Complementary tools for the control and eradication of caprine and ovine brucellosis in the European Union

F. Crespo León (1), J.L. Sáez Llorente (2), F.J. Reviriego Gordejo (3), E.F. Rodríguez Ferri (4) & M. Durán Ferrer (5) *

(1) Departamento de Ganadería y Acuicultura, Instituto Murciano de Investigación y Desarrollo Agrario y Alimentario (IMIDA), 30150, La Alberca, Murcia, Spain
(2) Subdirección General de Sanidad e Higiene Animal y Trazabilidad, Dirección General de Sanidad de la Producción Agraria, C/Alfonso, XII, 62, 28071, Ministerio de Agricultura, Alimentación y Medio Ambiente, Spain
(3) European Commission (EC), Health and Consumers’ Directorate-General, Froissart 101, Brussels, Belgium
(4) Departamento de Sanidad Animal, Universidad de León, Facultad de Veterinaria, Campus Vegazana, s/n. 24007, León, Spain
(5) Laboratorio Central de Sanidad Animal, Laboratorio Nacional de Referencia de Brucelosis, Camino de El Jau, s/n. 18320 Santa Fe (Granada), Ministerio de Agricultura, Alimentación y Medio Ambiente, Spain

*Corresponding author: mduran@magrama.es

Summary

Caprine and ovine brucellosis is one of the most serious and complex animal health problems faced by Veterinary Services in countries where the disease is endemic. Various geographical factors and the nature of the disease itself influence its epidemiology, encouraging widespread distribution and, at the same time, impeding the ability of animal health programmes to prevent, control and eradicate it. Although strategies against brucellosis have traditionally been based on two specific tools (namely, vaccination of the at-risk population and testing and slaughter of animals which are suspected of or test positive for the disease), other complementary tools of a technical or administrative nature should also be considered. Experience in the European Union has shown that these tools are necessary to guarantee sustainable progress and success against this disease. However, these complementary tools have not always received sufficient attention during the strategic planning and subsequent implementation of animal health programmes, with consequent reductions in efficiency. The aim of this article is to review these complementary tools, in order to facilitate their adoption and use by official Veterinary Services, according to the resources available.

Keywords

Background

Brucellosis is a major zoonosis, which is widely distributed throughout the world and caused by species of the genus Brucella. At present, three species have an essential impact on public health; namely (in order of significance): B. melitensis, B. abortus and B. suis (38). Brucella melitensis (biovars 1, 2 and 3) is the main causative agent of brucellosis in sheep and goats, also called caprine and ovine brucellosis (COB) (53). Brucella melitensis can also infect bovines, pigs, domestic buffalo and cameldids (camels, dromedaries, vicuña, alpacas, llama and guanaco) (52, 53).

Humans are accidental Brucella spp. hosts, representing the bottom of an epidemiological cul-de-sac, with no relevance in the chain of infection. Human brucellosis is widespread (7, 42) but, despite the fact that it is a notifiable disease, official statistics do not reflect the true magnitude of the problem. According to the World Health Organization, the real incidence of the disease is 15 to 25 times greater than that recorded through statutory notification systems (50).
Ever since Bruce demonstrated the microbial nature of brucellosis in 1887, and Zammit discovered that goats were implicated in the disease (1905), numerous control and eradication measures have been undertaken in animals. However, such measures have not always been applied with the same intensity or necessary continuity through time and space in all countries. As a result, human brucellosis is today a forgotten or neglected zoonosis in many developing countries where it is endemic (42, 51), and where it is difficult to quantify the suffering that it causes, through death, disability, reduced availability of foods of animal origin and economic losses. Diseases such as human brucellosis play a key role in the perpetuation of poverty (51). All international organisations agree that the fight against this disease represents a significant contribution towards the development of marginal communities whose primary resource is livestock rearing (47, 51). Furthermore, any animal health strategy has to take into account the specific needs, perceptions and characteristics of these communities (40).

An historical review of the fight against this disease (1, 2, 3, 8, 37) allows us to identify at least three overlapping stages. The first stage encompassed the introduction of the first measures aimed at breaking the chain of infection in humans, based on the heat treatment of milk and fresh dairy products. The second was based on developing vaccines and diagnostic methods in animals, and the third focuses on the large-scale implementation of control and eradication programmes in livestock. In the case of COB, this stage began in the 1970s (3, 4, 14) and reached its peak at the end of the 1980s, when the European Union (EU) declared this disease a priority issue (49).

