

## The Effect of Salicylic Acid and Paclobutrazol on Yield and Yield Components of Maize (*zea mays* L.) Under Water Stress

A. Sepehri\*<sup>1</sup>, and S. Bayat<sup>2</sup>

- 1.\* **Corresponding Author:** Assistant Professor, Department of Agronomy and Plant Breeding, University of Bu-Ali Sina, (Sepehri110@yahoo.com)
2. M.Sc. Student of Agronomy, Department of Agronomy and Plant Breeding University of Bu-Ali Sina

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### Abstract

In order to investigate the effect of growth regulators to mitigate impact of water stress on yield and yield components of maize, an experiment was carried out in research farm of Bu-Ali Sina university of Hamedan in field season 2009. The experimental design was a split plot in completely randomized block design with three replications. The main factor included three irrigation intervals (7, 11 and 15 days interval) as the main plot and antitranspiration substances (salicylic acid (SA) and paclobutrazol (PBZ)) as the sub-plot. The results showed that the interaction between SA and water regimes (7, 11 and 15 days interval) significantly increased grain yield by 13.69, 17.24, 22.93 percentage, the mean of seed weight by 10.24, 13.63, 16.79 percentage and biological yield by 13.36, 16.24, 18.84 percentage compared to untreated plants, respectively. The number of grains per row and the number of grains per ear significantly increased under SA treatment compared to untreated plants. The interaction between PBZ and 7 days interval significantly decreased grain yield and the mean of seed weight by 8.61, 8.65 percentage compared to untreated plants, respectively. The interaction between PBZ and 11 days interval significantly increased grain yield and the mean of seed weight by 14.92, 9.41 percentage compared to untreated plants, respectively. The interaction between PBZ and 15 days interval significantly increased grain yield and the mean of seed weight by 17.81, 12.96 percentage compared to untreated plant, respectively. The present investigation suggests that exogenous application of SA and PBZ may help reduce the adverse effects of drought in maize.

**Keywords:** *Maize Growth Regulator, Antitranspiration substance, Irrigation interval, Biological yield, Economical yield*