



Diseases of crustacea

Viral diseases—**Gill-associated virus disease**

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 tank and pond level

- high mortality
- moribund prawns aggregate near surface at pond edges
- cessation of feeding

Clinical signs of disease in an infected animal

- reddening
- biofouling with exoparasites
- emaciation

Disease agent

The causative agent is gill-associated virus (GAV), a corona-like RNA virus that has been classified with yellowhead virus in the genus *Okavirus*, family Ronaviridae and order Nidovirales. Comparison of DNA sequences indicates that GAV and yellowhead virus are closely related, but distinctly different viral strains or species.

Host range

Crustaceans known to be susceptible to infection with GAV:

black tiger prawn*	(<i>Penaeus monodon</i>)
brown tiger prawn	(<i>Penaeus esculentus</i>)
Gulf banana prawn	(<i>Penaeus merguensis</i>)
Kuruma prawn	(<i>Penaeus japonicus</i>)

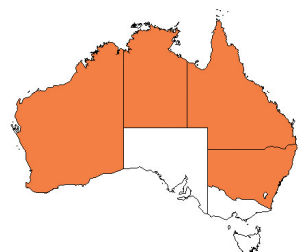
Presence in Australia

GAV has been officially reported from New South Wales, Queensland, the Northern Territory and Western Australia.



***Penaeus monodon* infected with gill-associated virus. Note red colouration.**

Source: D Callinan



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

Sourced from AGDAFF (2008) *Aquatic Animal Diseases Significant to Australia: Identification Field Guide*. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

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Gill-associated virus disease continued

Epidemiology

The epidemiology of GAV is thought to be very similar to that of yellowhead virus:

- Transmission may be horizontal, direct from the water column and through ingestion of infected material.
- Vertical transmission can occur from both male and female parents, probably by surface contamination or infection of tissue surrounding the fertilised egg, causing chronic infection in postlarvae.
- Viral multiplication and disease appear to be induced by environmental stress.
- Massive mortality usually occurs among early to late juvenile stages in rearing ponds.
- Vectors may include asymptomatic carrier crustaceans.
- GAV occurs commonly as a chronic infection in healthy broodstock and farmed black tiger prawns in eastern Australia. It has also been associated with acute infections and disease outbreaks in ponds, causing high mortality, but produces gross signs and patterns of tissue tropism different from those for yellowhead virus. In its chronic form, GAV has also been called 'lymphoid organ virus'.

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.

Sample collection

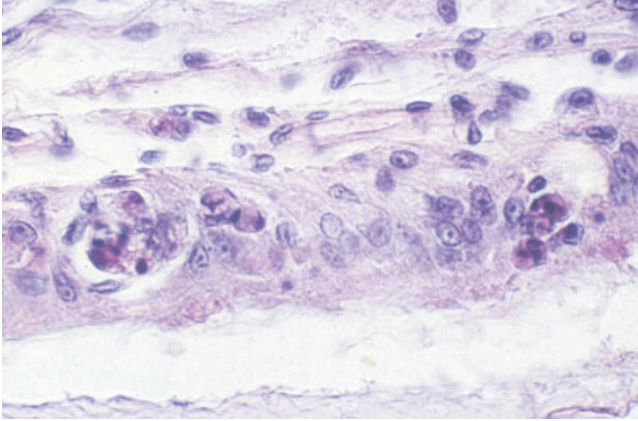
Because of uncertainty in differentiating diseases using only gross signs, and because some aquatic animal disease agents might pose a risk to humans, you should not try to collect samples unless you have been trained. Instead, you should phone your state or territory hotline number and report your observations. 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 state or territory emergency disease hotline number, see Whom to contact if you suspect a disease.

Gill-associated virus disease continued

Histology image



Gill-associated virus histology.

Source: L Owens