CHAPTER 9.1.

# INFECTION WITH *APHANOMYCES ASTACI* (CRAYFISH PLAGUE)

Article 9.1.1.

For the purposes of the *Aquatic Code*, infection with *Aphanomyces astaci* ~~crayfish plague~~ means infection with the *pathogenic agent* *Aphanomyces astaci* ~~Schikora~~. ~~This organism is a member of~~ ~~a group commonly known as~~ the Phylum ~~Class~~ Oomycota (water moulds) ~~(the *Oomycetida*)~~. The *disease* is commonly known as crayfish plague. ~~Common synonyms are listed in the corresponding chapter of the *Aquatic Manual*.~~

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

Article 9.1.2.

**Scope**

*The recommendations in this chapter apply to all species of crayfish in all three crayfish families (*Cambaridae, Astacidae *and* Parastacidae*). These recommendations also apply to any other susceptible species referred to in the Aquatic Manual when traded internationally.* ~~*to the following susceptible species which meet the criteria for listing species as susceptible in Chapter 1.5: noble crayfish (*Astacus astacus*), Danube crayfish (*Astacus leptodactylus*), signal crayfish (*Pacifastacus leniusculus*), red swamp crayfish (*Procambarus clarkii*), stone crayfish (*Austropotamobius torrentium*), white-clawed crayfish (*Austropotamobius A. pallipes*), spinycheek crayfish (*Orconectes limosus*), calico crayfish (*Orconectes O. immunis*), Florida crayfish (*Procambarus alleni*) and Potamon potamios. all species of crayfish in all three crayfish families (Cambaridae, Astacidae and Parastacidae). These recommendations also apply to any other susceptible species referred to in the Aquatic Manual when traded internationally.*~~

Article 9.1.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with *A. astaci* status of the exporting country, zone or compartment ~~from a country, zone or compartment not declared free from crayfish plague~~**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ *A. astaci* ~~crayfish plague~~, regardless of the infection with *A. astaci* ~~crayfish plague~~ 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 9.1.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crayfish products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time /temperature equivalent);

   *b)* cooked crayfish products that have been subjected to heat treatment at 100°C for at least one minute (or any time/temperature equivalent which has been demonstrated to inactivate *A. astaci*);

   *c)* pasteurised crayfish products that have been subjected to heat treatment at 90°C for at least ten minutes (or any time/temperature equivalent which has been demonstrated to inactivate *A. astaci*);

   *d)* frozen crayfish products that have been subjected to minus 20°C or lower temperatures for at least 72 hours;

   *e)* crayfish oil;

   *f)* crayfish *meal*;

   *g)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.1.2., other than those referred to in point 1 of Article 9.1.3., *Competent Authorities* should require the conditions prescribed in Articles 9.1.7. to 9.1.11. relevant to the infection with *A. astaci* ~~crayfish plague~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.1.2. but which could reasonably be expected to pose a *risk* of transmission ~~spread~~ of ~~infection with~~ *A. astaci* ~~crayfish plague~~, 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 analysis ~~assessment~~.

Article 9.1.4.

**Country free from infection with *A. astaci* ~~crayfish plague~~**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with *A. astaci* ~~crayfish plague~~ if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with *A. astaci* ~~crayfish plague~~ (see Article 9.1.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with *A. astaci* ~~crayfish plague~~ if:

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 two years;

OR

2) any of the *susceptible species* referred to in Article 9.1.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of ~~the *disease*~~ infection with *A. astaci* for at least the last 25 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 10 years;

OR

3) the ~~disease~~ infection with *A. astaci* 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 five years; and

   *b)* *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last five years without detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~;

OR

4) it previously made a *self-declaration of freedom* from infection with *A. astaci* ~~crayfish plague~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~ but the following conditions have been met:

   *a)* on detection of ~~the *disease*~~ *A. astaci*, the affected area was declared an *infected zone* and a *protection zone* was established; and

   *b)* infected populations ~~have been destroyed or removed from~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of ~~infection with~~ *A. astaci* ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with *A. astaci* ~~the *disease*~~; and

   *d)* *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last five years without detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.1.5.

Article 9.1.5.

**Zone or compartment free from infection with *A. astaci* ~~crayfish plague~~**

If a *zone* or *compartment* extends over more than one country, it can only be declared a *zone* or *compartment* free from infection with *A. astaci* ~~crayfish plague~~ 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 infection with *A. astaci* ~~crayfish plague~~ 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 9.1.2. 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 9.1.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with *A. astaci* ~~the~~ ~~*disease*~~ for at least the last 25 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 10 years;

OR

3) the ~~disease~~ infection with *A. astaci* 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 five 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 five years without detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with *A. astaci* ~~crayfish plague~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~ in the *zone* but the following conditions have been met:

   *a)* on detection of *A. astaci* ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of *A. astaci* ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with *A. astaci* ~~the *disease*~~; and

   *d)* *targeted surveillance*, as described in Chapter 1.4., has been in place for at least the last five years without detection of ~~infection with~~ *A. astaci* ~~crayfish plague~~.

Article 9.1.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with *A. astaci* ~~crayfish plague~~ following the provisions of points 1 or 2 of Articles 9.1.4. or 9.1.5. (as relevant) may maintain its status as free from infection with *A. astaci* ~~crayfish plague~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with *A. astaci* ~~crayfish plague~~ following the provisions of point 3 of Articles 9.1.4. or 9.1.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from crayfish plague~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with *A. astaci* ~~crayfish plague~~, 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 infection with *A. astaci* ~~crayfish plague~~, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.1.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with *A. astaci* ~~crayfish plague~~**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.1.2. from a country, *zone* or *compartment* declared free from infection with *A. astaci* ~~crayfish plague~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.1.4. or 9.1.5. (as applicable) and 9.1.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with *A. astaci* ~~crayfish plague~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.1.3.

Article 9.1.8.

**Importation of ~~live~~ aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with *A. astaci* ~~crayfish plague~~**

1) When importing ~~live~~ *aquatic animals* of species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from infection with *A. astaci* ~~crayfish plague~~, the *Competent Authority* of the *importing country* should assess the risk ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment;~~ and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate *A. astaci* (in accordance with Chapter 4.7).

~~2) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with *A. astaci*.

*b)* In the *importing country*:

*i)* import the F-0 population into a *quarantine* facility;

*ii)* test the F-0 population for *A. astaci* in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with *A. astaci* (as described in the *Aquatic Manual*) and test for *A. astaci* in accordance with Chapter 1.4.;

*v)* if *A. astaci* is not detected in the F-1 population, it may be defined as free from infection with *A. astaci* and may be released from *quarantine*;

*vi)* if *A. astaci* is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 *A. astaci*, 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 *A. astaci* and perform general examinations for pests and general health/disease status;~~

~~*g)* if *A. astaci* 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 free from infection with *A. astaci* crayfish plague free or specific pathogen free (SPF) for *A. astaci*;~~

~~*h)* release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.~~

~~2) 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* listed in point 1 of Article 9.1.3.~~

Article 9.1.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with *A. astaci* ~~crayfish plague~~**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from infection with *A. astaci* ~~crayfish plague~~, 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 9.1.3., or products described in point 1 of Article 9.1.11., 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 *A. astaci* 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 9.1.10.

