientos libres de tuberculosis y brucelosis, teniéndose en la actualidad un total de 110 establecimientos declarados libres y 78 en trámite.

5. **Campilobacteriosis genital bovina**

Sobre un total de 323 materiales trabajados por la DILAVE, resultaron positivos 38 animales.

6. **Tuberculosis bovina**

Sobre un total de 285.560 bovinos tuberculinizados, resultaron positivos 44 animales (0,015%).
7. **Cisticercosis**

Sobre un total de bovinos faenados de 1.132.972, un 0,29% fue decomisado parcialmente por cisticercosis.

8. **Leucosis bovina enzoótica**

Sobre un total de 611 muestras procesadas por la DILAVE, resultaron 108 positivas (17,6%).

Fue creada una Comisión en la órbita de los Servicios Veterinarios oficiales, con participación de los profesionales del sector privado y de la Universidad de la República, a los efectos de recomendar un plan nacional de lucha contra esta enfermedad.

9. **Rinotraqueítis infecciosa bovina**

Sobre un total de 432 muestras procesadas por la DILAVE, por seroneutralización, resultaron positivas 156 (36%).

10. **Brucelosis ovina**

Sobre un total de sueros procesados por la DILAVE de 928, resultaron positivos 24 (2,6%), provenientes de seis establecimientos, de un total de 36.

11. **Anemia infecciosa equina**

Se procesó un total de 2.278 muestras de suero de equinos de competición, en la DILAVE, por el test de Coggins, resultando 47 equinos positivos.

12. **Brucelosis porcina**

La *Brucella suis* no se había comprobado en el país desde 1985, realizándose en el mes de marzo de 1991 un diagnóstico en un operario de un establecimiento de faena de bovinos, ovinos y suinos.

En el mes de noviembre, ya se habían diagnosticado ocho casos por lo que se realizó un relevamiento a la totalidad del personal de dicho establecimiento de faena, resultando un total de 29 positivos sobre 243 funcionarios (12%), aislándose *Brucella suis* biotipo 1 por el laboratorio oficial de la DILAVE.

A partir de los diagnósticos en el personal, en el establecimiento de faena se procedió a la extracción y envío de sangre del 100% de los suinos faenados a la DILAVE, realizándose una investigación retrospectiva. Sobre un total de 2.904 muestras procesadas, procedentes de aproximadamente cien tropas, resultaron 44 muestras positivas (1,5%). También se aisló *Brucella suis* biotipo 1 en suinos. Se destaca que los animales provienen del sudeste del país.

Se programó y se está ejecutando un muestreo de significación nacional en todas las playas de faena de cerdos del país, con un nivel de confianza del 95%, cuyo objetivo es establecer la dispersión de la enfermedad a nivel nacional.

Se adoptaron medidas de carácter preventivo para el personal que trabaja en los establecimientos de faena.

13. **Acariasis de las abejas**

El número total de muestras procesadas por la DILAVE fue de 2.583 y el número de abejas examinadas corresponde a 90.405.
INTRODUCTION

1. Livestock systems

In economic terms, cattle are by far the most important livestock in Vanuatu. Of the 120,000 head of cattle, 30% are owned by smallholder farmers and 70% by large scale plantation owners.

Beef production is semi-extensive on natural or improved pastures, mainly under coconut tree plantations. There is only one commercial dairy producer, supplying a limited amount of milk and milk products for consumption in the capital of Port Vila.

Pigs play an important role in the subsistence diet and customs activities of the rural population, with a total of 56,000 head averaging two to five pigs per household. An additional 2,500 pigs are raised commercially.

Similarly the majority of the poultry population of 308,000 birds are kept as free range village flocks with only two large scale commercial producers close to the capital. Small numbers of geese and ducks also scavenge in the villages.

Sheep and goat populations are small with two commercially owned sheep flocks supplying 60% of the fresh or frozen sheep meat consumed locally, the balance being imported, although there is a scattered population of sheep and goats amongst village communities, where they contribute to the subsistence diet.

Horses are used for stock handling and recreational purposes.

Feral populations of cattle, pigs, poultry, goats and horses are variously distributed throughout Vanuatu.

2. Disease surveillance and control

The Livestock Division of the Department of Agriculture is responsible for all aspects of Animal Health and Production including disease surveillance and control, quarantine control, meat inspection and hygiene standards at the two abattoirs, meat packers and butcheries together with provision of clinical services. Support to animal production is mainly aimed at beef production through projects improving pasture management, marketing and husbandry, with particular emphasis on smallholder cattle production.

