

Spatial Fertilizer Recommendation at Rythu Bharosa Kendra (RBK) level using Geographic Information System

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ABSTRACT

The spatial recommendation of chemical fertilizers based on soil test values is pivotal in achieving the targeted yields by improving nutrient use efficiency and soil nutrient balance. The major crops of Bandarupalli RBK are rice and groundnut with an area of 416 ha. Based on application of Soil Test Crop Response (STCR) equations targeted yields in rice and groundnut were calculated for study area based on analytical results of the soil samples collected from 120 locations. The spatial fertilizer recommendation maps were prepared using *ArcGIS* tools for nitrogen, phosphorous and potassium fertilizers to rice and groundnut. The spatial fertilizer recommendation for targeted yields revealed that 13.3, 40.8, 35.0, 10.8 per cent, 47.5, 25.8, 17.8, 7.5, 1.4 per cent and 12.5, 18.3, 12.5, 55.8, 0.83 per cent study area was recommended with <100, 100 – 130, 130 – 160, 160 -190 kg ha⁻¹, <0, 0- 20, 20 – 40, 40 – 60, 60 – 80 kg ha⁻¹ and <0, 0 - 30, 30 - 60, 60 - 90, 90 - 120 kg ha⁻¹ of N, P₂O₅ and K₂O fertilizers respectively to rice crop for getting targeted yield of 4500 kg ha⁻¹. For groundnut, 15.0, 36.6, 35.0, 13.3 percent, 40.8, 21.6, 27.5, 10.0 per cent and 6.6, 20.0, 55.8, 17.5 per cent study area was recommended with <40, 40 - 60, 60 - 80, 80 - 100 kg ha⁻¹, <0, 0 - 10, 10 - 20, 20 - 30 kg ha⁻¹, <0, 0 - 30, 30 - 60, 60 - 90 kg ha⁻¹ of N, P₂O₅, K₂O, respectively for getting targeted yield of 3000 kg ha⁻¹ in study area.