

**EFFECT OF HEAT TREATMENT ON THE GERMINATION OF SEEDS
AND MORPHOLOGY OF PADDY SEEDLINGS**

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ABSTRACT

EFFECT OF HEAT TREATMENT ON THE GERMINATION OF SEEDS AND MORPHOLOGY OF PADDY SEEDLINGS

Germination is an important process in the phenological cycles of plants. The propagation of rice generally occurs through seed and seedling, while germination is a crucial stage in the life cycle of the plant. The purpose of this study was to determine the best treatment for enhancing the paddy seed germination (MR 297 variety). There have several treatments to break seed dormancy and one of the treatment is heat treatment. Heat treatment for seed is used for many purposes; one is to reduce their moisture content to level, which prolongs longevity during storage condition. The physiological feedbacks of the MR 297 paddy variety in terms of seed germination percentage and the length of shoot and root were analyzed by exposing its seeds to heat treatment in incubator for 4 days with different temperature which are T0 (26°C), T1(30°C), T2 (35°C) and T3 (40°C). It was shown that exposing the seeds to the incubator's with T2 (35°C) resulted in the highest percentage of germination (94.67%) and for the shoot and root length T3 (40°C) have the highest length which is 10.567cm. The result showed that T2 (35°C) exposure heat of incubator for 4 days significantly facilitated and improved the germination indices. The lowest values of seed germination, shoot and root length of paddy seeds were obtained by heating at T0 (26°C).

Keywords: paddy seed, seed germination, heat treatment, high temperature