The government veterinary officers (two based on the island of Efate and one on Espiritu Santo) supervise six meat inspectors and two disease control teams, with the latter being responsible for regular testing of the cattle population for bovine tuberculosis and brucellosis. The teams, reporting directly to the veterinary officers, are in close and regular contact with all cattle and livestock owners.

Support to Animal Production development is channelled through four livestock officers who disseminate extension messages, organise farmer training courses, etc., via fifty Agricultural Extension Officers strategically placed throughout the islands.
The above network of government employees report back to the veterinary officers any suspect disease outbreaks or health problems for further investigation.

All animals slaughtered for urban consumption or export are inspected prior to slaughter and post-mortem by the teams of veterinarians and meat inspectors, and routine serum samples are taken from all cattle passing through the abattoirs and screened for evidence of bovine brucellosis infection.

Although veterinary laboratory diagnostic facilities in Vanuatu are severely limited, good connections are available with the Ministry of Agriculture and Fisheries of New Zealand, where samples are submitted for laboratory diagnosis.

I. LIST A DISEASES

Vanuatu is free of all List A diseases. It is likely that the long sea journeys for livestock initially introduced acted as a form of quarantine. This together with Vanuatu's isolated geographical position and strictly applied import controls continues to provide a considerable degree of protection against the introduction of disease.

II. LIST B DISEASES

The last surveys carried out in 1977-1981 demonstrated that Vanuatu was free from the following List B diseases: anthrax, rabies, caprine and ovine brucellosis (B. melitensis), scrapie, dourine, equine encephalomyelitis, surra, trichinellosis, and avian infectious laryngotracheitis.

The following diseases are present: bovine tuberculosis, bovine brucellosis, leptospirosis, fowl pox, avian infectious bronchitis, infectious bursal disease and horse mange.

In addition, the following diseases are suspected as present on serological evidence: infectious bovine rhinotracheitis, bovine virus diarrhoea, Aujeszky's disease and Q fever. It is also known that clostridial infections, pasteurellosis, coccidiosis, filariasis, foot-rot and enterotoxaemia are present.

Tick surveys have revealed that Boophilus species are absent from the country by Haemaphysalis longicornis (on cattle and horses), Ambyomma breviscutatum (on pigs) and Rhipicephalus sanguineus (on dogs) all occur.

Determined efforts to control bovine tuberculosis and bovine brucellosis have resulted in eradication of the disease with the exception of small nuclei of disease on the island of Espiritu Santo. Routine screening of cattle throughout the country continues for these diseases however, and it is hoped to eliminate the remaining infection from Espiritu Santo by a combination of testing, destocking and movement control.

1. Bovine brucellosis (B. abortus)

The national bovine brucellosis eradication campaign tested a total of 22,251 samples by Rose Bengal Plate test and complement fixation test in 1991. No animals were found to be positive.
2. **Bovine tuberculosis**

   A total of 21,956 animals were tested during 1991 of which only one positive case was diagnosed.

   Compulsory testing and slaughter will continue throughout 1992.

3. **Poultry diseases**

   Investigations into an outbreak of disease on an intensive poultry unit in January, 1991 determined that infectious avian bronchitis and infectious bursal disease were present in the unit. Vaccination against both diseases is now being carried out at this unit.

**III. OTHER DISEASES**

It was demonstrated that Vanuatu was free from sheep scab and tick fever.

**IV. FUTURE DEVELOPMENTS**

Export of locally produced beef is a major foreign exchange earner for Vanuatu which 40% of the abattoir throughput originating from the smallholder sector.

Beef exports are presently mainly to Japan, with much smaller amounts to New Caledonia, The Solomons and Fiji. It is however planned to increase beef exports by entry into the beef markets of Southern Asia and other Pacific countries. Increase in beef exports is essential in order to develop the livestock industry, particularly in the smallholder sector.

A pre-requisite to entry into new markets is obtaining EEC and USDA accreditation status for beef exported from Vanuatu. This entails, amongst other things, upgrading of the export abattoirs, which is presently in progress, and conducting an extensive animal disease survey to include upgrading of diagnostic laboratories and the establishment of a continuing disease monitoring service.

Vanuatu does not have the resources to conduct such a survey and aid donor support is presently being sought for both financial and manpower inputs necessary for its design and conduct.
I. MALADIES DE LA LISTE A

1. Fièvre aphteuse

Le territoire de la Yougoslavie est indemne de fièvre aphteuse. Le dernier cas a été constaté en 1978 sur des bovins en transit en Yougoslavie.

