

POSTER SUMMARY

AN INVESTIGATION INTO STORED SEED VIABILITY

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Abstract

In 2016 the germination viability of the SASRI Plant Breeding seed in cold storage (-20°C) was evaluated. This seed collection is a valuable resource at SASRI's disposal, and consisted of historical germplasm which may be used for the development of future varieties.

Approximately 15 000 crosses ranging from those made 49 to two years ago were tested (10% of the total weight of each cross) between February and September 2016. Approximately half of the crosses (6 150) were retested after failing the initial germination test.

Several important outcomes were attained through this exercise which will greatly assist the Plant Breeders in several areas. 1) The germination results obtained indicate that any desirable crosses older than 25 years should be used immediately to prevent further deterioration in germination. 2) An accurate/updated inventory of all known and perhaps previously unknown/misplaced crosses was documented. 3) An accurate record of seed weight and germination percentage of each of the crosses was obtained. This information is valuable, particularly when preparing seed for export. 4) Once the viability was established, those crosses that were retained will be analysed by the breeders to determine their desirability, which may lead to additional removal of crosses with low genetic value. 5) More informative selection of desirable parents and or parent combinations for future crossing was obtained. 6) After two negative germination tests (10% of total weight each), approximately one third of all crosses were discarded, freeing up valuable storage space for future crosses.

Keywords: seed storage, germination capacity, crosses