EFFECT OF COPPER SULPHATE ON THE GROWTH OF CLADOPOPHORA GLOMERATA (CHLOREPHYTA)

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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; Hosiaissouma, 1976), however, no such reference exists on Cladophora glomerata (L.) Kütz., 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
by due to hypertoxicity (Chardard, 1970). Similar results were obtained by Hosiaislouma

The study suggests that CuSO₄ could be used both as an algicidal agent and growth
stimulant by varying its concentration.

References

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