It was within this geopolitical context in the 1990s (18) that control and eradication policies were definitively extended to all EU Member States in the Mediterranean Basin (France, Greece, Italy, Portugal and Spain). Cyprus, Greece, Italy, Portugal and Spain are currently implementing eradication programmes co-financed by the EU (30). So far, a steadily increasing number of regions have been declared officially free of B. melitensis, in accordance with EU legislation (28, 37). The main goal of eradicating the disease in the EU at the state level has recently been achieved by France (28), showing that the campaign against COB should be based on a thorough action programme intensively implemented over a period of decades, supported not only by considerable financial investment but also by serious commitment from all stakeholders.

Nevertheless, in the course of implementing these programmes, certain shortcomings which impede faster progress have become apparent, motivating a process of re-evaluation by the European Commission (EC). The results of this deliberation are embodied in an action plan, based on the principles laid down in the White Paper on Food Safety (20). An important step in this action plan was the creation, in the year 2000, of a standing advisory group, known as the Task Force on Monitoring Animal Disease Eradication (28). This group comprised risk managers from the EC and EU Member States, as well as brucellosis experts, whose remit was to monitor eradication programmes. The Task Force coordinates several specialised working groups, including one for COB and another for bovine brucellosis. Their conclusions and recommendations to Member States are made public on the Internet (29).

The fight against COB should start with an exhaustive scenario analysis, assessing all aspects of the disease:

- the epidemiological status of the disease in each region, where this is known, and – where it is not – the results of the last epidemiological enquiry
- the geographical features and other environmental factors which define and characterise the disease
- an evaluation of the Veterinary Services in the region
- the available technical and financial resources
- the number of diagnostic laboratories and availability of vaccines
- transport infrastructures
- the organisation and cooperation of the livestock sector (28).

After such analysis, COB programmes should be based on the two basic tools available for fighting the disease: vaccination of the at-risk population, and the diagnosis and slaughter of animals that are suspected of having or test positive for the disease (1, 5, 31). It should be borne in mind, however, that, in countries with limited Veterinary Services and scarce socio-economic resources, systematic vaccination is the only feasible tool for controlling the disease (6, 41). Consequently, diagnosis and slaughter play a secondary role.

Other complementary technical and administrative animal health management tools should also be progressively implemented, as these are essential for guaranteeing the success of COB eradication programmes (6). It is these tools that are examined in this paper. The adoption of any of these by a country’s Veterinary Services should be appropriately supported by robust veterinary legislation, to enable systematic and efficient implementation (48).

The authors classify these tools into four large groups, based on:
- the organisational structure of the productive sector (sector planning)
- reinforced control of the movement of livestock
- specific activities aimed at eradication
- coordination.

Tools related to the organisational structure of the productive sector (sector planning)

**Animal identification and registration systems**

Any health intervention should be preceded by an exhaustive compiling of information about the susceptible animal population and its regional distribution. This implies the need to register individual holdings and to identify the animals. Identification and registration improve effectiveness and efficiency when trying to control disease outbreaks, as well as in other animal health activities (56).

In the specific case of COB, the first and foremost information needed is the number and location of flocks (defined as an animal or group of animals kept on a holding that, due to the holding’s rearing practices, constitutes a distinct epidemiological unit) (16, 57). Nevertheless, in some types of husbandry, the epidemiological unit should be extended to include a set of flocks (belonging to the same or different holdings) which share a similar level of risk of exposure to the infection, due to the possibility of contagion from communal pastures, transhumance practices, water supplies, drovers’ roads, installations and equipment, etc. (10, 28).

In general, livestock identification and registration include:
- an up-to-date register of each holding
- a way of identifying individual animals
- animal movement documents (23).

**Livestock holding registration**

All ovine and caprine holdings in a specific region or country should be registered in a general record or computer database that includes:
- details of the farmer
- the main location
- secondary locations, where applicable (preferably the address and geographical coordinates)
- various technical characteristics, such as census data and the type of agricultural production.

