

## **Abstract**

An experiment is conducted to investigating the impact of different biological fertilizers on morphological and physiological attributes of *Cichorium intybus* herb under drought stress, based on split plot in completed randomized block design with 3 replications in 2015 in Zabol University Research Farm (Chah-e-Nime). The main-factor included drought stress based on 50, 70 and 90 percent of field capacity (FC) in all growing phases. Sub-factor was biological fertilizer including control (no fertilizer), Nitroxin as seeding treatment with 1 liter per hectare, spraying EM fertilizer at 40 l per hectare, and spraying chelated nano potassium (containing 27 percent) at 10 kg per hectare. Results indicated that the effect of drought stress on all studied parameters was significant. By increase in stress, all morphological attributes, photosynthetic pigments, inulin, content of phosphorus and potassium reduced compared with the control, however concentration of acerbate, praline, carbohydrate, and flavonoid improved by increasing drought stress. This increasing related to plant reaction to drought stress. Some reaction makes plant resistance to drought stress in short phase and cannot affect plant reaction to long phase of stress. Results indicated that the highest amount of catalase, polyphenol oxidase, guaiacol and carotenoids was observed at plant irrigated at 70% of FC. The application of biological fertilizers also leads to increase in all attributes. The highest plant height, dry yield of flower, wet and dry weight of root, and inulin was observed at plant fertilized at EM fertilizer treatment. Interaction between drought stress and fertilizer was significant for all studied factors except plant height and chlorophyll b. The greatest yield of dry flower, dry and wet weight of root, photosynthetic pigments and inulin was obtained at complete irrigation and application of EM, whereas the content of polyphenol oxidase and carotenoid was observed at plant irrigated at 70% of FC and fertilized with Nitroxin.

**Keywords:** Inulin, Paroling, Protein, Soluble sugars, Catalase



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**Effects of bio fertilizers on morphological and  
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