RESEARCH NOTE

Simple Storage Technique to Retain Longevity in Small Samples of Rice Seeds

M. P. DHANAPALA, L. NUGALIYADDE and L. S. SILVA
Central Rice Breeding Station, Batalagoda, Ibbagamuwa

Seed viability in rice under humid tropical conditions would rarely persist beyond a period of 12 months. Prolonged seed longevity is imperative in the preservation of the original genetic stocks of recommended cultivars that would undergo inadvertent changes in the process of multiplication and selection adopted in seed production. A simple and inexpensive technique adopted to preserve viability of nucleus seed stock of cultivar Bg 300 (Bg 731—2) at the Central Rice Breeding Station, Batalagoda has generated successful results.

Seeds of the rice cultivar Bg 300 were harvested from a multiplication plot in August 1983 (yala 1983). At the time of harvest the moisture content of seeds was 26%. The harvested seeds were dried immediately in an incubator for 6 days (4 days at 40°C and 2 days at 60°C). Small samples (10 g) of seeds were then bagged in 8.5×15 cm paper envelopes and stapled to secure. The envelopes were sealed in polythene bags (gauge 65 and 9×20 cm). Two layers of polythene were used to seal each bag separately to prevent rapid absorption of moisture. The sealed samples were resealed in groups of seven bags in bigger polythene bags and stored in a commercial deep freezer (Phillips, Tristar Tropical, Model AFB 044/PH) at —5°C.

In October 1991 (8 years later) a sample comprising 7 bags was removed and a germination test was done in petri-dishes by soaking seeds for 24 hours and incubating for 48 hours. The mean germination percentage of the seed samples in the 7 bags was 87.7 (Table 1).

Table 1. Germination percentage of Bg 300 after storage of 8 years* at—5°C

Sample No.	*Total No. of seeds*	*No. germinated*	*% germination*
01	171	148	86.5
02	151	135	89.4
03	171	146	85.4
04	135	115	85.2
05	155	134	86.5
06	178	165	92.7
07	176	155	88.1
Mean	162	143	87.7

*The freezer was non-operational for about 3 months in the second half of 1989, due to lack of electricity and this could have affected the longevity of seeds.

Evidently the seed viability, under the storage conditions tested would last longer than 8 years. The seed samples withdrawn from time to time in the future will be tested for viability to establish the period of extended longevity of the seeds under the storage conditions specified above.