



OIE Work on Animal Feed Safety

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Background (1)

- Animal feed is a critical component of the food chain that has a direct impact on animal health and welfare and also on food safety and public health
- Historically, OIE primary focussed on animal feed as a pathway for the entry and spread of contagious epidemic diseases, e.g. foot and mouth disease, swine vesicular disease and avian influenza
- Role of feed as a vector for disease agents, including zoonotic agents, e.g. BSE, Salmonella, now well recognised
- Feed and feed ingredients are widely traded internationally and trade disruptions can severely impact economies in both developed and developing countries



Background (2)

- Since 2002 OIE has expanded its zoonotic disease mandate to include animal production food safety, working in collaboration with the Codex Alimentarius Commission and other international organisations, in particular FAO and WHO
- In 2006 OIE International Committee resolved that OIE should develop guidance on foodborne zoonoses and animal feeding to complement the existing Codex texts
- Draft text developed by *ad hoc* group, reviewed by the Animal Production Food Safety Working Group and the relevant Code Commissions, sent to OIE Members for comment and then finally adopted by the General Session of the OIE World Assembly of Delegates

OIE texts

- ***OIE Terrestrial Animal Health Code. Chapter 6.3. The control of hazards of animal health and public health importance in animal feed.***
- ***OIE Aquatic Animal Health Code. Chapter 6.1. Control of hazards in aquatic animal feeds.***
- **OIE-FAO Guide to Good Farming Practices** contains a section on *Animal feeding and watering*

Codex Alimentarius texts

- **Codex Code of Practice on Good Animal Feeding (CAC/RCP 54-2004):** addresses food safety aspects
- Codex Code of Practice for the Prevention and Reduction of Dioxin and Dioxin-like PCB Contamination in Foods and Feeds (CAC/RCP 62-2006)
- Codex Code of Practice for the Reduction of Aflatoxin B1 in Raw Materials and Supplemental Feedingstuffs for Milk-producing Animals (CAC/RCP 45-1997)
- Code of Practice for Source-Directed Measures to Reduce Contamination of Food with Chemicals (CAC/RCP 49-2001)
(The next speaker will talk about the Codex texts)

Terrestrial Code. Chapter 6.3. (1)

6.3.2. Objectives and scope

- Provide guidance on animal feeding in relation to animal health and complement the guidance in Codex texts
- Ensure control of animal health and public health hazards through adherence to recommended practices during production and use of both commercial and on-farm produced animal feed and feed ingredients
- Covers feed for all terrestrial animals (except bees)

Terrestrial Code. Chapter 6.3. (2)

6.3.3. Definitions

- Feed: any material (single or multiple), whether processed, semi-processed or raw, which is intended to be fed directly to terrestrial animals (except bees)
- Feed additive: Microorganisms, enzymes, pH regulators, trace elements, vitamins and other products fall within the definition, depending on the purpose of use and method of administration. Veterinary drugs excluded.
- Feed ingredient
- Contamination: means the unwanted presence of a material or product in a feed or feed ingredient potentially harmful to animal or public health or restricted under current regulations

Terrestrial Code. Chapter 6.3. (3)

6.3.4. *General principles*

- 1. Roles and responsibilities

Competent Authority has the legal power to set and enforce regulatory requirements and has final responsibility for verifying that requirements have been met. Refer to *Terrestrial Code* Chapters 3.1. & 3.2.

Producers and users responsible for ensuring that products meet regulatory requirements. Contingency plans to enable tracing and recall of non-compliant products. Personnel training. Manufacturing equipment, storage and transport facilities adequate, good working order, sanitary condition

Terrestrial Code. Chapter 6.3 (4)

- 2. Regulatory standards

Limits and tolerances for hazards based on scientific evidence, including sensitivity of analytical methods, and risk characterisation

- 3. Risk analysis

Use internationally accepted principles and practices on risk analysis (see Section 2 of *Terrestrial Code* and relevant Codex texts) in developing and applying regulatory framework.

Application of a generic framework should provide a systematic and consistent process for managing all biosecurity risks

Terrestrial Code. Chapter 6.3 (5)

- 4. Good practices

Where national guidelines exist, Good Agricultural Practices & Good Manufacturing Practices (including Good Hygienic Practices) should be followed. Apply Hazard Analysis and Critical Control Point (HACCP) principles to control hazards

- 5. Geographic and environmental considerations

Consider epidemiological links between potential sources of hazards for animal health or food safety when assessing water sources, land or facilities for suitability for the production of feed and feed ingredients.

