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Title:	EFFECT OF CROP RESIDUE INCORPORATION IN HYBRID MAIZE ON K FRACTION IN ACID SOIL OF RANCHI
Publisher:	Birsa Agricultural University, Ranchi, Jharkhand-6
Language:	en_US
Type:	Thesis
Pages:	74
Agrotags:	null
Keywords:	EFFECT OF CROP RESIDUE INCORPORATION IN HYBRID MAIZE ON K FRACTION IN ACID SOIL OF RANCHI

Abstract:	The experiment was conducted in kharif 2016 on hybrid Maize comprising five treatments with and without incorporation of crop residues viz. NPK (250:120:120 kgha- 1), N0PK (0:120:120 kgha-1), NP0K (250:0:120 kgha-1), NPK0 (250:120:0 kgha-1) and SSNM (200 kg N: 90 kg P: 100 kg K ha-1) to study the effect of crop residue incorporation in hybrid maize on K fraction. The maize crop was shown on 13th June and harvesting on 29th September. Results showed among the different treatments combined application of all N, P, K (250:120:120 kgha-1) in the form of fertilizers, gave highest yield 87.69 and 83.63 qha-1 in with and without crop residues incorporated plots respectively. Minimum yield obtained in the N omitted plots (16.98 and 16.00 qha-1 with and without incorporation of crop residues respectively). Maximum nutrient uptake (N 278.74 & 265.89, P 45.77 & 43.69, K 112.8 & 109.15 kgha-1) was obtained when combined application of all N,P,K(250:120:120 kgha-1) nutrients were applied and minimum (N 48.34 & 45.39, P 7.29 & 6.82, K 27.35 & 26.07 kgha-1) uptake was observed in the treatments where N was omitted. Whenever, uptake was compared with incorporation of crop residues and without incorporation of crop residues, total uptake of nutrients was more in crop residues incorporated plots than without incorporation of crop residues. Total nutrients uptake (N, P, K) of all treatments were higher with incorporation of crop residue. However maximum response of crop residue (N 10.52%, P 11.25% & K 8.37%) were found in the K omitted plots. Crop residues incorporation showed higher agronomic efficiency of nutrients & partial factor of productivity than without crop residues incorporated treatments. Results showed that the percentage contribution of different K fractions towards total K in surface soil followed the order: Water soluble K > Exchangeable K > Non – Exchangeable K > Lattice K. Among the different treatments, crop residue incorporated soil showed higher value of all forms of K {water soluble K (11.28 – 42.04 kgha-1), Exchangeable K (114.56 – 312.2 kgha-1), Non – Exchangeable K (777.95 – 1003.46 kgha-1) and Lattice K (3948.9 – 4101.7 kgha-1)} than without crop residue incorporated soil {water soluble K (11.06 – 33.12 kgha-1), Exchangeable K (103.7 – 305. 38 kgha-1), Non – Exchangeable K (786 – 893 kgha-1) and Lattice K (3948.9 – 4101.3 kgha-1)}. Application of N and P without K caused depletion of water soluble K, available K, exchangeable K, non – exchangeable K and lattice K of soil. Co-relation study showed a highly significant positively co-relation among all the forms of soil K.
Description:	EFFECT OF CROP RESIDUE INCORPORATION IN HYBRID MAIZE ON K FRACTION IN ACID SOIL OF RANCHI
Subject:	Soil Science and Agriculture Chemistry
Theme:	EFFECT OF CROP RESIDUE INCORPORATION IN HYBRID MAIZE ON K FRACTION IN ACID SOIL OF RANCHI
These Type:	M.Sc
Issue Date:	2018
Appears in Collections:	Thesis (/handle/1/93550)

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