

SOIL QUALITY ASSESSMENT OF MILAK TAHSIL, DISTRICT RAMPUR (UTTAR PRADESH) UNDER RICE -MENTHA+WHEAT FARMING SYSTEM

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Abstract : Macro and micro nutrients are important soil elements that control its fertility. Soil fertility is one of the important factors controlling yields of the crops. Soil characterization in relation to evaluation of fertility status of soil of an area or region is an important aspect in context of sustainable agriculture production. Because of imbalanced and inadequate fertilizer use coupled with low efficiency of other inputs, the response efficiency of chemical fertilizer nutrients has declined tremendously under intensive agriculture in recent year. In the present investigation, an attempt has been made to examine the chemical properties of soil in rice – mentha+wheat farming system. The study area covers Milak Tehsil of Rampur district of Uttar Pradesh. Soil samples of 0-15 cm depth were collected from 326 sites covering 21 gram panchayats. Collected soil samples were air dried in shade, crushed gently with a wooden roller and pass through 2.0 mm sieve to obtain a uniform representative sample. The processed soil samples were analyzed by standard methods. The pH varied from 5.2 to 9.2, organic carbon content varied from 3.9 to 6.9 g Kg⁻¹ soil. The available N content was varied from 156.96 to 259.32 kg ha⁻¹ with an average value of 224.32 kg ha⁻¹. The available phosphorous content varied from 21.79 to 56.53 P₂O₅ kg ha⁻¹ with a mean value of 37.18 P₂O₅ kg ha⁻¹. Status of available potassium in the ranged from 158.20 to 283.25 K₂O Kg ha⁻¹ with an average value of 211.92 K₂O kg ha⁻¹. Cu in the surface soil was found to sufficient and varied from 0.258 to 1.708 mg kg⁻¹ the iron content varied from 3.214 to 16.852, Mn from 1.701 to 8.351 mg kg⁻¹. The available Zn in surface (0-15 cm) in soil ranged from 0.425 to 1.708 mg kg⁻¹ soil in rice-mentha+wheat. Nutrient status regarding to the available macro and micro nutrient in surface soil indicate that soils are low in available N and medium in available P and K and in general marginal in available Cu, Fe, Mn and Zn. Normal to slightly alkaline in reaction, low to medium in organic carbon content.

Keywords: Soil fertility, Macro & micro nutrients, Rampur, Farming system

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