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Effect of Spraying with Humic Acid on Grafted Watermelon Plants

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Abstract

This investigation was carried out during the growing season of 2016 on grafted watermelon *Citrullus lanatus* L. cv. Turkish seedlings at the vegetable research farm of the technical institute, Zakho polytechnic university, Duhok governorate, Kurdistan region, Iraq. The objective of this research was to investigate the agronomic effects of spraying of humic acid on grafted watermelon seedlings. These seedlings were brought from Turkey and transplanted on 25 May 2016 in ditch rows, with a distance between plants of 50 cm and 2.5 m between rows. Seedlings were arranged in a complete randomized block design with three application levels of humic acid (0, 2 or 3 ml L⁻¹). The first spraying was done at the 3 to 4 true leaf stage (two weeks after planting) while the second spraying was done at flower bud formation stage. Data were statistically analysed using SAS. The results indicated that there was a positive effect of humic acid application on vegetative growth properties, yield, and fruit quality (mineral content) as compared to the control treatment.

The double application of humic acid at a concentration of 3 ml L⁻¹ gave the highest plant length, number of branches per plant and chlorophyll content in leaves of 283.74 cm, 4.360 and 52.42, respectively. This treatment also gave the highest yield (fruit weight), fruit diameter and total soluble solids of 7.550 kg, 24.91 cm and 13.24%, respectively.

Mineral content of nitrogen, phosphorus and potassium revealed a positive trend in response to the applied humic acid. So this factor had a visible effect on all studied parameters.

Keywords: Grafting, humic acid, organic agriculture, watermelon