**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 infection with *A. astaci* ~~crayfish plague~~**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from infection with *A. astaci* ~~crayfish plague~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of *A. astaci*.

This Article does not apply to *commodities* referred to in point 1 of Article 9.1.3.

Article 9.1.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with *A. astaci* ~~crayfish plague~~ status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ *A. astaci* ~~crayfish plague~~, regardless of the infection with *A. astaci* ~~crayfish plague~~ status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of the following *commodities* which have been prepared and packaged for retail trade and which comply with Article 5.4.2.:

   – no *commodities* listed.

2) When importing *aquatic animals* or *aquatic animal products*, other than those referred to in point 1 above, of species referred to in Article 9.1.2. from a country, *zone* or *compartment* not declared free from infection with *A. astaci* ~~crayfish plague~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.2.

# INFECTION WITH YELLOW HEAD VIRUS GENOTYPE 1

Article 9.2.1.

For the purposes of the *Aquatic Code*, infection with yellow head virus genotype 1 means infection with the pathogenic agent yellow head virus genotype 1 (YHV1), of the Order *Nidovirales*, Family *Roniviridae*, Genus *Okavirus* ~~in the Family *Roniviridae* and the Order *Nidovirales*~~.

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

Article 9.2.2.

**Scope**

The recommendations in this chapter apply to the following ~~*susceptible*~~ *species* which meet the criteria for listing species as susceptible in Chapter 1.5.: Jinga shrimp *(Metapenaeus affinis),* giant tiger prawn *(Penaeus monodon)*, dagger blade grass shrimp *(Palaemonetes pugio),* blue shrimp *(Penaeus stylirostris)* and whiteleg shrimp *(Penaeus vannamei).* ~~giant tiger prawn *(Penaeus monodon)*, white leg shrimp *(Penaeus vannamei)*, blue shrimp *(Penaeus stylirostris)*, dagger blade grass shrimp *(Palaemonetes pugio)* and Jinga shrimp *(Metapenaeus affinis).*~~

Article 9.2.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with YHV1 status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ YHV1, regardless of the infection with YHV1 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 9.2.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121°C for at least 3.6 minutes or equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 60°C for at least 15 minutes (or any time/temperature equivalent which has been demonstrated to inactivate YHV1);

   *c)* pasteurised crustacean products that have been subjected to heat treatment at 90°C for at least ten minutes (or any time/temperature equivalent which has been demonstrated to inactivate YHV1);

   *d)* crustacean oil;

   *e)* crustacean *meal*;

   *f)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ *or aquatic animal products* of a species referred to in Article 9.2.2., other than those referred to in point 1 of Article 9.2.3., *Competent Authorities* should require the conditions prescribed in Articles 9.2.7. to 9.2.11. relevant to the infection with YHV1 status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ *or aquatic animal products* of a species not covered in Article 9.2.2. but which could reasonably be expected to pose a *risk* of transmission of ~~infection with~~ YHV1, 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 analysis ~~assessment~~.

Article 9.2.4.

**Country free from infection with yellow head virus genotype 1**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with YHV1 if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with YHV1 (see Article 9.2.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with YHV1 if:

1) none of the *susceptible species* referred to in Article 9.2.2. 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 9.2.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of ~~the *disease*~~ infection with YHV1 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 two years;

OR

3) the ~~disease~~ infection with YHV1 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 ~~infection with~~ YHV1;

OR

4) it previously made a *self-declaration of freedom* from infection with YHV1 and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ YHV1 but the following conditions have been met:

   *a)* on detection of YHV1 ~~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~~ within the *infected zone* have been killed and disposed of by means that minimise the likelihood of further transmission ~~spread of~~ YHV1 ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with YHV1 ~~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 ~~infection with~~ YHV1.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.2.5.

Article 9.2.5.

**Zone or compartment free from infection with yellow head virus genotype 1**

If a *zone* or *compartment* extends over more than one country, it can only be declared a *zone* or *compartment* free from infection with YHV1 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 infection with YHV1 may be declared free by the *Competent Authority* of the country concerned if:

1) none of the *susceptible species* referred to in Article 9.2.2. 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 9.2.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with YHV1 ~~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 two years;

OR

3) the ~~disease~~ infection with YHV1 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 ~~infection with~~ YHV1;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with YHV1 ~~for a *zone*~~ and subsequently lost its disease status due to the detection of ~~infection with~~ YHV1 in the *zone* but the following conditions have been met:

   *a)* on detection of YHV1 ~~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~~ within the *infected zone* have been killed and disposed of by means that minimise the likelihood of further transmission ~~spread~~ of YHV1 ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with YHV1 ~~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 ~~infection with~~ YHV1.

Article 9.2.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with YHV1 following the provisions of points 1 or 2 of Articles 9.2.4. or 9.2.5. (as relevant) may maintain its status as free from infection with YHV1 provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with YHV1 following the provisions of point 3 of Articles 9.2.4. or 9.2.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with YHV1~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with YHV1, 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 infection with YHV1, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.2.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with yellow head virus genotype 1**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.2.2. from a country, *zone* or *compartment* declared free from infection with YHV1, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.2.4. or 9.2.5. (as applicable) and 9.2.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with YHV1.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.2.3.

Article 9.2.8.

**Importation of live aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with yellow head virus genotype 1**

1) When importing ~~live~~ aquatic animals of species referred to in Article 9.2.2. from a country, zone or compartment not declared free from infection with YHV1, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate YHV1 (in accordance with Chapter 4.7).

~~2) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with YHV1.

   *b)* In the *importing country*:

      *i)* import the F-0 population into a *quarantine* facility;

      *ii)* test the F-0 population for YHV1 in accordance with Chapter 1.4. to determine their suitability as broodstock;

      *iii)* produce a first generation (F-1) population in *quarantine*;

      *iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with YHV1 (as described in the *Aquatic Manual*) and test for YHV1 in accordance with Chapter 1.4.;

*v)* if YHV1 is not detected in the F-1 population, it may be defined as free from infection with YHV1 and may be released from *quarantine*;

*vi)* if YHV1 is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 YHV1, 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 YHV1 and perform general examinations for pests and general health/disease status;~~

~~*g)* if YHV1 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 free from infection with YHV1 or specific pathogen free (SPF) for infection with YHV1;~~

~~*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* listed in point 1 of Article 9.2.3.~~

Article 9.2.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with yellow head virus genotype 1**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.2.2. from a country, *zone* or *compartment* not declared free from infection with YHV1, 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 9.2.3., or products described in point 1 of Article 9.2.11., 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 YHV1 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 9.2.10.

**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 infection with yellow head virus genotype 1**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.2.2. from a country, *zone* or *compartment* not declared free from infection with YHV1, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of YHV1.

This Article does not apply to *commodities* referred to in point 1 of Article 9.2.3.

Article 9.2.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with yellow head virus genotype 1 status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ YHV1, regardless of the infection with YHV1 status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp or decapod crustacea (shell off, head off) 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 9.2.2. from a country, *zone* or *compartment* not declared free from infection with YHV1, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.3.

