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Effect of storage period and dehusking on germination and seedling vigour in *Cenchrus* species

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Abstract
Present study was conducted in *Cenchrus ciliaris* and *C. setigerus* for evaluating the effect of storage period and type of seed on germination and seed vigour. Spikelet and true seed 'A' (seed obtained by dehusking immediate before germination) and seed 'B' (seed dehusked at the beginning of the experiment and stored during experiment) were stored in paper bags in ambient room condition and evaluated at <1, 3, 6, 9, 12, 18, 24, 30 and 36 months after storage. Three replications of 100 spikelet/ seed each were put for germination following CRD at 25 °C in between paper in the dark for 10 days. Germination % of spikelet was adjusted in accordance to proportion of filled spikelets to make equal to cent percent filled spikelet. Germination/dormancy and vigor differed significantly (P <0.05) due to storage period and dehusking of spikelet as well as their interaction for all three categories of seed. Germination was extremely low in freshly harvested (<1 month) spikelets and seed ranging from 1.1 to 8.7%. Highest germination was recorded in spikelets after 9 months (upto 48%) and maintained more or less at the same level upto 18 months. Germination started declining in onward storage and after 36 months it reduced upto half as compared to 9 months in both the species. In contrast to spikelets, highest germination in seed 'A' (74%) was observed after 6 months while in seed 'B' (68%) only after 3 months of storage. In seed fast decline in germination was observed than spikelets in onward storage. Germination reduced upto half after 30 months in seed 'A', while in seed 'B' it was much faster and reduced upto half after 18 months storage in both the species. Storage period also affected the seedling length and shoot dry weight nearly in same pattern as germination. These parameters started increasing from 3 months and keep increasing slowly upto 18 months but differences from 6 to 18 months were not significant in spikelets as well as in both seeds. After 18 months of storage decline started and at 36 months it was drastic. Indeed, the reduction in vigour was much faster in seed 'B' than seed 'A'.

Keywords: Caryopsis, Cenchrus grass, Dehusking, Germination, Spikelet, Storage period, Vigour