



BROAD INVESTIGATION OF XANTHOPHYCEAE ALGAE FROM ISAPUR DAM OF YAVATMAL DISTRICT WITH REFERENCE TO MORPHOLOGICAL AND REPRODUCTIVE CHARACTERS



ABSTRACT:

Isapur dam of Pusad taluka and Yavatmal district is well known for the storage of freshwater; day by day the soil level is increases at the bottom of the dam due to the soil and ingredients carrying by rain fall in the dam. These entire ingredients provide nutritive materials into dam which helps the unlimited growth of algal plants. In water also present chemical compounds like phosphorous, nitrogen etc. that helps to rapid growth of algal plants. Algae are economical important aquatic plants, its very common, widely spread and principal food of many aquatic animals.

KEYWORDS: *Algae, Chlorophyceae, Isapur dam, morphological and reproductive study.*

INTRODUCTION :

Isapur dam of taluka Pusad, district Yavatmal is situated near the geographical center of India in the Vidarbha region of Maharashtra state on longitude 70, 7E and latitude 29, 9N, it is 307 meter high above the sea level. Climatically Yavatmal is tropical with summer season extending from March to June, rainy season from July to October and winter from November to February. The maximum temperature ranged from May to April up to 43 to 46°C and minimum 7 to 15°C during December to

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Isapur dam district Yavatmal is situated approximately 130 km away from the Yavatmal towards south by way to Pusad. For the enumeration of algae composite water and mud sample were collected from selected sites in dully sterilized labeled sampling bottles, for laboratory investigation the sample were preserved in 5 percent formalin and were identified using keys provided by Gonzalves and Joshi, 1946, Prescott, 1951; Tiffany and Britton, 1952 and Desikachary 1959.

For a detailed study of the algae and identification of the sample these preservation process is very important. Algae preserved in formalin solution (5% formaldehyde and 95% double distilled water). Just placed the algal material on the slides then mounted them with iodine solution and observed them under compound microscope at various magnifications and observations are recorded very carefully.

OBSERVATIONS AND DISCUSSION

In present investigatory study, algae collected from Isapur dam were observed under compound microscope. While observations total 42 genera are found which of these only one genus of *Xanthophyceae* class is observed that is, *Botrydium*. In this class chromatophores are yellow-green which contain chlorophyll a, carotenes and xanthophylls in

them. The chief food products are oil. The flagellation is of heterokontate types, that is, one flagellum is shorter than the other. The shorter one is of tinsel type while the longer one is of whiplash type. The cell wall consists of pectin and in most cases two overlapping halves are present. The sexual reproduction is rare and cell walls solidified, most of the species are fresh water adapted few are marine. When collected algae are observed, on the basis of their morphological (vegetative) and reproductive characters genera is identified mentioned in table.

Table: Member of *Xanthophyceae* algae

S. No.	Algal form	Diagnostic characters
1	<i>Botrydium spp.</i>	<ol style="list-style-type: none"> 1. It is terrestrial in form, which grows in damp soil, drying muddy banks of streams, pools ponds and rivers. 2. The plant body is multicellular filament divided into two distinct parts, that is, the first aerial part is rounded 1 to 2 mm in diameter and contains typical <i>Xanthophyceae</i> type of chromatophore and the second, rhizoidal portion found embedded in mud, the plant body is colorless and branched. 3. The outer vesicular portion has a wall, just beneath this wall there is a thin cytoplasmic layer. Several nuclei and chromatophores are embedded in this lining of cytoplasm; the chromatophores are discoid and many. They remain interconnected to each other by cytoplasm strands. Pyrenoids are found in chromatophores of young plants. The rhizoidal system has no chromatophores but numerous nuclei are found in its cytoplasm. 4. The rhizoids hold the mud or damp soil firmly. 5. The pyriform, biflagellate zoospores are produced within the vesicular part of the thallus. They escape by gelatinization of apical portion of the parent cell. Each zoospore possesses two unequal flagella (heterokontean type). 6. The sexual reproduction may be isogamous or anisogamous. The gametes are formed inside the vesicular portion, they are biflagellate and of heterokontean type. Each gamete is naked, pear-shaped and devoid of neuromast apparatus. The gametes liberated by the gelatinization of the apical portion of cell of parent cell. After fertilization, the thick walled zygote is formed.

REFERENCES

- Desikachary 1959. Report, New Delhi ICAR, pp. 1686-1959.
- Gonzalves, E. A. and Joshi, D. B. 1946. Freshwater algae in a tank in Bandra. Journal Bombay Historical Society. 46, 154-176.
- Prescott, 1951. Report, "Algae as western great lake area publication." Cranbrook institute of science bulletin, 30, 1-496.
- Tiffany, L. H, and Britton, M. E. 1952. The algae of Illinois, University of Chicago press, Chicago, pp. 406.