Experience has also demonstrated the need to incorporate data on animal health interventions and the health status of the holding to aid in controlling the movement of livestock. The types of establishments which must be registered include flocks and holdings, as well as locations where livestock are gathered together in large numbers, such as livestock auctions, livestock fairs, transit and reproduction centres, markets, slaughterhouses, transhumance areas, dealers’ premises and livestock carriers (35, 55).

In some countries, the legislation states that livestock farmers who do not own more than three sheep or goats, and whose animals are destined for personal use or consumption (backyard flocks), are not obliged to register. It should be remembered that, in some circumstances, these small unregistered units may present an additional risk of disease propagation due to the difficulties inherent in their control.

The day-to-day control of a registered holding is best carried out through the use of a Livestock Holding Register and the information can be managed manually or on a computer (23). According to EU legislation, this information must include:
- a census of animals by category, indicating the date of the most recent census
- each animal’s identification code, year of birth and date of identification
- any movement or exchange of animals, detailing the number of animals involved in each entry or departure, their origin and destination, their identification codes and the date of each movement or exchange
- the month and year of any animal deaths on the holding (23).

**Ovine and caprine identification methods**

Diagnostic testing for COB and vaccination follow-ups require the accurate identification of individual susceptible animals, to facilitate animal tracking. Individual identification also enables the official Veterinary Services to effectively eliminate animals that test positive for infection, and facilitates inspection tasks and the follow-up of non-conclusive reactors. It also avoids fraudulent practices, such as the substitution or sale of infected animals, which might otherwise occur. This could have serious consequences for animal health, such as a loss of credibility and retrogression in animal health programmes and public health, due to the continuing risk of human contagion.

In general terms, and as happens with other animal species, the procedure employed for animal identification should satisfy certain requirements; principally, that it is easy to apply, easy to read, difficult to falsify, will last over time, and, finally, is inseparable from and tolerated by the animal (45). Likewise, the identification method must be adapted to local livestock farming practices, production
systems and climatic conditions (55). To comply with these conditions, several branding techniques have traditionally been used, including cuts, punch holes, metal or plastic ear tags, tattoos or dye on the ear or at the base of the tail. At present, the first two are rarely used as they do not comply with some of the conditions mentioned above and may contravene animal welfare regulations.

Ear tags should not be reusable, and the data contained should not be erasable. Their design should make it as hard as possible for them to become accidentally lost. A replacement procedure must be stipulated in the case of illegibility or loss, and this must be controlled by the appropriate authorities, without jeopardising tracking between holdings (23). In all cases, it is the responsibility of the farmer to report the loss or deterioration of any tag. An annual ear tag loss rate of over 10% should be considered irregular and, where this occurs, ear tag quality and application, or possible fraud, should be investigated.

In recent decades, electronic identifiers have been developed, using a ruminal bolus or incorporated into ear tags. More recently, transponders have been subcutaneously inserted into the ear region. To avoid problems in tracking, due to loss or alteration of the means of identification, EU regulations stipulate the simultaneous use of two means of individual identification, the second of which should be electronic (23).

**Documents for movement of livestock**

Any movement of livestock should be accompanied by a movement document (23). This document should contain information on:

- the registration code and location of the destination holding
- details of the method of transport and the carrier
- in the case of transhumance, transit points and the final destination
- the individual identification code of the animals moved
- the date of transportation.

This document may be replaced by a centralised database containing the same information.

The transport of infected animals requires special permits issued by the official Veterinary Services before transportation to a slaughterhouse, and inspection on reception by the official Veterinary Services.

**Certification of a holding’s health status**

The aim of a COB eradication programme is the extinction of the aetiological agent within a specific territory. To achieve this, it is necessary to gradually isolate sub-populations of healthy animals, completely separating them from the infected ones by natural or artificial boundaries, through the use of appropriate animal health management methods (58). This process of health certification for flocks is a key element in the fight against COB since, by isolating certified populations, resources can be concentrated on more problematic areas. In addition, it serves the further fundamental purpose of providing healthy restocking animals for those holdings where compulsory slaughter has been carried out (12). In this way, the trade of *B. melitensis*-free animals or officially *B. melitensis*-free animals is encouraged, and animal health therefore acquires real economic value for the farmer (34).

