B-04: Storage behaviour of bittergourd *(M.charantia)* seeds

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Storage behaviour of seeds is one of the important factors to be considered in germplasm conservation. According to the IBPGR handbook for gene banks, bittergourd seeds belong to the orthodox group and can be stored at low temperature. However, preliminary studies conducted with indigenous bittergourd cultivars showed that the seeds cannot be stored at low temperatures (low as +1°C) without loss of viability. The purpose of this study was to identify the storage behaviour of bittergourd seeds.

One Sri Lankan cultivar (MC43) and 2 Japanese cultivars (Big and Big Long Two Yard) of bittergourd were used for this study. Seeds of these cultivars were stored at 5 different storage temperatures +18°C, 0°C,-40°C,-80°C and -196°C (liquid nitrogen) after initial seed germination was observed. Seed samples were subsequently drawn out from storage at different time intervals and their germinability was observed. According to the results obtained, the seeds of the Sri Lankan cultivar (MC43) was the most susceptible to low temperature. Seeds of this cultivar lost viability in 3 days at 0°C. Japanese cultivar Big was the most tolerant to low temperature. These seeds retain viability even after storage in liquid nitrogen for more than 2 months. When compared to these 2 cultivars, Japanese cultivar Big Long Two Yard had an intermediate low temperature tolerance level.

From this study it was found that seeds of all bittergourd cultivars cannot be stored at low temperature without loss of viability. The trend of behaviour was not towards the behaviour reported for orthodox but to the recalcitrant. Therefore, bittergourd seeds belong to the recalcitrant group and to the orthodox group.