

Abstract:

To study the effect of humic acid and drought stress on quantity and quality characteristics of Roselle (*Hibiscus sabdariffa*) an experiment was conducted in the research of agricultural education Centre Jiroft in 2013. Field experiment was carried out as split plot design with three replications. Water deficit stress set as main factor with three levels (A1 =Irrigation after 50, A2 = 100 and A3 =150 mm evaporation from pan class A) and humic acid was in four manners (B1= non humic acid, B2= once with Irrigation, B3= once with Irrigation + Once spraying, B4= once with Irrigation + twice Spraying). Applied humic acid to form Irrigation and to form spray to arrangement with compactness (10kg/ha), (250ml/100l). result showed that the significant effect of drought stress on height, diameter, vegetative and generative yield, potassium, phosphorus, sodium content, anthocyanin, chlorophyll a, chlorophyll b, carotenoids, Cell Membrane Stability, relative humidity and proline. Drought stress increases this characters was reduced. Except sodium and proline levels in severe stress conditions were added . The effect of humic acid treatments on plant height, plant diameter, vegetative and generative yield, chlorophyll, chlorophyll a, chlorophyll b, carotenoids and the amount of phosphorus, potassium, sodium, and anthocyanins were significant. So that all of characters mentioned by increasing the amount of humic acid increased. The interaction effects significant on number of branches, chlorophyll content, potassium, phosphorus content, vegetative yield and carbohydrate. Therefore, the highest this traits obtained by applying Irrigation after 50 and once with Irrigation + twice Spraying humic acid. the highest carbohydrate obtained by applying Irrigation after 100 and once with Irrigation + twice Spraying humic acid. According to the results of this experiment can be said: humic acid could play important role in increasing quantity and quality characteristics and offset the harmful effects of drought stress on the plant roselle.

Key words: Anthocyanin, Drought stress, Humic acid, chlorophyll, roselle.