

## **Abstract**

Purslane is a valuable Medicinal Plant that leaves, seeds and oil are used in the medical and pharmacological..therefore,study of quantitative and phytochemical is in drought conditions is necessary. In order to investigate on morphological and physiological characteristics of two varieties of Purslane under drought stress, an experiment were designed. Experiment was conducted in research farm of agriculture and natural resources, city Ahar (East Azarbayjan) as split-plot factorial based on randomized complete block design with three replications. Drought levels: 90, 70 and 50 percent of Field Capacity moisture as the main factor, the first sub- factors including: non application (control) and application of nano iron chelated at a dose of one in a thousand and a second sub was Tehran and Kazeron cultivars of Purslane. Analysis of variance indicated that among studied cultivars, drought levels and spraying nano iron chelated are significant differences in all traits. Drought stress increased Carotenoids, Carbohydrates, anthocyanins, Proline, Organic matter, percentage of Sodium, Potassium and Iron, while was decrease in plant height, Stem diameter, Internode length, Seed weight, Chlorophyll , a, b, percentage of ash. The highest percentage of leaf oil was obtained of Kazeron cultivar under normal irrigation and spraying. The highest percent and seed weight was obtained of seed oil interaction normal irrigation with the Tehran cultivar and spraying nano iron chelated. The oil compounds linolenic acid, linolenic acid and then Palmitic acid accounted for highest rate. Tehran cultivar was the highest amount of linolenic acid (Omega-3), linolenic acid (Omega-6) and Palmitic.

**Key words:** Drought stress, Fatty acid, *Portulaca oleracea*, Proline.



University of Zabol  
Graduate school  
Faculty of Agriculture  
Department of Agronomy

**The Thesis Submitted for the Degree of Master of Science  
(in the field of Horticulture Science)**

Title:

**The effect of foliar feeding of nano - iron chelated on  
morphological and physiological traits of two  
varieties of purslan, under drought stress**

Supervisors:

**Dr. N. Mahdinezhad  
Dr. B.Fakheri**

Advisor:

**Dr. M. Khaje**

By:

**Hamide Jamalpour**

Sep 2016