

**The Role of Mycorrhizal Biofertilizers in Reducing the Use of Inorganic  
Fertilizers on  
Edamame Soybean (*Glycine Max* (L.) Merrill)**

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**ABSTRACT**

*The availability of inorganic fertilizers, both subsidized and non-subsidized, which are becoming increasingly scarce and whose prices are skyrocketing, poses an obstacle in providing production inputs for cultivation. One of the efforts to reduce the use of inorganic fertilizers is through the use of mycorrhizal biofertilizers. Mycorrhiza plays a role in improving soil health and nutrient absorption efficiency, thereby supporting optimal plant growth. The objective of this research is to analyze the dose of mycorrhizal fertilizer that yields optimal results for the growth of edamame soybean plants. This research was conducted from July to October 2024, in the Kebonsari agricultural land, Summersari District, Jember Regency, East Java Province. This study used a non-factorial Randomized Block Design (RAK) consisting of 6 levels. The research data were tested using ANOVA at the 5% or 1% level. The results showed that the use of mycorrhizal fertilizer at a dose of 5 grams/plant + 50% NPK had a significant effect on the parameters of plant height from 21 days after planting to harvest, number of branches, biomass weight, root length, number of pods per sample, pod weight per sample, and pod weight per plot. The results indicate that mycorrhizal biofertilizers play a role in reducing the use of inorganic fertilizers by 50% in edamame soybean plants.*

**Keywords:** edamame, mycorhiza, NPK