

## **Abstract**

*Jatropha curcus* L. is a plant belonging to the Euphorbiaceae family, which is of great economic and medical importance. Duplication of this plant with seed due to little germination is not considered. At present, the use of tissue culture is a suitable method for proliferation of plants that have a long crop or a proliferation of them. In order to evaluate the tolerance to salinity and dryness of the *Jatropha* plant, this research was carried out in two stages. In the first experiment, the internodes were placed in MS medium containing different concentrations of BAP and 2. 4-D hormones. The experiment was a factorial based on a completely randomized design with three replications. In the second experiment, the best calluses produced in MS medium containing different concentrations of sodium chloride and polyethylene glycol were separately transferred and examined in a completely randomized design with two separate experiments. In order to evaluate the tolerance of *Jatropha curcus* L. to salinity stress and drought stress, the results of this experiment were compared by t-test. The results of the first experiment showed that application of concentration of 1 mg / L of BAP with 1 mg / L of 2. 4-D concentration increased calcification and increased vegetative index in *Jatropha*. In the second experiment, in relative conditions of salinity, the relative growth rate of callus decreased, but under drought stress, there was no significant difference in the relative growth rate of calluses between concentrations. Also, under conditions of salinity and drought stress, the amount of proline and soluble carbohydrates in grown calluses increased. The *Jatropha curcus* L. plant was more resistant to drought stress than salt stress .

**Keywords:** *Jatropha curcus* L. , Drought stress, Salinity stress, Callus, BAP, 2. 4



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