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Role of Salicylic Acid in Improving Water Use Efficiency of Sesame, Corn and Bean under Water Stress Conditions

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Abstract

In order to evaluate the role of salicylic acid in improving water use efficiency of sesame, maize and common bean, a split plots experiment based on RCBD design with three replications was conducted in 2014-2015 growing seasons, in Ferdowsi University of Mashhad, Iran. Irrigation levels (50 and 100% of water requirement) and application and non-application of salicylic acid assigned to main and sub plots, respectively. Variables analyzed to 3 factors in sesame and 2 factors in maize and bean. In sesame, first factor included variables of dry matter yield, plant height, leaf erea index and soil phosphorous, variables of seed yield, seed weight per plant, crop growth rate and water use efficiency were in second factor and variables of EC, soil nitrogen and pH had the highest load in third factor. In maize, variables of seed yield, dry matter yield, seed weight per plant, plant height, crop growth rate, leaf erea index and water use efficiency were on first factor and variables of soil nitrogen, EC, pH and soil phosphorous had the highest load in second factor. In bean, variables of seed yield, dry matter yield, seed weight per plant, crop growth rate, soil nitrogen and phosphorous, EC and water use efficiency were in first factor and second factor included variables of leaf erea index, plant height and soil pH.

Key words

Crop Growth Rate, Deficit Irrigation, Factor Analysis, Organic Acid, Soil pH.

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