

## The effect of humic acid on some growth and physiological characteristics of *Fragaria ananassa* var: Selva in greenhouse conditions

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### Abstract

Due to the many restrictions on the use of soil and water resources, increasing greenhouse plants' yield is important. In order to study the effect of humic acid (HA) on some growth and physiological traits of strawberry (*Fragaria ananassa* var: Selva), an experiment was conducted as a completely randomized design with factorial arrangement with three replications. The experimental factors included HA type (HA extracted from vermicompost, HA extracted from vermicompost in combination with 10 mg indole acetic acid, and commercial HA), three different concentrations of HA (0, 15 and 30 mg/L) and two methods of HA application (foliar and nutrient solution). The results showed that the highest yield, chlorophyll and total soluble solids was obtained from foliar application of 15 mg/L extracted HA, the highest ion leakage was achieved from foliar application of 30 mg/L extracted HA from vermicompost in combination with 10 mg indole acetic acid, and the highest dry weight of roots was obtained from nutrient solution application of 30 mg/L HA extracted from vermicompost in combination with 10 mg indole acetic acid. In general, 15 mg/L HA, extracted from vermicompost, sprayed as foliar application, was more successful in most studied traits.

**Keywords:** Foliar spray, Vermicompost, Greenhouse culture, Indole acetic acid.

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