

SCREENING RICE GERMPLASM FOR BROWN PLANTHOPPER RESISTANCE IN EASTERN REGION OF SRI LANKA

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The brown planthopper (*Nilaparvata lugens* Stål; BPH) is a significant pest that threatens rice production worldwide, including in the Ampara district of Sri Lanka. Despite the introduction of resistant rice varieties, BPH continues to evolve, necessitating periodic evaluations of rice germplasm for resistance. This study aimed to screen 24 rice lines, including popular varieties in Ampara, for BPH resistance at the Rice Research and Development Institute (RRDI), Bathalagoda, Sri Lanka, during Yala 2024. A field experiment was conducted at the Regional Rice Research Station, Sammanthurai, using a randomized complete block design. Plants were transplanted into BPH-endemic fields, and resistance was assessed based on BPH infestation levels, plant damage, hopper-burn symptoms, and overall health. Additionally, the conventional seed box test was performed under controlled conditions at RRDI using resistant (Ptb 33) and susceptible (Bg 380) checks to validate field results. Resistance was evaluated using the International Rice Research Institute (IRRI) scale. Results showed that popular varieties Bg 374 and Bg 375 were highly susceptible to BPH. However, Bg 22-912, Bg 22-3297, and Bg 22-1000 demonstrated strong resistance and high yield potential, making them ideal candidates for BPH management in the Ampara district. Eight additional lines, including PGRC 5579, PGRC 4992, Bg 22-1201, and AC 1368 exhibited moderate resistance. The study highlights the necessity for regular screening and the adoption of resistant rice varieties to mitigate BPH infestations effectively. Bg 22-912, Bg 22-3297, and Bg 22-1000 are valuable resources for enhancing BPH resistance of rice in Ampara district of Sri Lanka.

Keywords: Brown planthopper, *Nilaparvata lugens*, Resistant, Rice lines, Screening