A review of biofuel creatures in marine aquaculture and the impact of biological and non-biological parameters on their populations

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Abstract

According to the FAO statistics, 30 percent of the total aquaculture is related to marine aquaculture. One of the main problems in the cultivation of fish in enclosed environments is the existence of sticky or biofouling organisms that, by clinging to equipment, structures, and devices at sea and forming biofilms, destroyed them so that the statistics show that between 5-10 the percentage of the total cost spent on aquaculture is related to the control of fouling's beings, which amounts to $ 1.5-3 million. Biofouling creatures include microfouling (bacteria, diatoms and micro-algae) and macrofouling (balloons, bivalves, mosquitoes, and jellyfish). By blocking cage tours, it can disrupt water flow and slow down, accumulate excreta and food waste, reduce dissolved oxygen and increase stress in fish, and as a result, by reducing the immune system, fish are susceptible to various diseases. One of the most important characteristics of biofouling communities is the change in species composition and population structure at different times. These variations are influenced by biological factors (competition, primary seedlings, larval storage) and non-biological (temperature, salinity, pH, and bedding, Type of tour and cage and blue streams). In this study, the most important sticky organisms in aquaculture and the impact of various factors on their population are referred.

Keywords: biofouling organisms, marine aquaculture, biological and non-biological parameters