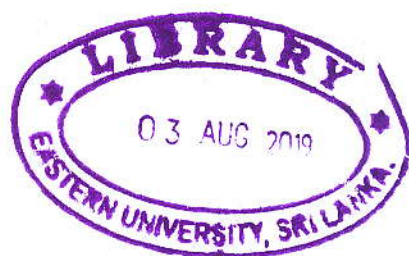
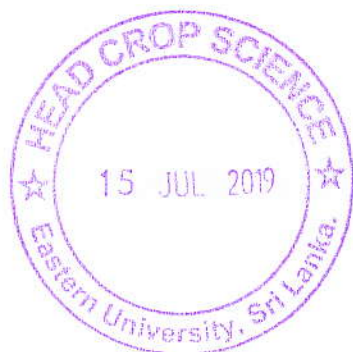


**COMPARISON OF ROOT AND SHOOT
MORPHOLOGICAL DEVELOPMENT OF SELECTED
RICE LINES (*Oryza sativa L.*)**

UNDER MOISTURE STRESS CONDITIONS



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ABSTRACT

An experiment was conducted at the Rice Research and Development Institute (RRDI), Batalagoda, Sri Lanka during January to March 2019 to compare morphological development of selected rice lines under moisture stress conditions.

This experiment was laid out in a Completely Randomized Design (CRD) and as 3×3 factorial experiment with five replicates. The two treatments were rice lines and moisture conditions. The drought tolerant lines IRDTN 07-11 and IRDTN 07-56 and the variety Bg 300 were selected as rice lines and three moisture conditions *viz.* irrigated moisture condition throughout the research, moisture stress from two weeks after planting to panicle initiation, followed by an irrigated condition in the reproductive stage, and irrigated condition from two weeks after planting to panicle initiation followed by moisture stress at the reproductive stage was maintained. Agronomic practices were carried out as per the recommendations of the Department of Agriculture, Sri Lanka.

The results showed that the moisture stress in the reproductive stage was severely affected the root and shoot development of rice lines rather than the moisture stress in the vegetative stage. Within the vegetative stage, Bg 300 withstands the water stress similar to the IRDTN 07-11 and IRDTN 07-56. With the water stress at the reproductive stage, the maximum length of roots, root ball length, dry weight of roots, the total length of roots and surface area of roots were higher in IRDTN 07-56 and IRDTN 07-11 were more prominent than that of Bg 300. There was a significant reduction in plant height and the shoot dry weight of these two lines compared to Bg 300. Therefore, the results suggest that among these three lines, IRDTN 07-56 was the most drought-tolerant rice line followed by the IRDTN 07-11.

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