Use of selenium nanoparticles to increase growth efficiency in marine aquaculture

Kianersi F.[1*]; Safahieh A.[1]; Salamat N.[1]; Parvize Salati A.[1]; Hosmand H[2].

1-Department of Marine Biology, Faculty of Marine and Ocean Sciences, Khorramshahr University of Science and Technology, Khorramshahr, Khouzestan, Iran

2-The Institute of Aquaculture of the South of the country, the Institute of Fisheries Research of the country, the organization of research, education and promotion of agriculture, Ahvaz, Khouzestan, Iran.

*Corresponding author's email: farahnaz.kianersi@gmail.com

Abstract:

The use of selenium nanoparticles can be introduced as a dietary supplement in aquatic diets due to its environmentally friendly nature and low toxicity. On the other hand, using selenium as an additive can help increase your diet and marketing quality. Therefore, in this study, the effect of selenium nanoparticles on growth factors and biochemical composition of muscle tissue has been investigated. For this purpose, 150 small fish with an average weight of 3.25 g were treated in three groups and fed 1 and 1.5 mg / kg nano-selenium, respectively, in terms of zero (control group). This study's results showed that adding selenium nanoparticles to 1.5 mg / kg increases body weight, specific growth index and weight gain percentage of yellow finch fins. There was no significant difference between control treatment with nanoparticles in the amount of moisture, protein, and fat and muscle tissue ash. The biochemical composition of muscle tissue was not affected by increased selenium nanoparticles. However, the addition of selenium nanoparticles has increased the amount of selenium in muscle tissue. In general, the results of this study showed that the importance of adding selenium to the diet goes beyond fish nutrition and causes selenium to accumulate in the muscle tissue of the muscle, which makes it a better food with higher antioxidant potential. Become a consumer. Therefore, the addition of selenium nanoparticles due to higher bioavailability and less toxicity than other forms of selenium can introduce to the industry as an aquatic feed additive.

Keywords: Selenium nanoparticle, yellowfin porgy, *Acanthopagrus latus*, Growth Indicators