

Response to mass mortality of carp: an Indonesian experience¹

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ABSTRACT

Since March 2002, Indonesian carp culture has faced a serious epizootic that has caused severe economic loss and significant social impact. As of December 2003, losses were estimated at US\$15 million, with total fish mortality of up to 80–95 percent. The disease outbreaks affected koi and common carp (*Cyprinus carpio*) populations of all ages and sizes cultured in different grow-out facilities (ponds, lakes, cages etc.), regardless of stocking density. Epidemiological observations indicated that the first outbreak occurred in imported koi carp that had just been transported from Surabaya to Blitar, both in East Java. The heavy rain prior to the initial outbreak indicated the possibility of an environmental triggering factor, such as temperature. Based on the history, clinical signs, epidemiological features, histopathological changes, results of experimental infection, PCR detection of naturally and experimentally diseased fish, and analysis of DNA sequence, it is confirmed that Koi herpes virus (KHV) was involved in this serious outbreak. To prevent the spread of the disease to other islands, the Government of Indonesia declared the islands of Java and Bali as isolated areas infected with the disease, and movement of koi and common carps from Java to other islands has been restricted to quarantined animals. The government has also taken measures to reduce the possible re-introduction of the disease through importation of koi and common carps into the country. This paper includes information collected in July 2002 during the initial investigation conducted by the Emergency Disease Control Task Force on a Serious Disease of Koi and Common

¹ Initially, many factors were speculated to be responsible for this new outbreak, including water pollution, contaminated feed and bacterial infection. NACA's Task Force found that koi herpesvirus (KHV) might have played a role in the mass mortalities, and since then, Indonesian scientists have used the term KHV. However, the Task Force recommended that this serious outbreak be called "mass mortality of koi and common carp" until a clear association with KHV could be established (NACA, 2002). During the International Workshop on Koi Herpesvirus held in London in February 2004, it was agreed that the cause of the Indonesian outbreak was KHV (see Crane, Sano and Komar, 2004).

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