

Effect of age of seedlings under different system of rice intensification (SRI)

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ABSTRACT

A field experiment was conducted at Agricultural Research Station, Siruguppa, Karnataka, during the *Kharif*, 2005 to study the influence of age of seedlings under different system of rice intensification. Modified SRI method resulted in significantly higher grain yield (6342 kg ha⁻¹) when compared to other methods. Younger seedlings of 9 days (6071 kg ha⁻¹) and 12 days (6018 kg ha⁻¹) produced significantly higher grain yield than the other aged seedlings viz., 15 days (5792 kg ha⁻¹), 18 days (5771 kg ha⁻¹) and 21 days (5781 kg ha⁻¹). The interaction effects between methods of planting and age of seedlings were found to be non significant.

Key words : System of rice intensification, Grain yield, Age of seedlings

INTRODUCTION

To assure food security in the rice-consuming countries of the world, those countries will have to produce 50% more rice with improved quality to meet consumers' demand by 2025. This additional rice will have to be produced on less land with less water, less labour, and fewer chemicals. Rice (*Oryza sativa* L.) is an important crop of Tungabhadra project area and is cultivated over an area of 0.1 m ha. Timely planting and use of appropriate aged seedlings for transplanting are important non cash inputs for realizing the higher productivity in rice (Pattar *et al.*, 2001).

Transplanting younger seedlings, preferably 8-15 days old before the plants enter their fourth phyllochron of growth, planting the seedlings singly rather than in clumps of 3-6 plants, and keeping the paddy soil moist but not continuously saturated during the plants' vegetative growth phase. Transplanting of less than 15 days old seedlings was found better. Further farmers are very often to use 35 to 50 days old seedlings in place of recommended 25 to 30 days old seedlings and such information under TBP situations is not available (Balasubramanian *et al.*, 1977). It is important to select suitable age rice seedlings contributing towards increased rice production and resolve the problem posed by higher temperature and water depth inflicting seedling mortality. This has resulted in low population per unit area just after transplanting as well as causing huge economic losses. Hence, the present investigation was carried out to study the influence of age of seedlings under different system of rice intensification.

MATERIALS AND METHODS

A field experiment was carried out during the *Kharif*, 2005 at Agricultural Research Station Siruguppa, Karnataka. The soil was deep black clay in texture, neutral in pH (8.22) and low in electrical conductivity (0.28 dS/m). It was low in available nitrogen (265 kg ha⁻¹), high in available phosphorus (30.5 kg ha⁻¹) and medium in available potassium content (365 kg ha⁻¹). There were 15 treatment combinations comprising of three methods of planting (M₁- Normal method, M₂- Recommended SRI method, M₃- Modified SRI method)as main treatments and five age of seedlings (9, 12, 15, 18 and 21 days) as sub treatments and were laid out in split plot design with three replications. The gross plot size was 4 m x 3 m. IET-16933 was used as test variety. The spacing followed was 20 cm x 10 cm (M₁), 25 cm x 25 cm (M₂ and M₃). The crop received a fertilizer dose of 150:75:75 kg NPK ha⁻¹. Full dose of P₂O₅ and K₂O and 50 per cent of nitrogen was applied at the time of transplanting and remaining 50 per cent of nitrogen was applied in two equal splits at 30 and 55 days after transplanting. All the recommended cultivation practices were followed. The crop was harvested after attaining physiological maturity.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been presented under following heads:

Methods of planting :

Methods of planting had significant influence on the

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