

Diseases of finfish

Viral diseases—**Koi herpesvirus 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 farm level

- typically mass mortalities with many dead and moribund fish floating on the surface

Disease signs at the tank and pond level

- disorientation and erratic swimming behaviour
- fish coming to the surface and gasping
- large numbers of dead fish

Clinical signs of disease in an infected animal

- pale/irregular colouration of the gills and skin
- severe gill necrosis
- superficial branchial (gill) and skin haemorrhages
- occasionally, sunken eyes and congestion of fins

Gross signs of disease in an infected animal

- severe gill necrosis, seen as white rotting patches

Disease agent

The causative agent of this disease, also known as carp nephritis and gill necrosis virus (CNGV), is koi herpesvirus (KHV)

Host range

Fish known to be susceptible to koi herpesvirus disease:

Common carp and koi carp * (*Cyprinus carpio*)

Presence in Asia–Pacific

Koi herpesvirus disease has been officially reported from Hong Kong, Indonesia, Japan, the Philippines, Singapore and Thailand.



* naturally susceptible



Australian Government
Department of Agriculture,
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Koi herpesvirus disease continued

Epidemiology

- Japanese researchers, during an outbreak in the spring of 2004, recorded that the outbreak occurred in wild carp populations at water temperatures of 15–16°C, and most of the dead fish were adult. In the field, it appears that adult carp are more susceptible than juveniles.
- The virus may survive at low temperatures (5°C), but the temperature range for disease outbreaks appears to be 17–28°C.
- Mortality due to infection of other freshwater fish species, such as goldfish (*Carassius auratus*), grass carp (*Ctenopharyngodon idellus*), silver carp (*Hypophthalmichthys molitrix*), silver perch (*Bidyanus bidyanus*) and tilapia (*Oreochromis niloticus*), by this virus has not been observed naturally or by experimental infection. To date, the disease is species specific.
- The disease affects all age classes of common and koi carp; the disease has occurred in finger-lings, juveniles and adults.
- Moving infected fish from cool (13°C) to warm (23°C) water results in rapid onset of mortality.
- In addition, secondary gill infections (for example, *Flavobacterium columnare* and *Aeromonas* spp) are often associated with KHV infection.

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

Viral haemorrhagic septicaemia, spring viraemia of carp, epizootic ulcerative syndrome

Differentiation from *Herpesvirus cyprini* (Carp herpesvirus 1 (CHV)) and other gill diseases responsible for gill necrosis, such as *Flavobacterium columnare* infection, is required

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.



Koi herpesvirus disease continued

Further reading

<http://www.enaca.org/modules/mydownloads/visit.php?cid=23&lid=557>

http://www.oie.int/eng/normes/fmanual/A_summry.htm

The currently accepted procedures for a conclusive diagnosis of KHV are summarised at <http://www.enaca.org/modules/mydownloads/visit.php?cid=23&lid=557>

These hyperlinks were correct and functioning at the time of publication.