# INFECTION WITH INFECTIOUS HYPODERMAL AND HAEMATOPOIETIC NECROSIS VIRUS

Article 9.3.1.

For the purposes of the *Aquatic Code*, infection with infectious hypodermal and haematopoietic necrosis virus ~~(IHHN)~~ means *infection* with the *pathogenic agent* infectious hypodermal and haematopoietic necrosis virus (IHHNV)~~:~~. ~~IHHNV is classified as the species *Penaeus stylirostris densovirus* in of the~~ Family *Parvoviridae*, Genus ~~genus~~ *Brevidensovirus* ~~in the Family family *Parvoviridae*~~.

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

Article 9.3.2.

**Scope**

The recommendations in this chapter apply to the following ~~susceptible~~ species which meet the criteria for listing species as susceptible in Chapter 1.5.: giant river prawn *(Macrobrachium rosenbergii)*, yellowleg shrimp *(Penaeus californiensis)*, giant tiger prawn *(Penaeus monodon)*, northern white shrimp *(Penaeus setiferus)*, blue shrimp *(Penaeus stylirostris) and* whiteleg shrimp *(Penaeus vannamei)*. ~~giant tiger prawn *(Penaeus monodon)*, Pacific white leg shrimp *(Penaeus vannamei)*, and blue shrimp *(P. stylirostris)*, yellow leg *(P. californiensis)*, northern white shrimp *(P. setiferus)* and giant river prawn *(Macrobrachium rosenbergii)*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.~~

~~For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.~~

Article 9.3.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with IHHNV status of the exporting country, zone or compartment ~~from a country, zone or compartment not~~** ~~declared free from infection with infectious hypodermal and haematopoietic necrosis virus~~

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ IHHNV ~~IHHN,~~ regardless of the infection with IHHNV ~~IHHN~~ 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 9.3.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time/temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 90°C for at least 20 minutes (or any time/temperature equivalent which has been demonstrated to inactivate IHHNV);

   *c)* crustacean oil;

   *d)* crustacean *meal*.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.3.2., other than those referred to in point 1 of Article 9.3.3., *Competent Authorities* should require the conditions prescribed in Articles 9.3.7. to 9.3.11. relevant to the infection with IHHNV ~~IHHN~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.3.2. but which could reasonably be expected to pose a *risk* ~~of spread~~ of transmission ~~of infection with~~ IHHNV ~~IHHN~~, 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 analysis ~~assessment~~.

Article 9.3.4.

**Country free from infection with IHHNV**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with IHHNV ~~IHHN~~ if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with IHHNV ~~IHHN~~ (see Article 9.3.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with IHHNV ~~IHHN~~ if:

1) none of the *susceptible species* referred to in Article 9.3.2. 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 9.3.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of ~~the *disease*~~ infection with IHHNV 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 two years;

OR

3) the ~~*disease*~~ infection with IHHNV 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 ~~infection with~~ IHHNV ~~IHHN~~;

OR

4) it previously made a *self-declaration of freedom* from infection with IHHNV ~~IHHN~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ IHHNV ~~IHHN~~ but the following conditions have been met:

   *a)* on detection of ~~the *disease*~~ IHHNV, the affected area was declared an *infected zone* and a *protection zone* was established; and

   *b)* *infected populations* ~~*have been destroyed or removed from*~~ *within the infected zone* *have been killed and* disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further ~~spread~~ transmission of IHHNV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with IHHNV ~~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 ~~infection with~~ IHHNV ~~IHHN~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.3.5.

Article 9.3.5.

**Zone or compartment free from infection with IHHNV**

If a *zone* or *compartment* extends over more than one country, it can only be declared a *zone* or *compartment* free from infection with IHHNV ~~IHHN~~ 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 infection with IHHNV ~~IHHN~~ 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 9.3.2. 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 9.3.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with IHHNV ~~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 two years;

OR

3) the ~~disease~~ infection with IHHNV ~~-~~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 ~~infection with~~ IHHNV ~~IHHN~~;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with IHHNV ~~IHHN~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ IHHNV ~~IHHN~~ in the *zone* but the following conditions have been met:

   *a)* on detection of IHHNV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further ~~spread~~ transmission of IHHNV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with IHHNV ~~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 ~~infection with~~ IHHNV ~~IHHN~~.

Article 9.3.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with IHHNV ~~IHHN~~ following the provisions of points 1 or 2 of Articles 9.3.4. or 9.3.5. (as relevant) may maintain its status as free from infection with IHHNV ~~IHHN~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with IHHNV ~~IHHN~~ following the provisions of point 3 of Articles 9.3.4. or 9.3.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with IHHNV IHHN~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with IHHNV ~~IHHN~~, 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 infection with IHHNV ~~IHHN~~, *targeted surveillance* ~~needs to~~ should be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.3.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with IHHNV**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.3.2. from a country, *zone* or *compartment* declared free from infection with IHHNV ~~IHHN~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.3.4. or 9.3.5. (as applicable) and 9.3.6., the place of production of the *aquatic animals* ~~and~~ ~~or~~ *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with IHHNV ~~IHHN~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.3.3.

Article 9.3.8.

**Importation of live aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with IHHNV**

1) When importing, for *aquaculture*, live *aquatic animals* of species referred to in Article 9.3.2. from a country, *zone* or *compartment* not declared free from infection with IHHNV ~~IHHN~~, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate IHHNV (in accordance with Chapter 4.7).

~~2) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with IHHNV.

   *b)* In the *importing country*:

      *i)* import the F-0 population into a *quarantine* facility;

      *ii)* test the F-0 population for IHHNV in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with IHHNV (as described in the *Aquatic Manual*) and test for IHHNV in accordance with Chapter 1.4.;

*v)* if IHHNV is not detected in the F-1 population, it may be defined as free from infection with IHHNV and may be released from *quarantine*;

*vi)* if IHHNV is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~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 IHHNV, 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 IHHNV and perform general examinations for pests and general health/disease status;~~

~~g) if IHHNV 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 free from infection with IHHNV IHHN free or specific pathogen free (SPF) for IHHNV;~~

~~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* listed in point 1 of Article 9.3.3.~~

Article 9.3.9.

**Importation of aquatic animals ~~and~~ ~~or~~ aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with IHHNV**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.3.2. from a country, *zone* or *compartment* not declared free from infection with IHHNV ~~IHHN~~, 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 9.3.3., or products described in point 1 of Article 9.3.11., 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 IHHNV 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 9.3.10.

**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 infection with IHHNV**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.3.2. from a country, *zone* or *compartment* not declared free from infection with IHHNV ~~IHHN~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of IHHNV.

This Article does not apply to *commodities* referred to in point 1 of Article 9.3.3.

Article 9.3.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with IHHNV status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ IHHNV ~~IHHN~~, regardless of the infection with IHHNV status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp (shell off, head off) 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 9.3.2. from a country, *zone* or *compartment* not declared free from infection with IHHNV ~~IHHN~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.4.

# INFECTION WITH INFECTIOUS MYONECROSIS VIRUS

Article 9.4.1.

