

Title : Selecting packaging containers for low-temperature seed storage in seed banks

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ABSTRACT

Ex situ seed banks aim to conserve plant species seeds and can support ecosystem restoration projects. In storing seeds at a low temperature of -20°C , the choice of packaging containers is crucial for maintaining seed moisture content and viability. The objective of this study was to assess seed moisture and germination ability after seed storage in four types of packaging containers for one month. The tested species were *Turpinia pomifera* (Roxb.) DC., *Diospyros glandulosa* Lace and *Toxicodendron rhesoides*. The seeds were placed in four packaging treatments: (1) paper bags (control group), (2) ziplock bags, (3) vacuum-sealed plastic bags, and (4) vacuum-sealed foil bags. The seeds were then stored in a freezer at -20°C and germination was monitored over 12 weeks. The results indicated that vacuum-sealed foil bags were the most effective in retaining seed moisture, followed by vacuum-sealed plastic bags. In contrast, the paper (control group) and ziplock bags showed lower efficiency. Regarding seed germination, the types of packaging containers did not significantly affect percent germination. The findings suggest that vacuum-sealed packaging (either foil or plastic) effectively preserves moisture without negatively impacting seed germination.