La vaccination contre la fièvre aphteuse n'est pas permise.

2. Peste porcine classique


En vue de combattre la peste porcine classique, les mesures suivantes sont appliquées : l'enquête épidémiologique, le contrôle du trafic des porcs, des produits et des sous-produits porcins, y compris la restriction ou l'interdiction du trafic de animaux et la fermeture temporaire des établissements concernés, l'abattage sanitaire et l'élimination, dans les foyers, de tous les animaux susceptibles d'être contaminés, accompagnée d'une mise en interdit stricte des foyers, la désinfection, la détermination de la source de la contagion et des voies de transmission ainsi que toutes autres mesures vétérinaires, sanitaires et administratives. La vaccination des porcs contre la peste porcine classique est systématique, mais il est proposé, dans le programme yougoslave, que cette vaccination cesse en 1993.

3. Maladie de Newcastle

La maladie de Newcastle constitue un important problème épidémiologique et économique de l’aviculture en Yougoslavie. La persistance des agents de la maladie dans la viande de volaille congelée, l'absence de vaccination dans les cas de production extensive et le trafic intense constituent les facteurs principaux de la persistance la maladie de Newcastle sur l'ensemble du territoire yougoslave.


Cette maladie contagieuse se manifeste surtout dans les petites exploitations familiales, et représente un danger permanent pour les grandes fermes de production de volailles.

Les mesures entreprises en vue de combattre la maladie de Newcastle sont les suivantes : l'enquête épidémiologique, le contrôle régulier du trafic de volaille, y compris l'interdiction ou la restriction du trafic de volailles et la fermeture temporaire des établissements concernés, le dépistage précoce de la maladie, l'abattage sanitaire des animaux contaminés et suspects et la destruction sanitaire des corps, la désinfection, la vaccination organisée de la volaille et la mise en œuvre de mesures vétérinaires et sanitaires.
II. MALADIES DE LA LISTE B

1. Rage

En 1991, ont été enregistrés au total 680 foyers de rage animale. La rage sylvatique est prédominante, surtout chez le renard (636 cas). Elle a été également constatée chez le chevreuil (1), la fouine (3) et le blaireau (1). Chez les animaux domestiques, 50 cas de rage ont été constatés, répartis comme suit : 14 chiens, 17 chats, 11 moutons, 3 bovins, 2 chèvres, 1 porc, 1 âne et 1 lapin.

Les mesures de lutte contre la rage se ramènent à la vaccination orale des renards (la vaccination orale des renards contre la rage est pratiquée en Slovénie depuis 1989 ; ce programme doit être élargi aux autres parties du territoire yougoslave où se manifeste la rage sylvatique), à la vaccination systématique des chiens ; les chiens âgés de plus de 4 mois sont vaccinés (1 200 000 animaux par an environ). Dans les milieux urbains où la rage a été dépistée les chats sont également vaccinés ; dans les régions contaminées les bovins et les ovins sont vaccinés avant de les envoyer aux pâturages ; la circulation des chiens et des chats errants est limitée et ils sont éliminés de manière humaine ; dépistage permanent de la rage et autres mesures sanitaires et vétérinaires.

2. Brucellose

La brucellose des ovins et des caprins représente un problème épidémiologique important. Le trafic des ovins, difficile à contrôler, est considéré comme étant la voie la plus dangereuse de propagation de cette maladie.

En 1991, la brucellose des ovins et des caprins due à B. melitensis a été enregistrée dans 287 foyers, dont 224 sur le territoire de la république de Macédoine, 1 en république de Croatie ; 1 en république de Serbie, et 61 dans la province autonome du Kosovo-Metohija.

Les mesures de lutte contre cette maladie sont appliquées de manière organisée, suivant un programme yougoslave pluriannuel qui consiste en mesures systématiques comprenant le diagnostic, le dépistage et le suivi. Les animaux atteints sont éliminés et leurs propriétaires sont dédommagés de la valeur estimée ; le trafic des animaux et des produits animaux est interdit dans les régions contaminées ; l'usage des pâturages communs est interdit, l'usage des produits frais est interdit également, et d'autres mesures vétérinaires et sanitaires sont aussi mises en œuvre.

La brucellose des ovins et des caprins due à B. ovis a été enregistrée dans 38 foyers sur le territoire de la république de Slovénie.

