

## Responses to Germination and Seedling Emergence Capacity of Durum Wheat Cultivars in Long Term Storage

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**Abstract :** This study was conducted at the research laboratory and greenhouse conditions to determine the effect on germination and emergency values of long-term stored seed (7 years) and non-stored seed (control) of nine durum wheat varieties. Three replicates of 20 seeds were germinated between double layered rolled germination papers in the Petri plates. Seeds were allowed to germinate at  $20\pm 1^{\circ}\text{C}$  in the dark for 8 days. The seeds were counted on the 8th day as per ISTA rules and calculated in percent to determine germination capacity. Seedling emergency values were determined by testing 20 seeds placed into the sands with three replications of pots. Plants were counted on the 7th day and 12th day to determined seedling emergency rate and capacity, respectively. According to results, there are significant differences among the varieties in terms of germination capacity, seedling emergency rate and capacity of long-term stored and non-stored seeds. Germination capacity values declined from 100% to 93,3% of non-stored seeds whereas they were from 96,7% to 71,7% of long-term stored seeds. Percentage of seedling emergency capacity varied from 65,0% to 93,3% for non-stored seeds, however, the percentage of it was between 11,7 and 86,7% for long-term stored seeds. Results indicate that germination and emergence values responses to long-term stored condition varied significantly among durum wheat cultivars. Research results showed that the long-term-storage resulted in significant decrease with 13.5 % for germination, 36.4 % for emergence on the seventh day and 32.4 % for emergence on the twelfth day. Germination values ranged from 93.3 to 100.0 % for control and 71.7 to 96.7 % for storage. Emergence values in seventh day varied between 51.7 % and 90.0 % for control and 75.0 % and 10.0 % for storage, however values in twelfth day were between 93.3 % and 65.0 % for control and 86.7 % and 11.7 % for storage. According to research results, germination and emergence responses to long-term storage condition varied significantly among durum wheat cultivars.

**Keywords :** germination, emergence, long-term-storage, durum wheat

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