Impact of Different Depths of Transplanting by MachineTransplanteron Growth and Yield Performance of Rice Variety (Bw 361)

***Sivaneson, S. and Vijayakumari, V.**

Rice Research Station, Department of Agriculture, Paranthan, Sri Lanka
*Corresponding E-mail: ssivaneson@yahoo.com

Depth of seeding transplanting is considered as one of the important factor influencing grain yield in rice production systems, primarily by determining the number of tillers. A field experiment was conducted to evaluate the growth and yield response of different planting depths of seedlings of mechanical transplanted rice during transplantation. Recently, machine transplanter was introduced to farmers by the Department of Agriculture under the *Yaya 11* program. The machine transplanting method considered as practical option to minimize the labor usage with the timeliness cultivation of rice. However, adoption of machine transplanting method is still low due to socio-economic background lack of technical information and research studies for machine transplanting with good choice of different adjustments in the transplanter. Four rows of behind-walk type paddy KUBOTA (SPW 48c) transplanter was used in this study with 30 cm row spacing (nonadjustable) and five different depth levels (0.7, 1.4, 2.1, 2.8 and 3.7 cm), replicated four times. The rice variety of Bw 361 was used with the plot size of 6m x 4.5m. The growth parameters of plant height, number of tillers, root length and yield parameters of panicle per hill, panicle length, grain yield were recorded. Plant height (cm) during vegetative period, was significantly (p <0.05)higher at shallow planting depth of 0.7 cm.Root length and panicle length were not significant influenced with depth of planting. The number of tillers per hill were significantly (p <0.05) differed among depth of planting. A positive correlation was observed between depth and tillers per hill up to medium (2.1 cm) depth. The maximum number of tillers per hill and panicle numbers per hill were recorded from the depth of 2.1cm.Results revealed that the planting depth of 2.1 cm was produced significantly highest tiller (14.29) and panicles numbers (14.23) per hill and yield (5.625 t/ha). Therefore, 2.1 cm planting depth was more appropriate for cultivation of Bw 361 variety in machine transplanting system in this region.

Key words: Depth, Growth, Mechanical transplanting, Rice, Bw 361