

## **Summary**

### **Title:**

Studies on the succession and control of aquatic flora in water bodies where Salvinia has been biologically controlled.

**Research Institute :** University of Kelaniya

### **Scientific Investigators :**

Dr S M Solangaarachchi

Prof M J S Wijeratna

**Period of contract :** From 1st August 1990 to December 1994

### **Scientific background and scope / objectives of project :**

Salvinia is being biologically controlled in several water bodies in the island. This weed has caused many physical, chemical and biotic changes in its aquatic environment such as Oxygen depletion, reduction in nutrient levels, prevention of light penetration resulting in significant changes in the flora and fauna of the habitat. The control of Salvinia may now cause reverse changes leading to unexpected problems such as rapid growth of certain other noxious weeds. For instance, Hydrilla and Eichhornia have already appeared in some water bodies where Salvinia has been controlled. These weeds too could block waterways and cause problems to irrigation, agriculture and fisheries.

Therefore monitoring of the succession of aquatic weeds may yield valuable information for the control of other weeds in future.

**Experimental method :**

Five water bodies in which Salvinia was being biologically controlled were studied in detail with respect to the species of aquatic weeds occurring in them, their ecological successive and factors influence of their successive sampling was carried out monthly.

Laboratory studies were carried out on the food and feeding of the fish species which feed on aquatic macrophytes.

**Results obtained :**

The main competing aquatic macrophytes were Salvinia sp., Nymphaea spp., Nelumbo spp. and Eichhornia sp.. In some water bodies Nymphaea spp. and Nelumbo spp. could also compete with Salvinia sp.. Chemical composition of water was not related to macrophytes succession.

A Lepidopteran larvae and Dipteran were found to damage the Nelumbo sp.. Name of the fish species present in the reservoirs play a significant role in controlling aquatic macrophytes.

## **Conclusion :**

Macrophyte species composition was different in different water bodies. The main competing species were Salvinia, Nymphaea spp., Nelumbo spp. and Eichhornia sp.. Succession depends on the relative abundance of species, the intensity and pattern of rainfall and the length of drought period. Nelumbo leaves were controlled by their natural enemies. (Lepidopteran caterpillar and Dipteran).

The fish species present in these reservoirs do not play a significant role in controlling aquatic macrophytes.

## **Papers published in work done under contract :**

### Presentations-

**Solangaarachchi, S. M. & Perera, W. D. M. S. K. (1994).** Succession of aquatic macrophytes in two water bodies where Salvinia has been biologically controlled in Sri Lanka.

Proceedings of the 50 th Annual Session of the Sri Lanka Association for the Advancement of Science, Section D, Life and Earth Sciences, Dec. 1994.

### Publications-

**Solangaarachchi, S. M. & Perera, W. M. D. S. K. (1996).** Preliminary studies on changes in distribution of aquatic macrophytes in the Lunuwila tank, after introduction of Cyrtobagous salviniae to control Salvinia molesta . Journal of the National Science Council of Sri Lanka. **24 (II)** .