

EFFECT OF COPPER SULPHATE ON THE GROWTH OF *CLADOPHORA GLOMERATA* (CHLOROPHYTA)

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Copper sulphate is extensively used in various agro-industrial products and is present in sufficient amount in our environment. The effects of various chemicals and detergents have been reported (Chardard, 1970; Hosiaislouma, 1976), however, no such reference exists on *Cladophora glomerata* (L.) Kutz., growing in our waters although this alga is highly sensitive against hydrostatic pressure and other ecofactors (Shameel, 1973). The present communication deals with the effects of CuSO_4 on *C. glomerata* under laboratory conditions.

About 2 gm centrifuged fresh *C. glomerata* filaments were cultured in aquaria of 15 l capacity with CuSO_4 @ and 2 g/15 ml. A comparable set without CuSO_4 was used. Three such replicates were prepared and the aquaria maintained at 16 h light period. Observations were recorded after 10 days.

Marked differences were observed in the growth behaviour of *C. glomerata*. The thickness of cell wall increased by almost 6 times where CuSO_4 was used @ 2 gm/15 l as compared to control (Fig. 1a & c). Protoplasmic shrinkage was significantly evident, number of pyrenoids enhanced and the fresh weight of algal mass decreased in CuSO_4 used @ 1 gm/15 l. The frequency of branches was rapid and young branchlets efficiently sprouted from the main filament (Fig. 1b). The fresh weight of algal mass and the

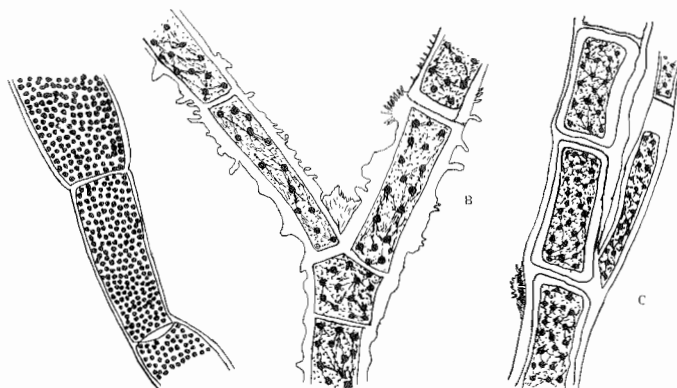


Fig. 1: Effect of CuSO_4 on *Cladophora glomerata* (x 175): a. control, b. cultured in low concentration (1 gm/15 l), c. cultured in high concentration (2 gm/15 l).

number of pyrenoids increased. The death of cells at high concentration might possibly be due to hypertoxicity (Chardard, 1970). Similar results were obtained by Hosiaislouma (1976) for *Netrium* and by Khan & Saifullah (1984) on *Oscillatoria*.

The study suggests that CuSO_4 could be used both as an algicidal agent and growth stimulant by varying its concentration.

References

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