



Determination of Agronomic Characters of Sri Lankan Traditional Rice Variety "Masuran" under different Environmental Conditions

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Abstract: Most of the Sri Lankan traditional rice (*Oryza sativa* L.) accessions initiate flowering only during the short day (Maha) season. Masuran is a traditional rice variety with premium pricing and health-promoting attributes. This study was conducted to determine the effect of selected environmental factors of the year on the number of days to flowering (DF), plant height at flowering (PH) and selected yield components of two accessions of Masuran variety (4132 and 5530). The experiment was carried out in the low country intermediate zone of Sri Lanka (in the agroecological zone IL1b) in a complete randomized design with 10 replicates. Planting was carried out on the 05th day of every month for a period of one year. Average daily rainfall (RF), temperature, and photoperiod for each month were recorded. The effect of environmental factors on DF, PH and, Effective Tiller Number (TTN) and Number of Spikelets per First Panicle (NSFP) was analyzed through Biplot analysis using R software version 4.4.0. Days to Flowering, PH, TTN and NSFP varied from 65 to 110 days, 85.7 to 158 cm, 3 to 8 and 142 to 199 in accession 4132, while those varied from 60 to 89 days, 80.3 to 170 cm, 3 to 16 and 119 to 283 in accession 5530 respectively during the experimental period. The first month of each planting was considered as the photoperiod-sensitive phase of rice accessions. The effect of photoperiod and temperature is significant on DF. Correlation analysis for DF and NSFP resulted in a strong positive relationship in Masuran when it was grown throughout the year. According to biplot analysis, long-day photoperiod reduces the yield. Cultivation in January and December increases higher NSFP in accession 5530.

Keywords: Days to flowering, Planting-date effect, Yield, Traditional rice "Masuran".