Abstract

Detailed Soil Survey of Porkulam panchayat in Thalapilly taluk of Thrissur district was undertaken as a part of the New Scheme “Detailed Soil Survey at Panchayat Level” to prepare an inventory of the soil, land and water resources of the panchayat. In the emerging agricultural scenario, the land quality assessment and land resource management are vital aspects for evolving proper land use plans. Generation of soil information system consisting of the soil type, depth, slope, erosion status, land capability class, land irrigability class, soil fertility status, soil conservation priority, etc at panchayat level along with the cadastral details provide authentic soil and land resource database for the formulation of micro level plans.

This report provides detailed information about the soils, their spatial distribution and relationship with other topographical features, land use and land cover, present cropping pattern and management level and socio-economic data. It also analyses the major problems especially in relation to the extent of soil and land degradation, and gives management requirements and recommendations for various uses.

Detailed soil survey of Porkulam panchayat was conducted during October - November 2012 using 1:5000 scale resurveyed cadastral maps as base maps. The panchayat extends over 1347ha. The garden lands, covering an area of 812.37 ha are mainly cultivated with coconut. The total wet land covers 507.67 ha in the panchayat, of which 31.80 ha is converted for miscellaneous purposes. The major soil series of the garden land is Velappaya with a total area of 723.92 ha followed by Anjur (47.58 ha) and Koratty (40.87 ha) series. The major wetland series is Konchira (227.96 ha) followed by Kizhapallikara (85.32 ha). The other wetland soils encountered in the panchayat are Perumpuzha, Manalur, Mulayam and Kolazhi.

Based on the characteristics of the identified soils, three land capability classes such as II, III and IV and three land irrigability classes such as 2, 3 and 4 are recognized. IIIe is the major land capability class and 3t is the major land irrigability class. Other interpretative studies like hydrological grouping, crop suitability, soil fertility and production potential were also conducted and
interpreted in this report. Major problems encountered in the panchayat and remedial measures to overcome these problems are also included in detail. Interpretative maps are also appended.

The soil mapping units representing series, texture, depth, slope and erosion of each land parcels were identified. The results are systematically arranged in this report and detailed descriptions of each management units are given with specific recommendations based on soil fertility analysis. The soils identified in the panchayat are classified as per the USDA Soil Taxonomic Classification System which enables information exchange and better understanding of soils.

Systematic collection of surface samples was done and these samples were subjected to detailed analysis for macro and micro nutrients and other soil properties which directly affect the plant growth. The results are interpreted in detail in the report. A major portion of the soils in the panchayat were medium acid in soil reaction. About 80-90% of the area of the panchayat was medium to high in available nitrogen and low to medium in available phosphorous and potassium. All soil series were adequate in sulphur content while Koratty and Anjur series exhibited deficiency in available magnesium. While iron, manganese, zinc and copper availability was sufficient in all the soils, boron deficiency was exhibited by all soil series except Velappaya in the gardenlands and Konchira in the wetlands. Information on level of plant nutrients in each land parcel may be gathered from the soil fertility map and nutrients may be applied according to the crops grown as detailed in the report.