Soil physico-chemical properties and nutrient status of Tekkali mandal of Srikakulam district, Andhra Pradesh

B Sravani, P Gurumurthy, I Usharani and A Upenderrao

Department of Soil Science and Agricultural Chemistry, Acharya N G Ranga Agricultural University, Agricultural College, Bapatla-522101, Andhra Pradesh, India

ABSTRACT

Seven representative soil profiles of Telinelapuram, Thirlangi, Lingalavalasa, Parasurampuram, Ravivalasa, Narsingapalli and Naupada villages from Tekkali mandal of Srikakulam district of Andhra Pradesh were exposed and horizon-wise soil samples were collected from each profile and analyzed for soil pH, EC, organic carbon, CEC and available micro and macro nutrients. The data revealed that the soils exhibit slighty acidic to moderately alkaline (soil pH 6.32 to 8.65) in nature, non saline (EC 0.07 to 0.89 dS m^{-1}), low to medium in organic carbon content (0.08 to 0.75 per cent). Cation exchange capacity of soils ranged from 8.30 to 19.15 Cmol/kg soil. The exchangeable calcium in profiles of study area was the most dominant cation, which ranged from 2.40 to 11.00 cmol (p^{+}) kg^{-1} soil. The results of laboratory data revealed that soil exchangeable complex of all the profiles studied was dominated by base cations in the order of$Ca^{2+}>Mg^{2+}>Na^{+}>K^{+}$. The percent base saturation of the soils ranged from 43.48 to 81.54 per cent. The soils were low to medium in available nitrogen (46.3 to 285.7 kg ha^{-1}), low to medium in available phosphorus (6.16 to 44.40 kg ha^{-1}), medium to high in available potassium (170.61 to 597.13 kg ha^{-1}) and sufficient in sulphur (12.09 to 27.78 mg kg^{-1}). About available micronutrient status, soil available zinc content ranged from 0.07 to 0.86 ppm, available iron ranged from 2.03 to 15.32 ppm, available manganese ranged from 3.11 to 18.07 ppm, and available copper ranged from 0.45 to 3.92 ppm. The available micronutrient status of soils indicated the soils were deficient in available zinc (except surface layer of profile3), sufficient in iron, manganese and copper. The statistical analysis of the results for correlation coefficients (r) revealed that 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.

Key words: *Available nutrients, Organic carbon, pH, E.C and Tekkali mandal.*