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Effects of Treated Wastewater and Foliar Application of Zn and Mn on Quantity and Quality of Grain Millet in Sistan Region

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Abstract

In order to study effects of municipal wastewater with foliar application of Zn and Mn on quantitative and qualitative characteristic of millet a field experimental was conducted in 2009. The experiment was conducted in split plot in complete randomized block design with three replication. The treatments were comprised of three levels of irrigation (w1= well water, W2= water Half and half irrigation with wastewater and W3= Full wastewater in main plot and sub plot consisted of F1(control), F2 (foliar application of Mn), F3 (foliar application of Zn), and F4 (foliar application of Mn+Zn). Results showed that irrigation with wastewater significantly increase the grain yield of millet than ordinary water. Treatment of treated wastewater had a positive and significant influence on grain yield and all yield components unlike stem height and diameter. Between sparing treatments, F4 in most situations had most efficacies on increase of grain yield and yield components. Foliar application of Zn and Mn effects on all parameters. Interaction of irrigation and sparing treatments effect on yield and yield component. in this experiment water treatment and sparing treatment had significant effect on accumulation of mineral elements in seed. Results of this experiment showed that concentrations of mineral elements affected by wastewater and fertilizer treatments.

Key words: Wastewater, Foliar Application, Grain Quality, Grain Quantity, Millet