Impact of Different Seedlings Age on Growth and Yield of Machine Transplanted Rice (*Oryza sativa* L.)

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Transplanting rice seedlings by Rice machine transplanter is one of the labour-saving technology in rice establishments. In mechanically transplanted rice, delayed transplantation is common practice, resulting in a significant reduction in grain yield. As a result, determining measures to compensate for the grain production loss is crucial for rice cultivation technology improvement. A field experiment was conducted to investigate the impact of different seedlings age on the growth and yield of machine transplanted rice at Rice Research Station, Paranthan, during 2017/18 *Maha*. Rice variety of *Bg406* was transplanted with 8, 10, 12, 14, 16, 18, 20, and 22 days-old seedlings by machine transplanter with a plot size of 4.5 m x 5.7m under RCBD design with four replicates. The plant height, tiller density, leaf area index, panicle density, panicle length, the weight of 1000 grains and grain yield were obtained and statistically analyzed through ANOVA and means separation was done by Duncan's Multiple Range test at the 5 % probability level. Results revealed that the transplanting of sixteen days old seedlings recorded the highest number of tillers significantly at harvest (281.25 m-2), leaf area index (3.663 m-2), and the number of panicles at harvest (242.25 m-2), and grain yield (5.065 t/ha). This study concluded that a plant seedling age of sixteen day-olds could be considered the optimum planting age for machine transplanted rice crops for the variety of *Bg406* in the Northern region.

Keywords: Growth, Machine Transplanter, Rice, Seedling Age and Yield.