

**Abstract**

In this study, the effect of Fe and Zn sprays accompanied by drought stress was examined on the growth, dry matter accumulation, grain yield, and mineral nutrients in cumin plants. The experimental design was a split plot with three irrigation regimes: irrigation at 5, 10 and 15 days intervals comprising the main treatments, and four combinations of Fe and Zn foliar sprays as sub-treatments that were applied with three replications. The experiment was conducted in 2012 at the Zabol University research farm in Zabol, south Iran. Results indicated drought stress significantly influenced yield and percentage of essential oil yield, plant height, stem diameter, number of umbels per plant, one-thousand grain weight, biological yield, grain yield and harvest index. Increasing drought stress severity decreased plant height, stem diameter, percentage and yield of essential oil. Effect of micro-nutrients spraying on plant height, stem diameter, number of umbels per plant, number of seeds per umbel, biological and grain yield, essential oil yield and harvest index was significant. The greatest grain yield was observed at plant sprayed with Zn. Interaction of micro-nutrients spraying and drought stress was significant on number of seeds per umbel, one-thousand grain weight and biological yield. The greatest biological yield was achieved at plant irrigated at 5 days intervals and sprayed with Zn.

**Keywords:** Cumin, Spray, Micronutrient, Drought



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**Effect of foliar application of iron and  
zinc on quantitative and qualitative  
characteristics of cumin (*Cuminum  
Cyminum*) under drought stress**

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