

## ABSTRACT.

The experiments were conducted at the Sugarcane Research Institute, Udawalawe to study the effect of depth of seed bury on germination and emergence of weed seedlings. .

Seeds of five selected weed species were allowed to germinate at different depths (from surface to 20 cm) in wooden boxes filed with sterilized soil. The soil boxes were kept in a green house to provide favourable environment for germination and emergence of seedlings. The temperature within the green house was  $30 \pm 2^{\circ}\text{C}$ .

In addition, separate seed batches of same weed species were germinated at  $30 \pm 2^{\circ}\text{C}$  under spontaneous change of day and night illumination and complete dark to observe their germination characteristics under various light regims.

There was no relationship of percentage germination, mean germination time and the rate of germination to the 1000 - seed weight. However, weed seeds showed discontinuous germination extending period sometimes more than 40 days for final germination to occur. Also, there was wide difference (0.05 to 0.39 seeds day<sup>-1</sup>) among the species of their rate of germination. The percentage germination, mean germination time and the rate of germination were always high at the spontaneous change of day and night illumination than that of complete dark. The most of emerged seedlings had come from surface soil. More than 70% - 80% of emerged seedlings of the tested weed species were recorded above 4cm soil depth. Also, seeds at greater soil depth took longer time to emerge their seedlings. In generally, larger seeded weed species could produce seedlings from greater soil depth.

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