
Italia

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Summary: The most important events in Italy following the recent nuclear accident at Chernobyl are presented. These include national and international restrictions on the trade of live animals and animal products. Information is also provided concerning legislative measures adopted by the Italian Health Authorities in order to prevent and reduce radiocontamination of living animals, foods of animal origin and all other products destined for human consumption.

KEYWORDS: Contamination - Italy - Meat - Milk - Radioactivity - Surveillance.

This paper presents a synthesis of the most important events which have taken place in Italy, with regard to the national and international trade of live animals and animal products, after the recent nuclear accident at Chernobyl. The first information from other countries on the levels of radioactive contamination and the protective measures which they were adopting, began to arrive around 10 May 1986. This was probably a result of the Telegraphic Ordinance adopted by our Health Ministry on 2 May 1986, whereby the importation of live domestic, live and killed wild animals and all foods of animal and other origin (with the exception of those produced or stored before 20 April 1986) was strictly forbidden from the whole territory of USSR, Sweden, Norway, Finland, Poland, Czechoslovakia, Hungary, Romania, Bulgaria, Yugoslavia, German Democratic Republic, Austria, Switzerland and Albania.

The list of imports was partially modified by the EEC Council’s Regulation No. 1388 dated 12 May 1986, which was transposed into national legislation by Telegraphic Ordinance on 14 May 1986.

Subsequently, on 30 May 1986 the EEC Council adopted another Regulation (No. 1707) to set maximum admissible levels for Cs-134 and Cs-137 in milk and dairy products (370 Bq/kg), and in all other edible products (600 Bq/kg). Controls were also set up on behalf of EEC member countries vis-a-vis third countries. Moreover, member States bound themselves to inform the EEC Commission about the Regulation’s implementation within their territory. An ad hoc Committee, formed by representatives of member countries, was also constituted.

On 5 June 1986, the EEC Commission adopted another Regulation (No. 1762) indicating the “high risk” animal products on which member countries were expected to have performed adequate controls.

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Finally, an intensification of such controls was recommended for all products coming from third countries with dangerous radiocontamination levels. Data from the controls performed by individual States were to be sent to the Commission before the fifteenth of every month, while the first communication of this kind was to be sent no later than 16 June.

These two legislative acts were transposed into Italian national legislation by Ministerial Ordinances dated 31 May and 9 June 1986 respectively.

Animals and animal products were also the subject of internal trade control and surveillance. Shortly after the Chernobyl accident, accurate measurements of radioactivity levels were performed by the official Italian network on foods of animal origin, with particular reference to bovine fresh milk and dairy products. Scientific literature (1, 3, 5, 6) and subsequent confirmation in the field, indicated that I-131 posed the greatest immediate risk.

The first health-protective measures adopted in Italy were thus aimed at limiting the consumption of fresh milk by the public, especially children and pregnant women. On 2 May 1986, an ordinance was issued by the Italian Health Ministry prohibiting the consumption of fresh milk by population groups “at risk”. Further measures were taken to ensure the implementation of the ordinance and to avoid any illegal behaviour concerning the date of milk-packing. The prohibition of fresh milk and dairy products was progressively revoked in the least affected Italian regions and finally abrogated on 23 May for the entire country.

At that time, it was suggested that high radioactive levels in ovine and caprine milk could justify Regional Health Authorities in taking local measures as necessary to restrict the consumption of ovine and caprine fresh milk, and fresh dairy products whose maturation period was less than 15 days. Such measures were adopted in some northern and central regions.

It was also deemed necessary to recommend the destruction of all thyroids from bovines, ovines and caprines slaughtered within the national territory, as these glands concentrate I-131 and I-132 (4). Values up to 100,000-150,000 Bq/kg could be detected in these animal tissues by means of $\gamma$-scanning ($\gamma$-S) and high performance $\gamma$-spectrometry ($\gamma$-HPS), which were both employed in accordance with the scientific literature (2).

Further recommendations were made by local authorities, to prevent the distribution of fresh forage and hay to animals, and to keep them in closed herds.

During this same period, laboratories within three Istituti Zooprofilattici Sperimentali (of Perugia, Teramo and Foggia) were engaged in analysing foods of animal origin. Large-scale investigations were carried out through systematic application of $\beta$-scanning ($\beta$-S) (Foggia), $\gamma$-S (Teramo and Foggia) and $\gamma$-HPS (Perugia and Foggia) techniques (2). The following results were obtained:

1. During the first phase immediately following the radioactive fallout (I-131 emergency phase), high radiocontamination levels were detected by $\gamma$-S and $\gamma$-HPS in the following foods of animal origin:
   - ovine and caprine fresh milk (up to 3,700-3,800 Bq/kg);
   - bovine fresh milk (up to 700-1,000 Bq/kg);
— ovine and caprine meat (average value = 224 Bq/kg) and organs; the highest radioactivity levels were observed in the liver (average value = 260 Bq/kg) and kidneys (average value = 480 Bq/kg) of regularly slaughtered sheep and goats;
— meat (average value = 185 Bq/kg) and organs (average value = 180 Bq/kg) of wild animals.

2. During the second phase following the radioactive fallout (Cs-134, Cs-137, Sr-89 and Sr-90 emergency phase), high radiocontamination (Cs-134 and Cs-137) values were observed by γ-S and γ-HPS in the following foodstuffs:
— rabbit meat (average value = 900 Bq/kg);
— ovine meat (average value = 1,100 Bq/kg);
— lake-fish (average value = 1,390 Bq/kg).

It was observed that Cs-134 and Cs-137 concentrations in rabbits were up to 3 times higher in muscular tissue (920 Bq/kg) than in other tissues such as organs (300 Bq/kg), while Cs-137 concentration was approximately double that of Cs-134. As a consequence, rabbit and ovine meat, along with lake-fish, honey, ovine and caprine milk and milk-based products will have to be monitored with special care in the future, and a significant number of samples collected to evaluate their content of Cs-134, Cs-137, Sr, Ru, etc.

Restrictive measures involving the above-listed foods were adopted only at the local level. The absence of precise information on a well-defined radioactive (or radiocontamination) “risk level” in foods has created serious difficulties for the Central Health Authorities. Regional Health Authorities continuously requested advice on local situations where different conditions existed, mainly in relation to the problem of milk, dairy products and other foods of animal origin with high values (370, 740, 1,850 Bq/kg) of radioactive I-131.

Finally, we wish to draw attention to the need for close cooperation to be developed and encouraged among the main international scientific organisations (OIE, WHO, FAO) in order to provide all public health operators with a list of well-defined reference values (to be expressed in the same radiocontamination measure units) concerning the levels of maximum admissible concentration and intake of radionuclides.

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Résumé : Les auteurs présentent les principales répercussions de l'accident nucléaire de Tchernobyl en Italie. Celles-ci ont comporté des restrictions au commerce national et international des animaux vivants et des produits animaux. Ils donnent également des précisions sur les mesures réglementaires adoptées par les Autorités sanitaires italiennes pour prévenir et réduire la contamination radioactive des animaux vivants, des aliments d'origine animale et de tous les autres produits destinés à la consommation humaine.


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Resumen: Los autores presentan las principales repercusiones del accidente nuclear de Chernobil en Italia, las cuales incluyen restricciones al comercio nacional e internacional de animales vivos y productos de origen animal. Asimismo, dan precisiones sobre las medidas reglamentarias adoptadas por las Autoridades sanitarias italianas para prevenir y disminuir la contaminación radiactiva de los animales vivos, los alimentos de origen animal y el resto de productos destinados al consumo humano.


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REFERENCES