Terrestrial Code. Chapter 6.3 (6)

- 6. Zoning and compartmentalisation

Feed an important component of biosecurity and needs to be considered when defining a zone or compartment

- 7. Sampling and analysis

Base on scientifically recognised principles and procedures

- 8. Labelling

Informative, unambiguous, legible, conspicuously placed. Ref to *Codex Code of Practice*, Section 4.2.10. Should include list of ingredients, and instructions on handling, storage and use.

Terrestrial Code. Chapter 6.3 (7)

- 9. Design and management of inspection programmes

Competent Authorities: inspection or auditing of activities conducted by other agencies or the private sector

Operators: self regulation to secure compliance . Full responsibility for implementing systems for quality control

- 10. Assurance and certification

Operators responsible for demonstrating safety of establishments under their control. **Competent Authorities** responsible for providing assurances domestically and to trading partners that regulatory safety standards have been met.

Terrestrial Code. Chapter 6.3 (8)

Veterinary Services required to provide *international veterinary certificates* for international trade in animal product-based feeds

- 11. Hazards associated with animal feed
 - a) Biological: bacteria, viruses, prions, fungi, parasites
 - b) Chemical: mycotoxins (e.g aflatoxins), gossypol, industrial and environmental contaminants (e.g. dioxins, PCBs), residues of veterinary drugs and pesticides, radionuclides
 - c) Physical: foreign objects such as pieces of glass, metal, plastic or wood

Terrestrial Code. Chapter 6.3 (9)

- 12. Contamination

Regulations and standards should include procedures to minimise the risk of contamination during manufacture, storage, distribution and use of feed and feed ingredients.

Procedures such as flushing, sequencing and physical clean-out should be used to reduce contamination between batches

- 13. Antimicrobial resistance

Refer to Chapters 6.7 to 6.11 of the *Terrestrial Code*

Terrestrial Code. Chapter 6.3 (10)

- 14. Management of information

Competent Authority should establish requirements for the provision of information by the private sector. Records should be maintained of production, distribution and use of feed and feed ingredients. These records required to facilitate trace-back and trace-forward of feed and feed ingredients.

Animal identification and traceability tools for addressing animal health and food safety risks arising from feed (see Chapters 4.1 and 4.2 of the *Terrestrial Code*).

Aquatic Code. Chapter 6.1. Control of hazards in aquatic animal feeds

- Key objective is to prevent the spread, via aquatic animal feed, of diseases from an infected country, zone or compartment to a free country, a free zone or a free compartment.
- Recommendations should be read in conjunction with relevant recommendations of the *Terrestrial Code*.
- OIE members also encouraged to consult *Codex Code of Practice on Good Animal Feeding* and relevant FAO texts

Control of hazards in aquatic animal feeds: some key considerations

- Concentration of aquaculture establishments heightens risk of disease transmission. As new species become subject of aquaculture, new pathogens emerge in association with these hosts.
- Animal proteins used in feed mainly sourced from marine environment, which increases the risk of disease transmission, especially when aquatic animals are fed live or whole aquatic animals of the same or related species.
- Usage of feed in moist, semi-moist and dry form implies different levels of risk due to processing applied to the feed.
- Hazards may be transmitted from feed to aquatic animals via direct or indirect means.

Control of hazards in aquatic animal feeds: scope



- Recommendations document risk mitigation measures, including traceability and certification, to deal with aquatic animal health risks associated with trade in aquatic animal feed and feed ingredients.
- Recommend control by adherence to recommended practices during production and use of both commercial and on-farm produced feed and feed ingredients for aquatic animals.
- Hazards include pathogens that cause OIE-listed diseases and other agents that can cause an adverse effect on animal and/or public health.
- Main focus on aquatic animals grown for food.

Control of hazards in aquatic animal feeds: general principles (1)



- Roles and responsibilities

Similar to text in *Terrestrial Code* Chapter 6.3., with the addition that it is a particular responsibility of the ***Competent Authority*** to set and enforce the regulatory requirements pertaining to the use of veterinary drugs, aquatic animal disease control and the food safety aspects that relate to the management of live aquatic animals on farm.

- Regulatory standards for food safety, risk analysis, good practices, zoning and compartmentalisation, sampling and analysis, labelling, design and management of inspection programmes, assurance and certification, contamination

Similar to the texts in *Terrestrial Code* Chapter 6.3.

