

# Researchers identify a likely carp control



*Koi herpesvirus* attacks the gills and then the other organs of carp. Agus Sunarto, CSIRO Livestock Industries

A potential new biological control agent could help eradicate one of Australia's most invasive aquatic pests – carp. Researchers at CSIRO Livestock Industries' Australian Animal Health Laboratory (AAHL) in Geelong, along with the Department of Primary Industries Victoria, are investigating *Koi herpesvirus* as a means of controlling the introduced fish.

Project leader Dr Mark Crane says the virus, which first emerged in 1998<sup>1</sup>, caused mass mortalities in carp in the US, the UK, Israel, the Netherlands, Japan and Indonesia. So far the virus does not appear to have reached Australia.

Supported with \$355 000 from the newly formed Invasive Animals Cooperative Research Centre and the Murray-Darling Basin Commission, the two-year project will investigate the effectiveness of the candidate virus in controlling strains of carp present in Australia and assess whether the virus could have any impact on certain native fauna.

**'The virus works by attacking the carp's gills as well as other vital organs and eventually killing its host.'**

All testing will be done within the secure biocontainment facilities at CSIRO's AAHL.

Dr Crane says while carp are a valuable resource in Asian countries, in Australia the fish is generally viewed as a major pest.

Carp were introduced in the early 1900s as a food and sporting fish, but escaped from farm dams and took over the waterways during extensive flooding in the 1970s. They can tolerate a wide range of water temperatures, salinity and pH levels, and can survive and breed in polluted, poorly oxygenated water.

'Given their reproductive capacity and their hardiness, carp have been termed the "rabbit of the river",' Dr Crane says.

'The fish grow up to 20 kilograms or more in weight and each female can lay up to three million eggs in a single season. In some areas of south-eastern Australia, carp make up more than 85 per cent of the fish in the rivers and creeks.

'The virus works by attacking the carp's gills as well as other vital organs and eventually killing its host. *Koi herpesvirus* is attractive as a biological control agent as overseas studies suggest that it has a very limited host range, infecting only carp.

'If the laboratory studies show promise, the next step will be extensive government, public and industry consultation to determine the best course of action to control carp, while protecting and restoring Australia's valuable waterways,' Dr Crane says.

The project is part of a larger pest fish control program under the Invasive Animals CRC and 50-year Native Fish Strategy at the Murray-Darling Basin Commission. Other technologies being developed in the pest fish program include 'daughterless' technology, carp-specific biocides, and pheromone and sensory attractants.

Dr Crane says, 'It is anticipated that if these technologies are proven to be effective and safe, they will be applied on-ground in an integrated pest fish control program for the Murray-Darling Basin.'



Dr Mark Crane's team are testing the specificity of the new virus. CSIRO Livestock Industries

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<sup>1</sup> Earlier outbreaks occurred in the UK in 1996 but the first scientific reports appeared following the outbreaks in Israel.