La brucellose des suidés et des bovins est présente dans un petit nombre de cas. La brucellose des porcs a été constatée dans 9 foyers, et la brucellose des bovins dans 17 foyers.

3. Tuberculose

Le nombre des bovins ayant eu une réaction positive à la tuberculisation était minime en 1991 : la maladie a été enregistrée dans 33 foyers. La tuberculose des suidés, (45 foyers enregistrés) et des volailles (13 foyers enregistrés) représente tout de même un problème épidémiologique.

En vue de lutter contre la tuberculose des animaux, les mesures suivantes sont mises en œuvre : examen sérologique ; isolement, marquage et élimination des animaux à réaction positive, dédommagement des propriétaires de la valeur estimée des animaux; autres mesures vétérinaires et sanitaires.
4. **Leucose bovine enzootique**

Au cours de l'année 1991, le contrôle régulier a permis de constater 16 foyers de leucose bovine enzootique.

Les mesures de lutte contre cette maladie sont mises en œuvre d'une manière organisée et selon un plan yougoslave pluriannuel qui consiste en un examen systématique de diagnostic, l'isolement, l'usage économique des animaux, l'abattage sanitaire avec dédommagement des propriétaires. D'autres mesures vétérinaires sont également mises en œuvre.

5. **Anémie infectieuse des équidés**

Elle a été enregistrée dans 22 foyers. Cette maladie continue à être constatée à proximité de grands chantiers forestiers. Afin de dépister et de combattre la maladie, on procède à un dépistage organisé, à l'élimination des animaux réagissants et à d'autres mesures vétérinaires et sanitaires.

6. **Maladie d'Aujeszky**

La maladie d'Aujeszky a été enregistrée dans deux foyers. La vaccination des porcs est pratiquée dans les fermes où cette maladie avait été dépistée les années précédentes.

**Maladies des abeilles**

7. **Loque américaine**

La loque américaine n'est pas en baisse et cause toujours de graves dommages à la production apicole. En vue de combattre et d'éradiquer cette maladie on procède à l'élimination des colonies d'abeilles atteintes et à l'application d'autres mesures sanitaires et vétérinaires. En 1991, 117 foyers ont été enregistrés.

8. **Nosémose des abeilles**

La nosémose a été enregistrée dans 138 foyers dans toutes les républiques.

9. **Varroase**

La varroase a été enregistrée dans 29 foyers.

En ce qui concerne les autres maladies contagieuses des animaux, elles sont prévenues et combattues conformément à la réglementation et ne constituent pas un problème majeur, ni épidémiologique ni économique.
ZAMBIA

INTRODUCTION

The animal health situation in 1991 was generally satisfactory throughout the country. Some success was achieved in the continuing process of passing part of the cost of routine prophylactic vaccinations on to farmers in the traditional sector. In the same vein, drug retail schemes were introduced to sell drugs to farmers for the treatment of livestock through veterinary field staff.

I. LIST A DISEASES

The following List A diseases have never been recorded in Zambia:

- Foot and mouth disease types C and Asia 1
- Vesicular stomatitis
- Swine vesicular disease
- Peste des petits ruminants
- Sheep pox and goat pox
- Hog cholera
- Teschen disease
- Fowl plague

Zambia was free of the following diseases in 1991:

- Rinderpest
- Contagious bovine pleuropneumonia
- Foot and mouth disease
- Bluetongue

1. Foot and mouth disease

The country remained free from foot and mouth disease throughout the year. An outbreak was suspected in the Northern Province late in the year. However, samples from suspected cases submitted to Pirbright, United Kingdom, proved to be negative for the disease. Over 12,000 and 69,281 head of cattle were routinely vaccinated against the disease along the northern and southern international borders, respectively, so as to create a buffer zone of immunised cattle along these borders.

Following reports of foot and mouth disease outbreaks in neighbouring countries, animal disease control measures, including a temporary ban on importation of clovenfooted animals and their products from these countries, were implemented.
2. **Rinderpest**

The last occurrence in Zambia was in 1896 during the pan-African epizootic. Unlike previous years, the cattle population in the districts of the Northern Province was not vaccinated in 1991.

3. **Contagious bovine pleuropneumonia**

A patrolled cordon 15-20 kilometres wide along the border with Angola was maintained in the Western and North-Western Provinces. A total of 8,889 head of cattle within this buffer zone were vaccinated. Serological testing of slaughter cattle from the areas at risk in the Western and North-Western Provinces continued. Movement of live cattle out of the provinces for purposes other than slaughter was not permitted. Cattle for slaughter were allowed to be moved only by trucks and under veterinary escort.

