

Effect of delinting and seed ageing on emergence of cotton under drought and salinity stresses

Abstract

The emergence is one of plant phenological major stages that determine the degree of success in agricultural production systems. The emergence can be heavily influenced by environmental factors, soil moisture, salinity and quality (viability and vigour seed). The fibers of cotton Remnants on cotton seeds. Seed vigour of crops at its maximum in Physiological maturity. But Certainly change seed vigour during storage. Seeds deteriorate during improper storage (moisture and temperature high) that this ageing reduce quality of seed.. The often seeds that longevity for species that there is hard coat on seeds and they are impervious than moisture . The objective of this research was to evaluate effect of delinting and seed ageing on emergence of cotton under drought and salinity stresses in Zabol University in year 2010. experiment was factorial conducted based on RCBD design with 3 replicate and total of units 120. Treatments were combinations of factor A in 2 type of cotton seed, factor B include environmental stress in 5 levels and factor C include seed ageing in 4 levels (24, 48, 72 and 96 hour) . In this study evaluate traits of percent, speed and uniformity of emergence, 50% (D50) the time required to achieve maximum emergence, root length, shoot length, seedling dry weight, electrically conducting of membrane, lipid peroxidation and hetroterophic growth of seedlings which consists of two components: 1) the amount of seed reserves have been transferred or dynamically 2) performance of seeds transferred into reserves to seedling tissues. The results showed that lipid peroxidation and electrical conductivity of plasma membrane increased with increasing accelerating aging, but this rate of increase for linter seeds was lower than delinter seeds. The time required to reach to emergence maximum 50% increased with seed ageing increase. In this experiment, such as other studies decreased traits such as percent, speed and uniformity of emergence, root length, shoot length, dry-seedling weight and seedling hetroterophic growth with increasing accelerating aging, But this rate of increase for linter seeds was lower than delinter seeds.

Key words: Delinter, Cotton, Emergence, Salinity, Drought, Seed aging



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