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degree of MSC in Agronomy

**The effect of soloptas and humic acid fertilizer on quantitative and  
qualitative traits of turnip (*Brassica rapa L*)**

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## **Abstract**

In order to investigate the effect of humic acid and Soloptas fertilizer on quantitative and qualitative traits of Vikima turnip, a factorial experiment was conducted in a randomized block design with three replications. The first agent, humic acid, was applied in four levels (0, 600, 1200 and 1800 ml/ha) and at three stages as foliar application (after leaf emergence, one month after planting and 2 months after planting). The second factor including Soloptas fertilizer was applied in four levels (0, 2, 4 and 6 kg/ha) at 2 stages (one month after planting and two weeks after the first stage) as foliar application. The results of analysis of variance showed that the effect of fertilizer levels on the following items was significant: plant height, fresh and dry weight of shoots, fresh and dry weight of roots (tubers), total plant dry weight, root length, root diameter, leaf area index, photosynthetic pigments (chlorophyll a, chlorophyll b, total chlorophyll, and carotenoids), chlorophyll content (SPAD), anthocyanin content, Brix index, and plant canopy temperature. Application of humic acid in the fourth level at the rate of 1800 ml/ha caused the following: The highest aerial fresh weight (3.30 g), aerial dry weight (30.41 g), root fresh weight (889.3 g), root dry weight (53.64 g), total plant fresh weight (698834.04) and total plant dry weight (1997/01 g), root length (8.526 cm), root diameter (9.712 cm), highest leaf area (10.62 cm), chlorophyll a concentrations (1.594 mg/g in fresh weight), chlorophyll b (2.256 mg/g in fresh weight), total chlorophyll (3.850 mg/g in fresh weight), carotenoids (0.625 mg/g in fresh weight), Chlorophyll content (53.233), anthocyanin content (2.787  $\mu\text{mol/g}$  in fresh weight), Brix index (14.2) and plant canopy temperature (17.4 °C). The interaction of these two fertilizers in height was 79.1 cm.

**Keywords:** Chlorophyll , Foliar ,application Turnip, Nutrition, Yield.