Identification of Seed Dormancy Period of Popular Rice Varieties in Sri Lanka

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Seed dormancy is the ability of seeds to delay their germination even under favourable conditions. Dormancy affects the cultivation and production of rice. This experiment was conducted to identify the variation of dormancy period of 14 popular rice varieties grown in eight locations in Sri Lanka. Seeds taken immediately after harvesting were tested for germination. The stage at which the seeds show 85% of germination was taken as the dormancy breaking point as per the International Seed Testing Association (ISTA) guidelines. The experiment was conducted at Seed Certification Service, Gannoruwa, Peradeniya. The initial moisture content of the seeds (%), thousand seed weight (g), days taken for 85% germination, days taken for 50% germination, thousand seed dry weight (g), and shoot and root length of seedlings (cm) were measured. According to the results of the study, the mean seed dormancy period varied from variety to variety within a range of 19-85 days after harvesting. Location-wise difference in dormancy period was also observed for a given variety. Different varieties grown in the same location also showed differences in the dormancy period. Thousand seed weight and thousand seed dry weight of varieties varied from location to location but did not show any relationship with the dormancy period. Mean seedling vigor index (SVI) significantly varied ($p=0.05$) among varieties, locations as well as the days after harvesting within each variety. Seeds just after harvesting had a lower SVI indicating poor seedling quality and reached the maximum at the dormancy breaking period. Therefore, the study found that the seed dormancy period of paddy varies among varieties as well as the cultivating area of Sri Lanka. Moreover, the quality of seedlings is better after the dormancy breaking point.

Keywords: Dormancy period, Germination, Rice, Seedling vigor index, Thousand seed weight

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