Impact of storage conditions and packaging materials on seed germination and field emergence of okra (Abelmoschus esculentus) at different seasons

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Abstract
The conservation of okra [*Abelmoschus esculentus* (L.)] seeds in genebanks is essential for success of their use in breeding programmes. This study was conducted to investigate the impact of storage conditions and packaging materials on germination and field emergence of okra seeds. One okra accession (NGB 00372) produced during the late growing season of 2015 was used for the study. The experiments were set up using 3x3 factorial in completely randomized design (CRD) and randomized complete block design (RCBD) for germination and field emergence experiments respectively with three replications. One hundred seeds per replicate were subjected to standard germination test and immediately followed by field evaluations during four growing seasons. The results of individual analysis of variance (ANOVA) revealed most of the treatments had highly significant effect on germination and seedling emergence in all seasons. However, the combined ANOVA across the seasons revealed that storage conditions, packaging materials and interactive effects were highly significant on seed germination and field emergence. Okra seeds stored in plastic container had highest germination value (79.67%) and field emergence value (78.67%) under short term storage conditions while seeds stored in aluminum foil had highest seed germination value (74.33%) and field emergence value (75.33%) under medium term storage conditions. The materials stored under deep freezer using aluminum cans had highest percentage values for seed germination (67.00%) and field emergence (77.67%). This study suggests that plastic containers, aluminum foils and aluminum cans would enhance the viability of okra seeds during in short, medium and freezer storage conditions respectively.

Keywords: conservation, breeding, viability, short term, medium term