

First detection of Cyprinid herpesvirus-2 (CyHV-2) followed by screening and monitoring studies in Goldfish (*Carassius Auratus*) in Turkey

G. Kalaycı¹, B. Özkan¹, K. Pekmez¹, M. Kaplan^{1*},
A. Mefut² and A. Anıl Çağırğan¹

¹İzmir/Bornova Veterinary Control Institute (National Reference Laboratory for Fish Diseases), İzmir/Bornova Veteriner Kontrol Enstitüsü Müdürlüğü, Erzene Mah. Ankara Cad. No:172/155 35010 - Bornova - İzmir / Turkey; ²Mediterranean Fisheries Research, Production And Training Institute, Akdeniz Su Ürünleri Araştırma, Üretme ve Eğitim Enstitüsü Müdürlüğü, Beymelek Merkez Birimi Finike Karayolu 6 km Demre / Antalya / Turkey

Abstract

Herpesviral hematopoietic necrosis of goldfish, *Carassius auratus*, is a viral disease caused by Cyprinid herpesvirus-2 (CyHV-2). Clinically, lethargy and anorexia are seen during disease progression. The disease outbreaks may result in high mortality (50-100%) at 15-25°C water temperature. This study aims to determine the infection status of CyHV-2 in aquaculture facilities producing goldfish in Turkey. The infection was first detected by polymerase chain reaction (PCR) in the autumn of 2013 during an investigation into the cause of mass mortality seen at a facility in Turkey. Following the first detection of the virus in Turkey, screening studies were performed at 4 hatcheries in 2014 and 8 hatcheries in 2016 to determine the prevalence of the virus within these hatcheries and the epidemiological spread of CyHV-2 within Turkey. In this study CyHV-2 viral DNA was detected in 1 hatchery in 2014 and 2 hatcheries in 2016. Monitoring studies of the index hatchery detected the virus in 2013 and 2014, but the virus was not detected in either 2016 or 2017.

Introduction

Goldfish, *Carassius auratus*, is a very common species cultivated among aquarium fish. Several viral diseases have been reported in relation to this species, which is important considering that its international aquaculture and distribution are widespread. Of these diseases, herpesviral haematopoietic necrosis is of great importance and it has been reported as causing outbreaks and mortality in all age groups (Jung and Miyazaki, 1995). Cyprinid herpesvirus-2 (CyHV-2)

is the pathogenic agent of the disease. CyHV-2 is included in the genus *Cyprinivirus* of the family *Alloherpesviridae* (Hanson et al., 2011; Davison et al., 2013). The virus was isolated for the first time in Japan from a severe outbreak that affected all ages of goldfish in the spring and autumn of 1992 and 1993 (Jung and Miyazaki, 1995). Similar outbreaks have subsequently been reported from goldfish in the United States of America, Taiwan, Australia, United Kingdom, Czech Republic, Netherlands

* Corresponding author's email: kaplanmurat10@gmail.com