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### Effects of humic acid applications on some plant yield, quality parameters and nutrient contents in Turkey

umic acid (HA) might benefit plant growth by improving nutrient uptake, plant yield, fruit yield, plant physiological H parameters. Humic acids have been complexed with sodium (Na), potassium (K), magnesium (Mg), zinc (Zn), calcium (Ca), iron (Fe), copper (Cu) and with various other elements to overcome a particular element deficiency in soil. Humic acid serves as a catalyst in promoting the activity of microorganisms in soil, so, some studies were conducted that effects of humic acid different plants in field and greenhouse conditions. In Wheat: The application doses of humic acid on wheat plants of iron uptake were the highest 8 L da-1. The regression analysis of the results for optimal application of humic acid doses was determined as 7.2 L da-1. In Spinach: Humic acid treatments increased antioxidant enzyme activity and physiological parameters of spinach plants, specially soil application of humic acid. And humic acid treatments increased dry matter, nutrient content and chlorophyll of spinach plants, specially leaf+soil application of humic acid. In Lettuce: Humic acid applications have positive effects on dry matter productivity and on nutrient mechanism of lettuce plant and with the increasing dose of humic acid; the usage of phosphorus by plants is increased. In Tomato: According to the study results the highest stem diameter, leaf number of branches, total plant yield and root weight were obtained from soil+foliar Ca-humate and B-humat application. While soil+foliar B-humate application increased to body diameter, number of branches and plant B content to 37%, 50%, and 84%, soil + foliar Ca-humat application increased to root weight, plant weight and plant Ca content to 62%, by 29%, and 70% when compared to control respectively. And the other study the humic acid treatment had positive effect on the dry matter yield and nutrition status of tomato plants. Whereas, it had not significant effect on the Fe contents of tomato leaves, statistically. In Broccoli: According to the study results, the highest plant root yield was determined from 1000 ppm humic acids with C26 bacteria applications, but the highest plant yield and chlorophyll contents were obtained from 2000 ppm humic acid with Osu-142 bacteria applications. The highest permeability was determined from 1000 ppm humic acid with Osu-142 bacteria applications.

#### Biography

Metin Turan has completed his PhD from Ataturk University, Soil Science Department. He is currently working as a Full Professor at Yeditepe University, Genetics and Bioengineering Department. He has published more than 100 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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