

Research Article

Package of nutrients application for ravinous land of Bundelkhand on watershed basis

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Summary

The study on nutrients requirement for degraded ravinous land was carried out during three consecutive years in pilot area of Model Watershed Jalaun, Bundelkhand, U.P. The main objective of this study was to work out the nutrients requirement of different crops on the basis of watershed technology. The different varieties of gram gave maximum yield at 20 kg N+60 kg P₂O₅/ha. Similarly, the different varieties of field pea's and cv.K75 of lentil also yielded highest grains at 20 kg N+60 kg P₂O₅/ha. Cultivar T 21 and UPAS 120 of arhar gave maximum yields at 60 kg P₂O₅/ha in association of recommended dose of nitrogen. Application of 60 kg P₂O₅/ha in association of recommended dose of nitrogen gave highest grain yield of urd by 10.43 q/ha. Gram, field pea's and wheat raised after soybean responded up to use of 25 kg N/ha, 25 kg N/ha and 160 kg N/ha, respectively. The different varieties of soybean gave maximum yield at 20 kg N+80 kg P₂O₅ + 40 kg K₂O/ha. Likewise, the different varieties of mustard gave maximum yield at 150 kg N/ha as compared to lower doses of nitrogen. Mustard gave maximum yield by 33.80 q/ha with the use of 40 kg S/ha in conjunction of 80 kg N + 40 kg P₂O₅ + 40 kg K₂O/ha. Varsha variety of jowar yielded maximum grains at 80 kg N/ha on the both class of land *i.e.* II and III under rainfed situation. The direct seeded rice gave maximum yield of 29.50 q/ha at 80 kg N/ha in the catchments area of nala bund. Application of 50 per cent nitrogen through F.Y.M. in association of 50 per cent nitrogen through urea provided higher yields of sugarcane, urd and mustard over the 100 per cent recommended dose of N through both urea and F.Y.M. Therefore, on the basis of above results, farmers may be advocated for application of 25 to 35 per cent more nutrients especially NPK over their recommended doses for reaping the better yield from the reclaimed ravinous land.

Key words : Ravines affected land, Nutrients management, Model watershed, Conservation agronomical practices, Catchments area of nala bund

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Introduction

The nutrients management in dryland area on watershed basis play a decisive role in upholding the productivity of crops and maintaining eco-friendly system. The drylands are mostly degraded, denuded and deficient in nutrients. The shallow to deep gullies formed on these soils accelerate the erosion process due to severe runoff. The gradual loss of plant nutrients from the upper surface of soil with run off makes them unproductive. Under this adverse environment the sustainable production of crops is only possible with the

use of different type of plant nutrients.

Agriculture of Bundelkhand region suffers from varieties of problem which are quite different from the alluvial tract of Uttar Pradesh. About 70 per cent of the culturable land is rainfed which are generally denuded, degraded and deficient in plant nutrients. The annual rainfall of this region is about 930 mm and total rainy days are about 60 as a result crops grown in this area show symptoms of scarcity of moisture at critical stages of the crops due to higher evapotranspiration. The farming approach in this area has been traditionalized by the farming majority and consequently the economic condition