

**Effects of crop rotation on organic carbon status of an Indian vertisol**

Agronomic practices significantly influence soil properties with continuous cultivation, particularly under intensive annual crop farming. Hence, an experiment was conducted to determine the effects of crop rotation on organic carbon status of an Indian Vertisol. (Typic Pellustert) in relation to farmyard manure (FYM) and chemical fertilizer applications. The experiment was carried out in 1996 in a long-term experiment at field established in 1989 at patancheru (17.5°N,78.5°E), Andhra Pradesh, India, Main

treatments were two crop rotations, namely “maize+chickpea-maize+safflower” and “soybean/pigeonpea-millet +safflower”. The sub treatments were two fertilizer and traditional FYM (farmer practice). Each treatment was replicated four times and the treatments were arranged in a split plot design. Soil samples were collected before sowing of safflower from both crop rotations from the surface(0-15cm) and sub surface(15-30cm) depths of soil. Soils were analyzed for organic carbon content by the Nelson and Sommers procedure.

Results showed that organic carbon content of surface soil with FYM and chemical fertilizer application was 0.53 and 0.58A% in the “maize+chickpea-safflower” crop rotation and it was 0.68 and 0.64% in the “soybean/pigeonpea-millet+safflower” crop rotation, respectively. It indicates that crop rotation has a greater influence than farmer application of FYM on improvement of organic matter content in this Vertisol. This study reveals the significance of crop rotation on improvement of soil organic matter in farming lands.