

Abstract

Pulse, as the second source of human nutrition, benefits from great agronomic and nutritious features. Due to study the effect of seed and embryo size on seedling establishment and yield of lentil cultivars under drought stress conditions, an experiment was conducted at the Agricultural Research Institute of University of Zabol in Zahak (Chah -e Nimeh To zahak) during the growing season of 2016-2017. an experiment was conducted as split-split plot with complete randomized block design and three replications. The experimental treatments, the main factor involved of irrigation treatments at three levels: 1) full water requirement (based on evapotranspiration); 2) 70%; water requirement; 40% 3.water requirement; and the first factor of cultivar in three levels: 1) local Sistan 2) - Thunderboilt 3) Succane and the second sub-factor include the seed size at two levels: 1) large size (Succumbum 3.54 mm, treadmill mm 4.75, local Sistan mm 2.80) 2) small size (Sassanak mm / 4, Thunderbolt 4 mm, Local Sistan 5.2 mm). Characteristics Plant height, Number of main branches, Number of secondary branches, Number of pods per plant, Number of seeds in Niam, Number of seeds per plant, 100-grain weight grain performance, biomass and harvest index were evaluated. The results showed that there is a correlation between seed size and embryo, so that in the cultivars examined, the larger the seed size, the larger the size of the embryo. With increasing drought stress, all studied traits were reduced, so that the highest economic yield was obtained from irrigation with 100% water requirement with a mean of 1331.72 kg/ ha/1, of which irrigation was 70% and 40% water requirement 49% reduction of total irrigation Function. n the cultivars, the best performance was Sistany's local cultivar, with a yield of 1642.4 kg/ha/1, which had a 62% increase compared to the 56% Tandervoillot cultivar. Seed size treatments also showed that the highest seed yield was obtained from large seed treatment with an average of 1052 kg/ ha/1, which was 11% higher than seed treatment.

Key words: Seed size, seedling establishment, embryo size, drought stress



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