

SECTION 9.
DISEASES OF CRUSTACEANS

CHAPTER 9.1.
ACUTE HEPATOPANCREATIC NECROSIS DISEASE

Article 9.1.1.

For the purposes of the *Aquatic Code*, acute hepatopancreatic necrosis disease (AHPND) means *infection* with strains of *Vibrio parahaemolyticus* (Vp_{AHPND}), of the Family Vibrionaceae, that contain a ~70-kbp plasmid with genes that encode homologues of the *Photobacterium* insect-related (Pir) toxins, PirA and PirB.

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

Article 9.1.2.

Scope

The recommendations in this chapter apply to the following species that meet the criteria for listing as susceptible in accordance with Chapter 1.5.: giant tiger prawn (*Penaeus monodon*) and whiteleg shrimp (*Penaeus vannamei*).

Article 9.1.3.

Measures for the importation or transit of aquatic animal products for any purpose regardless of the AHPND status of the exporting country, zone or compartment

The *aquatic animal products* listed below have been assessed as meeting the criteria for safety of *aquatic animal products* in accordance with Article 5.4.1. When authorising the importation or transit of these *aquatic animal products*, *Competent Authorities* should not require any *sanitary measures* related to AHPND, regardless of the AHPND status of the *exporting country, zone or compartment*:

- 1) *aquatic animal products* that have been subjected to a heat treatment sufficient to attain a core temperature of at least 100°C for at least 60 seconds, or a time/temperature equivalent that inactivates Vp_{AHPND} ;
- 2) crustacean *meal* that has been subjected to a heat treatment sufficient to attain a core temperature of at least 100°C for at least 60 seconds, or a time/temperature equivalent that inactivates Vp_{AHPND} ;
- 3) crustacean oil;
- 4) chemically extracted chitin.

Article 9.1.4.

Requirements for self-declaration of freedom from infection with AHPND

A Member Country may make a self-declaration of freedom from infection with AHPND for the entire country, a *zone* or a *compartment* in accordance with the provisions of Articles 9.1.5. to 9.1.8., as relevant. The self-declaration of

freedom must be made in accordance with other relevant requirements of the *Aquatic Code* including that the Member Country meet the following conditions:

- 1) complies with the provisions of Chapter 3.1.; and
- 2) uses appropriate methods of *diagnosis*, as recommended in the *Aquatic Manual*; and
- 3) meets all requirements of Chapter 1.4. that are relevant to the self-declaration of freedom.

Article 9.1.5.

Country free from infection with AHPND

If a country shares water bodies with other countries, it can only make a self-declaration of freedom from infection with AHPND if all shared water bodies are within countries or *zones* declared free from infection with AHPND (see Article 9.1.6.).

As described in Article 1.4.4., a Member Country may make a self-declaration of freedom from infection with AHPND for its entire *territory* if it can demonstrate that:

- 1) none of the *susceptible species* referred to in Article 9.1.2. are present and *basic biosecurity conditions* have been continuously met for at least the last [six] months;

OR

- 2) there has been no occurrence of AHPND for at least the last [ten] years, and:
 - a) the Member Country can demonstrate that conditions are conducive to the clinical expression of infection with AHPND, as described in the corresponding chapter of the *Aquatic Manual*; and
 - b) *basic biosecurity conditions* as described in Chapter 1.4. have been continuously met for at least the last [ten] years;

OR

- 3) *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last [two] years without detection of AHPND, and *basic biosecurity conditions* have been continuously met and have been in place for at least [one] year prior to commencement of *targeted surveillance*;

OR

- 4) it previously made a self-declaration of freedom from infection with AHPND and subsequently lost its free status due to the detection of AHPND but the following conditions have been met:
 - a) on detection of AHPND, the affected area was declared an *infected zone* and a *protection zone* was established; and
 - b) infected populations within the *infected zone* have been killed and disposed of by means that minimise the likelihood of further transmission of AHPND, and the appropriate *disinfection* procedures (as described in Chapter 4.4.) have been completed followed by *fallowing* as described in Chapter 4.7.; and
 - c) previously existing *basic biosecurity conditions* have been reviewed and modified as necessary and have continuously been in place since eradication of infection with AHPND; and
 - d) *targeted surveillance*, as described in Chapter 1.4., has been in place for:
 - i) at least the last [two] years in wild and farmed *susceptible species* without detection of AHPND; or
 - ii) at least the last [one] year without detection of AHPND if affected *aquaculture establishments* were not epidemiologically connected to wild populations of *susceptible species*.

In the meantime, the part of the country outside the *infected zone* and *protection zone* may be declared a *free zone* as described in Article 1.4.4.

Article 9.1.6.

Zone free from infection with AHPND

If a *zone* extends over the *territory* of more than one country, it can only be declared a *zone* free from infection with AHPND if all of the relevant *Competent Authorities* confirm that all relevant conditions have been met.

