

Carp virus species specificity

What species does the carp virus affect?

The World Organisation of Animal Health advise that the Koi Herpes Virus (carp virus) is a species specific disease that only affects carp and carp hybrid species. Globally, there has been no reported accounts of the carp virus infecting any species other than carp. Koi carp are susceptible as they are selectively bred forms of European carp.

What research has been done on carp virus species specificity?

Over approximately eight years, CSIRO researchers at the Australian Animal Health Laboratories (AAHL), tested the susceptibility of 22 species to infection by an Indonesian strain of the carp virus. Species tested in the CSIRO trials comprised 13 Australian native fishes, introduced Rainbow Trout, a lamprey, a crustacean (freshwater yabbies, *Cherax destructor*), two frog species, two native reptiles (a freshwater turtle and a water dragon), chickens (a representative bird), and mice (a representative mammal).

Did the carp virus affect other fish species tested?

No, CSIRO's viral challenge trials show that all other fish exposed to the carp virus were not infected or showed signs of the carp virus disease. In some carp virus exposure trials, other fish (not carp) died, because of stress related handling practices and unsuitable temperatures regime - these fish showed no sign of carp virus infection or disease. Globally, there has never been a reported case of the carp virus infecting any species other than carp.

What further research is being done to ensure it is safe for native species?

In 2023, the Australian ministers for agriculture agreed to priority research actions which include additional carp virus exposure trial testing on other species. Leading fisheries researchers on the Carp Advisory Group are soon to provide their advice to the federal government on the scope of this additional testing. The carp virus occurs in 26 countries and CSIRO's global literature review found there was no evidence that the carp virus infects or causes disease in any other fish other than carp.

Will the carp virus affect humans?

No, there is no evidence globally of the virus ever affecting people despite large scale outbreaks of the virus of carp farms around the world. The carp virus is highly specialised to infect carp and will not affect humans, mice, frogs, turtles, water dragons or any mammals. In addition, the average human body temperature lies well outside the virus's permissive temperature range.

Can native fish transmit the carp virus?

No, Native fish are not infected by the carp virus, but native fish and other fish species may be able to carry the virus e.g. on their external surfaces. The carp virus can survive for a period of up to three days suspended in the water column, sitting on sediment, or hitching a ride on other species but cannot reproduce without using a carp as a host. If the virus does not find a suitable host (a carp) it will die after the three days.

Will the carp virus mutate and affect native species?

Both international experience with the carp virus and the virus's basic biology show that the virus is unlikely to change (mutate) to affect other species. The carp virus is a highly specialised DNA virus and DNA virus mutations are rare and take millions of years to occur. Carp are also not closely related to any Australian native species making it even more unlikely.

This fact sheet has been prepared by the VFA to provide brief and general answers to common questions raised by recreational fishing stakeholders on social media and at fishing related engagement forums. Our summary responses are drawn from detailed and lengthy published scientific investigations completed under the National Carp Control Plan. We acknowledge our responses fall short of a detailed explanation and encourage those interested in finding out more about the work, to go to the source documents for more detail.