Application of Geographical Information Systems
on tea production in Kamburupitiya DS division.

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Tea production plays an important role in the Sri Lankan economy, and is a major foreign currency earner, bringing US$ 1.03 billion in 2007. Matara district contributes for 15 % of the total tea production in Sri Lanka. Lack of data and data maintenance hinder the process of decision making and resources planning for improving the tea production.

This study seeks to use decision support system embedded in Geographical Information Systems on tea production in Kamburupitiya Divisional Secretariat Division. Identification and mapping of distribution pattern of pH, Organic Carbon, Organic matter, Nitrogen, C/N using GIS techniques and identification of yield and fertilizer application were the objectives of the study.

Seventy seven soil samples were collected from 77 sampling sites at a depth of 5-20 cm. Soil pH was measured using the pH meter. Soil Organic Carbon and Nitrogen were analyzed using Walkley and Black rapid titration method and Kjeldhal method respectively. Data related to yield and fertilizer application was collected using a questionnaire survey. ArcView GIS software was used for spatial analysis and mapping.

Results helped to identify the distribution pattern of soil pH, Organic Carbon, Nitrogen and C/N ratio. pH Values ranges from 3.06 to 7.3. Land area with optimum pH and optimum carbon are 3046.296ha and 791.989ha respectively. Organic Carbon percentage ranges from 0.27 to 3.64 while Nitrogen percentage ranges from 0.021 to 0.235. C/N distribution ranges from 5.03-32.26. Highest tea land extent was reported as 34ha in Sapugoda and highest average green leaf yield was reported as 10630kg/ha/year at Mapalana Magin Pahala.