

ECONOMICS OF MUSSEL CULTURE

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THE economics of commercial culture of any aquatic organism is dependent upon a range of factors, most of which have biological basis. In any aquaculture practice, the immediate source of revenue is directly related to the growth and mortality rate of the species cultured and accordingly, the cost of production and marketing is solely dependent upon a number of biotic and abiotic factors and their interaction. Of all edible bivalves, the green mussels (*Mytilus viridies* L) because of their wide distribution in the estuarine and marine realms, offer an excellent scope for commercial cultivation. Our earlier studies on green mussels have revealed that due to excessive intertidal exposure and heavy mortality, the attainment of marketable size in natural populations takes considerable time of a year or more. Considering the fact that the mussels are filter-feeders and hence, if grown under constant submerged conditions and if the rate of predation by natural enemies is monitored, then the growth progression will improve, resulting in harvest of marketable animals in less time.

As reported earlier, the success of mussel culture on floating rafts, depends on the interplay of a number of biotic and abiotic parameters, some of which act as limiting factors, and hence, the criteria for selection of site have to be observed strictly. Similarly, the monetary inputs also need long term monitoring. Prolonged breeding and intermittent spotfalls make it possible to have a continuous harvesting and relaying of mussels on rope for a major part of the year. The annual estimated yield, of 480 tonnes per hectare is lower than the 600 tonnes reported from Spain but many times greater than that was recorded by Qasim and Achari. One reason for lower yield in Goa waters is due to the use of smaller crafts with shorter ropes, as these experiments were conducted on small scale. As compared to the rafts used in other countries like Spain, Netherlands, Philippines and Japan, our rafts were cheaper to fabricate and maintain but equally effective and perhaps well suited for sea conditions of our coast. The value of produce per raft was Rs. 6,900/- as against the cost of production which amounted to Rs. 2,450/-.

The raft culture of green mussels has the following advantages (i) high tolerance to wide varia-

tions in salinity, makes the species an ideal organism for cultivation in estuarine and marine environments of tropical seas (ii) growth occurs almost throughout the year and culminates in attaining marketable size within 18 weeks as against 12-13 months in wild population (iii) protracted breeding and continued settlement of spat ensure prolonged recruitment which finally gives rise to harvests in a year (iv) mussels being feeders on microscopic algal and detrital matter found abundantly in tropical waters, there is no necessity for the use of expensive artificial feeds (v) being almost immobile, harvesting of mussels becomes easy and cheap (vi) as the species can withstand a high degree of atmospheric exposure, marketing it 'live' is possible (vii) the production of high quality meat in unit time and area guarantees a very substantial return on the investment (viii) low initial and operational cost and simple technique makes the culture of green mussels feasible, both technically and economically.