

Impact of invasion of Cogon grass (*Imperata cylindrica*) on the physical and chemical properties of soil

M.S.P.M. Bandara*, R.M.P. Dilshara, D.K.O.B. Gunarathne, H. Senevirathne, S.K.I. Udayanthika and C. Kumari

Department of Zoology and Environmental Management, University of Kelaniya, Kelaniya

Corresponding author: *sach777net@gmail.com*

Cogon grass (*Imperata cylindrica*) is an invasive species found in many parts of Sri Lanka. This species is among the top ten worst weeds in the world. Cogon grass is found on road sides, mining sites, abandoned plantations and many other areas with disturbed soil forming a dense field like monocultures. The objective of this study was to assess the impact of the invasion of Cogon grass on soil physical and chemical properties.

The present study was conducted in a selected site at Nelumdeniya, a village located at Eastern part of Sabaragamuwa Province. Three sites were identified within the study area, of which two sites are invaded by Cogon grass with a high to low level of cover. The remaining site without the weed (undisturbed site) was used to assess the condition of soil before invasion of the weed in above sites. From each site five soil samples were extracted using a soil corer to analyze soil particles density, soil bulk density, porosity, moisture content, organic matter content, conductivity and Nitrogen content (kjeldahl method) in soil.

The moisture content of undisturbed site (0.78) was less than the two sites invaded by the Cogon grass (0.88 and 0.89). The organic matter content (OM) and the Nitrogen content of soil in undisturbed site (OM= 0.163%, N= 0.14%) was higher compared to the other two sites (OM= 0.083% and 0.107%; N= 0.13% and 0.11%). The bulk density and the porosity was higher in affected areas than the undisturbed site. The study reveals that the invasion of Cogon grass affects both the physical and chemical properties of soil.

Keywords: Invasive, soil properties, cogon grass