Structure of macrophyte communities in a freshwater wetland and their relative capacity of nitrogen retention

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Species richness of macrophyte species in the inlets, outlet and the centre of Iriyawetiya wetland at Kelaniya was determined with a view to understanding the relative contribution of constituent species in removing nitrogen from the water column and sediment of the wetland. Samples of vegetation were obtained using 0.5 m x 1 m floating quadrats, placed along line transects laid perpendicular to the shoreline.

A total of 11 macrophyte species were recorded from the three sectors of the wetland and among them only one (Isachne globosa) was found common to all three sectors. Inlet was the most rich in species than the rest of the wetland. Ipomea aquatica was the most frequently encountered species in the inlets and the outlet. Isachne globosa and Leersia hexandra which recorded the highest biomass (310 g/m² and 555 g/m² respectively) were the dominant species while Pistia stratiotes and Commelina difusa also recorded relatively high biomass/ m² in the outlet. Being an abandoned paddy field, most of the macrophytes recorded from Iriyawetiya are those that typically occur in paddy fields.

C:N of the above macrophytes was determined as an indicator of their relative capacity to remove nitrogen from water/sediment and retain them in the plant tissues. Except for Ipomea aquatica in the inlet and Isachne globosa and Leersia hexandra in the central part of the wetland, C:N of roots of all the species was lower than that of the shoot, indicating more nitrogen to be retained in the root tissues. Pistia stratiotes (a floating plant) in the inlet recorded the highest root:shoot of retained nitrogen (4.473) and Leersia hexandra (a rooted species) showed the lowest