

Prospects for Oyster Culture in Kerala Backwaters

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The oysters are highly esteemed sea foods in Japan, U.S.A. and Europe. It is stated that as early as the first century B.C., the Romans practised simple method of oyster culture by collecting oyster seed and growing them for food. In the world aquaculture production of 1,53,22,703 t in 1990, the molluscs accounted for 29,65,265 t forming 19.35%. In the same year, among the molluscs, production of oysters by culture ranked second only to mussels and amounted to 8,76,629 t, forming 29.6%. The important oyster producing countries are Japan, Republic of Korea, France and China and together they accounted for 78.7% of oyster production by aquaculture in 1990. There is vast untapped potential for the development of oyster culture in the tropics since the oyster grows faster and large tracts of suitable pollution free grow-out areas are available in tropical waters. Brazil, Malaysia, Philippines, Thailand and Sierra Leone have embarked upon programmes to develop oyster culture. In India oysters are not cultivated on commercial lines. However, the annual production by the harvest of wild stocks is estimated at about 2000 t shell-on weight. Consumption of oysters is limited to coastal areas and they largely remain as non-conventional food.

Current status of Oyster Culture in India

The Central Marine Fisheries Research Institute (CMFRI) has developed the technology for culture, including hatchery production of seed of the oyster *Crassostrea madrasensis* at Tuticorin. These studies showed that the rack and tray method gives a production of about 130 t shell-on/ha/year and the ren method 80 t/ha/year. The details of oyster culture technology are given by Nayar and Mahadevan (1987) and James and Narasimham (1993). The Institute is currently operating a three year Pilot Project on oyster culture in collaboration with the National Bank for Agriculture and Rural Development at Tuticorin. The "Edible Oyster Harvest Mela" was held at Tuticorin on 27-3-1993 to demonstrate all aspects of oyster culture and to commemorate the first ever large-scale harvest of farm grown oysters in the country (details of the

Edible Oyster Harvest Mela were covered in the Fishing Chimes, 1993, 13(4) : p 32-41). The harvest amounted to 24.86 t shell-on weight. Several harvests will be taken from this Pilot Project oyster farm in course of time. The Institute conducted location testing studies at Karwar, Kakinada Bay and Pulicat lake near Madras and the results showed that all these three areas are suitable for taking up oyster culture. In the current year these location testing studies are being extended to Kerala State.

Lack of entrepreneurship is the key factor that is holding up the progress towards commercialisation of the oyster culture technology in the country.

Oyster Resources of Kerala

The coastline of Kerala is endowed with a large number of backwaters, estuaries and brackishwater lakes and edible oysters and clams are regularly exploited from these waters. Recently CMFRI conducted a survey of the Kerala coast for oyster resources and these studies indicated that in 13 water bodies the standing stock of oysters (mostly *C. madrasensis*) has been estimated at about 4000 t (Rao *et al.* 1993). The important oyster production centres are Korapuzha estuary, Dharmadam and the Ashtamudi lake. Our visit to Ashtamudi on 19-7-1993 revealed that oysters measuring 50-91.5 mm in length (average 65 mm) are exploited from an oyster bed located about 2 km interior from the lake mouth. The oysters are in good condition and meat formed 10% of total weight. The meat is sold at Rs.20 -30/100 nos and is locally consumed.

Prospects for developing oyster culture in Kerala

There are several positive factors for developing oyster culture in Kerala. The foremost is the availability of natural oyster populations in several water bodies suggesting that the environmental conditions are favourable for the production of oysters.

The Southwest monsoon along the Kerala coast dilutes the backwaters to such an extent that near freshwater conditions prevail for prolonged periods and these conditions may lead to oyster mortalities, ruling out the possibility of year round oyster culture. It is reasonable to assume that October-May period, when the environmental conditions are relatively stable, should be favourable for oyster culture. During this 8-month period the oysters are expected to attain over 70 mm length since studies by Purushan *et al.* (1983) showed that in Cochin backwaters *C. madrasensis* attains 60-62 mm average length in 5-5½ months from the time of settlement on spat collectors. It may be mentioned that in several countries the oysters are marketed at 60 - 70 mm length.

There is regular exploitation of oysters for local consumption which indicates that there is demand for oyster meat. The market for oyster meat can be expanded easily to places away from the production centres. The proximity of freezing and processing plants to the oyster-producing areas is an advantage for developing the market. Apart from frozen meat, several products can be developed for market.

The Central sector of Kerala is characterised by the presence of Chinese dip nets in several backwaters for catching finfish and prawns which move with the tides. The dip nets are operated from wooden platforms which project into the water upto about 2m depth. The possibility of utilising the dip net platforms for suspending oyster shell strings merits study as it helps to cut down the expenditure for the construction of racks for oyster culture. Such a system of oyster culture does not interfere with the traditional capture fishery. An important aspect to be considered here is the velocity of water current at the area of dip net operation since strong water currents are not considered as favourable for oyster growth.

CMFRI has initiated a research programme during 1993-94 to assess the suitability of the backwaters of Kerala for developing oyster culture. The edible oyster hatchery of the Institute at Tuticorin has supplied several shell strings, with oyster spat attached, to Vizhinjam, Cochin and Calicut in the first week of October, 1993. These shell strings were suspended either from the platforms of the Chinese dip nets or from racks specially constructed near Vizhinjam, Ashtamudi, Munambam, Dharmadam and Korapuzha estuary.

Harvest of the oysters is planned by the end of May 1994, before the onset of southwest monsoon. The results of this study are keenly awaited as they have the potential to significantly contribute for the development of oyster culture in the Kerala backwaters.

References

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Conversion of Agricultural Lands for Aquaculture

Mr. D. Sudeshbabu of Bhimavaram in A.P. says in a letter to a daily news paper that "It is unfortunate that mushroom growth of fish and shrimp farms in the coastal area of A.P. has reached its peak. It appears that from Ichchapuran to Tada more than one lakh acres along the coast have been converted to shrimp farming. Even the Kolleru lake in A.P. has not been spared from being developed into a big fish/shrimp farm. The Government is watching the growth of this business as a spectator. The conversion of Agricultural lands into fish/shrimp farms not only throws hundreds of agricultural labour out of employment but also destroys ecological balance. It is no exaggeration that the fish/shrimp farming is a great threat to the inhabitants of the coastal areas in the event of floods. The authorities should ensure that the agricultural lands are not converted into aquaculture lands"
