ALGINIC ACID CONTENT IN COMMON BENTHIC BROWN ALGAE OF SAURASHTRA COAST

ABSTRACT

Seventeen different species of brown algae that commonly occur in Saurashtra Coast are studied for their alginic acid content. Alginic content varies from 5.3 per cent *(Iyengaria)* to 16.6 per cent *(Sargassum cinereum)*. These study also reveal that, besides, *Sargassum* there is a possibility of utilising *Dictyopteris, Spathoglossum* and *Cystoseira* which are fairly available in large quantity along this coast.

BROWN algae are the important raw material for alginic acid industry. Saurashtra region is abound with seaweeds particularly, phaeophycea. Rao (1970) has recently reviewed the work in alginic acid of Indian seaweeds. Kappanna, Rao and Mody

(1962) reported alginic acid content in a few species brown algae of Saurashtra Coast. The present investigation is undertaken to ascertain the alginic acid content of different alginophytes, so as to find suitable alternative raw material for alginic acid industry.

The Authors wish to acknowledge their grateful thanks to Dr. D. J. Mehta, Deputy Director-in-Charge for kindly permitting them to publish this work.

Materials and Methods

Algae were collected, dried, powdered and preserved as explained recently (Lewis, 1973). Algae studied here are tabulated along with the place and month of collection. The alginic acid content determined according to the method of Cameron *et al.* (1948).

TABLE I. *Alginic acid content in brown algae of Saurashtra Coast (Calculated as per cent dry weight of alga)*

Alga	Place of collection	Month of collection	Alginic acid
Dictyota atomaria Hauck.	Okha Port	October	11.8
D. bartaynesiana Lamour.	,,	,,	10.2
–do–	,,	March	8.1
Dictyopteris australis sond.	,,	November	13.9
–do–	,,	January	13.4
–do–	Porbandar	December	13.7
Iyengaria stellata Boergs.	Adatra	November	7.0
–do–	Porbandar	December	5.3
–do–	Okha Port	January	8.2
–do–	,,	March	7.8
Levringia borgensenii Kylin	,,	,,	9.2
Padina tetrastromatica Hauck	Porbandar	December	6.4
–do–	Okha Port	October	8.3
–do–	Chorwad	December	9.3
Sargassum cinctum J. Ag.	Porbandar	,,	9.4
Sargassum swartzii (Turn) C. Ag.	Okha Port	November	13.6
–do–	Porbandar	December	15.3
S. tenerrimum J. Ag.	Okha Port	November	10.9
S. Vulgare C. Ag.	,,	,,	15.1
–do–	Veraval	December	13.4
–do–	Porbandar	,,	9.2
S. cinereum J. Ag.	Okha Port	January	16.6
Spathoglossum asperum J. Ag.	,,	November	8.0
–do–	,,	August	12.1
–do–	Veraval	December	10.4
S. variable Fig. et. De. Not.	Okha Port	November	10.0
–do–	,,	January	12.0
–do–	Veraval	December	14.0
–do–	Chorwad	,,	11.5
–do–	Porbandar	,,	10.1
Stoechospermum marginatum Ag. Kuetz	Okha Port	November	8.5
–do–	,,	January	8.0
–do–	,,	March	10.8
Cystophyllum muricatum (Turn.) J. Ag.	,,	November	11.9
Cystoseira indica (Thivy et. Doshi) Mairh	,,	August	15.3
–do–	,,	November	13.3
–do–	,,	January	10.1
–do–	Porbandar	December	9.2
Hydroclathrus clathratus C. Ag.	Adatra	January	9.0

Results and Discussions

The results of the investigation are given in Table 1. The alginic acid content is calculated as per cent dry weight of alga.

Plants from Saurashtra Coast studied here are comparatively poorer in alginic acid than those of Mandapam plants (Rao, 1970). However, none of the species studied here are reported by them. Alginic acid content of *Sargassum cinereum*, reported by (Kappanna *et al.*, 1962) is comparatively higher than reported here. However in case of *Sargassum tennerimum* data more or less agrees. Algae studied here not only species of *Sargassum* but the species of *Cystoseira, Cystophyllum, Spathoglossum* and *Dictyopteris* are also containing fairly good amount of alginic acid. It is worth to study in detail of their viscosity and extractability so as to exploit these algae as untapped sources of alginic acid.

Central Salt and Marine Chemicals Research Institute, Bhavnagar.

R. G. PAREKH
M. J. DAVE
E. J. LEWIS

REFERENCES

CAMERON, M. C., A. G. ROSS AND E. G. V. PERCIVAL 1948. *Jour. Soc. Chem. Indust.*, **67**: 161–164.

KAPPANNA, A. N., A. VISWESWARA RAO AND I. C. MODY 1962. *Curr. Sci.*, **31**: 463–464.

LEWIS, E. J. 1975. *J. mar. biol. Ass. India*, **17** (2) : 191-195.

RAO, U. M. 1970. *Bull. Cent. mar. Fsih. Res. Inst.*, **20**: 1-68.