For the purposes of the *Aquatic Code*, infection with infectious myonecrosis virus ~~(IMN)~~ means infection with the *pathogenic agent* infectious myonecrosis virus (IMNV)~~. This virus which~~ that is similar to members of the ~~family~~ Family *Totiviridae*.

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

Article 9.4.2.

**Scope**

The recommendations in this chapter apply to the following ~~susceptible~~ species which meet the criteria for listing species as susceptible in Chapter 1.5.: brown tiger prawn *(Penaeus esculentus)*, banana prawn *(Penaeus merguiensis)*. ~~Pacific white shrimp~~ and ~~white leg~~ whiteleg shrimp *(Penaeus vannamei)*. ~~These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.~~

For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.

Article 9.4.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with IMNV status of the exporting country, zone or compartment ~~from a country, zone or compartment not declared free from infectious myonecrosis~~**

1) *Competent Authorities* should not require any conditions related to IMNV, regardless of the infection with IMNV 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 9.4.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121˚C for at least 3.6 minutes or any time/temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 60˚C for at least three minutes (or any time/temperature equivalent which has been demonstrated to inactivate IMNV);

   *c)* crustacean oil;

   *d)* crustacean *meal*;

   *e)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.4.2., other than those referred to in point 1 of Article 9.4.3., *Competent Authorities* should require the conditions prescribed in Articles 9.4.7. to 9.4.11. relevant to the infection with IMNV status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.4.2. but which could reasonably be expected to pose a *risk* ~~of spread~~ of transmission ~~of infection with~~ IMNV, 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 analysis ~~assessment~~.

Article 9.4.4.

**Country free from infection with IMNV**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with IMNV if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with IMNV (see Article 9.4.5.).

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

1) none of the *susceptible species* referred to in Article 9.4.2. 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 9.4.2. are present and the following conditions have been met:

   *a)* there has been no observed occurrence of infection with IMNV 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 two years;

OR

3) the disease infection with IMNV 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 infection with IMNV;

OR

4) it previously made a *self-declaration of freedom* from infection with IMNV and subsequently lost its *disease* free status due to the detection of infection with IMNV but the following conditions have been met:

   *a)* on detection of the *disease* IMNV, the affected area was declared an *infected zone* and a *protection zone* was established; and

   *b)* infected populations have been destroyed or removed from within the *infected zone* have been killed and disposed of destroyed or removed by means that minimise the *risk* likelihood of further transmission spread of IMNV, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with IMNV 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 infection with IMNV.

In the meantime, part or all of the unaffected non-affected area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.4.5.

Article 9.4.5.

**Zone or compartment free from infection with IMNV**

If a *zone* or *compartment* extends over more than one country, it can only be declared a an IMN free *zone* or *compartment* free from infection with IMNV 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 infection with IMNV 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 9.4.2. 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 9.4.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with IMNV ~~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 two years;

OR

3) the infection with IMNV ~~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 ~~infection with~~ IMNV;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with IMNV and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ IMNV in the *zone* but the following conditions have been met:

   *a)* on detection of IMNV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of IMNV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with IMNV ~~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 ~~infection with~~ IMNV.

Article 9.4.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with IMNV following the provisions of points 1 or 2 of Articles 9.4.4. or 9.4.5. (as relevant) may maintain its status as free from infection with IMNV provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with IMNV following the provisions of point 3 of Articles 9.4.4. or 9.4.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with IMNV~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with IMNV 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 infection with IMNV, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.4.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with IMNV**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.4.2. from a country, *zone* or *compartment* declared free from infection with IMNV, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.4.4. or 9.4.5. (as applicable) and 9.4.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with IMNV.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.4.3.

Article 9.4.8.

**Importation of live aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with IMNV**

1) When importing~~, for *aquaculture*, live~~ *aquatic animals* of species referred to in Article 9.4.2. from a country, *zone* or *compartment* not declared free from infection with IMNV, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate IMNV (in accordance with Chapter 4.7.

~~1) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with IMNV.

   *b)* In the *importing country*:

      *i)* import the F-0 population into a *quarantine* facility;

      *ii)* test the F-0 population for IMNV in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with IMNV (as described in the *Aquatic Manual*) and test for IMNV in accordance with Chapter 1.4.;

*v)* if IMNV is not detected in the F-1 population, it may be defined as free from infection with IMNV and may be released from *quarantine*;

*vi)* if IMNV is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 IMNV, 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 IMNV and perform general examinations for pests and general health/disease status;~~

~~*g)* if IMNV 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 free from infection with IMNV free or specific pathogen free (SPF) for IMNV;~~

~~*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* listed in point 1 of Article 9.4.3.~~

Article 9.4.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with IMNV**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.4.2. from a country, *zone* or *compartment* not declared free from infection with IMNV, 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 9.4.3., or products described in point 1 of Article 9.4.11., 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 IMNV 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 9.4.10.

**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 infection with IMNV**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.4.2. from a country, *zone* or *compartment* not declared free from infection with IMNV, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of IMNV.

This Article does not apply to *commodities* referred to in point 1 of Article 9.4.3.

Article 9.4.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with IMNV status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ IMNV, regardless of the infection with IMNV status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp (shell off, head off) 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 9.4.2. from a country, *zone* or *compartment* not declared free from infection with IMNV, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.5.

# INFECTION WITH *HEPATOBACTER PENAEI* (NECROTISING HEPATOPANCREATITIS)

Article 9.5.1.

For the purposes of the *Aquatic Code*, infection with *Hepatobacter penaei* ~~necrotising hepatopancreatitis (NHP)~~ means infection with the *pathogenic agent* ~~Candidatus~~ *Hepatobacter penaei*~~.~~ ~~This~~ an obligate intracellular bacterium ~~is a member~~ of the ~~order~~ Order α-Proteobacteria. The *disease* is commonly known as necrotising hepatopancreatitis.

Article 9.5.2.

**Scope**

The recommendations in this chapter apply to the following ~~susceptible~~ species which meet the criteria for listing species as susceptible in Chapter 1.5.: ~~Pacific white~~ ~~white leg~~ whiteleg shrimp *(Penaeus vannamei)*~~, blue shrimp *(P. stylirostris)*, northern white shrimp *(P. setiferus)* and northern brown shrimp *(P. aztecus)*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.~~

~~For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.~~

Article 9.5.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with *H. penaei* status of the exporting country, zone or compartment ~~from a country, zone or compartment not declared free from necrotising hepatopancreatitis~~**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ *H. penaei* ~~NHP~~, regardless of the infection with *H. penaei* ~~NHP~~ 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 9.5.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121˚C for at least 3.6 minutes or any time/temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 100˚C for at least three minutes (or any time/temperature equivalent which has been demonstrated to inactivate ~~Candidatus~~ *H. penaei*);

   *c)* pasteurised crustacean products that have been subjected to heat treatment at 63˚C for at least 30 minutes (or any time/temperature equivalent which has been demonstrated to inactivate ~~Candidatus~~ *H. penaei*);

   *d)* crustacean oil;

   *e)* crustacean *meal*;

   *f)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.5.2., other than those referred to in point 1 of Article 9.5.3., *Competent Authorities* should require the conditions prescribed in Articles 9.5.7. to 9.5.11. relevant to the infection with *H. penaei* ~~NHP~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.5.2. but which could reasonably be expected to pose a *risk* ~~of spread~~ of transmission of ~~infection with~~ *H. penaei* ~~NHP~~, 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 analysis ~~assessment~~.