To certify the health status of a holding, the presence or absence of COB is investigated by clinical, immunological, bacteriological, molecular and epidemiological procedures, applied according to a systematic protocol (19, 52, 53, 54). Once there is reasonable confidence that the disease is absent, certification is granted (19).

Serological diagnostic techniques are the most widely employed tool in COB monitoring because they are suitable for large-scale livestock checking (31, 32, 52, 53). Nevertheless, certain drawbacks related to sensitivity and specificity which are inherent in any serological technique (13, 15) make it necessary to apply other types of diagnosis, such as bacteriological diagnosis, clinical history based on notification of abortions, and epidemiological investigation (28), which should always take the epidemiological unit as a point of reference.

The official Veterinary Services in each country should establish the specific conditions under which ovine and caprine holdings obtain, maintain or lose their health status. Procedures for the withdrawal of status where outbreaks have occurred, and subsequent regaining of status after the successful eradication of the outbreak, should also be established. In this context, international organisations, such as the World Organisation for Animal Health (OIE), have established standards for herd status certification (54), and the EU has drawn up more detailed legislation (19).

Additional procedures may be necessary when an outbreak is confirmed. European Union legislation establishes health policy standards regulating the intra-EU trade of sheep and goats, and lists the requirements that must be met if holdings are to obtain *B. melitensis*-free or officially *B. melitensis*-free status. It also stipulates the procedures to be followed in case of suspected or confirmed COB, for the introduction of animals into these holdings, and for upgrading the health status of the holding (19). A timescale for upgrading a flock from free to officially free status, by the cessation of vaccination, should be established, bearing in mind the epidemiological situation in the surrounding territories. Upgrading, however, should be discouraged if a medium-to-high risk of re-entry of the disease is identified. The phasing-out of vaccination in a
region is a key strategic decision in an eradication programme that should only be taken after a thorough assessment of the epidemiological situation.

**Definition of action zones**

The fight against COB in a specific country should be approached by defining clear action zones and applying the best health strategies available, adapted to the specific geographical, epidemiological and husbandry features of that country to facilitate rapid, sustained progress against the disease. In general terms, and according to experts, decisions taken on the health strategy to follow in various regions of a country where COB presents a problem should be centrally coordinated, but should always bear in mind the specific conditions of each zone (39). This aspect is of great importance in large countries, those with a decentralised structure, and those presenting diverse, well-defined geographical features, in which different strategies would accordingly be advisable.

**Tools for reinforced control of livestock movement**

There are few diseases in which geographical features and environmental factors have such a strong influence on epidemiology as brucellosis (11). In this context, it must be borne in mind that the majority of small ruminant flocks rely primarily on traditional feeding methods, such as shepherding, nomadism and transhumance (8, 44). It is not difficult to imagine why controlling the movement of these flocks is the key to combating COB.

Farmers, dealers and livestock transporters, or any other professional involved in any aspect of the movement of livestock, should be obliged to cooperate directly with the official animal health or Veterinary Services in the appropriate controls of livestock movement, since this is a fundamental aspect of disease control, which permits:
- the rapid and efficient location of all holdings and livestock transporters
- inspection and intervention where the disease has been reported
- traceability of any epidemiological relationship with a COB outbreak.

**Controlling movement of animals between holdings**

Movement of sheep and goats should only be authorised in the case of certified COB-free flocks. As an additional control measure, animals may be required to undergo a test 30 days before being moved (36). This measure is extremely effective when the certified flock is located in zones where the disease is still present, and where the risk of contagion persists.

Nonetheless, so as not to interfere with the daily activities of an infected holding while eradicating infection, it is recommended that authorisation be given to move animals from these establishments to slaughterhouses, under strict health controls. To maintain production during the implementation of animal health programmes, other strategies may also be employed, so that sero-negative animals from infected holdings can be sent to designated fattening units, which are isolated from breeding units, and from where the ultimate and exclusive destination of these animals will be the slaughterhouse. This practice involves a high risk of spreading the disease, and thus strict and permanent controls should be applied to these holdings. In some countries or regions, the second possibility (transport to fattening units) is only allowed for holdings that have undergone a negative serological check.

The means of transport and the transporting company must be duly authorised, and must comply with certain hygiene standards, particularly for cleaning and disinfection after unloading animals (34).

