Veterinaria Italiana, 2011, **47** (1), 49-52

Guidelines used in Japan to prevent the contamination of feed products with undesirable substances

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Summary

As Japan depends on imports for most ingredients used to manufacture feed products, close co-operation is indispensable between importers and manufacturers of feed and feed ingredients to effectively mitigate the risk associated with feed safety. Guidelines were issued by the Ministry of Agriculture, Forestry and Fisheries (MAFF) in March 2008 to prevent feed products from being contaminated with undesirable substances. These guidelines identify the responsibilities of feed ingredient importers, feed manufacturers and distributors, as well as the roles of the MAFF and the Food and Agricultural Materials Inspection Centre.

Keywords

Animal, Feed, Guidelines, Japan, Safety, Undesirable substances.

Linee guida per prevenire la contaminazione dei prodotti alimentari con sostanze indesiderabili in Giappone

Riassunto

Il Giappone dipende dalle importazioni per la maggior parte degli ingredienti utilizzati per fabbricare i prodotti alimentari; è quindi indispensabile una stretta cooperazione tra importatori e fabbricanti di alimenti e ingredienti alimentari per ridurre efficacemente i rischi connessi con la sicurezza alimentare. Nel marzo 2008, il Ministry of Agriculture, Forestry and Fisheries *(MAFF) ha emanato le linee guida per prevenire la contaminazione dei prodotti alimentari da sostanze indesiderabili. Queste linee guida identificano le responsabilità degli importatori di ingredienti alimentari, dei fabbricanti e dei distributori di alimenti, oltre ai ruoli del MAFF e del* Food and Agricultural Materials Inspection Centre.

Parole chiave

Alimenti, Animale, Giappone, Linee guida, Sicurezza, Sostanze indesiderabili.

Introduction

To ensure the safety of feedstuffs marketed in Japan, the following measures are taken in accordance with the *Law on the Assurance of Safety and Improvement of Quality of Feed* (Law No. 35, 1953) (Feed Safety Law) (2):

- establishment of standards and specifications for production, usage, storage and labelling of feed and feed additives (feed and feed additives that do not meet these standards and specifications are prohibited)
- prohibition of marketing of specified feeds which have not been tested by the Food and Agricultural Materials Inspection Centre (FAMIC) or which are not produced by manufacturers registered by the Minister of Agriculture, Forestry and Fisheries (MAFF)
- prohibition of production, importation, marketing or use of feeds and feed additives containing hazardous substances or that have been contaminated by micro-organisms.

In addition, the MAFF issues guidelines to complement this regulatory framework. The MAFF has issued several hazard-specific guidelines that are to be applied by feed

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manufacturers, namely:

- a guideline for the prevention of feed contamination with *Salmonella* (1998)
- a guideline for the prevention of feed contamination with animal proteins (2003)
- a guideline for safety assurance of feed from recycled food waste (2006)
- a guideline for quality control of feed with antimicrobials (2007).

In recent years, consumers have become increasingly interested in food safety. The recent emergence of new hazards affecting feed safety, such as meat-and-bone meal contaminated with the bovine spongiform encephalopathy (BSE) agent and feed and feed ingredients contaminated with melamine created concern about feed safety throughout the world. Other events that have resulted in increased concern over feed safety among Japanese consumers are as follows:

- detection of a high level of bromoxynil in Sudan grass hay imported from the United States in 2008
- detection of high nitrate nitrogen levels in Sudan grass hay imported from the United States in 2007
- detection of malachite green and leucomalachite green in fish meal imported from China in 2008
- intoxication of cattle by hay imported from the United States and infected with endophyte between 1996 and 2007
- detection of chloramphenicol in non-fat dry milk imported from Ukraine in 2008.

Given the fact that Japan depends on imports for most ingredients that are used to manufacture feed products, close co-operation is essential between importers of feed ingredients, feed manufacturers and others to effectively mitigate the risk associated with feed safety (Fig. 1). In March 2008, the MAFF issued a guideline to prevent feed products from being contaminated with undesirable substances, prescribing the responsibilities of feed ingredient importers, feed manufacturers and distributors as well as the roles of the MAFF and the FAMIC (3) (Fig. 2). The term 'undesirable substances' in this guideline refers to chemical substances, including residual pesticides, mycotoxins and heavy metals that may affect the health of both humans and animals.