Control of hazards in aquatic animal feeds: general principles (2)



- Relationship between prions and aquatic animal species
Scientific knowledge lacking but no evidence that use of terrestrial animal by-products as ingredients in aquatic animal feed gives rise to risks in respect to prion disease. More scientific information desirable.
- Hazards associated with aquatic animal feed and bioaccumulation
Biological, chemical and physical hazards –similar to text in *Terrestrial Code* Ch. 6.3. Chemical hazards include heavy metals, dioxins, PCBs, which persist in certain tissues and therefore tend to accumulate in the food chain.

Control of hazards in aquatic animal feeds: general principles (3)



- Geographical and environmental considerations

Aquatic and terrestrial harvest areas for feed should not be located in proximity of sources of animal health or food safety hazards or preventive measures applied to control risk. Same applies to processing of feed and location of aquaculture establishments.

Aquatic animal health considerations include factors such as disease status, location of quarantined premises, existence of processing plants without proper biosecurity measures and existence of zones/compartments of specified health status.

Public health considerations include factors such as industrial operations and waste treatment plants generating pollutants.

Control of hazards in aquatic animal feeds: general principles (4)



- Antimicrobial resistance

Refer to Chapter 6.2 of *Aquatic Code* (under study)

- Management of information

Competent Authority should establish requirements for provision of information by the private sector.

- Private sector should maintain records on production, distribution, importation and use of feed and feed ingredients to facilitate trace-back and trace forward.

- Animal identification (normally on group basis for aquatic animals) and traceability are tools for addressing animal health and food safety risks arising from animal feed.

Control of hazards in aquatic animal feeds: approaches to risk mitigation (1)



1. Commodities

a) Safe commodities

Some commodities undergo extensive processing (e.g. heat treatment, acidification, extrusion, extraction). Negligible risk that pathogens will survive if produced using G.M.P.

b) Other commodities

Competent authorities should consider following risk mitigation measures:

i) sourcing feed/feed ingredients from disease-free country/zone/compartement; or

ii) confirmation (by testing) that pathogens are not present; or

Control of hazards in aquatic animal feeds: approaches to risk mitigation (2)



iii) treatment (e.g. heat or acidification) using a method approved by the *Competent Authority* to inactivate pathogens.

iv) use of feed only in population not susceptible to pathogen(s) in question and where susceptible aquatic animals will not come into contact with the feed or waste products.

c) Whole fish (fresh or frozen)

Measures include sourcing fish only from stocks where there is no evidence of infection with any OIE-listed diseases or treatments that inactivate aquatic animal pathogens

Control of hazards in aquatic animal feeds: approaches to risk mitigation (3)



2. Feed production

To prevent contamination by pathogens:

- a) Flushing, sequencing or physical clean-out of manufacturing lines and storage facilities between batches
- b) Buildings and equipment for processing and transport should be constructed so as to facilitate hygienic operation, maintenance and cleaning and prevent contamination.
- c) Feed manufacturing plants designed and operated so as to avoid cross-contamination.
- d) Store processed feed/feed ingredients separately from unprocessed feed ingredients under appropriate conditions.

Control of hazards in aquatic animal feeds: approaches to risk mitigation (4)



- e) Keep manufacturing equipment, storage facilities and surroundings clean. Implement pest control measures.
- f) Where appropriate, use measures (heat, chemicals) to inactivate pathogens. Monitor efficacy of treatment.
- g) To assist in tracing feed/feed ingredients as may be required to deal with animal disease incidents, labelling should provide for identification by lot/batch and place and date of production.

Control of hazards in aquatic animal feeds: approaches to risk mitigation (5)



3. Importing countries

Competent Authorities should consider the following measures:

- a) imported feed/feed ingredients should be delivered to feed manufacturing plants or aquaculture facilities for processing and use under conditions approved by *Competent Authority*.
- b) effluent and waste from feed manufacturing plants and aquaculture facilities should be managed under conditions approved by the *Competent Authority*.
- c) feed known to contain pathogens should only be used in a zone/compartment that does not contain susceptible species.
- d) importation of raw unprocessed feed derived from aquatic animals to feed aquatic animal species should be avoided.