**Pasture access control**

From time immemorial, sheep and goat farming has been based on the use of feeding resources dispersed throughout the territory and subject to seasonal variations (9, 44, 46). In many countries, stationary flocks are the exception, as these require the holding to have pastures at their disposal, or sufficient quality feed, throughout the year.

Any movement of livestock for grazing purposes must be subject to control and managed in the light of health risks. Aspects of such management include:
- health status certification of the pasture, to ensure that only flocks with the same health status can share the grazing land
- animals undergoing a serological test before and after relocation, to ensure that possible infection is rapidly detected
- health documentation to facilitate the effective control of all animals moved
- effective coordination between those Veterinary Services responsible for the place of origin and for the destination point of the livestock.

Communal pastures, or grazing land rented to several flocks, present a further problem. These should be certified according to the health status of the animals using them, or which have used them (17).
Control of livestock gatherings (livestock trade fairs, markets and establishment shows)

All livestock gatherings must first be authorised by the official animal health or Veterinary Services, observing a series of requirements that minimise health risks to the animals involved. In particular, livestock gatherings should take place in hygienic surroundings with appropriate animal housing, and at an adequate distance from other livestock establishments. The site must be equipped with facilities for cleaning and disinfecting vehicles, together with the human, material and technical resources necessary to guarantee that these activities are effectively carried out (34).

Only animals duly identified, registered and inspected should be permitted to enter and leave. Entry and departure should be duly recorded. Animals gathered at the same site and time must come from holdings sharing the same health status.

Computerised management of livestock movement

Computerised management of livestock movement constitutes a further step in the management of health hazards associated with the movement of animals. To facilitate such control, the EU has been steadily developing national computerised registers containing basic details about any national movement of animals and, in some cases, international movement. Furthermore, the Trade Control and Expert System (TRACES) has now been implemented: an on-line system which comprises a network of Veterinary Authorities and economic operators of Member States (22).

Tools for eradicating the disease

Action in disease outbreaks, slaughter of animals that test positive and replacement of animals with health status guarantees

Any suspicion of COB at a holding must be reported immediately to the official Veterinary Services, who will initiate an investigation to confirm the presence or absence of the disease (33, 34). The holding is placed under official observation and subject to movement restrictions. All animals should be individually identified if this has not already been carried out, and suspect animals isolated from the rest in order to break any further infection spread. While these restrictions on the holding remain in force, animal movement should be exclusively limited to the slaughterhouse or to sero-negative animals destined for specific fattening units under certain conditions, but always with official authorisation. To confirm the outbreak, a clinical, serological and bacteriological investigation is conducted (33), and a detailed epidemiological survey is carried out, in order to trace back the possible origin of the outbreak, and trace forward possible transmission to other holdings (28).

Once the disease has been confirmed, it is obligatory to swiftly slaughter all infected or suspect animals. Slaughter is only effective if other requirements are met, including:

- implementation of a biosafety plan at the holding, to break the chain of infection among individual animals (milking hygiene, isolation of animals which have aborted or are about to give birth, sanitation of water supplies, maintenance of feed hygiene, etc.)
- rapid slaughtering, preferably no more than two weeks after diagnosis of the animals
- hygienic disposal of dead animals, fetuses, placentas, bedding and any other material in contact with the aetiological agent
- as far as possible, disinfection of manure, soil and pastures and prohibition of grazing in infected fields.

It is important that facilities and equipment are cleaned and appropriately disinfected under official supervision, since this constitutes a complementary measure of proven efficacy (43). Use of pastures previously grazed by infected animals can only be resumed after a certain (variable) period of time, which is dictated by the treatment received and by the environmental factors that influence the persistence of *Brucella* (33, 34).

It is important that the farmer is officially informed of the identity of the positive animals as soon as possible to ensure rapid separation of the reactors from the rest of the flock. However, under certain circumstances, it might be advisable to communicate the laboratory results to the farmer at the very last moment before slaughtering, to avoid any fraudulent practices, such as the substitution of animals. The slaughter site at the holding, if slaughter is not carried out in an authorised slaughterhouse, should be chosen to guarantee good hygiene practices and respect animal welfare requirements during the culling operation (with subsequent destruction of carcasses by appropriate burial or removal to specialised rendering centres), avoiding any possibility of illegal traffic in live positive animals.

