

## Impact of Different Burial Depths on Weedy Rice (*Oryza sativa* f. *spontanea*) Seedling Emergence

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Direct seeding of rice is widely adopted in Sri Lanka due to the scarcity of land and labour. Weedy rice (*Oryza sativa* f. *spontanea*) is a serious problem in direct-seeded rice. Lack of selective herbicides for the control of weedy rice, nor other effective measures, has made its control a subject of national significance. The ability of emergence of eight Sri Lankan weedy rice populations, collected from different geographical regions buried in 3, 6, 9 and 12 cm depths was assessed. The experiment was conducted twice, in a Randomized Complete Block Design in an open field. Ten seeds of each accession were placed on the soil surface of plastic pots with three replicates. Seedling emergence was recorded for 28 days. ANOVA analysis indicated that the interaction effect of population\*burial depth was not significantly affected by the seedling emergence. Burial depth had a significant impact on seedling emergence. Seedling emergence gradually decreased with increased burial depth, with minimal emergence from a depth of 12 cm. Burial depth of 3 cm and 6 cm recorded the highest seedling emergence. Burial depth of 9 cm noted moderate emergence. The results of this study suggest that weedy rice seedling emergence can be suppressed by deep tillage thereby burying the seeds below the maximum depth of emergence, followed by flooding fields to create anaerobic conditions. Our findings provide a new clue for developing agronomic practices, adopt to the deep ploughing techniques is vital to minimize the continuous enrich of weedy rice seeds in the prevailing soil bank.

**Keywords:** Burial depth, Direct seeding, *Oryza sativa* f. *spontanea*, Weed control