Abstract

(Portulaca oleracea L.) is a plant that is known more as weed, but in recent years, due to its valuable medicinal properties and its use in many areas, including edible, oil and forage, by the World Health Organization as one of the The most widely used medicimlplants are introduced. In this study, in order to investigate the effect of different levels of organic fertilizers on qualitative and quantitative characteristics of purslane under different irrigation regimes, a split plot experiment was conducted in a randomized complete block design with three replications at the Nehbandan Municipality farm. Irrigation regimes included 7, 14 and 21 days as the main factor and the sub factor including no fertilizer application (control), organic fertilizers of nitrogen, phosphorus and potassium at concentrations of 1, 2 and 3 ml / l. Spraying with phosphorus at the same time as starting the application of the stress (after fully planting in the 8th leaf stage), nitrogen spraying will occur at the same time as the first capsules appear on the plant and potassium spraying occurs in the half-way of the emergence of half of the plant capsules. The results showed that the effect of irrigation regimes, organic fertilizers and their interaction on plant height, stem diameter, fresh and dry leaf weight, number of capsules per plant, 1000-seed weight, aerial yield, chlorophyll a and b, proline, anthocyanin, carbohydrate , Flavonoids, protein, catalase, ascorbate peroxidase and guaiacol peroxidase in leaf and oil content in leaf and seed at 1% probability level. The highest plant height, stem diameter, leaf fresh and dry weight, number of capsules per plant, 1000-seed weight, shoot yield, chlorophyll a and b content, protein and leaf and seed oil content were obtained in 7 days irrigation regimen. Irrigation regime reduced the values of these characteristics. While proline, anthocyanin, carbohydrate, flavonoids, catalase enzymes and guaiacolvperoxidase increased in the leaf with increasing irrigation regimes. The results of the comparison of mean interactions of fertilizer treatment and drought stress showed that application of 3 ml / L of organic fertilizers caused fresh and dry weight of leaf, 1000 seed weight, aerial yield, leaf oil and seed oil content in irrigation regimen for 14 days and amount anthocyanins, carbohydrates and flavonoids in the irrigation regimen were 21 days (severe stress). Application of 3 ml / l of organic fertilizers increased plant height, diameter, number of capsules per plant, chlorophyll a and b and protein in contvol conditions, but in interaction with water deficit activity, the activity of catalase, ascorbate peroxidase, guaiacoloperoxidase and proline concentration thereby increasing the resistance to drought stress.

Key words: Anthocyanin, Proline, Oil percentage, Weight gain, Yield

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Effect of different levels of organic fertilizers on quantitative and qualitative traits of (Portulaca oleraceae) under different irrigation regimes in Nehbandan

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