

## CHAPTER 10.7.

# KOI HERPESVIRUS DISEASE

### Article 10.7.1.

For the purposes of the *Aquatic Code*, koi herpesvirus disease (KHVD) means *infection* with the viral species koi herpesvirus (KHV) tentatively placed in the sub-family *Cyprinid herpesvirus* of the family *Herpesviridae*.

Information on methods for *diagnosis* are provided in the *Aquatic Manual*.

### Article 10.7.2.

#### Scope

The recommendations in this chapter apply to: common carp (*Cyprinus carpio carpio*), ghost carp (*Cyprinus carpio goi*), koi carp (*Cyprinus carpio koi*) and common carp hybrids (e.g. *Cyprinus carpio* x *Carassius auratus*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

### Article 10.7.3.

#### Importation or transit of aquatic animals and aquatic animal products for any purpose from a country, zone or compartment not declared free from koi herpesvirus disease

- 1) *Competent Authorities* should not require any conditions related to KHVD, regardless of the KHVD status of the *exporting country, zone or compartment*, when authorising the importation or transit of the following *aquatic animal products* from the species referred to in Article 10.7.2. which are intended for any purpose and which comply with Article 5.4.1.:
  - a) heat sterilised hermetically sealed fish products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time/temperature equivalent);
  - b) pasteurised fish products that have been subjected to heat treatment at 90°C for at least ten minutes (or to any time/temperature equivalent which has been demonstrated to inactivate KHV);
  - c) mechanically dried eviscerated fish (i.e. a heat treatment at 100°C for at least 30 minutes (or any time/temperature equivalent which has been demonstrated to inactivate KHV);
  - d) fish oil;
  - e) fish *meal*.
- 2) When authorising the importation or transit of *aquatic animals* and *aquatic animal products* of a species referred to in Article 10.7.2., other than those referred to in point 1 of Article 10.7.3., *Competent Authorities* should require the conditions prescribed in Articles 10.7.7. to 10.7.11. relevant to the KHVD status of the *exporting country, zone or compartment*.
- 3) When considering the importation or transit of *aquatic animals* and *aquatic animal products* of a species not covered in Article 10.7.2. but which could reasonably be expected to pose a *risk* of spread of KHVD, the *Competent Authority* should conduct a *risk analysis* in accordance with the recommendations in Chapter 2.1. The *Competent Authority* of the *exporting country* should be informed of the outcome of this assessment.

### Article 10.7.4.

#### Country free from koi herpesvirus disease

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from KHVD if all the areas covered by the shared water bodies are declared countries or *zones* free from KHVD (see Article 10.7.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from KHVD if:

- 1) none of the *susceptible species* referred to in Article 10.7.2. are present and *basic biosecurity conditions* have been continuously met for at least the last two years;

OR

- 2) any of the *susceptible species* referred to in Article 10.7.2. are present and the following conditions have been met:
  - a) there has been no observed occurrence of the *disease* for at least the last ten years despite conditions that are conducive to its clinical expression (as described in the corresponding chapter of the *Aquatic Manual*); and
  - b) *basic biosecurity conditions* have been continuously for at least the last ten years;

OR

- 3) the disease status prior to *targeted surveillance* is unknown but the following conditions have been met:
  - a) *basic biosecurity conditions* have been continuously met for at least the last two years; and
  - b) *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last two years without detection of KHVD;

OR

- 4) it previously made a *self-declaration of freedom* from KHVD and subsequently lost its *disease free* status due to the detection of KHVD but the following conditions have been met:
  - a) on detection of the *disease*, the affected area was declared an *infected zone* and a *protection zone* was established; and
  - b) infected populations have been destroyed or removed from the *infected zone* by means that minimise the *risk* of further spread of the *disease*, and the appropriate *disinfection* procedures (as described in the *Aquatic Manual*) have been completed; and
  - c) previously existing *basic biosecurity conditions* have been reviewed and modified as necessary and have continuously been in place since eradication of the *disease*; and
  - d) *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last two years without detection of KHVD.