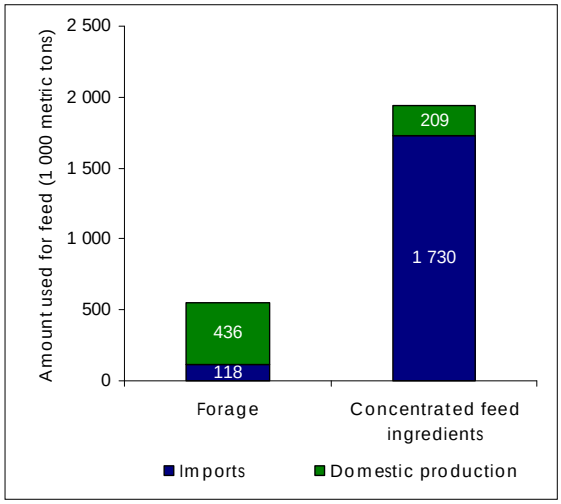

Figure 1
Quantities of forage and grains used for concentrated feed in Japan in fiscal year 2008 (4)
Forage includes hay, silaged grass, corn, rice and rice straw
Grains for concentrated feed include corn, rice, sorghum, rice bran, soybean oil residue, beet pulp, beer residue, bean curd residue, fish meal, etc.

Responsibilities and roles of importers, manufacturers and distributors of feed and feed ingredients stipulated in the guideline

Responsibilities of importers

The importers of feed ingredients should:

- develop specifications for the ingredients that they import
- assure compliance with set specifications by drawing up a contract with the suppliers and visiting the suppliers in the exporting countries
- develop standard operational procedures (SOPs) for quality control, complaint resolution, recall processing and education and training of employees
  collect information on the factors that may affect the safety of feed and feed ingredients in the exporting countries (this includes information on meteorological situation mycotoxin production during storage and the use of pesticides).

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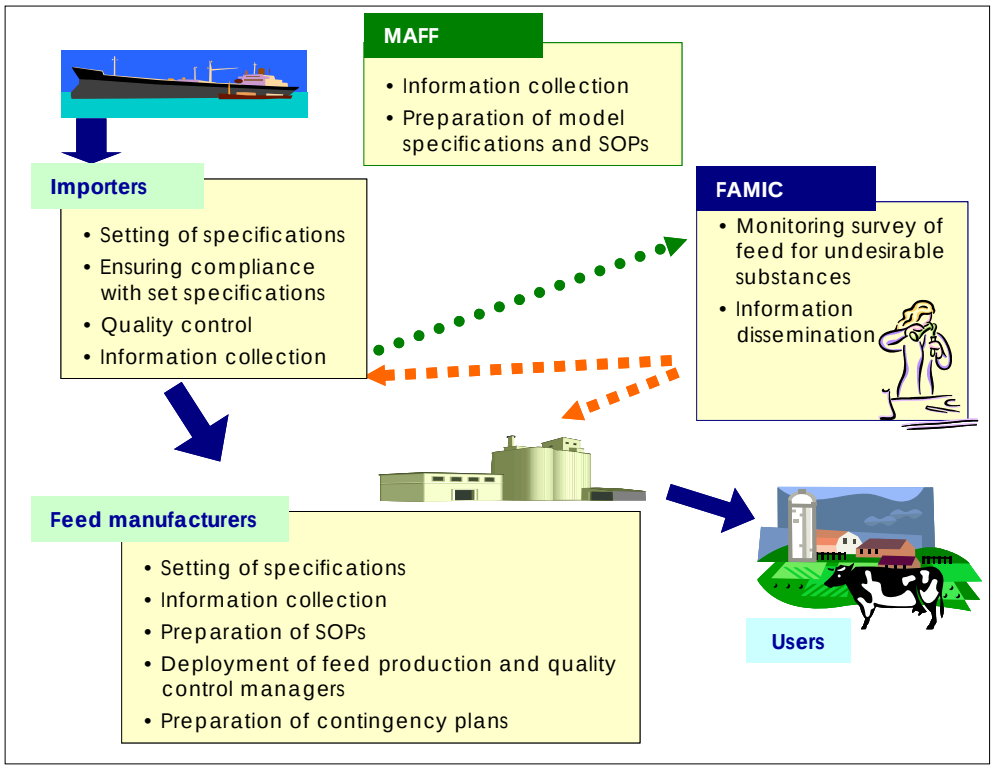