Article 9.5.4.

**Country free from infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with *H. penaei* ~~NHP~~ if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with *H. penaei* ~~NHP~~ (see Article 9.5.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with *H. penaei* ~~NHP~~ if:

1) none of the *susceptible species* referred to in Article 9.5.2. 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 9.5.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of ~~the *disease*~~ infection with *H. penaei* 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 two years;

OR

3) the ~~*disease*~~ infection with *H. penaei* 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 ~~infection with~~ *H. penaei* ~~NHP~~;

OR

4) it previously made a *self-declaration of freedom* from infection with *H. penaei* ~~NHP~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ *H. penaei* ~~NHP~~ but the following conditions have been met:

   *a)* on detection of ~~the *disease* *H. penaei~~, the affected area was declared an *infected zone* and a *protection zone* was established; and

   *b)* infected populations ~~have been destroyed or removed from~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of *H. penaei* ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with *H. penaei* ~~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 ~~infection with~~ *H. penaei* ~~NHP~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.5.5.

Article 9.5.5.

**Zone or compartment free from infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

If a *zone* or *compartment* extends over more than one country, it can only be declared a ~~an NHP free~~ *zone* or *compartment* free from infection with *H. penaei* ~~NHP~~ 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 infection with *H. penaei* ~~NHP~~ 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 9.5.2. 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 9.5.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with *H. penaei* ~~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 two years;

OR

3) the ~~disease~~ infection with *H. penaei* 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 ~~infection with~~ *H. penaei* ~~NHP~~;

OR

4) it previously made a *self-declaration of freedom* in the *zone* from infection with *H. penaei* ~~NHP~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ *H. penaei* ~~NHP~~ in the *zone* but the following conditions have been met:

   *a)* on detection of ~~the *disease*~~ *H. penaei*, the affected area was declared an *infected zone* and a *protection zone* was established; and

   *b)* infected populations ~~have been destroyed or removed from~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of *H. penaei* ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with *H. penaei* ~~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 ~~infection with~~ *H. penaei* ~~NHP~~.

Article 9.5.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with *H. penaei* ~~NHP~~ following the provisions of points 1 or 2 of Articles 9.5.4. or 9.5.5. (as relevant) may maintain its status as free from infection with *H. penaei* ~~NHP~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with *H. penaei* ~~NHP~~ following the provisions of point 3 of Articles 9.5.4. or 9.5.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with *H. penaei* NHP~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with *H. penaei* ~~NHP~~, 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 infection with *H. penaei* ~~NHP~~, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.5.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.5.2. from a country, *zone* or *compartment* declared free from infection with *H. penaei* ~~NHP~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.5.4. or 9.5.5. (as applicable) and 9.5.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with *H. penaei* ~~NHP~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.5.3.

Article 9.5.8.

**Importation of live aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

1) When importing, for *aquaculture*, live *aquatic animals* of species referred to in Article 9.5.2. from a country, *zone* or *compartment* not declared free from infection with *H. penaei* ~~NHP~~, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate *H. penaei* (in accordance with Chapter 4.7.

~~1) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with *H. penaei*.

*b)* In the *importing country*:

*i)* import the F-0 population into a *quarantine* facility;

*ii)* test the F-0 population for *H. penaei* in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with *H. penaei* (as described in the *Aquatic Manual*) and test for *H. penaei* in accordance with Chapter 1.4.;

*v)* if *H. penaei* is not detected in the F-1 population, it may be defined as free from infection with *H. penaei* and may be released from *quarantine*;

*vi)* if *H. penaei* is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 Candidatus *H. penaei*, 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 Candidatus *H. penaei* and perform general examinations for pests and general health/disease status;~~

~~*g)* if Candidatus *H. penaei* 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 free from infection with *H. penaei* NHP free or specific pathogen free (SPF) for Candidatus *H. penaei*;~~

~~*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* listed in point 1 of Article 9.5.3.~~

Article 9.5.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.5.2. from a country, *zone* or *compartment* not declared free from infection with *H. penaei* ~~NHP~~, 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 9.5.3., or products described in point 1 of Article 9.5.11., 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 ~~Candidatus~~ *H. penaei* 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 9.5.10.

**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 infection with *H. penaei* ~~necrotising hepatopancreatitis~~**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.5.2. from a country, *zone* or *compartment* not declared free from infection with *H. penaei* ~~NHP~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of ~~Candidatus~~ *H. penaei*.

This Article does not apply to *commodities* referred to in point 1 of Article 9.5.3.

Article 9.5.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with *H. penaei* ~~necrotising hepatopancreatitis~~ status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ *H. penaei* ~~NHP~~, regardless of the infection with *H. penaei* ~~NHP~~ status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp (shell off, head off) 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 9.5.2. from a country, *zone* or *compartment* not declared free from infection with *H. penaei* ~~NHP~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.6.

# INFECTION WITH TAURA SYNDROME VIRUS

Article 9.6.1.

For the purposes of the *Aquatic Code*, infection with Taura syndrome virus ~~(TS)~~ means infection with the *pathogenic agent* Taura syndrome virus (TSV)~~. Taura syndrome virus is classified as a species of the~~ Family *Dicistroviridae*, Genus *Aparavirus*, ~~in the family Family *Dicistroviridae*. Common synonyms are listed in the corresponding chapter of the *Aquatic Manual*.~~

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

Article 9.6.2.

**Scope**

The recommendations in this chapter apply to the following susceptible species which meet the criteria for listing species as susceptible in Chapter 1.5.:greasyback shrimp *(Metapenaeus ensis)*, northern brown shrimp (*P aztecus*), giant tiger prawn *(P. monodon)*, northern white shrimp *(P. setiferus)*, blue shrimp *(P. stylirostris)* whiteleg shrimp *(Penaeus vannamei)*. ~~Pacific white shrimp or white leg shrimp *(Penaeus vannamei)*, blue shrimp *(P. stylirostris)*, northern white shrimp *(P. setiferus)*, southern white shrimp *(P. schmitti)*, greasyback shrimp prawn *(Metapenaeus ensis)*, and giant tiger prawn *(P. monodon)* and northern brown shrimp (*P aztecus*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.~~

~~For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.~~

Article 9.6.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with TSV ~~TS~~ status of the exporting country, zone or compartment ~~from a country, zone or compartment not declared free from Taura syndrome~~**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ TSV ~~TS~~, regardless of the infection with TSV ~~TS~~ 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 9.6.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time/ temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 70°C for at least 30 minutes (or any time/ temperature equivalent which has been demonstrated to inactivate TSV);

   *c)* pasteurised crustacean products that have been subjected to heat treatment at 90°C for at least ten minutes (or any time / temperature equivalent which has been demonstrated to inactivate TSV);

   *d)* crustacean oil;

   *e)* crustacean *meal*;

   *f)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.6.2., other than those referred to in point 1 of Article 9.6.3., *Competent Authorities* should require the conditions prescribed in Articles 9.6.7. to 9.6.11. relevant to the infection with TSV ~~TS~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.6.2. but which could reasonably be expected to pose a *risk* ~~of spread~~ of transmission of ~~infection with~~ TSV ~~TS~~, 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 analysis ~~assessment~~.