As described in Article 1.4.4., a Member Country may make a self-declaration of freedom from infection with AHPND for a *zone* within its *territory* if it can demonstrate that:

- 1) none of the *susceptible species* referred to in Article 9.1.2. are present and *basic biosecurity conditions* have been continuously met for at least the last [six] months;

OR

- 2) there has been no occurrence of infection with AHPND for at least the last [ten] years, and:
 - a) the Member Country can demonstrate that conditions are conducive to the clinical expression of infection with AHPND, as described in Article 1.4.8. of Chapter 1.4.; and
 - b) *basic biosecurity conditions* as described in Chapter 1.4. have been continuously met for the *zone* for at least the last [ten] years;

OR

- 3) *targeted surveillance*, as described in Chapter 1.4., has been in place in the *zone* for at least the last [two] years without detection of AHPND, and *basic biosecurity conditions* have been continuously met and have been in place for at least [one] year prior to commencement of *targeted surveillance*;

OR

- 4) it previously made a self-declaration of freedom for a *zone* from infection with AHPND and subsequently lost its free status due to the detection of AHPND in the *zone* but the following conditions have been met:
 - a) on detection of AHPND, the affected area was declared an *infected zone* and a *protection zone* was established; and
 - b) infected populations within the *infected zone* have been killed and disposed of by means that minimise the likelihood of further transmission of AHPND, and the appropriate *disinfection* procedures (as described in Chapter 4.4.) have been completed followed by *fallowing* as described in Chapter 4.7.; and
 - c) previously existing *basic biosecurity conditions* have been reviewed and modified as necessary and have continuously been in place since eradication of infection with AHPND; and
 - d) *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last [two] years without detection of AHPND.

In the meantime, a part of the *zone* outside the *infected zone* and *protection zone* may be declared a new *free zone* as described in Article 1.4.4.

Article 9.1.7.

Compartment free from infection with AHPND

As described in Article 1.4.4., a Member Country may make a self-declaration of freedom from infection with AHPND for a *compartment* within its *territory* if it can demonstrate that:

- 1) *targeted surveillance*, as described in Chapter 1.4., has been in place in the *compartment* for at least the last [one] year without detection of AHPND, and *basic biosecurity conditions* have been continuously met and have been in place for at least [one] year prior to commencement of *targeted surveillance*;

OR

- 2) it previously made a self-declaration of freedom for a *compartment* from infection with AHPND and subsequently lost its free status due to the detection of AHPND in the *compartment* but the following conditions have been met:
 - a) all *aquatic animals* within the *compartment* have been killed and disposed of by means that minimise the likelihood of further transmission of AHPND, the appropriate *disinfection* procedures (as described in Chapter 4.4.) have been completed, and the *compartment* has been fallowed as described in Chapter 4.7.; and
 - b) previously existing *basic biosecurity conditions*, including the *compartment biosecurity plan*, have been reviewed and modified as necessary and have continuously been in place from the time of restocking with *aquatic animals* from an approved pathogen free source in accordance with the requirements of Articles 9.1.9. and 9.1.10. as appropriate; and
 - c) one survey for infection with AHPND has been completed at least [six months] after restocking (as described in Article 1.4.14.) without detection of the pathogen.

Article 9.1.8.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from infection with AHPND following the provisions of Articles 9.1.4. to 9.1.7. (as relevant) may maintain its status as free from infection with AHPND provided that the requirements described in Article 1.4.15. are continuously maintained.

Article 9.1.9.

Importation of aquatic animals or aquatic animal products from a country, zone or compartment declared free from AHPND

When importing *aquatic animals* of a species referred to in Article 9.1.2., or *aquatic animal products* derived thereof, from a country, *zone* or *compartment* declared free from AHPND, 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*. The *international aquatic animal health certificate* should state that, on the basis of the procedures described in Articles 9.1.5., 9.1.6. or 9.1.7. (as applicable) and 9.1.8., the place of production of the *aquatic animals* or *aquatic animal products* is a country, *zone* or *compartment* declared free from AHPND.

The *international aquatic animal health certificate* should be in accordance with the Model Certificate in Chapter 5.11.

This article does not apply to *aquatic animal products* listed in Article 9.1.3.

Article 9.1.10.

Importation of aquatic animals for aquaculture from a country, zone or compartment not declared free from AHPND

When importing, for *aquaculture*, *aquatic animals* of a species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from AHPND, the *Competent Authority* of the *importing country* should assess the *risk* in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 1 and 2 below.

- 1) If the intention is to grow out and harvest the imported *aquatic animals*, consider applying the following:
 - a) the direct delivery to and lifelong holding of the imported *aquatic animals* in a *quarantine* facility; and
 - b) before leaving *quarantine* (either in the original facility or following biosecure transport to another *quarantine* facility) the *aquatic animals* are killed and processed into one or more of the *aquatic animal products* referred to in Article 9.1.3. or other products authorised by the *Competent Authority*; and
 - c) the treatment of all transport water, equipment, effluent and waste materials to inactivate Vp_{AHPND} in accordance with Chapters 4.4., 4.8. and 5.5.

