

## LARGE SCALE PHYTOPLANKTON BATCH CULTURES FOR REARING OF MARINE PRAWN LARVAE

S. K. PANDIAN and K. SURENDRAN

Narakkal Prawn Culture Laboratory of CMFRI, Cochin-682 505

Successful rearing of penaeid prawn larvae depends on the continuous availability of desired species of phytoplankton. A breakthrough in the culture of penaeid larvae was achieved by Japanese scientist Hudinaga when he was able to culture the diatom *Skeletonema costatum* to feed the *Penaeus japonicus* larvae. Phytoplankton culture developed at the Narakkal Prawn Culture Laboratory of CMFRI for large scale rearing of *Penaeus indicus* larvae consisted chiefly of the diatom *Chaetoceros affinis*.

The culture of phytoplankton is carried out in one ton capacity white coloured fibre glass rectangular tanks having a depth of 50 cm. The tanks are placed under a glass roof to provide natural sunlight. The temperature inside the glass house ranges from 28° to 36° C during day time. To start with, filtered seawater is directly pumped into the culture tank and is fertilised

with nitrate, phosphate, silicate and EDTA. Continuous oil-free air supply from an air blower is provided through air stones. When the day-time water temperature is above 32° C and the intensity of sunlight exceeds 1,00,000 Lux for a minimum of six hours, *Chaetoceros* sp. dominates in this culture which is used as inoculum for maintenance of batch cultures. Seawater, settled for 2 days and filtered through 30 micron mesh nylobolt is pumped into the culture tanks and enriched with fertilisers as mentioned in order to develop batch cultures. 100 litres of the starter culture is added as inoculum for each batch. Under normal conditions a bloom (2 million cells per ml) is attained when the tanks are exposed to 8-10 hours of bright sunlight. This culture is used for feeding the larvae. Fresh starter cultures are prepared every week in order to ensure the vigour of the culture. ○