Article 9.6.4.

**Country free from infection with TSV**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with TSV ~~TS~~ if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with TSV ~~TS~~ (see Article 9.6.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with TSV ~~TS~~ if:

1) none of the *susceptible species* referred to in Article 9.6.2. 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 9.6.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of ~~the *disease*~~ infection with TSV 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 two years;

OR

3) the ~~disease~~ infection with TSV 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 ~~infection with~~ TSV ~~TS~~;

OR

4) it previously made a *self-declaration of freedom* from infection with TSV ~~TS~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ TSV ~~TS~~ but the following conditions have been met:

   *a)* on detection of TSV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of ~~infection with~~ TSV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with TSV ~~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 ~~infection with~~ TSV ~~TS~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.6.5.

Article 9.6.5.

**Zone or compartment free from infection with TSV**

If a *zone* or *compartment* extends over more than one country, it can only be declared a *zone* or *compartment* free from infection with TSV ~~TS~~ 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 infection with TSV ~~TS~~ 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 9.6.2. 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 9.6.2. are present in the *zone* or *compartment* and the following conditions have been made:

   *a)* there has not been any ~~observed~~ occurrence of infection with TSV ~~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 two years;

OR

3) the ~~disease~~ infection with TSV status prior to *targeted surveillance* is unknown but the following conditions have been made:

   *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 TSV;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with TSV ~~TS~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ TSV ~~TS~~ in the *zone* but the following conditions have been met:

   *a)* on detection of TSV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of TSV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with TSV ~~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 ~~infection with~~ TSV ~~TS~~.

Article 9.6.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with TSV ~~TS~~ following the provisions of points 1 or 2 of Articles 9.6.4. or 9.6.5. (as relevant) may maintain its status as free from infection with TSV ~~TS~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with TSV ~~TS~~ following the provisions of point 3 of Articles 9.6.4. or 9.6.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with TSV TS~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with TSV ~~TS~~, 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 infection with TSV ~~TS~~, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.6.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with TSV**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.6.2. from a country, *zone* or *compartment* declared free from infection with TSV ~~TS~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.6.4. or 9.6.5. (as applicable) and 9.6.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with TSV ~~TS~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.6.3.

Article 9.6.8.

**Importation of ~~live~~ aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with TSV**

1) When importing~~, for *aquaculture*, live~~ *aquatic animals* of species referred to in Article 9.6.2. from a country, *zone* or *compartment* not declared free from infection with TSV ~~TS~~, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water~~, equipment, used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate TSV (in accordance with Chapter 4.7.

~~1) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with TSV.

*b)* In the *importing country*:

*i)* import the F-0 population into a *quarantine* facility;

*ii)* test the F-0 population for TSV in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with TSV (as described in the *Aquatic Manual*) and test for TSV in accordance with Chapter 1.4.;

*v)* if TSV is not detected in the F-1 population, it may be defined as free from infection with TSV and may be released from *quarantine*;

*vi)* if TSV is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 TSV, 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 TSV and perform general examinations for pests and general health/disease status;~~

~~*g)* if TSV 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 free from infection with TSV TS free or specific pathogen free (SPF) for TSV;~~

~~*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* listed in point 1 of Article 9.6.3.~~

Article 9.6.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with TSV**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.6.2. from a country, *zone* or *compartment* not declared free from infection with TSV ~~TS~~, 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 9.6.3., or products described in point 1 of Article 9.6.11., 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 TSV 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 9.6.10.

**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 infection with TSV**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.6.2. from a country, *zone* or *compartment* not declared free from infection with TSV ~~TS~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of TSV.

This Article does not apply to *commodities* referred to in point 1 of Article 9.6.3.

Article 9.6.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with TSV status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ TSV ~~TS~~, regardless of the infection with TSV ~~TS~~ status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp or decapod crustacea (shell off, head off) 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 9.6.2. from a country, *zone* or *compartment* not declared free from infection with TSV ~~TS~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.7.

# INFECTION WITH WHITE SPOT SYNDROME VIRUS ~~DISEASE~~

Article 9.7.1.

For the purposes of the *Aquatic Code*, infection with white spot syndrome virus ~~disease (WSD)~~ means infection with the *pathogenic agent* white spot syndrome virus (WSSV)~~.~~ ~~White spot syndrome virus 1 is classified as a species in the genus *Whispovirus* of the family~~ Family *Nimaviridae*, Genus *Whispovirus*. ~~Common synonyms are listed in the corresponding chapter of the *Aquatic Manual*.~~

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

Article 9.7.2.

**Scope**

The recommendations in this chapter apply to all decapod (order *Decapoda*) crustaceans from marine, brackish and freshwater sources. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

~~For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.~~

Article 9.7.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with WSSV status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to WSSV ~~WSD~~, regardless of the infection with WSSV ~~WSD~~ 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 9.7.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time/temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 60°C for at least one minute (or any time/temperature equivalent which has been demonstrated to inactivate WSSV);

   *c)* pasteurised crustacean products that have been subjected to heat treatment at 90°C for at least ten minutes (or any time/temperature equivalent which has been demonstrated to inactivate WSSV);

   *d)* crustacean oil;

   *e)* crustacean *meal*;

   *f)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.7.2., other than those referred to in point 1 of Article 9.7.3., *Competent Authorities* should require the conditions prescribed in Articles 9.7.7. to 9.7.11. relevant to the infection with WSSV ~~WSD~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.7.2. but which could reasonably be expected to pose a *risk* of transmission ~~spread~~ of WSSV

~~WSD~~, 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 analysis ~~assessment~~.

Article 9.7.4.

**Country free from infection with WSSV ~~disease~~**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with WSSV if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with WSSV ~~WSD~~ (see Article 9.7.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with WSSV ~~WSD~~ if:

1) none of the *susceptible species* referred to in Article 9.7.2. 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 9.7.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of infection with WSSV ~~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 two years;

OR

3) the ~~disease~~ infection with WSSV 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 WSSV ~~WSD~~;

OR

4) it previously made a *self-declaration of freedom* from infection with WSSV ~~WSD~~ and subsequently lost its ~~*disease*~~ free status due to the detection of WSSV ~~WSD~~ but the following conditions have been met:

   *a)* on detection of WSSV ~~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~~ within the *infected zone* have been killed and disposed of by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of ~~infection with~~ WSSV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with WSSV ~~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 WSSV ~~WSD~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.7.5.

Article 9.7.5.

