



Evaluation of soil fertility status in red and yellow soil of Navagarh block in Janjgir-Champa district of Chhattisgarh

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Abstract : A Study was undertaken to evaluate the fertility status of Navagarh block, Janjgir-Champa district, Chhattisgarh, covering 112 villages of Navagarh block and 78 villages under red and yellow soil during 2011-2012. The systematic collection of samples in geo-referenced surface (0-0.15,m depth) soil samples from 1984 sites representing, red and yellow soil using Global Positioning System and mapped on 1:4000 scale. The samples were analyzed for DTPA-extractable zinc, copper, iron and manganese and available nitrogen, phosphorus and potassium content for delineation the fertility status in relation to salient physico-chemical characteristics. The statistical description of soil characteristics indicated that the pH of the soils varied from 4.5 to 7.2 (mean- 5.73). The electrical conductivity of soil-water suspension ranged from 0.05 to 0.78, dS m⁻¹ (mean- 0.16, dS m⁻¹). The DTPA-extractable copper content ranged from 0.16 to 10.84, mg kg⁻¹ (mean- 2.13, mg kg⁻¹). The available Mn, Fe and Zn content ranged from 0.32 to 64.8 (mean- 31.57), 3.24 to 51.42 (mean- 26.52) and 0.16 to 5.4, mg kg⁻¹(mean- 0.9 mg kg⁻¹), respectively. These results indicated that zinc is likely to constraint for crop production in soil of Navagarh block. A positive significant correlation was found between pH and EC. Further, the available copper, manganese and iron content showed high status, whereas about 34.42 per cent area under soils delineated as deficient in available zinc content.

Key Words : Fertility status, Micronutrients, Red and yellow soil (*Inceptisol*)

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