AN OVERVIEW OF KERALA SOILS AND STRATEGIES TO CONSERVE AND SUSTAIN SOIL HEALTH

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Kerala occupies 1.18 per cent of the total land area of India.Eight of the twelve soil orders as per the USDA soil taxonomy are found in Kerala because of the unique climatic conditions and physiographic features of the land and they come under the agro-ecological sub-regions 19.2 and 19.3 defined by National Bureau of Soil Survey and Land Use Planning. Eighteen major soil types of Kerala grouped as per the combination of land form, local place name and soil properties and its specific fertility constraints and advantages are described. Stressing the importance of soil health, practical management options to conserve the soil and maintain its fertility and productivity are described.

Key words: Soil types, Soils of Kerala, Soil health,Soil fertility management

INTRODUCTION

The unique climate of Kerala, namely a typical tropical sub humid climate with heavy rain fall (>3000 mm annually) during the monsoon season (June to September) and a hot and dry summer (January to April), the undulating topography from the Western Ghats to the foothills and the plains towards the Arabian coast interspersed with 44 rivers has led to development of a variety of soil types in the small geographic area of the state. The total area of the state is about 39000 sq. km which constitutes only 1.18 per cent of the land area of the country. Presence of a large network of rivers, streams, and lakes makes the entire state of Kerala as a macro-watershed with significant implications for soil formation.

Soils of Kerala

As many as eight of the twelve soil orders as per USDA soil taxonomy are found in Kerala (Soil Survey Organization, Kerala, 2007). They are (i) Histosols (as patches of rich organic soils in Kuttanad), (ii) Spodosols (sporadically seen on the coastal sandy levees and beach deposits in the coastal plains of Alappuzha), (iii) Vertisols(confined to the black cotton soils of Palakkad gap, extending eastward to Tamil Nadu), (iv) Ultisols (laterite soils with low base saturation in the plains), (v) Alfisols (laterite soils which are rich in exchangeable bases), (vi) Mollisols (small patches of soils in the rain-shadow areas of Western Ghats with less than 1000 mm rainfall, sloping towards east and are rich in bases, (vii) Inceptisols (juvenile soils developed on stabilized land

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