OR

- 2) If the intention is to establish a new stock for *aquaculture*, consider applying the following.
 - a) In the *exporting country*:
 - i) identify potential source populations and evaluate their *aquatic animal* health records;
 - ii) test source populations in accordance with Chapter 1.4. and select a founder population (F-0) of *aquatic animals* with a high health status for AHPND.
 - b) In the *importing country*:
 - i) import the F-0 population into a *quarantine* facility;
 - ii) test the F-0 population for Vp_{AHPND} in accordance with Chapter 1.4. to determine their suitability as broodstock;

- iii) produce a first generation (F-1) population in *quarantine*;
- iv) culture the F-1 population in *quarantine* for a duration sufficient for, and under conditions that are conducive to, the clinical expression of AHPND, and sample and test for Vp_{AHPND} in accordance with Chapter 1.4. of the *Aquatic Code* and Chapter 2.2.1. of the *Aquatic Manual*;
- v) if Vp_{AHPND} is not detected in the F-1 population, it may be defined as free from AHPND and may be released from *quarantine*;
- vi) if Vp_{AHPND} is detected in the F-1 population, those animals should not be released from *quarantine* and should be killed and disposed of in a biosecure manner in accordance with Chapter 4.8.

Article 9.1.11.

Importation of aquatic animals or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from AHPND

When importing, for processing for human consumption, *aquatic animals* of a species referred to in Article 9.1.2., or *aquatic animal products* derived thereof, from a country, *zone* or *compartment* not declared free from AHPND, 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 Article 9.1.3. or in point 1 of Article 9.1.14., or other products authorised by the *Competent Authority*; and
- 2) all water (including ice), equipment, *containers* and packaging material used in transport are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4., 4.8. and 5.5.; and
- 3) all effluent and waste materials are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4. and 4.8.

For these *aquatic animals* or *aquatic animal products* Member Countries may wish to consider introducing internal measures to address the *risks* associated with the *aquatic animal* or *aquatic animal product* being used for any purpose other than for human consumption.

Article 9.1.12.

Importation of aquatic animals or aquatic animal products intended for uses other than human consumption, including animal feed and agricultural, industrial, research or pharmaceutical use, from a country, zone or compartment not declared free from AHPND

When importing *aquatic animals* of a species referred to in Article 9.1.2., or *aquatic animal products* derived thereof, intended for uses other than human consumption, including animal *feed* and agricultural, industrial, research or pharmaceutical use, from a country, *zone* or *compartment* not declared free from AHPND, the *Competent Authority* of the *importing country* should require that:

- 1) the consignment is delivered directly to, and held in, *quarantine* or containment facilities until processed into one of the products referred to in Article 9.1.3. or other products authorised by the *Competent Authority*; and
- 2) all water (including ice), equipment, *containers* and packaging material used in transport are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4., 4.8. and 5.5.; and
- 3) all effluent and waste materials are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4. and 4.8.

Article 9.1.13.

Importation of aquatic animals intended for use in laboratories or zoos from a country, zone or compartment not declared free from AHPND

When importing, for use in laboratories or zoos, *aquatic animals* of a species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from AHPND, the *Competent Authority* of the *importing country* should ensure:

- 1) the consignment is delivered directly to, and held in, *quarantine* facilities authorised by the *Competent Authority*; and
- 2) all water (including ice), equipment, *containers* and packaging material used in transport are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4., 4.8. and 5.5.; and

- 3) all effluent and waste materials from the *quarantine* facilities in the laboratories or zoos are treated to ensure inactivation of Vp_{AHPND} or disposed of in a biosecure manner in accordance with Chapters 4.4. and 4.8.; and
- 4) the carcasses are disposed of in accordance with Chapter 4.8.

Article 9.1.14.

Importation or transit of aquatic animal products for retail trade for human consumption regardless of the AHPND status of the exporting country, zone or compartment

- 1) *Competent Authorities* should not require any conditions related to Vp_{AHPND} , regardless of the AHPND status of the *exporting country, zone or compartment*, when authorising the importation or transit of the following *aquatic animal products* that have been prepared and packaged for retail trade and comply with Article 5.4.2.:

- a) frozen peeled shrimp (shell off, head off).

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 *aquatic animal products* Member Countries may wish to consider introducing internal measures to address the *risks* associated with the *aquatic animal product* being used for any purpose other than for human consumption.

- 2) When importing *aquatic animal products*, other than those referred to in point 1 above, derived from a species referred to in Article 9.1.2. from a country, *zone or compartment* not declared free from AHPND, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

NB: FIRST ADOPTED IN 2017; MOST RECENT UPDATE ADOPTED IN 2024.