Abstract

Detailed soil survey of Thenkurissi panchayat (2992 ha) was undertaken as a part of the centrally sponsored scheme, RSVY to inventories the soil, land and water resources of the panchayat. The soil perspective and its role in improving agriculture production and productivity are given special stress during the survey.

Seven soil series are encountered in the panchayat during the coarse detailed soil survey. They are K.K.Pathy, Nariparachalla, Ozhalapathy, Thenampathi, Athipotta, Kavasseri, and Tharur. Among these soil series Athipotta, Kavasseri and Tharur series are encountered in the low land regions of the panchayat. Paddy is the major crop cultivated in the panchayat and is cultivated in an area of 1400 ha. Coconut, mango, toddy palms, tapioca, pepper, ginger, cashew, jack etc are the other crops cultivated. Vegetables are seen cultivated in the paddy lands during summer months.

The soil mapping units representing individual mapping units are identified. Systematic collection of surface samples were done from each land parcels 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 were systematically arranged in this report and detailed descriptions of each management units are given with specific recommendations based on soil fertility analysis. Various interpretative maps were also prepared for easy understanding. 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. In general this report gives an account of complete soils and land resources of the panchayat and includes soil maps.

Composite surface soil samples were collected from individual land parcels and analysed for soil reaction, available micro and micro nutrients and for various other parameters affecting the normal plant growth. Nearly 1814 samples were analysed for evaluating surface soil fertility.
Nearly 846 composite surface samples were collected from different soil series in the up lands for detailed analysis. The surface samples showed vide range of soil acidity. Nearly 2 per cent of the samples were extremely acid, 12 per cent very strongly acid, 35 per cent strongly acid, 30 per cent moderately acid, 13 per cent slightly acid and the rests neutral in soil reaction. All the land parcels with moderate or high acid ranges require liming. The availability of nitrogen was low in about 44 per cent, medium in 50 per cent and high in the rest. Nearly 29 per cent of the samples were low, 38 per cent medium and the rest high in the availability of phosphorus. About 42 per cent of the samples were low, 29 per cent medium and the rest were high in available potassium. More than 90 per cent of the samples were adequate in available zinc and copper. Nearly 7 per cent in case of zinc and 8 per cent in case of copper showed deficiency. All the land parcels in the up land with low available nitrogen, phosphorus, potassium need to be treated with 125 per cent of the recommended dose and only 60 per cent is required if the availability is high. In land parcels with medium availability recommended dose should be applied. The land parcels with low available zinc and copper should be treated with foliar spray when cultivation is practiced.

About 968 samples from the wet lands were collected and tested. The surface samples showed vide range of soil acidity. Nearly 1 per cent of the samples were extremely acid, 22 per cent very strongly acid, 37 per cent strongly acid, 23 per cent moderately acid, 10 per cent slightly acid and the rest neutral in soil reaction. All the land parcels with moderate or high acid ranges require liming. The availability of nitrogen was low in about 54 per cent, medium in 39 per cent and high in the rest. Nearly 32 per cent of the samples were low, 43 per cent medium and the rest of the samples were high in the availability of phosphorus. About 55 per cent of the samples low, 26 per cent medium and the rest high with respect to available potassium. More than 90 per cent of the samples were adequate in available zinc and copper. Nearly 10 per cent in case of zinc and 7 per cent in case of copper showed deficiency. All the land parcels in the up land with low available N, P, K need to be treated
with 125 per cent of the recommended dose and only 60 per cent is required if the availability is high. In land parcels with medium availability recommended dose should be applied. The land parcels with low available Zn and Cu should be treated with foliar spray when cultivation is practiced.

Information on level of plant nutrients in each land parcels may be gathered from the soil fertility map and nutrients may be applied accordingly to the crop plants. It is necessary to adopt incorporation of green manure crops in paddy lands to increase the available nitrogen content. These green manure crops should be ploughed back into the soil at correct stages of growth to ensure maximum expected advantage. Farm yard manure or compost should be added regularly in the soils to enhance the organic carbon content of the soil.