

Assessment of soil physical and physico-chemical properties of modukuru village of Tsundur mandal in Guntur district using geospatial tools

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ABSTRACT

A total of 202 surface soil samples from Modukuru village, Tsundur mandal, Guntur district, Andhra Pradesh were collected at 300 m grid interval and assessed for soil physical and physico-chemical properties. Soil physical properties like soil colour, soil texture, Water holding capacity and Aggregate stability. Physico-chemical properties like soil reaction (pH), electrical conductivity and organic carbon. The analytical data were statistically interpreted like range, mean, standard deviation and coefficient of variation were calculated and delineated spatial variability maps for soil reaction (pH), electrical conductivity and organic carbon by using QGIS 3.42 software. Results showed that soils were neutral to slightly alkaline with non-saline with low to medium in organic carbon. Colour of the soils ranged between 5YR to 10YR with value and chroma were 2 to 4 and 1 to 2, respectively. Majority of the soils were clay textured, water holding capacity ranged between 17.5 and 71.3 per cent and aggregate stability of the soils ranged from 28 to 88 per cent. By generation of spatial variability maps it has been concluded that pH, EC and OC plays a major role availability of nutrients and in crop development.

Keywords: *Geographic Information System (GIS), Grid sampling and Spatial variability*