

Abstract

To investigate the effects of foliar feeding of the Nano fertilizer and biological on the physiological and morphological characteristics of *hibiscus* under drought stress an experiment in year 1393-1394 to form plot of a split with block design Complete with three replications in agricultural Research Institute, University of Zabol (chah nimeh) was conducted. The main factor of drought stress in the four Levels includ: 30, 50, 70 and 90 percent of field capacity and sub-plots in three levels includ: nano iron and nano-hybrid (manganese, zinc, iron) and biomic (nano-bio) studied. The soil moisture during the growth period by using of devices of waves reflective (TDR) measured. The results of this experiment showed that drought and solution of the Nano- fertilizer and bio-fertilizer and them interaction on the more traits the significant effect have got. Compare average of Interaction showed that the highest amount of the anthocyanin (9.53 micromoles per gram of fresh weight) in the stress drought 30% of field capacity and by using of iron nanoparticles fertilizer and the highest yield of the sepals in the drought stress 90 percent of the field capacity by using of Nano Fe fertilizer (5394/94 kg ha) Respectively .

Key words: solution, anthocyanin content, secondary metabolites, stress



University of Zabol
Graduate School
Faculty of Agriculture
Department of Horticulture and Landscape

Thesis Submitted in Partial Fulfillment of the Requirement for the degree of Master of
Science (M. Sc) in in Medicinal plant, Spices and Soda

Title

**The effects of foliar feeding of nano and bio-fertilizer on
physiological and morphological characteristics of
hibiscus under drought stress conditions**

Supervisor:

Dr. B. A. Fakhri

Dr. N. Mahdinezhad

By:

S. E. Hashemi

June 2016