Effect of transplanting dates on growth and yield of inbred and hybrid rice varieties grown during rainfed season in Bangladesh

ABSTRACT

A field experiment was carried out at Sher-e-Bangla Agricultural University, Dhaka, Bangladesh to determine the effects of transplanting dates on growth and yield of rice varieties grown in the rainfed season of 2011. The growth and yield of two inbred varieties (BR11-Mukta and BRRI dhan39) and two hybrid varieties (ACI 1 and ACI Shera) were evaluated at four transplanting dates (at 15-d intervals, from 20 July to 3 September). Varietal effect was significant based on all the recorded agronomic parameters whereas transplanting date had little effect on panicle length, grain yield, straw yield, biological yield and harvest index. Combined effect showed significant variation among the tested rice genotypes except for number of total tillers m-2 at 90 d after transplanting (DAT), leaf area index (LAI) at 15 and 30 DAT, panicle length and harvest index. Among the four transplanting dates, transplanting on 4 August resulted in the highest plant biomass and yield for all tested varieties. Inbred variety BR11 produced maximum number of effective tillers (502.70 m-2), grain yield (6.57 t ha-1) and straw yield (7.68 t ha-1), yield followed by the hybrid variety ACI1. The hybrid variety ACI Shera transplanted on 4 August resulted in 9 d of early flowering, 12 d less time for maturity. The lowest performance in terms of morphological and yield-contributory characteristics, except harvest index, was recorded in the hybrid variety ACI Shera planted on 3 September. Among the tested varieties, BR11 performed better in terms of plant growth and yield, and 4 August proved to be the best time for transplanting inbred and hybrid rainfed transplanted Aman varieties in Bangladesh.

Keyword: BR11 (Mukta); BRRI dhan39; ACI 1; ACI Shera; Harvest index; Rice; Transplanting time