

## CHAPTER 4.8.

# CONTROL OF PATHOGENIC AGENTS IN AQUATIC ANIMAL FEED

### Article 4.8.1.

#### **Introduction**

*Feed* can be a source of infectious *disease* in *aquatic animals*.

Because *aquatic animals* are often a principal ingredient in *feed* for *aquatic animals*, and because the use of semi-processed, raw and live *feed* continues to be a common practice, the *risk* of *disease* transmission via *feed* should be addressed.

### Article 4.8.2.

#### **Purpose and scope**

The purpose of this chapter is to address transmission of infectious *diseases* of *aquatic animals* via *feed* to prevent entry and spread into a country, *zone* or *compartment* free from *pathogenic agents* of concern.

This chapter applies to the production and use of all products destined for *feed* and *feed ingredients* whether produced commercially or on farm.

*Risk analysis* principles (in accordance with Chapter 2.1.) should be applied to determine the *risks* associated with the production and use of *feed* in *aquatic animals*.

This chapter is complementary to guidance provided by the Codex Code of Practice on Good Animal Feeding (CAC/RCP 54-2004).

### Article 4.8.3.

#### **Responsibilities**

The responsibilities of the *Competent Authority* include setting and enforcing regulatory requirements related to animal *feed*, and verifying that these requirements are met. This also includes raising awareness about *risks* related to use of unprocessed or semi-processed *feed* in *aquaculture*.

*Feed* producers have the responsibility to ensure that production of *feed* is performed in a manner to prevent the spread of *diseases* of *aquatic animals*. Records and contingency plans should be in place, as appropriate, to enable the tracing, recall, or destruction of non-compliant products. All personnel involved in the harvest, manufacture, transport, storage and handling of *feed* and *feed ingredients* should be adequately trained and aware of their role and responsibility in preventing the spread of infectious *diseases* of *aquatic animals*. Equipment for producing, storing and transporting *feed* and *feed ingredients* should be kept clean and maintained in good working order.

Owners and managers of *aquaculture establishments* should adhere to regulatory requirements and implement *biosecurity plans* on their farms in order to manage *risks* related to the use of semi-processed, raw and live *feed*. This can be done through identification of *disease* free sources and record keeping for traceability purposes, implementation of on farm *risk* mitigation measures, and early detection of infectious *diseases*.

Private veterinarians and other *aquatic animal health professionals* providing specialist services to producers and to the *feed* industry may be required to meet specific regulatory requirements pertaining to the services they provide (e.g. *disease* reporting, quality standards, transparency).

Article 4.8.4.

**Hazards associated with aquatic animal feed**

Biological hazards that may be present in *feed* and *feed ingredients* include *pathogenic agents* such as bacteria, viruses, fungi, and parasites. The scope of these recommendations covers *listed diseases* and other *pathogenic agents* that cause an adverse effect on *aquatic animal* health.

Chemical and physical hazards associated with *feed* and *feed ingredients* are not addressed in this chapter.

Antimicrobial resistance arising from the use of *antimicrobial agents* in *feed* is addressed in Section 6.

Article 4.8.5.

**Risk pathways and exposure**

*Feed* may be contaminated with *pathogenic agents* present at the time of harvesting, transport, storage and processing of *commodities* used as *feed ingredients*. Contamination may also occur during manufacture, transport, storage and use of *feed*. Poor hygienic practices during processing and manufacture, transport and storage are potential sources of contamination with *pathogenic agents*.

*Aquatic animals* can be directly exposed to *pathogenic agents* in *feed*. *Aquatic animals* can also be indirectly exposed through contamination of the environment by *feed*.

Article 4.8.6.

**Risk management**

1. Use of safe feed and feed ingredients

Some *commodities* undergo significant processing such as heat treatment, acidification, extrusion and extraction. There may be a negligible likelihood that *pathogenic agents* will survive in such products if they have been produced in accordance with Good Manufacturing Practice.

Criteria provided in Chapter 5.4. may be used to assess the safety of *commodities* to be used as *feed* or *feed ingredients*.

Articles X.X.3. of all *disease-specific* chapters in Sections 8 to 11 list *commodities* considered safe for any purpose including use as *feed* or *feed ingredients*.

*Competent Authorities* should also consider sourcing *feed* and *feed ingredients* from a country, zone or compartment free from *pathogenic agents* of concern.

2. Use of feed and feed ingredients from sources that may not be free from pathogenic agents of concern

When using *feed* and *feed ingredients* from sources that may not be free from *pathogenic agents* of concern, *Competent Authorities* should consider the following *risk* mitigation measures:

- a) treatment (e.g. by heating or acidification) of the *commodity* using a method approved by the *Competent Authority* to inactivate *pathogenic agent(s)* as per Articles X.X.10. (for Chapter 10.4. the relevant Article is 10.4.14.) of all *disease-specific* chapters in Sections 8 to 11; or
- b) confirmation (e.g. by testing) that *pathogenic agents* are not present in the *commodity*; or
- c) use of *feed* only in populations that are not susceptible to the *pathogenic agent(s)* in question and where *susceptible species* will not come into contact with the *feed* or its waste products.

3. Feed production

To prevent contamination by *pathogenic agents* during processing, manufacture, storage and transport of *feed* and *feed ingredients*, the following is recommended:

- a) flushing, sequencing or physical cleaning-out of manufacturing lines and storage facilities should be performed between batches as appropriate;
- b) buildings and equipment for processing and transporting *feed* and *feed ingredients* should be constructed in a manner that facilitates hygienic operation, maintenance and cleaning and prevents contamination;

- c) *feed* manufacturing plants should be designed and operated in a manner that avoids cross-contamination between batches;
- d) processed *feed* and *feed ingredients* should be stored separately from unprocessed *feed ingredients*, under appropriate storage conditions;
- e) *feed* and *feed ingredients*, manufacturing equipment, storage facilities and their immediate surroundings should be kept clean;
- f) measures to inactivate *pathogenic agents*, such as heat treatment, should be used where appropriate;
- g) labelling should provide for the identification of *feed* and *feed ingredients* as to the batch, place and date of production to assist in tracing *feed* and *feed ingredients*

---

NB: FIRST ADOPTED IN 2008; MOST RECENT UPDATE ADOPTED IN 2015.

