



Decolorization of Textile Dye (CI Direct Blue 201) by Selected Aquatic Plants

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Abstract

Untreated or partially treated textile dye effluents present a significant environmental and health problem as those are finally end up into aquatic environment. Textile industry has received greater attention from national and international agencies as major pollutant source of water and to find out solutions to control or minimize water pollution. Present study was aimed to determine ability of some aquatic plants to use for CI Direct Blue 201 textile dye decolorization. Therefore four aquatic plants namely *Eichhornia crassipes* (water hyacinth), *Lemna* sp. (duckweed), *Salvinia* sp. (watermoss) and *Pistia* sp. (water lettuce) were employed in the present study and complete decolorization was recorded by *E. crassipes* at 2 days of treatment where *Pistia* sp. showed complete decolorization at 8 days. After 14 days, decolorization percentage of *Salvinia* sp. and *Lemna* sp. were reached as $79.33 \pm 2.01\%$ and $16.47 \pm 1.95 \%$ respectively. Further, root extract of *E. Crassipes* revealed that some chemical compound present in roots may have a potential effect on decolorization of the textile dye. Studies on photolysis effect on the decolorization of CI Direct Blue 201 dye was not showed any effect. Thus, the results of present study showed that *E. crassipes* is a potential aquatic plant which could be employed as a low cost alternative candidate to remove CI Direct Blue 201 from textile waste water.

Keywords: CI Direct Blue 201, Textile dye, Decolorization, *Eichhornia crassipes*, *Pistia* sp., *Salvinia* sp.