

**EFFECTIVENESS OF ARBUSCULAR MYCORRHIZAL FUNGI ON  
EDAMAME (*Glycine Max (L.) Merr*) PLANTS  
AGAINST DROUGHT STRESS**

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**ABSTRACT**

*Climate change certainly affects edamame production, one of which is drought stress conditions. The purpose of this study was to determine the effectiveness of the application of Arbuscular Mycorrhizal Fungi in Drought Stress conditions. This research was conducted from July to December 2024. This research activity took place at the Green House and Plant Protection Laboratory of Jember State Polytechnic. The design used in this study used a Factorial Completely Randomized Design (FCRD) with 2 factors and was repeated 3 times. The first factor is Arbuscular Mycorrhizal Fungi (AMF) which consists of 5 levels, namely 0 grams/plant, 10 grams/plant, 15 grams/plant, 20 grams/plant, and 25 grams/plant and the second factor is Drought Stress (DS) treatment consisting of 2 levels, namely without stress and drought stress 40%. The observed variables were root length, root volume, root weight, number of root nodules, crown weight, pod weight per plant, root crown ratio, spore density, and root infection measurement. Observation data were analyzed using Analysis of Variance (ANOVA) and further tested using Duncan Multiple Range Test (DMRT) with a level of 5%. Based on the results of the study, the treatment without Drought Stress showed a significant effect on pod weight per plant and crown weight, with an average of 29.20 grams and 33.70 grams. While the interaction of the two treatments showed no significant differences in all observation variables.*

**Keyword :** *Climate Change; Edamame; Microorganisms; Pods; Roots*