4. **Lumpy skin disease**

Numerous outbreaks of lumpy skin disease of epidemic proportions were experienced from October 1990 to April 1991 in the Southern, Central and Copperbelt Provinces. Over 14,000 cases were officially reported, with 1,906 head of cattle reported dead. Only 9,500 head of cattle could be vaccinated due to non-availability of the vaccine in the country.

5. **Rift Valley fever**

No confirmed or clinical cases of Rift Valley fever were reported during the year. However, cattle with positive antibody titre were encountered during the serological survey carried out in the country. Only some commercial farmers carry out prophylactic vaccinations against the disease.

6. **African horse sickness**

No cases were reported during the year. Horse owners routinely vaccinate against this disease.

7. **African swine fever**

Although African swine fever (ASF) virus has been isolated from soft ticks (*Ornithodorus moubata*) collected from many parts of Zambia, clinical ASF is confined to the Eastern Province. The vast majority of pigs in this province run free range as scavengers; pig population density is relatively high and the entire north-western part of the province is occupied by National Parks and Game Management Areas, thereby affording opportunities for the spread of ASF virus from wild pig populations. Export of live pigs and pork products from the Eastern Province to the rest of the country is prohibited. All traffic moving into the rest of Zambia funnels onto one bridge over the Luangwa River, thus making it easy to enforce this regulation.

8. **Newcastle disease**

Sporadic outbreaks of the disease mostly confined to chickens in the traditional sector were reported from many parts of the country. Commercial farmers vaccinated their flocks routinely against the disease.
II. LIST B DISEASES

1. **Anthrax**

   The disease continued to be reported from the Western Province, however the number of confirmed cases was less than the previous year. In 1991, 52 cases were confirmed. Quarantine measures were imposed in the affected areas to contain the spread of the disease, and 314,319 head of cattle were vaccinated during the year.

2. **Rabies**

   Rabies occurs throughout Zambia. For logistic reasons a number of specimens from suspected cases in the field could not be sent for confirmation, however ten cases were confirmed positive mainly in dogs. Control measures include quarantine restrictions, dog tie up orders and vaccinations throughout the year.

3. **Dermatophilosis**

   The disease is endemic throughout the country. However, relatively more cases were reported from the Western and North Western Provinces. No specific control measures are carried out. Clinical cases are treated with long acting oxytetracycline. A total of 693 cases were confirmed, 2,268 cases were suspected and 142 deaths reported.

4. **Haemorrhagic septicaemia**

   Sporadic occurrences were recorded in the Western, Central and Southern Provinces: 10 cases were confirmed whereas 623 cases were suspected. During the year, 128,866 cattle were vaccinated.

5. **Malignant theileriosis**

   East Coast fever (ECF) is enzootically established in the Northern and Eastern Provinces. In the Eastern Province large scale trials immunize calves using the infection and treatment method have been carried out with satisfactory results.

   Corridor disease is confined to the Southern, Central and Lusaka Provinces. The disease has spread mostly through illegal cattle movements. Over 900,000 head of cattle are in the risk areas. The disease is confined to traditional livestock where dipping is either carried out arbitrarily or not at all. Commercial farmers have been practising effective dipping, minimising opportunities for the introduction and spread of the disease.

   Officially 5,462 confirmed cases, 12,982 suspected cases and 8,741 deaths were reported in the three provinces.

   **Control measures:** ECF and corridor disease are notifiable diseases and the Cattle Cleansing Act can be enforced to aid in their control. Movement of cattle out of the Eastern and Northern Provinces is prohibited. Cattle can only be legally moved from Southern and Central Provinces for immediate slaughter in a predetermined abattoir. Such cattle are rendered tick free and are allowed to move only by train or truck. All cattle leaving the Southern Province for slaughter are distinctively branded at the outset of the journey so that they can be easily identified outside the district of origin. Such cattle if found alive in other districts are destroyed.

   Strategic dipping and/or spraying of cattle is being encouraged in affected areas. Since 1987, farmers have had to bear part of the cost of dipping by paying a token fee per head of cattle dipped. Government and communal diptanks have operated under the supervision of veterinary
staff but active participation of the farmers is sought through the formation of a diptank committee or cattle club at each diptank. The committee is made responsible for the day to day running of the respective diptank.

A pilot project is being carried out in a limited area of Monze district of the Southern Province to test the results of the infection and treatment method of immunization.

