Bio-fouling organisms and their adverse impacts on Mari-culture

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Abstract

All surfaces in the marine environment are exposed to a variety of biological, physical and chemical factors that result in the formation of a complex layer of attached microorganisms and macroorganisms referred to as biofouling. This organisms are known as a settlement or an attachment of a community of usually visible plants and animals on manmade structures (Immersed structures such as hulls, navigational buoys, underwater equipment, seawater piping systems, industrial or municipal intakes, beach well structures, oil rigs and cages) and farmed species (mussels, scallops, oysters etc) exposed to seawater environment. Biofouling includes diverse organisms such as barnacles, bivalves, bryozoans, polychaetes, ascidians, hydroids, sponges and algae. The direct economic costs of biofouling control to the aquaculture industry are substantial, with estimates of 5–10% of production costs attributed to biofouling. Most control strategies are designed to treat the larval and juvenile stages of fouling organisms, although some of these strategies are effective against adults as well. Traditionally, the control of biofouling has involved costly and labor intensive mechanical processes coupled with the use of toxic antifouling coatings. In this review we will discuss the fouling of marine structures and marine organisms, the problems associated with biofouling in manmade structures and aquaculture, and a range of control or antifouling technologies currently available in the world.
Keywords: Biofouling, barnacles, marine structures, control strategies.