

IMPACT OF SOIL AMENDEMENTS ON pH AND ELECTRICAL CONDUCTIVITY OF SOIL IN MAIZE.

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A field experiment was carried out at college farm, College of Agriculture, Rajendranagar, Hyderabad to evaluate the efficacy of different soil amendments on physico- chemical properties (pH and EC) of soil in maize crop. The soil was sandy loam in texture. The treatments were viz., T₁:Vermicompost @ 5 t ha⁻¹, T₂:FYM @ 10 t ha⁻¹, T₃-tanksilt @ 50 t ha⁻¹, T₄-biochar @ 10 t ha⁻¹, T₅-control (no fertilizer was applied), T₆- RDF (NPK- 200, 60, 50 kg ha⁻¹ respectively). Recommended Dose of Fertilizer (RDF) was applied commonly for all treatments from T₁ to T₄. Soil pH was not influenced significantly by amendments and RDF. However, a non significant increase in pH was observed with the application of amendments like tanksilt, vermicompost, biochar, FYM and RDF (7.70, 7.81, 7.80, 7.80 and 7.82) respectively compared to the control (7.75). The alkaline nature of the biochar exchanges H⁺ with the surrounding soil, causing a rise in soil pH. The EC (Electrical Conductivity) of the soil was not influenced significantly by application of amendments and RDF. But, a non significant increase in EC was observed with the application of amendments like tanksilt, vermicompost, biochar, FYM and RDF (0.20, 0.19, 0.21, 0.18, 0.18 dS m⁻¹) respectively compared to the control (0.17 dS m⁻¹). Ebin et.al (2007) reported that the long-term application of fertilizer and manure in a maize- wheat-cowpea cropping system did not affect the soil pH and EC. The EC in 100% NPK + FYM and 100% NPK treatments was higher than in control and 100% N treatments. This small increase in EC might be due to increase in base saturation of the soil where optimum rate of fertilizer and manure was applied compared to the control plots (Hati et al., 2007).

Keywords: Maize, stover, tanksilt, vermicompost and biochar.

REFERENCES

- [1] Ebin, M. R., Pramod, K., Sing, D and Ashok, K. 2007. Soil quality response to long-term nutrient and crop management on a semi-arid Inceptisol. *Agriculture Ecosystem & Environment*.118: 130-142.
- [2] Hati, K. M., Swarup, A., Dwivedi, A.K., Misra, A.K and Bandyopadhyay, K.K. 2007. Changes in soil physical properties and organic carbon status at the topsoil horizon of a vertisol of central India after 28 years of continuous cropping, fertilization and manuring. *Agriculture, Ecosystems and Environment*. 119: 127-134.