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INVASION OF WATER HYACINTH (*Eichhornia crassipes*) IN SELECTED IRRIGATION TANKS IN SRI LANKA

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An invasive species (IS) is a species that has been introduced to an environment where it is non-native, or alien and whose introduction causes environmental or economic damage and harm to human health. In Sri Lanka, the Department of Irrigation (DI) has to spend over 55% of the total annual budget to remove IS from water bodies, feeder canals and inlet canals which are maintained under DI. The water hyacinth (*Eichhornia crassipes*) is one of the major invasive plants which spread rapidly on the stagnant and running water bodies. Therefore, the present study focused on the invasion of water hyacinth in three major irrigation tanks namely Parakrama Samudraya in Polonnaruwa, Karawila Wewa and Mailagamuwa Wewa in Wellawaya. Total nitrogen and total phosphorous contents of water hyacinthwere measured along with the general water quality parameters, *viz.* pH, electric conductivity, total inorganic nitrogen and total phosphorous. The results of the study showed that Parakrama Samudraya, Karawila Wewa and Mailagamuwa Wewa were invadedby water hyacinth covering 0.01%, 6.72% and 0.39%of the total surface area of the tank, respectively. In Parakrama Samudraya, Karawila Wewa and Mailagamuwa Wewa, total inorganic nitrogen in the water was 229.54 µg L^{-1}, 160.92 µg L^{-1}, and 192.42 µg L^{-1} and the concentration of total phosphorous was 133.33 µg L^{-1}, 191.42 µg L^{-1}, and 176.02 µg L^{-1}, respectively. The average pH and conductivity of the water bodies ranged between 6.9 - 7.8 and 190 - 260 µS cm^{-1} respectively. In water hyacinth plants, the highest total nitrogen (4.8%) and total phosphorous (0.82%) were recorded from the leaves of the plant. The results showed that the highest percentage of invasion and less nutrient content in water was observed at Karawila Wewa. This may due to the nutrient uptake by water hyacinth from water and spreading throughout the tanks. During the field studies, it was observed that the spread of water hyacinth in irrigation tanks creates various negative impacts on biodiversity, inland fishery and on the socio-economic activities of the people. Thus, scientific researches and regular monitoring are timely and important to address the issues related to the invasion of water hyacinth in irrigation tanks.

Keywords: Water hyacinth, Invasion, Invasive plants, Water quality

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