

Effects of Drought Stress and Foliar Micronutrient Application on Qualitative and Quantitative Yield of Forage and Grain in Pear Millet

Abstract

In order to study the effect of Mn and Zn micronutrients foliar application on quality and quantity particulars of pearl millet under drought stress a field experiment was conducted in 2008 in research institute of zabol agriculture faculty. The experiment was conducted in split plot design with three replications. Main plots were different levels of drought stress included: S₁= full irrigation, S₂= withholding irrigation in vegetative growth stage (beginning of rapid stem development), and S₃= withholding irrigation in flowering stage. Sub plots were of four levels micronutrients foliar application treatments (F₁= no foliar application, F₂= 3000 ppm foliar application of manganese sulfate, F₃= 3000 ppm foliar application of Zink sulfate, and F₄= foliar application of manganese sulfate + Zink sulfate). Result indicated that highest fresh forage, dry matter and grain yields, 1000-seeds weight and harvest index obtained from S₁ treatment. Furthermore highest ash, crude fiber, crude protein, nitrogen and phosphorus percentage achieved from S₁ treatment. But it hadn't significant effect on potassium, manganese and Zink content in forage. Also, highest fresh forage, dry matter and grain yields obtained from foliar application of micronutrients. But these treatments hadn't significant influence on 1000-seeds weight and harvest index. Highest ash, crude fiber, crude protein, nitrogen, manganese and Zink content achieved from application of micronutrients. But these treatments hadn't significant influence on phosphorus and potassium percentage in forage.

Keywords: Pearl millet, Micronutrients, Manganese, Zink, Drought stress



University of Zabol
Graduate school
Faculty of Agriculture
Department of Agronomy

The Thesis
Submitted for the Degree of Master of Science(Ms.c)
(In the Field of Agronomy)

**Effects of drought stress and foliar
micronutrient application on qualitative
and quantitative yield of forage and
grain in Pear millet**

Supervisors:

Dr. A. Ghanbari

Advisor:

Dr. M. Heydari

By:

Yousef paygozar

Jun 2009