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Abstract:	An experiment was conducted in farm area of Ranchi Agricultural College, BAU during the year 2011-12 to study the indigenous nutrient supply from nutrient omission plots with and without incorporation of crop residues and their response on yield of crops under Maize-Wheat cropping system. Plant samples were collected at different physiological stages of crops (Maize-V4, V10 and at harvest & Wheat-CRI, PI and at harvest). Soil samples at two depths 0-15 and 15-30 cm were collected at different physiological stages of crops for analysis of physico-chemical properties (pH, total N, organic carbon, available N, available P, available K, available S, C:N ratio and 1 N HNO3 extractable K). With crop residues, grain yield of both maize and wheat recorded under SSNM (81.33 and 57.80 q/ha, respectively) was higher as compare to nutrient omission plots, but remained at par with the application of optimum NPK (83.67 and 51.90 q/ha for maize and wheat, respectively). However, with respect to system yield, SSNM was higher than the NPK treatment. Reduction in system yield was highest in N omission plots (84%) followed by P (24.9%) and K omitted plot (19.1%) with incorporation of crop residues. Whereas, reduction in yield without incorporation of crop residue followed the order N (- 84%), P(-39.3%) and K(-31.3%). Nutrient concentration and total uptake varied with the treatments, maximum N, P, K and S uptake were found with the application of NPK under maize-wheat cropping system with incorporation of crop residue. Whereas, maximum N, P, K and S uptake were found with the application of SSNM under maize-wheat cropping system without incorporation of crop residue. Omission of nutrients influenced the fertility of soil with respect to available N, P, K and S values. Crop residue incorporation enhanced nitrogen, potassium and sulphur harvest index in nutrient omission plots but not much influence on phosphorus harvest index in maize crop while increase in S harvest index only was observed after incorporation of crop residues in wheat crop. Apparent recovery of applied N was increased 15% in maize-wheat cropping system with incorporation of crop residues. Per-cent applied N fertilizer that was taken up by the crop (apparent recovery of applied N) was higher in maize crop with residue as (71%) as compared to without residue (51%). The N internal use efficiency of maize, wheat and maize-wheat cropping system was (43.50 & 55.88), (35.52 & 34.40) and (48.60 & 54.69 kg grain yield per kg N applied) with & without incorporation of crop residues. With the incorporation of crop residues the nutrient internal use efficiency increased by 3% in wheat crop. Increment in B:C ratio and net return in all (N, P & K) omission plots was recorded in maize-wheat sequence with incorporation of crop residues. Highest B:C ratio was recorded in SSNM among all the treatments in maize, wheat as well as maize-wheat sequence with and without incorporation of crop residues. The Site Specific Nutrient Management along with recycling of crop residues increased B:C ratio, nutrient efficiency and yield of crops under maize-wheat system.
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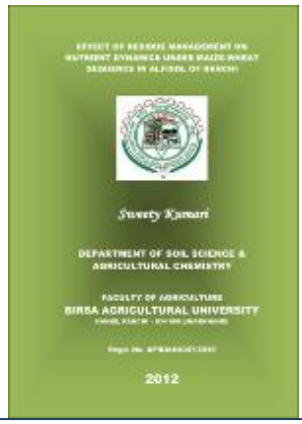
1384 Sweety Kumari.pdf	3.2 MB	Adobe PDF	

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