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EXPERIMENTAL FIELD CULTIVATION OF *GRACILARIA EDULIS*

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Preliminary observations on the artificial cultivation of red algae such as *Gracilaria edulis*, *Hypnea musciformis*, *Gelidiella acerosa*, *Acanthophora delile* and *Laurencia obtusa* in the open sea at Mandaitivu revealed that *G. edulis* could be cultured more easily compared to others.

Vegetative fragments from the apex of *G. edulis* were used as propagating material, but observations indicate that fragments from other parts of the plant also could grow, although not as vigorously as the apical fragments. Planting was done from October 1982 to June 1983 and each month an experiment was set up using algae collected in that month.

Three types of substrata namely, coir ropes, coir nets and coral stones were used and it was found that the coral stones supported good growth of the alga. The alga grew to its maximum size in about 2½-3 months attaining a length of 30-35 cm and fresh and dry weights of 20-30g and 1.5 - 2.5g respectively. Planting can be started at any time of the year. However, frequent growth of species of *Chaetomorpha*, *Jania* and *Hypnea* occurred and overgrew *G. edulis* thus limiting its growth. This necessitates frequent weeding out of these algae.

Regeneration studies from harvested algae indicate that plants are able to grow at the same rate as the fresh planting material.

The agar content and gel strength of agar obtained from cultured alga were determined. The amount of agar increased with increase in growth stage of alga but there was no difference in the gel strength of agar. These data compare well with those obtained for naturally occurring *G. edulis*.

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