

## Evolution of alternative filling materials replace to the soil media for raising nursery seedlings in fields of Chittoor district

■ M. Naga Jyothi, G. Muralee Krishna and M.V. Ramana

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See end of the Paper for authors' affiliation

Correspondence to :

M. Naga Jyothi  
College of Agricultural  
Engineering, Madakasira  
(A.P.) India

■ **ABSTRACT** : This study was conducted to investigate on alternative tray filling materials to replace the soil media on crop growth, yield characteristics and yield attributes in The Mechanized System of Rice Intensification (MSRI). Focusing on the different alternative filling materials suitable to replace the soil media with 100% seed germination, Ten treatments with different combinations were experimented and a fine thin layer of well decomposed farm yard manure was spread over all ten treatments of bed filling material [(i.e., T<sub>1</sub> - 10% groundnut shell + 90 % soil; T<sub>2</sub> - 10% vermin-compost+ 90% soil; T<sub>3</sub> - 10% rice husk+90% soil; T<sub>4</sub> - 25% vermin-compost + 75% soil; T<sub>5</sub> - 25% rice straw + 75% soil; T<sub>6</sub> - 25% rice husk + 75% soil; T<sub>7</sub> - 10% rice straw+ 90% soil; T<sub>8</sub> - 25% groundnut shell +75% soil; T<sub>9</sub> - Field soil (100%) (MT); T<sub>10</sub> - Manual plantin (MP)]. The observation of transplanted hills was also noted in root growth and leaf number, leaf area index and number of tillers and panicle number, panicle length and grain number per panicle, grain filling and 1000-grain weight and straw weight. The raising nursery with different bedding materials transplanted with machine significantly influenced grain yield per hectare. The results revealed that highest grain yield per hectare was observed with T<sub>8</sub> (25% GS) as 4858.5 kg/ha and followed by T<sub>4</sub> (25% VC) as 4685 kg/ha. However, the lowest grain yield was recorded at 2212.6 kg/ha was observed in T<sub>6</sub> (25% RH), due to lowest N, P, K contents in rice husk bed material. It is also observed from transplanted crop that root length was highest with T<sub>5</sub> (25% RS) as 11.39 cm followed by T<sub>3</sub> (10% RH) as 11.16 cm, whereas lowest root length 9.10 cm, root spreading was highest with T<sub>8</sub> (25% GS) as 20.72 cm followed by T<sub>1</sub> (10% GS) as 19.46 cm, T<sub>2</sub> (10% VC) as 19.00, T<sub>4</sub> and 9 are comparable with each other and is 18.47 cm. whereas lowest root spreading 13.08 cm was observed in T<sub>10</sub> (manual planting). Finally it has been concluded that there is significant effect of bedding materials on crop growth and yield parameters.

■ **KEY WORDS** : MSRI, SRI, Bedding materials, Yield, Crop parameters

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