**Zone or compartment free from infection with WSSV ~~disease~~**

If a *zone* or *compartment* extends over more than one country, it can only be declared a ~~WSD free~~ *zone* or *compartment* free from infection with WSSV 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 infection with WSSV ~~WSD~~ 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 9.7.2. 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 9.7.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with WSSV ~~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 two years;

OR

3) the ~~disease~~ infection with WSSV 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 WSSV ~~WSD~~;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with WSSV ~~WSD~~ and subsequently lost its ~~*disease*~~ free status due to the detection of WSSV ~~WSD~~ in the *zone* but the following conditions have been met:

   *a)* on detection of WSSV ~~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~~ within the *infected zone* have been killed and disposed of by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread of infection with~~ WSSV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with WSSV ~~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 ~~infection with~~ WSSV ~~WSD~~.

Article 9.7.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with WSSV ~~WSD~~ following the provisions of points 1 or 2 of Articles 9.7.4. or 9.7.5. (as relevant) may maintain its status as free from infection with WSSV ~~WSD~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with WSSV ~~WSD~~ following the provisions of point 3 of Articles 9.7.4. or 9.7.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from WSD~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with WSSV ~~WSD~~, 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 infection with WSSV ~~WSD~~, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.7.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with WSSV ~~disease~~**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.7.2. from a country, *zone* or *compartment* declared free from infection with WSSV ~~WSD~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.7.4. or 9.7.5. (as applicable) and 9.7.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with WSSV ~~WSD~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.7.3.

Article 9.7.8.

**Importation of ~~live~~ aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with WSSV ~~disease~~**

1) When importing~~, for *aquaculture*, live~~ *aquatic animals* of species referred to in Article 9.7.2. from a country, *zone* or *compartment* not declared free from infection with WSSV ~~WSD~~, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   *a)* the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate WSSV (in accordance with Chapter 4.7.

~~1) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

*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 infection with WSSV.

*b)* In the *importing country*:

*i)* import the F-0 population into a *quarantine* facility;

*ii)* test the F-0 population for WSSV in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with WSSV (as described in the *Aquatic Manual*) and test for WSSV in accordance with Chapter 1.4.;

*v)* if WSSV is not detected in the F-1 population, it may be defined as free from infection with WSSV and may be released from *quarantine*;

*vi)* if WSSV is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~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 WSSV, 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 WSSV and perform general examinations for pests and general health/disease status;~~

~~g) if WSSV 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 WSD free or specific pathogen free (SPF) for WSSV;~~

~~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* listed in point 1 of Article 9.7.3.~~

Article 9.7.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with WSSV ~~disease~~**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.7.2. from a country, *zone* or *compartment* not declared free from infection with WSSV ~~WSD~~, 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 9.7.3., or products described in point 1 of Article 9.7.11., 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 WSSV 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 9.7.10.

**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 infection with WSSV ~~disease~~**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.7.2. from a country, *zone* or *compartment* not declared free from infection with WSSV ~~WSD~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of WSSV.

This Article does not apply to *commodities* referred to in point 1 of Article 9.7.3.

Article 9.7.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with WSSV ~~disease~~ status of the exporting country, zone or compartment**

1) *Competent Authorities* should not require any conditions related to WSSV ~~WSD~~, regardless of the infection with WSSV ~~WSD~~ status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp or decapod crustacea (shell off, head off) 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 9.7.2. from a country, *zone* or *compartment* not declared free from infection with WSSV ~~WSD~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.

CHAPTER 9.8.

# INFECTION WITH *MACROBRACHIUM ROSENBERGII* NODAVIRUS (WHITE TAIL DISEASE)

Article 9.8.1.

For the purposes of the *Aquatic Code*, infection with *Macrobrachium rosenbergii* nodavirus means infection with the *pathogenic agent Macrobrachium rosenbergii* nodavirus (MrNV), ~~of the~~ Family *Nodaviridae*. The *disease* is commonly known as white tail disease. ~~white tail disease (WTD) means *infection* with macrobrachium nodavirus (MrNV). This virus has yet to be formally classified.~~

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

Article 9.8.2.

**Scope**

The recommendations in this chapter apply to the following ~~susceptible~~ species which meet the criteria for listing species as susceptible in Chapter 1.5.: ~~the~~ giant ~~fresh water~~ river prawn *(Macrobrachium rosenbergii)*. ~~Other common names are listed in the *Aquatic Manual*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.~~

~~For the purposes of this chapter, the terms shrimp and prawn are used interchangeably.~~

Article 9.8.3.

**Importation or transit of aquatic animals ~~and~~ or aquatic animal products for any purpose regardless of the infection with MrNV status of the exporting country, zone or compartment ~~from a country, zone or compartment not declared free from white tail disease~~**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ MrNV ~~WTD~~, regardless of the infection with MrNV ~~the WTD~~ 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 9.8.2. which are intended for any purpose and which comply with Article 5.4.1.:

   *a)* heat sterilised hermetically sealed crustacean products (i.e. a heat treatment at 121°C for at least 3.6 minutes or any time/temperature equivalent);

   *b)* cooked crustacean products that have been subjected to heat treatment at 60°C for at least 60 minutes (or any time/temperature equivalent which has been demonstrated to inactivate MrNV);

   *c)* pasteurised crustacean products that have been subjected to heat treatment at 90°C for at least ten minutes (or any time/temperature equivalent that has been shown to inactivate MrNV);

   *d)* crustacean oil;

   *e)* crustacean *meal*;

   *f)* chemically extracted chitin.

2) When authorising the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species referred to in Article 9.8.2., other than those referred to in point 1 of Article 9.8.3., *Competent Authorities* should require the conditions prescribed in Articles 9.8.7. to 9.8.11. relevant to the infection with MrNV ~~WTD~~ status of the *exporting country*, *zone* or *compartment*.

3) When considering the importation or transit of *aquatic animals* ~~and~~ or *aquatic animal products* of a species not covered in Article 9.8.2. but which could reasonably be expected to pose a *risk* of transmission ~~of spread~~ of ~~infection with~~ MrNV ~~WTD~~, 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 analysis ~~assessment~~.

Article 9.8.4.

**Country free from infection with MrNV ~~white tail disease~~**

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from infection with MrNV ~~WTD~~ if all the areas covered by the shared water bodies are declared countries or *zones* free from infection with MrNV ~~WTD~~ (see Article 9.8.5.).

As described in Article 1.4.6., a country may make a *self-declaration of freedom* from infection with MrNV ~~WTD~~ if:

1) none of the *susceptible species* referred to in Article 9.8.2. 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 9.8.2. are present and the following conditions have been met:

   *a)* there has been no ~~observed~~ occurrence of infection with MrNV ~~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 two years;

OR

3) the ~~disease~~ infection with MrNV 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 ~~infection with~~ MrNV ~~WTD~~;

OR

4) it previously made a *self-declaration of freedom* from infection with MrNV ~~WTD~~ and subsequently lost its ~~*disease*~~ free status due to the detection of MrNV ~~WTD~~ but the following conditions have been met:

   *a)* on detection of MRNV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission of ~~spread of~~ MrNV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with MrNV ~~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 ~~infection with~~ MrNV ~~WTD~~.

In the meantime, part or all of the unaffected ~~non-affected~~ area may be declared a free *zone* provided that such a part meets the conditions in point 3 of Article 9.8.5.

Article 9.8.5.

