

AN ESTIMATE OF THE IODINE YIELDING SEAWEED *ASPARAGOPSIS TAXIFORMIS* (DELILE) COLLINS AND HARVEY FROM SOME SUBTIDAL REEFS OF SAURASHTRA COAST

ABSTRACT

The present paper deals with the potential iodine yielding seaweed resources available in the subtidal reefs of Saurashtra coast and results of the sample surveys carried out to estimate the standing crop of *Asparagopsis taxiformis*. A sheltered and calm area in the Gulf of Kutch suitable for carrying out the cultivation experiments of *A. taxiformis* is indicated.

SEAWEEDS ranks as the foremost of the prospective resources of iodine in India (Dave *et al.*, 1967). The studies on the chemical composition of seaweeds along the Indian coast show that there are a few species of seaweeds containing good quantities of iodine, of which the red seaweed *Asparagopsis taxiformis* (Delile) Collins and Harvey has the maximum content of 499.30 mg. of iodine/ 100 gm (dry weight) (Kappanna *et al.*, 1962; Dave *et al.*, 1969). This seaweed has been reported to occur on the Gujarat coast in India in rare quantities (Boergesen, 1933 ; Gopalakrishnan, 1969). The large-scale cultivation of this seaweed becomes an absolute necessity to provide a continuous supply of raw material to the seaweed based industries. With this purpose in view, the extensive surveys to locate the beds and to study the ecology of *A. taxiformis* were initiated on the Saurashtra coast in 1972-73. The present report embodies the results of the first phase of the surveys conducted from Dwarka to the outer western side of the Gulf of Kutch up to Boria Reef (68°56' -69°14'24" E. Long., 22°14'24" -22°28'N. Lat.).

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Material and Methods : The surveys were conducted on some places near Okha viz. Okha, Adatra, Dwarka, Hanumandandi, Dona and Boria Reefs in 1972-73 at the time of low tides ranging from 0.06 m to 0.38 m. The general ecological features viz., topography, climate and hydrology, tides and currents etc., of the reefs presently surveyed have been described in detail by Gopalakrishnan (1970). To estimate the exact density, transects of 1/2 m width were laid down at fixed intervals of 25 m vertically along the length of the seaweed bed where it was observed. Each transect containing the weed was completely harvested from top on the bed down to the harvestable point of sub-littoral zone. The fresh weight of the seaweed collected from each transect was made on Yamato (Japan) scale of 4 Kgs capacity after draining of water from the samples. The fresh weight of the seaweed per metre square (density) was taken as quantitative measure.

Results and Discussion : The results revealed that only two places, viz., Okha and Boria had luxuriant growth of *A. taxiformis*, while other places like Dona, Hanumandandi and Adatra were observed with hardly one or two plants, and it was totally absent on Dwarka Reef throughout the period.

Table 1 indicates the particular period during which the plant was found in maximum harvestable quantity and the area of the sea weed bed observed at particular place.

TABLE 1

Place	The sea weed bed area in sq km	Maximum (fresh) quantity in m tons.	Period
Okha	0.007	0.150	December 1972
Boria	0.060	12.000	March 1973
Total	0.067	12.150	..

Table 1 shows only the results of two places out of six, viz., Okha and Boria Reef which were found to give the maximum harvestable yield, i. e., 12.15 m tons (fresh) of *A. taxiformis*. Out of this yield, 12.00 m tons were estimated only from Boria reef in 0.060 sq km area in March '73. While on Okha Reef, the quantity was estimated to be 0.150 m. tons in 0.007 sq km area in December '72. These results have clearly revealed the abundance of *A. taxiformis* on Boria Reef. Boria Reef is afforded protection by Dona Reef on western side and Mangunda Reef on eastern side. Due to this, water remains unruffled throughout the period in the area and the surf action is very less. The reef also provide somewhat sandy substratum. These all factors support the rich growth of *A. taxiformis* along with other algae.

It is felt from the observations that Boria Reef is most suitable for conducting sea-weed cultivation experiments and also concluded that the consecutive and intensive surveys, particularly the underwater surveys of sub-littoral zone on other sea weed growing areas near this reef would throw much light on the availability of this iodophyte.

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