

PHYSIO-CHEMICAL PROPERTIES OF PEARL MILLET-WHEAT CROPPING SYSTEM AND ITS IMPACT ON CARBON STOCKS OF SOILS OF EASTERN HARYANA

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Abstract—The experiment was conducted to study the impact of Pearl millet-Wheat cropping system on Physio-chemical properties and carbon stocks of soils of eastern Haryana. The pearl millet-wheat cropping system is an important cropping system of eastern Haryana which is predominantly adopted in Sonapat and Jhajjar districts and in parts of Rohtak and Palwal districts of eastern Haryana. The soil samples were collected from selected fields under Pearl millet-Wheat cropping system as well as from adjacent uncultivated fields to facilitate comparative analysis. A total of five profile samples each from six depths (0-15, 15-30, 30-45, 45-60, 60-90 and 90-120 cm) were collected and their physio-chemical properties and carbon stocks was analysed. Bulk density of the uncultivated field varied from 1.54 to 1.55 Mg m⁻³ whereas cultivated field bulk density varied from 1.55-1.56 Mg m⁻³ as observed from 0-15cm layer to 90-120cm layer. NPK and soil organic carbon status of uncultivated and cultivated fields was found in low to medium ranges. The soil carbon stock (Mg C ha⁻¹) in the uncultivated fields was found significantly higher as compared to adjoining cultivated fields which signifies the availability of carbon stock potential in cultivated fields.