**Zone or compartment free from infection with MrNV ~~white tail disease~~**

If a *zone* or *compartment* extends over more than one country, it can only be declared a ~~WTD free~~ *zone* or *compartment* free from infection with MrNV 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 infection with MrNV ~~WTD~~ 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 9.8.2. 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 9.8.2. are present in the *zone* or *compartment* and the following conditions have been met:

   *a)* there has not been any ~~observed~~ occurrence of infection with MrNV ~~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 two years;

OR

3) the ~~disease~~ infection with MrNV 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 ~~infection with~~ MrNV ~~WTD~~;

OR

4) it previously made a *self-declaration of freedom* for a *zone* from infection with MrNV ~~WTD~~ and subsequently lost its ~~*disease*~~ free status due to the detection of ~~infection with~~ MrNV ~~WTD~~ in the *zone* but the following conditions have been met:

   *a)* on detection of MrNV ~~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~~ within the *infected zone* have been killed and disposed of ~~destroyed or removed~~ by means that minimise the ~~*risk*~~ likelihood of further transmission ~~spread~~ of ~~infection with~~ MrNV ~~the *disease*~~, and the appropriate *disinfection* procedures (as described in Chapter 4.3.) 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 infection with MrNV ~~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 ~~infection with~~ MrNV ~~WTD~~.

Article 9.8.6.

**Maintenance of free status**

A country, *zone* or *compartment* that is declared free from infection with MrNV ~~WTD~~ following the provisions of points 1 or 2 of Articles 9.8.4. or 9.8.5. (as relevant) may maintain its status as free from infection with MrNV ~~WTD~~ provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from infection with MrNV ~~WTD~~ following the provisions of point 3 of Articles 9.8.4. or 9.8.5. (as relevant) may discontinue *targeted surveillance* and maintain its free status ~~as free from infection with MrNV WTD~~ provided that conditions ~~that~~ are conducive to clinical expression of infection with MrNV ~~WTD~~, 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 infection with MrNV ~~WTD~~, *targeted surveillance* should ~~needs to~~ be continued at a level determined by the *Aquatic Animal Health Service* on the basis of the likelihood of *infection*.

Article 9.8.7.

**Importation of aquatic animals ~~and~~ or aquatic animal products from a country, zone or compartment declared free from infection with MrNV ~~white tail disease~~**

When importing *aquatic animals* ~~and~~ or *aquatic animal products* of species referred to in Article 9.8.2. from a country, *zone* or *compartment* declared free from infection with MrNV ~~WTD~~, 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*. The *international aquatic animal health certificate* should state ~~certifying~~ that, on the basis of the procedures described in Articles 9.8.4. or 9.8.5. (as applicable) and 9.8.6., the place of production of the *aquatic animals* ~~and~~ or *aquatic animal products* is a country, *zone* or *compartment* declared free from infection with MrNV ~~WTD~~.

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

This Article does not apply to *commodities* listed in point 1 of Article 9.8.3.

Article 9.8.8.

**Importation of ~~live~~ aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with MrNV ~~white tail disease~~**

1) When importing~~, for *aquaculture*, live~~ *aquatic animals* of species referred to in Article 9.8.2. from a country, *zone* or *compartment* not declared free from infection with MrNV ~~WTD~~, the *Competent Authority* of the *importing country* should assess the *risk* ~~and, if justified, apply the following risk mitigation measures:~~ in accordance with Chapter 2.1. and consider the *risk* mitigation measures in points 2) and 3) below.

2) If the intention is to grow out and harvest the *aquatic animals*, consider applying the following:

   a) the direct delivery to and lifelong holding of the *aquatic animals* in a *quarantine* facility; ~~consignment in biosecure facilities for continuous isolation from the local environment~~; and

   *b)* the treatment of transport water, equipment, ~~used in transport and of all~~ effluent and waste materials ~~in a manner that ensures inactivation of~~ to inactivate MrNV (in accordance with Chapter 4.7.

~~1) If the intention of the introduction is the establishment of a new stock, 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 considered.~~

3) If the intention is to establish a new stock for *aquaculture*, consider applying the following: ~~For the purposes of the Aquatic Code, the ICES Code (full version see: http://www.ices.dk/publications/our-publications/Pages/Miscellaneous.aspx) may be summarised to the following main points:~~

   *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 infection with MRNV.

*b)* In the *importing country*:

*i)* import the F-0 population into a *quarantine* facility;

*ii)* test the F-0 population for MrNV in accordance with Chapter 1.4. to determine their suitability as broodstock;

*iii)* produce a first generation (F-1) population in *quarantine*;

*iv)* culture F-1 population in *quarantine* under conditions that are conducive to the clinical expression of infection with MrNV (as described in the *Aquatic Manual*) and test for MrNV in accordance with Chapter 1.4.;

*v)* if MrNV is not detected in the F-1 population, it may be defined as free from infection with MrNV and may be released from *quarantine*;

*vi)* if MrNV is detected in the F-1 population, those animals should not be released from *quarantine* and should be ~~destroyed~~ killed and disposed of in a biosecure manner.

~~*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 MrNV WTDV, 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 MrNV WTD and perform general examinations for pests and general health/disease status;~~

~~*g)* if MrNV WTDV 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 free from infection with MrNV WTD free or specific pathogen free (SPF) for MrNV WTDV;~~

~~*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* listed in point 1 of Article 9.8.3.~~

Article 9.8.9.

**Importation of aquatic animals ~~and~~ or aquatic animal products for processing for human consumption from a country, zone or compartment not declared free from infection with MrNV ~~white tail disease~~**

When importing, for processing for human consumption, *aquatic animals* or *aquatic animal products* of species referred to in Article 9.8.2. from a country, *zone* or *compartment* not declared free from infection with MrNV ~~WTD~~, 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 9.8.3., or products described in point 1 of Article 9.8.11., 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 ~~WTDV~~ MrNV 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 9.8.10.

**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 infection with MrNV ~~white tail disease~~**

When importing, for use in animal *feed* or for agricultural, industrial or pharmaceutical use, ~~live~~ *aquatic animals* of species referred to in Article 9.8.2. from a country, *zone* or *compartment* not declared free from infection with MrNV ~~WTD~~, the *Competent Authority* of the *importing country* should require that:

1) the consignment is 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 are treated in a manner that ensures inactivation of MrNV ~~WTDV~~.

This Article does not apply to *commodities* referred to in point 1 of Article 9.8.3.

Article 9.8.11.

**Importation of aquatic animals ~~and~~ or aquatic animal products for retail trade for human consumption ~~from a country, zone or compartment not declared free from~~ regardless of the infection with MrNV ~~white tail disease~~ status of the exporting country, zone or compartment.**

1) *Competent Authorities* should not require any conditions related to ~~infection with~~ MrNV ~~WTD~~, regardless of the infection with MrNV ~~WTD~~ status of the *exporting country*, *zone* or *compartment*, when authorising the importation or transit of frozen peeled shrimp (shell off, head off) 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 9.8.2. from a country, *zone* or *compartment* not declared free from infection with MrNV ~~WTD~~, the *Competent Authority* of the *importing country* should assess the *risk* and apply appropriate *risk* mitigation measures.