In the meantime, part or all of the non-affected area may be declared a *free zone* provided that such a part meets the conditions in point 3 of Article 10.7.5.

#### Article 10.7.5.

#### **Zone or compartment free from koi herpesvirus disease**

If a *zone* or *compartment* extends over more than one country, it can only be declared a KHVD free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that all relevant conditions have been met.

As described in Article 1.4.6., a *zone* or *compartment* within the *territory* of one or more countries not declared free from KHVD may be declared free by the *Competent Authority(ies)* of the country(ies) concerned if:

- 1) none of the *susceptible species* referred to in Article 10.7.2. are present in the *zone* or *compartment* and *basic biosecurity conditions* have been continuously met for at least the last two years;

OR

- 2) any of the *susceptible species* referred to in Article 10.7.2. are present in the *zone* or *compartment* and the following conditions have been met:
  - a) there has been no observed occurrence of the *disease* for at least the last ten years despite conditions that are conducive to its clinical expression (as described in the corresponding chapter of the *Aquatic Manual*); and
  - b) *basic biosecurity conditions* have been continuously met for at least the last ten years;

OR

- 3) the disease status prior to *targeted surveillance* is unknown but the following conditions have been met:
  - a) *basic biosecurity conditions* have been continuously met for at least the last two years; and
  - b) *targeted surveillance*, as described in Chapter 1.4., has been in place, in the *zone* or *compartment*, for at least the last two years without detection of KHVD;

OR

- 4) it previously made a *self-declaration of freedom* for a *zone* from KHVD and subsequently lost its *disease free* status due to the detection of KHVD in the *zone* but the following conditions have been met:
- a) on detection of the *disease*, the affected area was declared an *infected zone* and a *protection zone* was established; and
  - b) infected populations have been destroyed or removed from the *infected zone* by means that minimise the *risk* of further spread of the *disease*, and the appropriate *disinfection* procedures (as described in the *Aquatic Manual*) have been completed; and
  - c) previously existing *basic biosecurity conditions* have been reviewed and modified as necessary and have continuously been in place since eradication of the *disease*; and
  - d) *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last two years without detection of KHVD.

Article 10.7.6.

#### Maintenance of free status

A country, *zone* or *compartment* that is declared free from KHVD following the provisions of points 1 or 2 of Articles 10.7.4. or 10.7.5. (as relevant) may maintain its status as free from KHVD provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from KHVD following the provisions of point 3 of Articles 10.7.4. or 10.7.5. (as relevant) may discontinue *targeted surveillance* and maintain its status as free from KHVD provided that conditions that are conducive to clinical expression of KHVD, as described in the corresponding chapter of the *Aquatic Manual*, exist, and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of KHVD, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of *infection*.

Article 10.7.7.

#### Importation of aquatic animals and aquatic animal products from a country, zone or compartment declared free from koi herpesvirus disease

When importing *aquatic animals* and *aquatic animal products* of species referred to in Article 10.7.2. from a country, *zone* or *compartment* declared free from KHVD, 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* certifying that, on the basis of the procedures described in Articles 10.7.4. or 10.7.5. (as applicable) and 10.7.6., the place of production of *aquatic animals* and *aquatic animal products* is a country, *zone* or *compartment* declared free from KHVD.

The *certificate* should be in accordance with the Model Certificate in Chapter 5.11.

This Article does not apply to *commodities* referred to in point 1 of Article 10.7.3.

Article 10.7.8.

#### Importation of live aquatic animals for aquaculture from a country, zone or compartment not declared free from koi herpesvirus disease

- 1) When importing, for *aquaculture*, live *aquatic animals* of species referred to in Article 10.7.2. from a country, *zone* or *compartment* not declared free from KHVD, the *Competent Authority* of the *importing country* should assess the *risk* and, if justified, apply the following *risk mitigation* measures:
  - a) the direct delivery to and lifelong holding of the consignment in biosecure facilities for continuous isolation from the local environment; and
  - b) the treatment of water used in transport and of all effluent and waste materials in a manner that ensures inactivation of KHV.

