D-60 A comparative survey of seasonal variations of phytoplanktonic flora in rivers Gin and Nilwala

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Gin and Nilwala are 2 major rivers in the Southern Province of Sri Lanka. Both are grouped under wet zone rivers whose catchment areas (of nearly 370 sq miles each) receive an annual rainfall of 2000 - 3500 mm each year. They also exhibit extensive tributary systems, a steep drop from Deniyaya range of mountain (4000 ft) to sea level within 68 km (Nilwala) land 110 km (Gin) and seasonal flushing. Many studies have indicated that phytoplankton population in water bodies oscillate quantitatively as well as qualitatively depending on seasonal variations in water quality. They are considered as indicator organisms.

500 ml water samples were collected from the surface at 12 pre-selected sites at monthly intervals, treated with Lugol's solution at the rate of 100:1 and identified using an inverted microscope. The results are expressed as number of cells in 100 ml suspension. Twenty nine species were identified in Gin water while 28 species were identified in Nilwala. Both river systems had 8 species in common, which included 2 *Nitzchia* species, *Scenedesmus* species *and Closterium* species. The total count per month varied from 3000 to 200 (Gin) and 1100 to 360 (Nilwala). Salinity tolerant species (such as *Navicula* species and *Niteschia* species) were abundant at Nilwala while highest counts for Gin were at stations close to agrochemical residue seepages. *Closterium* species and *Tabellaria* species were the most abundant at these stations which had high nutrient status.