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Effect of fertility, genotypes and spacing on yield and soil properties of rice under SRI during dry season in coastal Odisha

■ PLABITA RAY AND T. BARIK[1]

AUTHORS' INFO
Associated Co-author :
[1]Department of Agronomy, College of Agriculture, Orissa University of Agriculture and Technology, BHUBANESWAR (ODISHA) INDIA

Author for correspondence:
PLABITA RAY
Department of Agronomy, College of Agriculture, Orissa University of Agriculture and Technology, BHUBANESWAR (ODISHA) INDIA
Email: plabitaray@gmail.com

ABSTRACT : A study was carried out at the Agronomy Main Research Station, Orissa University of Agriculture and Technology, Bhubaneswar during the *Rabi* seasons of 2012-2013 and 2013-2014 in split plot design with three replications. The six main plots consisted of the combinations of three fertility levels and two genotypes; while the subplots had four different methods of planting. The pooled data for both the years revealed that the fertility level with 3 splits of N @ 50% at sowing + 25% top dressing at 30 DAS+25 per cent top dressing at 60 DAS (F_2) recorded the significantly highest grain yield (6424 kg ha^{-1}) while HI (0.44) of highest value was recorded with F_3 (organics). The hybrid 'Arise gold' produced significantly higher (6606 kg ha^{-1}) grain yield as compared to that of conventional variety Lalat (5214 kg ha^{-1}). The treatment of S_2 - 25 cm square planting with two spaced (5cm) seedlings $hill^{-1}$ recorded significantly highest grain yield (6811 kg ha^{-1}) which was at par with the treatment S_4 - 30 cm with three seedlings $hill^{-1}$ in a traingular method (6642 kg ha^{-1}). In case of grain nutrient uptake F_3, V_1 (hybrid 'Arise gold') and S_2 recorded the highest value whereas in straw F_2, V_1 (Lalat) and S_3 (30 cm with two seedlings with a gap of 5cm between 2 seedlings $hill^{-1)}$ recorded the highest uptake.The highest pH was recorded with F_3. F_2, V_2 and S_1 (25 cm with one seedling $hill^{-1}$) recorded the highest EC while the highest organic carbon percentage was recorded in F_2, V_2 and S_4 (30 cm with three seedlings with a gap of 5cm between 2 seedlings in a triangular method $hill^{-1}$).The highest available soil N, P and K was recorded with F_3, V_2 and S_1. F_3 recorded the highest value in microbiological properties.

KEY WORDS : SRI, Fertility levels, Organic, Genotypes, Planting geometry, Microbial property

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