

B:80: Effect of storage conditions on the germination of Papaya (*Carica papaya* L.) seed

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In the recent past cultivation of papaya (*Carica papaya* L.) has become increasingly popular in many parts of Sri Lanka. Papaya unlike other perennial fruit plants is mainly propagated from seed. Use of quality seeds plays an important role in successful cultivation of papaya.

Therefore, it is useful to investigate the storability study of papaya seeds for both breeders and growers. The germinability and longevity of seeds predominantly depend on storage environment and seed moisture content.

Objectives : Effect of moisture content on the germination of papaya seeds.
Effect of storage temperatures on the germination of papaya seeds.

Two Experiments were conducted.

- (1) Seeds were extracted from fully ripe fruits. The sarcotesta was removed. Initially moisture and germination tests were carried out. Seeds were dried using silica gel at 1 : 1 ratio. Germination and moisture tests were carried out at 24 h intervals, until dehydration tolerance level.
- (2) Seeds were extracted as in. (1). Initially moisture and germination tests were carried out. Seeds were dried to 9 - 10% moisture level by forced air circulation. The dried (9 - 10% mc) seeds were sealed in polyethylene for subsequent storage for a 1 year period. The storage treatments comprised a factorial combination of 4 temperatures (5, 10, 16°C and ambient temperature) and 4 durations (2, 4, 6 8 weeks) upto 2 months in a CRD with 4 replicates. The germination tests were carried out on moist blotting papers. The data was analysed using ANOVA.

Papaya seeds showed 100% germination at the initial moisture content of 50.1%. There was no significant reduction in germination upto 6.5 - 5.8% moisture content. Seed drying to 9 -10% moisture content had no effect on germination. Drying of seeds to lower moisture contents reduced initial germination.

In seed drying to 0 - 10% moisture level, stored at different temperatures, the storage time, storage temperature and the interaction of time and temperature significantly effected the germination. Seeds stored at ambient temperature maintained a high percentage of germination. Seeds stored at lower temperature showed reduced germinability.

Papaya (Variety Co-I) seed can be dried upto 9 - 10% moisture content without losing its initial germination.

The dehydration tolerance level of papaya (Variety Co-I) was around 5.8 - 6.5% moisture content.

Papaya seed stored at 9 - 10% moisture level, ambient condition, in a polyethylene bag maintained higher germinability during the 2 months period.