

## Diseases of crustaceans

### Viral diseases—**Infectious myonecrosis**

#### Signs of disease

Important: animals with disease may show one or more of the signs below, but disease may still be present in the absence of any signs.

#### Disease signs at the farm level

- large numbers of sick animals and significant mortalities in juvenile and subadult pond-reared stocks of *Penaeus vannamei*

#### Clinical signs of disease in an infected animal

- acute form of disease produces gross signs and elevated mortalities, but disease progresses to a chronic phase with persistent low-level mortalities
- focal to extensive white necrotic areas in the striated muscle, especially of the distal abdominal segments and tail fan (which might become necrotic and reddened in some individuals)

#### Disease agent

The causative agent is infectious myonecrosis virus, an RNA virus.

#### Host range

Crustaceans known to be susceptible to infectious myonecrosis:

white shrimp*	( <i>Penaeus vannamei</i> )
tiger prawn	( <i>Penaeus monodon</i> )
blue shrimp	( <i>Penaeus stylirostris</i> )

\* naturally susceptible (other species have been shown to be experimentally susceptible)



**Gross signs of infectious myonecrosis in naturally infected farmed Pacific white shrimp (*P. vannamei*), exhibiting various degrees of skeletal muscle necrosis, visible as an opaque, whitish discolouration of the abdomen**

Source: DV Lightner



Australian Government  
Department of Agriculture,  
Fisheries and Forestry

Sourced from AGDAFF–NACA (2007) *Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide*. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

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## Infectious myonecrosis continued

### Presence in Asia–Pacific

Infectious myonecrosis has been officially reported from Indonesia.



### Epidemiology

- Infectious myonecrosis is a new viral disease identified recently in northeast Brazil in cultured *P. vannamei*. However, shrimps with similar gross signs have been also reported from other countries where *P. vannamei* are cultured.
- Affected life stages include juveniles and subadults. Significant mortalities occur in juvenile and subadult pond-reared populations.
- Extremes in salinity and temperature seem to be associated with disease outbreaks.
- Horizontal transmission has been demonstrated, but there is no information on vertical transmission.

### Differential diagnosis

The differential diagnostic table and the list of similar diseases appearing at the bottom of each disease page refer only to the diseases covered by this field guide. Gross signs observed might well be representative of a wider range of diseases not included here. Therefore, these diagnostic aids should not be read as a guide to a definitive diagnosis, but rather as a tool to help identify the listed diseases that most closely account for the gross signs.

### Similar diseases

White tail disease

### Sample collection

Because of uncertainty in differentiating diseases using only gross signs, and because some aquatic animal disease agents might pose a risk to humans, you should not try to collect samples unless you have been trained. Instead, you should phone your national hotline number and report your observations. If samples have to be collected, the agency taking the call will advise you on what you need to do. Local or district fisheries/veterinary authorities could advise you on sampling.

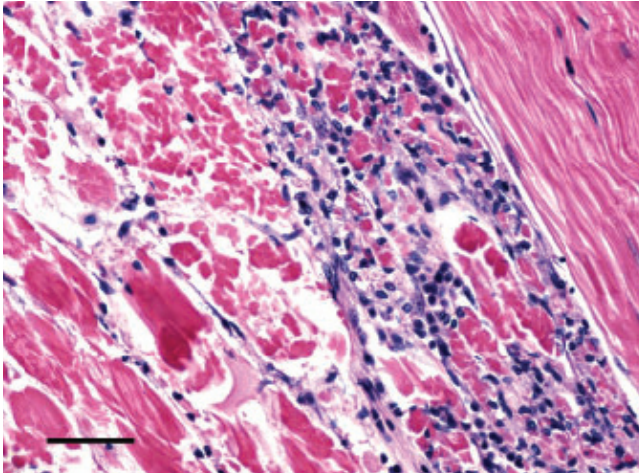
### Emergency disease hotline

For your national emergency disease hotline number, see Whom to contact if you suspect a disease.

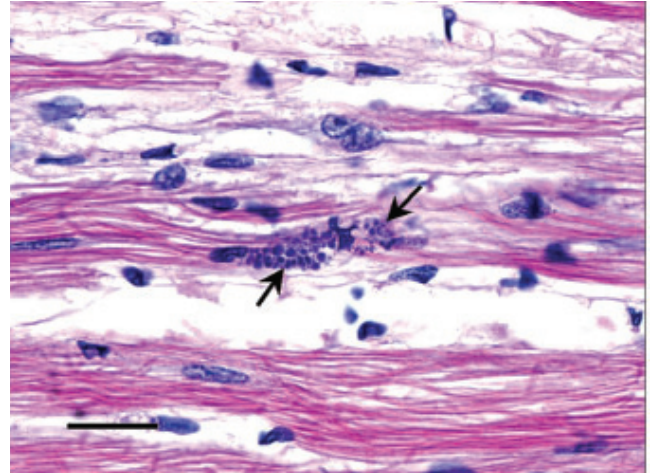


## Infectious myonecrosis continued

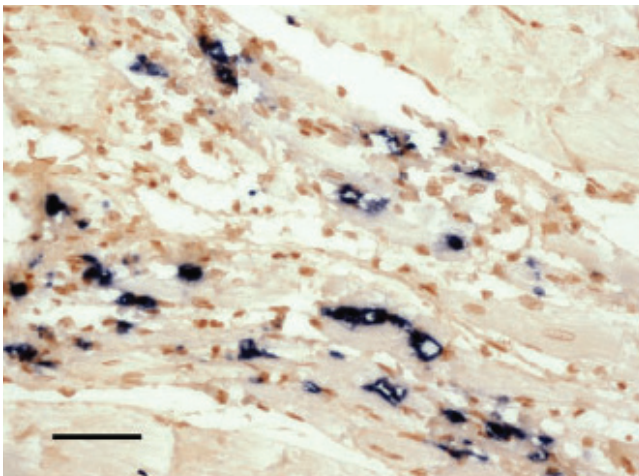
### Histological images



Myonecrosis due to infection of *Penaeus vannamei* with purified virions.  
(a) Coagulative necrosis of skeletal muscle accompanied by haemocytic infiltration and fibrosis. As a reference, normal skeletal muscle can be observed in the upper right corner. H&E stain; bar, 50  $\mu$ m.



(b) Perinuclear pale basophilic to dark basophilic inclusion bodies are evident in this group of muscle cells (arrows point at some examples). H&E stain; bar, 20  $\mu$ m.



(c) In situ hybridisation of skeletal muscle tissue using a digoxigenin-labelled infectious myonecrosis virus probe. A black precipitate is present in areas where the probe has hybridised with target virus. Bismarck brown counterstain; bar, 50  $\mu$ m.

Source: DV Lightner

