Impact of Harvesting Dates on Seed Germination in the AT-362 Rice Variety

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Abstract

Rice variety, AT-362 is one of the popular commercial cultivars in the Ampara district of Sri Lanka due to its increased yield potentials and drought-resistant traits. However, the seed germination percentage is relatively lower compared to its counterpart commercial elites. Therefore, investigating the harvesting dates of the previous cropping cycle may be an integral for improving seed germination in the subsequent farming. The objective of this investigation was to identify how the harvesting dates influence the seed germination of AT-362 rice variety. Six different dates were used for treatment, commencing from seeds after the 50% heading stage, and harvested rice at 20 days (T1), 25 days (T2), 30 days (T3), 35 days (T4, control treatment), 40 days (T5), and 45 days (T6) were used. The treatments were arranged in field plots with an RCBD design supplemented with three replications (3m × 6m each plot). The direct broadcasting method was applied, with each plot receiving 225g of paddy seeds. Subsequently, after booting stages, panicles were harvested in each plot, and the seeds were dried using sunlight to achieve a moisture content of 13%. Thereafter, seed germination and viability tests were performed. Our results indicated a highly significant difference between rice harvest dates and germination parameters ($P < 0.01$) among the treatments. Increased germination rates of seeds (>85%) were recorded for the paddy seeds harvested between 30-40 days compared to the other tested dates. Therefore, according to the findings, 30-40 days after the booting stage is ideal to maintain optimum seed germination percentages.

Keywords: Germination Rates, Seed dormancy, Seed germination, Seed viability