## Abstract

Nodayse, antioxidants and plant growth regulator to reduce the negative effects of stress has been proposed. The factorial experiment in a completely randomized design with three replications was conducted at the Center for Biotechnology, University of Zabol. Treatments consisted of three levels of drought stress (80, 60 and 40 percent of field capacity) that the volume w as a factor A, salicylic acid as a B at three levels 0, 1 and 2 mM and chitosan as a C in three levels (0, 1 and 2 mM) which were foliar treatment. The results showed that levels of drought, salicylic acid and chitosan and their interaction on growth and development sesame plant were effective. Drought stress reduces some traits were measured while the activity of antioxidant enzymes (catalase, guaiacol peroxidase, ascorbate peroxidase) increased. Studies on photosynthetic pigments sesame plant under of drought stress treatments suggest that a very significant impact on reducing the amount of pigment. So that with increasing of drought stress (40% field capacity), chlorophyll a, b and carotenoid respectively .498, .4 and .353 control of the plant, which is very significant reduction in the level of a percent. Chitosan and salicylic acid treatments on the pigments on the surface was a significant difference. Chitosan had been increased by the amount of pigment chlorophyll a, b and carotenoid equal to 602, 403 and 249. be. QReal time PCR methods were used to study gene expression peroxidase. The results showed that the interaction of treatments on gene expression at the level of 5% was significant. According to the observations of this study it can be concluded that the use of chitosan and salicylic acid suitable solution to increase plant resistance to drought stress.

Keywords: sesame, drought stress, antioxidant enzyme, salicylic acid, chlorophyll, gene expression



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## Effects of salicylic acid and chitosan on Sesame peroxidase gene expression pattern under of drought stress

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