Control of hazards in aquatic animal feeds: certification procedures (1)

When importing feed/feed ingredients of aquatic animal origin other than those mentioned in point 1a of Article 6.1.4., the **Competent Authority** of the importing country should require that the consignment be accompanied by an *international aquatic animal health certificate* issued by the **Competent Authority** of the exporting country (or a certifying official approved by the importing country)

Certificate in accordance with Model Certificate (Chapter 5.10.)

Control of hazards in aquatic animal feeds: risk pathways (1)



1. Pathogens can be introduced into feed in the following ways:
 - a) via the harvest of infected animals
 - b) during storage, processing and transport, due to poor hygienic practices, the presence of pests or residues of previous batches of feed remaining in processing lines, containers or transport vehicles.

Control of hazards in aquatic animal feeds: risk pathways (2)



2. Aquatic animals can be exposed to pathogens in feed in the following ways:

a) Direct exposure

Use of unprocessed feed derived from aquatic animals to feed aquatic animals presents a potential direct route of exposure

b) Indirect exposure

Pathogens in feed may be transmitted to aquatic animals in aquaculture and wild aquatic animals via contamination of the environment or infection of non-target species.

Future OIE work on animal feed

- Text on “*Control of hazards of animal health and public health importance in heat-treated pet food*” is under development and appropriate articles will be added to Chapter 6.3 of the *Terrestrial Code* when finalised.
- OIE standards on animal feed and the OIE-FAO Guide to Good Farming Practices are relatively new.
- Await OIE Members reaction to these texts and respond to Members needs for further standards/guidelines etc.
- Follow developments in Codex, FAO, WHO and other organisations and complement texts where necessary, but avoid duplication.

OIE Working Group on Animal Production Food Safety

- Established by the OIE International Committee in 2002: ninth meeting held 3-5 November 2009
- Coordinates OIE activities related to animal production food safety – focus on food safety issues related to primary production
- Provides advice to the Director-General and the OIE Specialist Commissions
- Strengthens cooperation between the OIE and Codex

Members of the Working Group

Prof. Hassan Aidaros (Egypt)

Dr Katinka de Balogh (FAO)

Dr Carlos A. Correa Messuti (Uruguay)

Ms Selma Doyran (Codex Secretary)

Dr Andrew McKenzie (New Zealand)

Dr Alan Randell (Italy, previous CAC Secretary)

Mr Michael Scannell (European Commission)

Dr Jorgen Schlunt (WHO)

Dr Stuart Slorach (Sweden, previous CAC Chairperson)

Dr Robert Thwala (Swaziland)

Observers and other participants (2009)

Observers

Dr Karen Hulebak (CAC Chairperson)

Dr Alexander N. Panin (Russia)

OIE Headquarters

Dr Bernard Vallat (Director General)

Dr Sarah Kahn (Head, International Trade Department)

Dr Gillian Mylrea (Project Officer, International Trade Dept.)

Dr Kazuaki Miyagishima (Head, Scientific & Technical
Department)

Dr Theo Knight-Jones (Intern)

Main issues dealt with 2009

- Update on OIE, Codex, FAO and WHO activities
- Priority pathogens for standard setting by the OIE
- Review of Terms of Reference and *modus operandi*
- Heat-treated pet food, terrestrial and aquatic animal feed
- Trade in animal products
- Salmonellosis
- Antimicrobial resistance
- Biotechnology
- Private standards
- Animal identification and traceability
- Work programme for 2010

Work programme for 2010 (1)

Horizontal issues

- Antimicrobial resistance
- Pet food
- Potential food safety implications of biotechnology vaccines
- Import risk analysis
- Scientific evidence for relationship between animal welfare and animal production food safety
- Animal production food safety in veterinary education
- Importance of animal production food safety for food security



Work programme for 2010 (2)

Horizontal issues (continued)

- Food safety issues arising from ongoing work on the emerging zoonoses at the human-animal interface
- Certification , in particular electronic certification

Disease-specific texts

- Brucellosis
- Salmonellosis and campylobacteriosis in poultry
- Follow-up of the report on priority pathogens for standard setting activities in animal production food safety

Continue to strengthen relationship between OIE and Codex

Next Working Group meeting is planned for 2-4 November 2010

Further information



- The **OIE *Terrestrial Animal Health Code*** and ***Aquatic Animal Health Code*** and other OIE documents can be accessed via the OIE website:
www.oie.int
- **Codex Code of Practice on Good Animal Feeding (CAC/RCP 54-2004)** and other Codex documents can be accessed via the Codex website:
www.codexalimentarius.net