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Title: PERFORMANCE EVALUATION OF TWO ROW SEMI-AUTOMATIC VEGETABLE TRANSPLANTER

Publisher: Birsa Agricultural University, Kanke, Ranchi, Jharkhand

Language: en_US

Type: Thesis

Pages: 53

Agrotags: null

Keywords: PERFORMANCE EVALUATION OF TWO ROW SEMI-AUTOMATIC VEGETABLE TRANSPLANTER

Abstract: Globally, the role of vegetable crops has been well recognized in solving the problem of food and nutritional security. In addition to meeting the local demand, vegetables are now being considered as potential commodities, for internal and external markets. In India, estimated area under vegetables is around 7.8 M ha and production is about 125.9 million tones and average productivity of vegetable crops is low 15.1 t/ha ([GOI], 2008). A wide gap exists between the yields obtained and the potential yield owing to poor adoption of improved techniques and it has always been considered as a major handicap in increasing the productivity of vegetable crops. In India, cultivation of vegetables crops is in general labour intensive. Moreover transplanting of vegetable seedling after raising seedling in nurseries is done manually across the country as no machine is commercially available for this work. However transplanting by means of transplanter would not only improve the productivity and timeliness but also quite helpful in minimizing the expenditure incurred on labour. With a view to know performance of vegetable transplanter, the experiment was carried out at Birsa Agricultural University, Ranchi during kharif season 2010, on three vegetable crops namely, Brinjal (Swarna Shree), Tomato (Cherry) and Chilli (KA- 2) in Randomized Block Design. The treatment consisted of two level of field condition (Flat bed and Raised bed) and two level of method of sowing (Manual and Machine). The mean values of speed of operation and theoretical field capacity were 0.9 km/h and 0.135 ha/h while actual field capacity ranged in between 0.0926- 0.1016ha/h. Similarly field efficiency was in the range of 68.35 % (Tomato) to 75.26% (Brinjal). A maximum of 80% labour saving was calculated in almost all crops while cost of saving in transplanting was obtained between 2.26 % chilli to 4.21% tomato. In treatment M2S2, missing hills percentage was high but minimum sapling mortality and maximum plant survival percentage were recorded under the same treatment combination in the range 6.10 (brinjal) to 7.15 (Tomto) and 84.55 (Tomto) to 88.70 (Brinjal) respectively in different crops. Similarly the growth and fruiting parameters particularly plant height, number of branches, fruits per plant and yield per plant were remarkably influenced by M2S2 treatment combination. Thus it may be undoubtedly brought out that two row semi automatic vegetable transplanter is found suitable for vegetable transplanting, as it not only save the duration of transplanting along with minimal mortality but also reduce the expenditure incurred on labour and other cultural practices during transplanting. Also it may be safely concluded that transplanter performance was satisfactory, however it was also found that transplanter performance was better in raised bed over flat bed.

Description: PERFORMANCE EVALUATION OF TWO ROW SEMI-AUTOMATIC VEGETABLE TRANSPLANTER

Subject: Agricultural Engineering

Theme: PERFORMANCE EVALUATION OF TWO ROW SEMI-AUTOMATIC VEGETABLE TRANSPLANTER

These Type: M.Tech.

Issue Date: 2010

Appears in Thesis (/handle/1/93550)

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