6. **Trypanosomiasis**

Over 500,000 head of cattle are at risk from trypanosomiasis. A total of 995 cases were officially confirmed whereas 15,936 cases were suspected. Due to financial constraints only 86,441 cattle were treated with trypanocides. Control of tsetse flies is being carried out under donor-assisted projects in the Southern, Western and Eastern Provinces (using targets).

7. **Fowl pox**

The disease is enzootic in the country and sporadic cases are reported in the field. Non-availability of the vaccine in the country made large scale vaccination difficult.
ZIMBABWE

I. LIST A DISEASES

The following List A diseases have never been recorded in Zimbabwe:

- Vesicular stomatitis
- Swine vesicular disease
- Peste des petits ruminants
- Sheep pox and goat pox
- Hog cholera
- Teschen disease
- Fowl plague

1. Foot and mouth disease

Virus types O, A, C and Asia 1 have never been recorded. There were three isolated outbreaks of foot and mouth disease due to virus types SAT 1, SAT 2, SAT 3:

SAT 1: Rifa outbreak which occurred in a sentinel herd of 11 head of cattle for tsetse fly/trypansomiasis detection. This herd was confined behind the foot and mouth disease control fences within a wild-life zone. The source of infection was contact with wild buffalo.

SAT 2: Chikwarakwara outbreak (25 July) which occurred in a group of cattle situated on the Limpopo River border with South Africa. The outbreak was within the foot and mouth disease vaccination control zone.

SAT 3: Whaddon Chase outbreak (25 October) which occurred within Mashonaland Central Province and proved to be caused by the movement of carrier cattle previously infected during the May 1989 outbreaks in the Midlands Province. Only the one property, Whaddon Chase, was infected, and it was depopulated of all domestic livestock.

To date 4,906 probang samples have been collected from cattle previously infected during 1989, and 14 carrier animals have been identified. The longest carrier period identified has been 31 months.

A total of 1,148,206 cattle were vaccinated with trivalent SAT 1, 2 and 3 vaccine during the year, the majority of vaccinations taking place in vaccination control zones.

ELISA tests were done on 4,380 sera collected from various wildlife species. Positive samples were identified only from wildlife living within the wildlife zones confined behind foot and mouth disease control fences.

2,850 random sera samples were collected from 210 herds of goats in various parts of Zimbabwe and all tested negative to foot and mouth disease using the blocking ELISA test.

2. Rinderpest

Last occurrence in 1898.
3. **Contagious bovine pleuropneumonia**
   Last occurrence in 1904.

4. **Lumpy skin disease**
   A large outbreak during the year in north West Midlands Province. 1,229 deaths recorded and 302,598 cattle vaccinated during the year.

5. **Rift Valley fever**
   No virus isolations made. 88,750 bovines and 9,200 ovines vaccinated during the year.

6. **Bluetongue**
   Mild cases reported from two outbreaks. 50,400 sheep vaccinated.

7. **African horse sickness**
   Four outbreaks resulting in four deaths were recorded. 10,218 equines were vaccinated during the year.

8. **African swine fever**

9. **Newcastle disease**
   Last occurrence in 1986.

**II. LIST B DISEASES**

1. **Anthrax**
   The national annual vaccination campaign in the communal areas initiated in 1981 was stopped in 1991. A total of 310,707 head of cattle were vaccinated in high risk areas. Nine outbreaks were recorded which resulted in 212 bovine deaths.

2. **Rabies**
   There were 454 recorded cases of rabies during the year of which 177 were canine, 141 bovine and 104 jackals. 383,646 dogs were vaccinated during the year. There has been a large increase in the jackal population causing increased incidence of the disease in bovines.

3. **Bovine brucellosis**
   A survey was conducted in beef cattle involving 10,538 sera. 97% of samples were negative and 1.3% positive for the disease. Within the brucellosis free accredited herd scheme for dairy cattle, 100,795 sera were tested, with 1,282 samples found to be positive (1.3%).

   A goat survey involving 2,850 sera all returned negative results for brucellosis.
4. **Enzootic bovine leukosis**

Within the enzootic bovine leukosis free accredited herd scheme 76,034 sera were examined. 104 of 560 dairy farms returned positive sera.

5. **Trypanosomiasis**

Two human cases were recorded in tourists who could have become infected in the Zimbabwe northern tsetse areas. 25,158 blood smears were examined returning 562 positives in cattle within the tsetse fly infected zones. 1,821 animals were treated during the year.
OIE MEMBERS
(INTERNATIONAL AGREEMENT OF 25 JANUARY 1924)

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