Growth and development of greenhouse cucumber under foliar application of Biomin and Humifolin fertilizers in comparison to their soil application and NPK

F. Fahimi[1], M. K. Souri[1]* and F. Yaghobi[1]

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Abstract

Cucumber represents one of the most important fruit vegetables in the world which has an undeniable role in human nutrition and especially vegetarian nutritional diets. Therefore, yield and quality improvement of this crop is very important. This study was carried out during 2014 to evaluate the effects of foliar application of some chemical fertilizers compared to their soil application on greenhouse cucumber growth and development. The experimental design was completely randomized design with 6 treatments and 6 replications. Treatments were control (without fertilizer application), soil application of NPK, soil application of Biomin amino-chelate, foliar application of Biomin amino-chelate, soil application of Humifolin and foliar application of Humifolin. The results of means comparison showed that fertilizer treatments had significant effect on vegetative and reproductive growth of greenhouse cucumber. Soil-applied Humifolin, soil-applied NPK and then soil-applied Biomin treatments resulted in higher chlorophyll index, number of lateral shoots, shoot fresh weight, total fruit yield, fruit dry weight percentage and fruit soluble solids. Foliar application of Biomin in recommended concentration (0.2 %) resulted in leaf chlorosis and reduced plant growth and yield. While, foliar application of Humifolin caused better growth and development of the plants. In general, in this study, soil-applied treatments, especially Biomin amino-chelate, led to better plant performance, as compared to foliar application treatments.

Keywords: Fruit vegetables, Chemical Fertilizers, Vegetative growth.

1. Dept. of Hort., College of Agric., Tarbiat Modares Univ., Tehran, Iran.
*: Corresponding Author, Email: mk.souri@modares.ac.ir

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