In some programmes, hiring the services of specialised companies which, under official supervision, remove the animals from holdings and transport them directly to the slaughterhouse, or take the carcasses to the destruction centre, in sealed, guarded vehicles, has proved effective in
avoiding fraudulent practices such as the substitution of animals. Slaughtered animals should only be replaced by others from certified holdings.

Compensation for farmers affected by obligatory slaughter of animals

Farmers who, as a consequence of animal health programmes, have been obliged to slaughter animals or destroy their means of production should be entitled to appropriate compensation from the public authorities.

Compensation has a dual aim: on the one hand, to alleviate economic losses due to the slaughter of animals and, on the other, to promote the active cooperation of farmers in the control programme. The system and level of compensation should be established according to market values, but should be lower than the market price for healthy animals of the same category, to avoid overcompensation (28) and provide a positive stimulus. This minimises the risk of renewed outbreaks due to fraudulent practices. Furthermore, compensation should be paid as quickly as possible to avoid unnecessary loss to the farmer (27).

Mechanisms for suspending entitlement to compensation should be established for situations where the farmer is in breach of the rules, such as:

- having non-identified animals present on the holding
- altering health documentation or the means of identification
- failing to observe precautionary containment measures
- introducing animals into the holding that do not comply with health status guarantees
- failing to carry out the obligatory slaughter of positive animals within the established time limit
- the detection of hygiene and disinfection deficiencies in the animals' housing (33).

Sanctions for non-compliance

Any animal health programme should have a solid legislative basis (48), and be supported by a consistent system of control and auditing (24). Infractions can be classified as minor, serious and very serious, and should be punished by corresponding economic and administrative sanctions, consistent with the type of infraction committed (34). Proportionate and deterrent economic and administrative sanctions constitute a tool which should not be overlooked if health programmes are to achieve credibility.

Coordination tools

Minimum requirements for standardising control programmes

At the beginning of the 1990s, the EU established guidelines for the design and implementation of coordinated eradication programmes. Its aim was to encourage progressive consolidation of the single internal market, through rapid control of any outbreaks of a serious contagious disease, and to prevent the appearance of zoonoses which posed a threat to public health (18). In the case of COB, these guidelines established the minimum conditions for strategies and animal health measures that should be observed by eradication programmes co-financed by the EU and affected Member States. A series of mechanisms were put in place to ensure cooperation and enable monitoring of the programme’s progress and consequent modifications, where necessary (17).

The programme’s design should be based on an analysis of the epidemiological status of the disease and clearly defined intervention areas, as well as objectives, costs and specific benefits to be gained from the intervention. Programme goals should be established which can be achieved within the timescale envisaged, and appropriate indicators should be specified to enable quantification of results. Furthermore, the programme should be coordinated by the central Veterinary Authority. The duties and responsibilities of each Veterinary Service and interested party should be clearly defined, and a clear hierarchical structure established. Lastly, availability of sufficient resources (economic, technical and human resources) should be guaranteed for the duration of the programme (25).

Intense efforts have been made in recent years to establish standardised requirements for programme design, with the aim of facilitating monitoring, evaluation and comparison of the results obtained by different Member States (26, 27). It is, therefore, of the utmost importance to use basic activity indicators (for example, the proportion of flocks and animals included in the programme, vaccination coverage, number of diagnostic tests performed, average length of time between diagnosis and slaughter, average length of time before compensation is paid, etc.), together with epidemiological and performance indicators (fundamentally, the incidence and prevalence of the disease in flocks and animals) (26, 28).

Coordination

Coordination amongst the services responsible for public health, food hygiene and animal health is essential. Caprine and ovine brucellosis occurs at the interface between humans, animals, the environment and food, and...
the concept of ‘One Health’ can only be implemented with excellent communication and coordination between all players. The rapid exchange of information on human cases and animal outbreaks enables these services to take swift action and minimise the disease burden and economic losses (48).