MAFF Ministry of Agriculture, Forestry and Fisheries
SOPs standard operational procedures
FAMIC Food and Agricultural Materials Inspection Centre

Figure 2
Responsibilities and roles of importers and manufacturers of feed and feed ingredients and the roles of the Ministry of Agriculture, Forestry and Fisheries and Food and Agricultural Materials Inspection Centre under the *Guideline for preventing the contamination of feed products with undesirable substances*
Arrows indicate the movement of feed ingredients and feed
The dotted green arrow indicates transmission of information
The dotted orange arrow indicates inspections

Responsibilities of manufacturers

Manufacturers of feed products should:

- develop specifications for the feed ingredients that they use as well as for the feed products that they manufacture
- ensure compliance with set specifications by signing a contract with the ingredient importers and visiting the ingredient processors
- develop process control standards for each plant they operate, describing manufacturing process control and other procedures
- develop quality control standards for each plant they operate, describing sample collection, testing and other procedures
- deploy a feed production manager and quality control manager
- receive information provided by the FAMIC on the results of monitoring and on the factors that may affect the safety of feed and feed ingredients
- develop SOPs for emergency response, complaint resolution, recall processing, auto-inspection and education and training of employees
- if a feed product containing an undesirable substance is identified, recall unsold/unused feed products from the same lot, request potential users to refrain from using it and inform the distributors and MAFF.

Responsibilities of distributors

Distributors of feed products should:

- develop SOPs for transportation and storage of feed products
- transport and store feed products in accordance with the SOPs
- if a feed product containing an undesirable substance is identified, recall unsold/unused

feed products from the same lot, request potential users to refrain from using it and inform the manufacturer and MAFF.

Roles of the authorities stipulated by the guideline

Role of the Ministry of Agriculture, Forestry and Fisheries

The MAFF should:

- collect information on the safety of feed, as a base to set regulatory standards in accordance with the Feed Safety Law
- develop model standards and SOPs for manufacture process control and quality control to be applied by importers, manufacturers and distributors
- if a food safety emergency arises that is caused by the use of feed contaminated with undesirable substances, establish a taskforce, conduct investigations, issue instructions and collect and disseminate information
- if a feed product containing an undesirable substance is identified, request importers, manufacturers and distributors to suspend shipments of and recall unsold/unused feed products from the same lot and request potential users to refrain from using it.

Role of the Food and Agricultural Materials Inspection Centre

The FAMIC should:

- monitor the safety of feed and feed ingredients for undesirable substances by taking samples and analysing them
- collect information from importers and other sources on the factors that may affect the safety of feed and feed ingredients in the exporting countries.

Since the FAMIC was designated as a World Organisation for Animal Health (*Office International des Épizooties*: OIE) Collaborating Centre for Animal Feed and Analysis in May 2009, the results of the monitoring of feed and feed ingredients conducted by the FAMIC are not only supplied to the people concerned with the feed business in Japan but disseminated worldwide (1).

Implementation of the guideline and future prospects

In March 2009, the MAFF produced a detailed manual on the implementation of the guideline as well as model SOPs on the import and manufacture of major feed ingredients (grains, forage, fish meal, plant oil meal, animal fat and meat-and-bone meal) and on the manufacture of compound feeds (2). Based on these model SOPs provided by the MAFF, importers, manufacturers and distributors of feed and feed ingredients have developed SOPs that apply to their respective activities. From April to September 2010, the FAMIC inspected 20 randomly selected importers of feed ingredients and found no major breaches of the guideline. From October 2010 onwards, the FAMIC will start inspecting manufacturers to ensure that they observe the guideline. The MAFF is considering the possibility of integrating hazard specific guidelines and introducing a hazard analysis critical control point (HACCP)-based approach into this guideline in the future.

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