

# **THE EFFECTS OF DROUGHT CONDITION ON THE FLOWERING AND FRUITING STAGE OF MYCORRHIZAL INFECTED TOMATO VARIETIES**

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## **Abstract**

A method used for the development of dry areas or drought condition, is the improvement of soil structure to support the growth and development of crops. Tomatoes have the potential to be developed in dry areas due to its high nutrition, high in demand and easy to be cultivated. The tomato fruit as the main yield that will be harvested, is prone to be affected by water supply to the plant. One of the method used to improve absorption of water is the addition of microorganisms such as mycorrhizal fungi. The interval of irrigation can be used as a simulation of drought. The aim of this research was to observe the effect of mycorrhiza on the development of two tomato varieties, especially the flowering and fruiting stage, with several treatments of irrigation.

The method used was the addition of 4 gr of mycorrhiza per polybag (size 30x30 cm), using Complete Randomized Design. There were 12 combinations of treatments. The treatments were : 2 tomato varieties (Revalina and Martha), 3 interval of irrigation (every day, every 7 days and every 14 days), and 2 treatments of mycorrhiza (0 gr and 4 gr ). There were 3 repetition for each combination of treatments. Observations were done on the number of flowers, initiation of flowering, number of fruits, weight of fruit, number of leaves and root length. The results showed that the addition of mycorrhiza did not significantly affected the flowers or fruits but affected the root length of tomato varieties. The difference in number of leaves, number of flowers, number of fruits, and fruit weight were also caused by the difference in irrigation interval. The two varieties used made a difference in the number of fruits, weight of fruit and root infection by micorrhiza. Further research must be made on the effect of mycorrhiza on other tomato varieties and fruit quality of tomato.

Key words : drought, flowering, fruit, mycorrhiza, tomato

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