

## SURVEILLANCE STUDIES OF LYMPHOCYSTIS DISEASE VIRUS IN FARMED GILTHEAD SEABREAM (*SPARUS AURATA*) BY REAL-TIME PCR

**E.J. Valverde, A.M. Labella, R. Leiva, J.J. Borrego and D. Castro\***

*Universidad de Málaga, Málaga, Spain*

Lymphocystis disease (LCD) is the main viral infection reported to affect cultured gilthead seabream (*Sparus aurata*) in Southern Atlantic and Mediterranean aquaculture. Its etiological agent is the Lymphocystis disease virus (LCDV), a member of the family *Iridoviridae* (genus *Lymphocystivirus*). The only adequate measures for LCD prevention in the aquaculture systems are general prophylactic practices, such as the control of fish to be introduced in the farm facilities in order to detect carrier fish. These animals may pose a risk for the introduction of LCDV in fish farms, as direct contact between fish specimens is considered the main route of LCDV spreading. More recently, asymptomatic carrier breeders, as well as virus contaminated-live food, have been involved in LCDV transmission to fish larvae.

The detection of subclinical viral infections in carrier fish requires the use of sensitive diagnostic methods. In this context, the objective of this study was to establish the applicability of a real-time PCR assay for LCDV diagnosis in surveillance studies. In addition, the assay has been evaluated with samples from a gilthead seabream hatchery, in order to prove its utility to trace the origin of LCDV in fish farms. Juvenile fish were collected at four farms with different background regarding to LCD. LCDV was detected in all farms, and 30 to 100% of fish were identified as LCDV-infected. Estimated viral load in caudal fin of asymptomatic fish was two to five orders of magnitude lower than in diseased fish. Carrier fish were also identified in the broodstock from a farm with LCD records by analysing caudal fin samples by qPCR. In this farm, the q-PCR assay developed in this study allowed the quantitative detection of LCDV in all samples collected in the hatchery, including fertilized eggs, larvae and fingerlings, and also rotifer cultures and artemia metanauplii and cysts used for larval rearing.

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