

SRI-tray: breakthrough in nursery management for the system of rice intensification

ABSTRACT

The major challenges envisaged by SRI practitioners to nursery management are high labour requirement and transplanting shock due to traumatic condition at the nursery. This study was aimed at creating innovative techniques for increasing the quality and transplanting potentials of seedlings vis-à-vis to savings on water, seeds, nursery space as well as reducing the transplanting shock. It involved the use of the developed SRI-Tray having 924 square growing cavities with sliding base to facilitate seedling transfer. The parameters used were water requirement (WR), growing media (GM), nursery perimeter (NP) and age of seedling (AS). These were compared with conventional nursery methods (dry-bed, wet-bed and tray) to evaluate the growth performances for 10 days on seedling height [SH], leaf length [LL], leaf number [LN] and root length [RL]. The SAS revealed that SRI-tray had the highest significant values for SH, LL and RL with the mean values of 157.2mm, 110.3 mm and 89 mm. when compared with conventional practices on tray (125mm, 92mm and 52mm), dry-bed (86mm, 64mm and 42mm). The seed rate, nursery area and seedling age to support one hectare of planting area were found as 5.34kg, 36m² and 8-10 days on SRI-tray against 15-50kg, 250 to 500m² and 15 to 30 days on conventional practices. The water management was found to be high on conventional tray (Flat tray) with a nursery area of 250m², if supply at 4cm height for 20 days, and then total water use for conventional flat tray is 200m³. While a significant saving was observed on SRI-tray with only 18m³ with a nursery space of about 36m² when supplied at 5cm for 10 days.

Keyword: Dry-bed; Germination; Growing cavities; Seedling height; Vigor