- 2) If the intention of the introduction is the establishment of a new stock, relevant aspects of the Code of Practice on the Introductions and Transfers of Marine Organisms of the International Council for the Exploration of the Seas (ICES) should be followed.
- 3) For the purposes of the *Aquatic Code*, relevant aspects of the ICES Code (full version see: <http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx>) may be summarised to the following points:
  - a) identify stock of interest (cultured or wild) in its current location;
  - b) evaluate stock health and disease history;
  - c) take and test samples for KHV, pests and general health/disease status;
  - d) import of a founder (F-0) population and quarantine in a secure facility;
  - e) produce F-1 generation from the F-0 stock in *quarantine*;
  - f) culture F-1 stock and at critical times in its development (life cycle) sample and test for KHV and perform general examinations for pests and general health/disease status;
  - g) if KHV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet the *basic biosecurity conditions* of the *importing country, zone or compartment*, the F-1 stock may be defined as KHVD free or specific pathogen free (SPF) for KHV;
  - h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone or compartment*.
- 4) With respect to point 3 e), *quarantine* conditions should be conducive to multiplication of the pathogen and eventually to clinical expression. If *quarantine* conditions are not suitable for pathogen multiplication and development, the recommended diagnostic approach might not be sensitive enough to detect low *infection* level.

This Article does not apply to *aquatic animals* referred to in point 1 of Article 10.7.3.

#### Article 10.7.9.

##### **Importation of aquatic animals and aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from koi herpesvirus disease**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 10.7.2. from a country, *zone* or *compartment* not declared free from KHVD, the *Competent Authority* of the *importing country* should assess the *risk* and, if justified, require that:

- 1) the consignment is delivered directly to and held in *quarantine* or containment facilities until processing into one of the products referred to in point 1 of Article 10.7.3., or products described in point 1 of Article 10.7.11., or other products authorised by the *Competent Authority*; and
- 2) water used in transport and all effluent and waste materials from the processing are treated in a manner that ensures inactivation of KHV or is disposed in a manner that prevents contact of waste with *susceptible species*.

For these *commodities* Member Countries may wish to consider introducing internal measures to address the *risks* associated with the *commodity* being used for any purpose other than for human consumption.

#### Article 10.7.10.

##### **Importation of live aquatic animals intended for use in animal feed, or for agricultural, industrial or pharmaceutical use, from a country, zone or compartment not declared free from koi herpesvirus disease**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, live *aquatic animals* of a species referred to in Article 10.7.2. from a country, *zone* or *compartment* not declared free from KHVD, the *Competent Authority* of the *importing country* should require that:

- 1) the consignment be delivered directly to, and held in, *quarantine* facilities for slaughter and processing into products authorised by the *Competent Authority*; and
- 2) water used in transport and all effluent and waste materials from the processing be treated in a manner that ensures inactivation of KHV.

This Article does not apply to *commodities* referred to in point 1 of Article 10.7.3.

Article 10.7.11.

**Importation of aquatic animals and aquatic animal products for retail trade for human consumption from a country, zone or compartment not declared free from koi herpesvirus disease**

- 1) *Competent Authorities* should not require any conditions related to KHVD, regardless of the KHVD status of the *exporting country, zone or compartment*, when authorising the importation or transit of fish fillets or steaks (frozen or chilled) which have been prepared and packaged for retail trade and which comply with Article 5.4.2.

Certain assumptions have been made in assessing the safety of the *aquatic animal products* mentioned above. Member Countries should refer to these assumptions at Article 5.4.2. and consider whether the assumptions apply to their conditions.

For these *commodities* Member Countries may wish to consider introducing internal measures to address the *risks* associated with the *commodity* being used for any purpose other than for human consumption.

- 2) When importing *aquatic animals* or *aquatic animal products*, other than those referred to in point 1 above, of species referred to in Article 10.7.2. from a country, *zone* or *compartment* not declared free from KHVD, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.
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