

PERFORMANCE OF SOME SELECTED RICE GENOTYPES IN THE
ACID SOILS OF NILWALA RIVER BASIN IN SOUTHERN
SRI LANKA

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ABSTRACT

Rice genotypes developed for adverse soil conditions by several Institutes were evaluated for three consecutive seasons in the acid soils of the Sector 24 of the Nilwala Development Scheme in Southern Low Country Sri Lanka. Increased soil acidification, iron toxicity and associated problems were reported in this area with the implementation of Nilwala Ganga Development Scheme. BG 379-2, the most widely cultivated variety in the area served as the check.

In Yala (Minor) 1987 season, the planting method adopted by farmers viz. broadcasting of pre-germinated seeds, was tested against transplanting of seventeen genotypes in a strip plot design. Two replicates of broadcasted treatment were totally destroyed while transplanted crop survived. BW 272-3, BW 297-2 and BW 272-8 recorded 3.14, 2.96 and 2.68 t/ha grain yield respectively against 1.44 t/ha in the control. Due to poor performance of broadcast sown crop, the cultivars were further tested under transplanting only.

In the Maha (Major) 1987 season BW 78-7 recorded the highest yield of 5.46 t/ha followed by BW 271-1 (5.36 t/ha) against 4.85 t/ha in the control. In the subsequent Yala 1988 season BW 297-2 (4.6 t/ha) as well as two newly introduced cultivars viz. BW 85 and BW 100 (4.79 & 5.93 t/ha respectively) recorded significantly higher yield than the control (3.08 t/ha).

Statistical analysis of the yield components in the different cultivars revealed significant differences among the genotypes. Percentage of filled spikelets per panicle was recorded as the most important contributory factor to yield. Some genotypes with good adaptation to these acid soils need incorporation of blast resistance. Transplanting of improved cultivars could substantially increase the average yield of 1.6 - 1.8 t/ha (Weerasinghe and Lexa, 1988) in this sector as well as in the other affected areas of Sri Lanka's low country.

management systems, periodic analyses are made of soil and water quality, leaf samples, crop yields, and the field water balance. The results of the first cropping season will be presented at the symposium.