

Investigation of Germination and Initial Development Periods of Sorghum (*Sorghum Vulgare* L.) Seeds with Different Pretreatments under Controlled Conditions

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Abstract

The study aimed to investigate germination criteria and seedling development by applying five different pretreatments to sorghum seeds: PEG (20%), Mannitol (6%), Sorbitol (10%), distilled water, and a control. The study was conducted in 2023 at the laboratory of the Field Crops Department of the Faculty of Agriculture at Ankara University, using a randomized plot design with four replications. After soaking the seeds in the treatment media for 24 hours, they were dried on blotting paper for another 24 hours and allowed to germinate under controlled conditions. Germination rate and strength, shoot and radicle length, shoot fresh and dry weight, and radicle fresh and dry weight of the seeds monitored under laboratory conditions were recorded. It was noted that the characteristics examined in the germination of millet seeds under controlled laboratory conditions produced significant differences in terms of priming treatment. According to laboratory results, it was determined that primed seeds showed a more significant increase in germination speed and germination power compared to the control, and that PEG 20% and distilled water applications had a positive effect on the examined traits.

Key Words: