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RESEARCH PAPER

Effect of planting geometry and timing and source of nitrogen application on yield and yield attributing character of rice (*Oryza sativa* L.) under system of rice intensification

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Abstract : An experiment was conducted at Agronomy Research Station, Orissa University of Agriculture and Technology, Bhubaneswar during *Kharif* season of 2012 to study the effect of different fertility levels, planting patterns per hill and their interaction on productivity of rice variety 'Lalat' under SRI. F_2 (FYM @ 15 t ha^{-1} + vermicompost 2 t ha^{-1} + neem cake 250 kg ha^{-1}) gave highest yield (8.76 t ha^{-1}). It was found that twice or thrice splitting of N was at par (7.62 and 7.57 t ha^{-1}). Highest harvest index was recorded from F_2 (51.11 %) among main plots and P_1 (25×25cm spacing with 1 seedling $hill^{-1}$) *i.e.* 50.41 per cent among subplots. F_4 (FYM @ 5 t ha^{-1} + N : P_2O_5 : K_2O @ 30:30:30 kg ha^{-1} basal) and P_3 (30×30 cm spacing with 1 seedling $hill^{-1}$) gave the lowest harvest index (45.74 % and 43.33 %, respectively). Three plants per hill with wider spacing of 30×30 cm gave the highest yield among all planting patterns. Wider spacing was found more beneficial. More than one plant per hill had given increased yield due to higher plant population per m^2 in comparison to one plant per hill. Fertility level (F_4) with half of RDF of nitrogen, recorded the lowest yield (5.87 t ha^{-1}). Among the subplots the lowest yield was recorded in P_3 *i.e.* one seedling per hill at 30×30 cm spacing (6.75 t ha^{-1}).

Key Words : SRI, Nitrogen, Splitting of nitrogen, Wider spacing, Seedling/hill

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