

**APPLICATIONS OF BIO-FERTILIZERS MICRORRHIZA  
AND SOME TYPES OF GREEN FERTILIZER ON THE  
GROWTH AND PRODUCTION OF SOYBEAN  
(Glycine max L.)**

**Sumiani**

Program Study Food Crop Production Technology  
Agricultural Production Department,

**ABSTRACT**

The purpose of this study was to determine the effect of arbuscular mycorrhizal biofertilizer and green manure application from *Tithonia diversifolia* and *Leucaena leucocephala* plants on the growth and production of soybean. This research was conducted in February-May 2021 with a Randomized Block Design with 2 factors. The first factor was the dose of mycorrhizal biofertilizer: without mycorrhizal, 10 gram/plant, 15 gram/plant, 20 gram/plant. The second factor was the application of several types of green manure: without green manure, *T. diversifolia* green fertilizer, *L. leucocephala* green fertilizer. Variables observed were plant height, number of branches, root length, root weight, number of pods per sample, weight of wet pods per sample, weight of wet pods per plot, weight of dry pods per sample, weight of dry pods per plot, weight of dry seeds per sample, and dry seed weight per plot. The results of the study on the treatment of mycorrhizal biofertilizers showed the best results at a dose of 20 grams/plant. In the green manure application, *T. diversifolia* showed the best treatment in the generative phase, while the *L. leucocephala* green manure showed the best treatment in the vegetative phase. The combination treatment between green manure from *T. diversifolia* and mycorrhizal biological fertilizer 20 grams/plant could increase the average yield on number of pods, weight of wet pods per plot and weight of dry pods per plot of soybean. Meanwhile, the application of green manure *L. leucocephala* with mycorrhizal biological fertilizer 20 grams/plant had a significant effect on the observed parameters of root length.

**Keywords:** Arbuscular Mycorrhizal; Green manure; Soybean.