# Soil Physical Properties and Fertility Status of Ayacut Area Under the Thotapalli Irrigation Project of North Coastal Andhra Pradesh

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**ABSTRACT**

A reconnaissance survey was conducted with 1:50,000 scale in the ayacut area of Thotapalli major irrigation project of North Coastal region of Andhra Pradesh. Based on soil correlation studies six representative soil profiles were selected from Devarapalli, Gujjangivalasa, Patikivalasa, Gangada, Aamiti and Maddivalasa villages under Srikakulam and Vizianagaram districts. Horizon wise soil samples were collected from each profile and analysed for physical, physico-chemical and chemical characters. The data revealed that the soil texture was sandy loam to sandy clay loam in gently sloping uplands, while it was clay loam to clay in cultivated plains. The soil physical constants like bulk density was recorded low at surface horizon compared to subsurface layers, whereas other properties like maximum water holding capacity, pore space and volume expansion were followed the trend as that of clay. The soils were acidic to alkaline in reaction, non saline, low to medium in organic carbon content. The soils in general were low in available nitrogen, low to medium in available phosphorus and medium to high in available potassium status, while the micronutrients were sufficient in respect of manganese and copper however, zinc and iron were deficient to sufficient. Available nitrogen, phosphorous, potassium, zinc, iron, copper and manganese were positively correlated with organic carbon content, while available phosphorous and micronutrients were negatively correlated with soil pH.

**Keywords :** *Soil physical properties and nutrient status, pH and EC*