

EFFECT OF FOLIAR FERTILIZERS ON GROWTH AND YIELD OF TOMATO

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Plants absorb nutrients mainly through roots, but ability to absorb nutrients directly from leaves is also well known. Nutrient disorders, mainly micronutrient deficiencies, are often corrected by spraying leaves with the appropriate nutrient solution. Most vegetable growing farmers in Sri Lanka regularly use foliar fertilizers claiming that additional yield increases are obtainable though the Department of Agriculture (DOA) does not recommend such.

The present study was conducted to evaluate the effectiveness of two foliar fertilizers namely Yogen and Maxicrop, compared to DOA recommended fertilizers on tomato (variety T 245) under field and greenhouse conditions. The treatment combinations were two foliar fertilizers alone, and three combinations of foliar fertilizers and DOA recommended soil applied fertilizers. The DOA recommended soil applied fertilizers served as the control. The treatments were triplicated. In the field experiment plant height and yield data were recorded and in the greenhouse experiment plant height, chlorophyll content and dry matter production were recorded. At the full bloom stage, greenhouse experiment was terminated and plant samples were analyzed for macronutrients viz. N, P, K, Ca, Mg and S and for some micronutrients (Zn, Cu and Mn).

Results of the field experiment showed that there was no significant difference ($P>0.05$) in plant height and fruit yield due to application of foliar fertilizers compared to DOA recommended fertilizers. However, application of Yogen and Maxicrop together with DOA recommended fertilizers resulted in a yield increase of 3.4 t/ha and 0.3 t/ha respectively. However, these differences were not significant ($P>0.05$) which may be partially due to the initial nutrient level of soil. In the greenhouse experiment there was no significant increase ($P>0.05$) in plant height, chlorophyll content and dry matter percentage. However, N and Zn contents in plant tissue increased significantly ($P>0.05$) when foliar fertilizers were applied as a supplement to recommended chemical fertilizers. It is recommended that extensive research should be carried out to examine yield and economic gains in using different concentration levels of Yogen and Maxicrop in different soils before making any recommendations on their application.