

## **Abstract**

This experiment was conducted in order to study the effect of growth stimulation (organic) on some of the physiological traits, yield and oil content of Goldasht cultivar safflower under different levels of drought stress in split plots in a randomized complete block design with three replications. MainPlot: Hamoon Green (a growth regulator) in four levels: control, 8, 10 and 12 lit/ha, and the SupPlot was drought stress in three levels: full irrigation, irrigation until the flowering stage of the main stem and irrigation to the stage Flowering was complete. Each plot consisted of 4 planting lines with a length of 3 meters and a distance between the lines of 50 cm. The cultivation was carried out in December. Measurable characteristics include: plant height, 1000-seed weight, petal weight, plant number, grain yield, leaf number, lateral stem, fresh weight, saturated weight, dry weight, stem diameter, protein percentage, Oil content and carotenoid concentration, proline, ascorbate, guaiacol, calcium, catalase and peroxidase. Based on the results, interaction between "growth stimulus" and "drought stress" levels was significant only on plant height, stem diameter, oil percentage, proline concentration and catalase concentration. So that: the highest plant height was obtained from non-stress treatment and 12 liters of growth stimulation treatment with average 64 cm. The highest chlorophyll was obtained from non-stress treatment and 12 liters of growth stimulation treatment with an average of 10/20. The highest stem diameter was obtained from non-stressed treatments and 12 liters of growth stimulation treatment with an average of 8/1. The highest oil content was obtained from 12 liters of growth stimulus and from non-stress treatment with an average of 32/7. Maximum proline concentration was obtained from 12 liters of growth stimulus and 0/38 stems treated treatments. The highest concentration of catalase was obtained from 12 liters of growth stimulation and from stems treatment with an average of 0/001521.

**Keywords:** Oxidative stress, growth regulator, proline, chlorophyll, selenium



University of Zabol  
Faculty of Agriculture  
Department of Agriculture

**The Thesis Submitted for the Degree of M.Sc (in the field of  
Agronomy)**

**Title: Effect of foliar application organic growth  
stimulator on physiological characteristics, yield and  
percentage of safflower oil under levels of drought stress**

**Supervisors:**

Dr. A.R. Sirousmehr

Dr. M. Moosavi Nik

**Advisor:**

Dr. A. Ghanbari

**By:**

A. Rashedi

Spring 2019