Efficiency of Ca and B humate and humic acid application on pepper (*Capsicum annuum* L.) seedlings growth and quality parameters

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Summary

This study was carried out in order to determine effects of calcium (Ca) and boron (B) humate applications on pepper seedling growth under greenhouse condition. A mixture of soil and sand (1:1) was used as a plant growing media including four different concentrations of Ca humate, B humate and humic acid which were applied in following concentrations 0, 500, 1000, and 2000 mg kg⁻¹ of Ca humate and humic acid and 0, 50, 100 and 200 mg kg⁻¹ of B humate. Pepper seeds cv. Demre were sown into 300 cm³ of mixture of turf : perlite : vermiculite (2:1:1) in each pot. Recorded data showed that all morphological characters parameters including plant height, number of leaves and stems/plant, fresh weights of leaves/plant as well as yield and its components of pepper seedling showed positive and significant responses with the Ca and B humate and humic acid application compared with control treatments. The highest fresh and dry leaf weight, fresh and dry root weight, stem diameter, root length and shoot length, chlorophyll content were determined at 1000 and 2000 mg kg⁻¹ of Ca humate, 2000 mg kg⁻¹ of humic acid and 100 mg kg⁻¹ of B humate. On the other hand, results showed that macro- and micronutrient content increased with increasing the Ca and B humate as well as humic acid application. Highest N, Ca, P, S, and Mn concentration of seedling were determined at 1000 mg kg⁻¹ of Ca humate application, whilst the highest N, P, K, Mg, S, Fe content were obtained at 2000 mg kg⁻¹ of humic acid application. Highest concentrations of N, P, K, Mg, S, Fe and Zn in plant were determined at 200 mg kg⁻¹ of B humate application.

Key words: pepper seedling, Ca humate, B humate, growth