

## Abstract

Enhanced crops tolerance to drought stress is of great importance to maintain yield in arid seasons. In order to study the effect of drought stress and different types of humic fertilizers, amino acids and organic supplement on the yield and quantitative and qualitative traits of Safflower, a split plot in a randomized complete block design with 3 replications was conducted at Research Institute of Agriculture Research Institute, University of Zabol (Chahnimeh). The main factor of the drought stress level is control (non-stress or full irrigation), irrigation with 50% capacity and irrigation with 70% of crop capacity. The sub-factor is 5 levels including control (non-application), aminomicropower fertilizer, humic acid, and organic supplement. The planting was ridge at a distance of 50 cm and rows 5 cm which was implemented manually in early December. The Safflower cultivar is a planting plant of Goldasht, provided from the Zabol Agricultural Research Center. In this experiment, some morphological traits such as number of leaves per plant, number of branches per plant and plant height were investigated. Determination of safflower yield, grain yield, harvest index and yield components including number of seeds per plant, number of seeds per head and 1000 kernel weight. Some physiological traits such as determination of photosynthetic pigments (chlorophyll a, b and carotenoids), protein, catalase, peroxidase, as well as determination of oil content, nitrogen, phosphorus and potassium were measured. Drought stress and organic fertilizer application significantly affected the mentioned traits. Based on the results of mean comparisons, drought stress significantly decreased and spraying caused a significant increase in all traits. Increasing plant height and parallel increase of number of branches and number of plant leaves in fertilizer treatments, especially in the treatment of humic acid solution, caused vegetative growth in the plant

Keyword: Irrigation, Proline, Oil percentage, Chlorophyll, Organic fertilizer.



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**Effect of drought stress and organic fertilizers  
types on yield, quantity and quality traits of  
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