BREAKTHROUH IN THE SUCCESSFUL NURSERY REARING OF *Gracilaria edulis* FROM SPORES

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Scientist, Regional Centre of CMFRI, Mandapam, **achieved success in growing the spores of Gracilaria edulis to germlings under running sea water outside the aquarium. The germlings grew to a size of 34 mm after seven months of their output from the cystocarps.**

Gracilaria is a commercially valuable agarophyte and its many species are distributed throughout temperate and tropical seas. *Gracilaria edulis* is the common agar yielding seaweed in India. The life history of *Gracilaria* consists of an alternation of isomorphic phase with unisexual gametophyte. The spermatia are produced in the cavities or shallow depression of the male plants. Cystocarps are usually prominent, hemispherical structures projecting from the thallus surface having a large number of carpospores.

Basically there are two methods for the cultivation of seaweed : one by means of vegetative propagation using the fragments and the other by means of spores such as tetraspores, carpospores and oospores. Since 1972, CMFRI is involved in the experimental culture of *Gracilaria edulis*. The Institute has developed a viable technique for large scale cultivation of *G. edulis* by fragment culture methods. However, hitherto the propagation of *Gracilaria* by spore culture method was not done. In the present work germlings of *G. edulis* could be developed from carpospores and tetraspores in outdoor tank provided with round the clock circulation of seawater.

Healthy cystocarpic tetrasporic plants were brought to the laboratory in plastic bags from the natural environment. They were washed thoroughly in seawater and spread on a nylon cloth in stagnant seawater. The spores released from the plant sunk to the bottom. Below the nylon mesh different substrata like cement blocks, coir ropes and glass slides were placed for the attachment of the spores. The spores got attached to the substrata within 12 hours of their release. The plants were removed and the substrata were kept under 24 hours of seawater circulation. Moderate aeration was provided in the night.

Diameter of the spores was measured regularly using an ocular micrometer till the 15-17 days of their growth. Sporelings appeared in the form of erect frond from the spores. Once the germlings became visible their length were measured regularly using verniar-caliper. Mean diameter of the spores soon after their release was 133/m. It increased to 557/m in 17 days. Measurements of germlings were taken after 47 days of spore output. At this stage the range in the length of the germlings was 1.40 - 3.80 mm. On the completion of 165 days the range in germlings length increased to 15.90-34.00 mm.

Further work is being pursued to enhance the growth rate of the germlings by providing enriched seawater medium kept under controlled environment. Following this nursery rearing, the germlings can be transplanted to the sea for further growth.