



Abstract

Potential Impacts in the Gilthead Seabream Larviculture by Nodavirus[†]

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Abstract: The nervous necrosis virus (NNV) leads to viral encephalopathy and retinopathy (VER) disease in more than 170 fish species, mainly from marine habitats. It replicates in the central nervous tissues, reaching up to 100% mortalities after a few days of infection, mainly in the larvae and juvenile stages. This is continuously spreading and affecting more species, both wild and cultured, posing a risk to the development of the aquaculture industry. In the Mediterranean Sea, it mainly affects European sea bass (*Dicentrarchus labrax*) and some grouper species (*Epinephelus* spp.). Interestingly, in the gilthead seabream (*Sparus aurata*), typically resistant to common NNV strains, great mortalities in hatcheries associated with typical clinical signs of VER have been confirmed to be caused by RGNNV/SJNNV reassortants. Thus, we have evaluated the susceptibility of seabream larvae to either RGNNV/SJNNV or SJNNV/RGNNV reassortants, as well as the larval immunity. Based on our results we can conclude that: (i) gilthead seabream larvae are susceptible to infection with both NNV reassortant genotypes, but mainly to RGNNV/SJNNV; (ii) virus replicated and infective particles were isolated; (iii) larval immunity was correlated with larval survival; and (iv) larval resistance and immunity were correlated with age of the larvae. Further investigations should be carried out to ascertain the risks of these new pathogens to Mediterranean larviculture.

Keywords: Nodavirus; reassortants; virus; gilthead seabream; larvae; immunity; aquaculture



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