Summary

The possibility of using water hyacinth (Eichhornia crassipes) in treatment systems for textile factory effluents was investigated. Initial monitoring of the existing ponding system at VTM showed that it performs well with regard to pH and chloride levels; performs satisfactorily with regard to BOD and COD, requiring attention since occassional values exceed the permissible levels. Suspended solids were high and the colour of the final discharge was also not satisfactory.

A three tank laboratory model with a retention time of 30 days without a sand filter wsa tested & its performance was comparable to that of existing treatment system at VTM.

The introduction of a sand filter to the 3-tank model system brought down the pollutant levels (pH, BOD, COD, Chlorides, and suspended solids) to be well within the permissible levels with consistancy.

A two-tank model with water hyacinths and a column type sand filter was also investigated (retention time 20 days) and it gave satisfactory results for pH, BOD, COD, chlorides, and also colour showing that retention time could be reduced to 20 days by employing ideal conditions, which as a result would reduce the land area requirement for construction of ponds.

A nitrification process was found to be in operation in the VTM ponding system as well as in the lab models used in this study. Indications were that this nitrification process would not pose a seroius problem of pollution of ground water, when discharged.

Ponding system once stabilized would have its own nutrient pool to maintain a good growth of water hyacinth cover after the initial period of uncertainity.