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Effects of Humic Acid Applications on Nitrogen Use Efficiency of Lettuce (*Lactuca Sativa*)

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Abstract

Lettuce (*Lactuca sativa*) is the most widely grown and important food in the world for human nutrition as well as a major source of mineral nutrition. Fertilizers used to improve lettuce yield and quality should be selected very carefully. The present study was conducted to investigate the effects of humic acid treatments on nutrient use efficiency of lettuce plants. Five different humic acid doses (0, 3, 6, 9, and 12 L da⁻¹) were applied to pots filled with 4 kg of soil. Experiments were conducted in 5 replications in 25 pots. Humic acid treatments were applied before sowing the seeds to soil. Initial soil sampling was performed to identify initial physical and chemical soil characteristics. Plants were harvested at the end of experimental period and dry-fresh plant weights, nitrogen and nitrate accumulation levels were investigated. Results revealed that humic acid treatments increased nitrogen use efficiency of lettuce plants, specially 6 L da⁻¹ application doses of humic acid. It was also observed that especially humic acid treatments reduced nitrate accumulation levels.

Keywords: Lettuce, humic acid, nitrogen use efficiency