



RESEARCH ARTICLE :

Rice establishment techniques and co-cultivation of green manure on productivity and economics of rice

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ARTICLE CHRONICLE :

Received :

11.07.2017;

Accepted :

24.07.2017

KEY WORDS :

Rice establishment methods, Co-cultivation of green manures, Growth, Yield

SUMMARY : Field experiments were conducted at Agricultural College and Research Institute, Killikulam during late Pishanam of 2013-14 and 2014-15 to evaluate different methods of rice establishment techniques and co-cultivation of green manures to enhance the rice productivity. The experiments were laid out in Randomized Block Design and replicated thrice. Rice ADT (R) 45 taken as test variety. Paddy direct seeding was taken up in the main field by using paddy drum seeder with a spacing of 20 cm between rows and paddy cum dhaincha seed drill with an interrow spacing of 25 cm between rice rows and 12.5 cm between rice and dhaincha in the respective plots. Simultaneously, rice nursery also taken separately for manual and machine transplanting. *Azolla* was applied in the respective plots on third days after paddy sowing / planting. The results shows that direct seeded rice with dhaincha / *Azolla* recorded higher plant height than the machine/ manual planted rice. Rice yield attributes remains unaffected by adoption of various rice establishment methods. But it was positively influenced by the adoption of green manure dhaincha intercropping / *Azolla* co-cultivation practices. Planting at 25 x 25 cm with dhaincha intercropping and its incorporation by conoweeder at 30 DAS recorded higher grain (6110 and 6324 kg / ha) and straw yield (6973 and 7358 kg / ha) during both the years, respectively. It was closely followed and statistically at par yield when the rice cultivated by machine planting at 25 x 17.5 cm with dhaincha intercropping and its incorporation by conoweeder at 30 DAS and / or direct sown rice using paddy cum dhaincha seed drill. Planting of rice at 25 x 25 cm with dhaincha intercropping and its *in-situ* incorporation by conoweeder at 30 DAS recorded higher gross income of Rs.94,239 and 97, 962 /ha. But direct seeding of rice using paddy cum dhaincha seed drill fetched with higher net income of Rs.55,088 and 58,067/ha and B:C ratio during both the years of study.

How to cite this article : Joseph, M. and Hemalatha, M. (2017). Rice establishment techniques and co-cultivation of green manure on productivity and economics of rice. *Agric. Update*, 12(TECHSEAR-2) : 452-458; DOI: 10.15740/HAS/AU/12.TECHSEAR(2)2017/452-458.

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