Coordination is an essential element, and the European experience is both unique and invaluable. In the last decade of implementing eradication programmes within the EU, concerted efforts have been made to coordinate and integrate activities according to the priorities established in the EU White Paper on Food Safety (20). Thus, in addition to the classic procedure of decision-making by committees, primarily the Standing Committee for the Food Chain and Animal Health (21), other elements have been established, such as the Task Force (20, 29), which, after more than ten years of activity, has emerged as a key element in the coordination and assessment of eradication programmes. The work of the Task Force includes standardising programmes and associated monitoring and assessment procedures, establishing aims and goals, and providing scientific and animal health management information.

Other tools employed in control and eradication programmes: animal health protection groups

A key factor in the success of programmes against COB is co-responsibility. This implies the participation of all interested parties, including public authorities, private veterinarians and farmers and their associations, so that each is involved in the implementation of the programme and assumes their respective responsibilities.

In this respect, animal health activities benefit from the existence of appropriate animal health planning in the productive sector, and here the animal health protection groups constitute a key element. These are farmers’ associations which work to achieve higher standards of animal health and productivity, through establishing and implementing prophylactic measures and programmes for combating animal diseases, and also through improving hygiene and health standards in the production process (34). These groups have been promoted and encouraged by the authorities through subsidies and, in EU countries such as France, Spain and Portugal, they constitute a significant stakeholder involvement in the development and implementation of animal health programmes.

As part of their co-responsibility, these groups and their federations participate in the design, monitoring and assessment of programmes to fight diseases. Their veterinarians should participate and collaborate in the implementation of many of the technical measures envisaged by such programmes, such as vaccination, blood sampling and animal identification. In all actions related to official programmes, there are internal quality controls and training programmes to ensure the suitability of procedures employed. Likewise, all such activities should be supervised, periodically audited and monitored by the official Veterinary Services (24, 28).

Acknowledgements

The authors are grateful to all the experts who participated in the brucellosis subgroups of the Task Force for Monitoring Disease Eradication in EU Member States. Their cooperation and collaboration have resulted in a broad consensus on most of the aspects of brucellosis control and eradication reviewed in this article.
Outils complémentaires pour le contrôle et l’éradication de la brucellose caprine et ovine dans l’Union européenne

F. Crespo León, J.L. Sáez Llorente, F.J. Reviriego Gordejo, E.F. Rodríguez Ferri & M. Durán Ferrer

Résumé
La brucellose caprine et ovine est l’un des problèmes de santé animale les plus graves et complexes auxquels sont confrontés les Services vétérinaires des pays où la maladie sévit à l’état endémique. Plusieurs facteurs géographiques, ainsi que la nature même de la maladie influent sur son épidémiologie et en favorisent la propagation à grande échelle, tout en posant de nombreux problèmes aux programmes de santé animale destinés à la prévenir, à la contrôler et à l’éradiquer. Si les stratégies contre la brucellose font classiquement appel à deux outils spécifiques, à savoir la vaccination des populations à risque et le dépistage puis l’abattage des animaux suspects ou trouvés positifs, d’autres outils complémentaires, à caractère technique ou administratif devraient également être envisagés. L’expérience de l’Union européenne a montré que ces outils sont indispensables pour garantir des avancées durables et obtenir des résultats probants contre cette maladie. Néanmoins, ces outils complémentaires n’ont pas toujours été suffisamment pris en compte lors de la conception stratégique des programmes de santé animale ni lors de leur mise en œuvre, ce qui se traduit par une perte d’efficacité. Les auteurs passent en revue ces outils complémentaires, afin d’encourager les Services vétérinaires officiels à les adopter et à les utiliser, en fonction des ressources dont ils disposent.

Mots-clés

Herramientas complementarias para controlar y erradicar la brucelosis caprina y ovina en la Unión Europea

F. Crespo León, J.L. Sáez Llorente, F.J. Reviriego Gordejo, E.F. Rodríguez Ferri & M. Durán Ferrer

Resumen
La brucelosis caprina y ovina constituye uno de los más graves y complejos problemas zootécnicos que afrontan los Servicios Veterinarios en los países donde la enfermedad es endémica. Hay una serie de factores geográficos y ligados a la propia naturaleza de esta afección que influyen en su epidemiología y propician su extendida distribución, a la vez que impiden su eficaz prevención, control y erradicación por medio de programados sanitarios. Aunque tradicionalmente las estrategias de lucha contra la brucelosis han reposado en dos herramientas específicas (a saber, la vacunación de poblaciones expuestas...
References


