

# Phytoremediation Potential of Selected Plants for Nitrate and Phosphorus from Ground Water

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## Abstract

The phytoremediation potential of three aquatic plants namely, water lettuce (*Pistia stratiotes*), water hyacinth (*Eichhornia crassipes*), and water spinach (*Ipomoea aquatica*) for nitrate N and phosphorus from nutrient treated ground water was assessed. A total of twelve treatment combinations including four levels of nitrate (expressed as nitrate N 0, 20, 40, and 60 mg/l) and three levels of phosphorus (0, 20, and 40 mg/l) were treated for the total volume of 1 and 20 liters of water respectively, for *Pistia stratiotes* and *Eichhornia crassipes*. For *Ipomoea aquatica* ten treatment combinations with five levels of nitrate N (0, 10, 20, 40, and 50 mg/l) and two levels of phosphorus (0 and 5 mg/l) were treated to 3 liters of water. The design used was a two factor factorial with three replicates. Water was analyzed at weekly interval for nitrate N and phosphorus. *Pistia stratiotes*, *Eichhornia crassipes* and *Ipomoea aquatica* had the potential to remove nitrate N between 61.5-91.8%, 40-63.5%, and 29.3-75% during the period of six, three and three and weeks, respectively. In addition, 90-99%, 75-97.2%, and 75-83.3% of phosphorus was removed from water by *Pistia stratiotes*, *Eichhornia crassipes* and *Ipomoea aquatica* respectively, during the same period.

## Author keywords

*Eichhornia crassipes*; ground water; *Ipomoea aquatica*; nitrate pollution; *Pistia stratiotes*