

## ABSTRACT

Salwa Rainha Asyura. 24020120140115. **Vegetative Growth and Yield Response of Mung Bean (*Vigna radiata* L.) through Application of Soil Conditioner and Mycorrhiza under Drought Stress Conditions in Sandy Soil.** Under the guidance of Sri Widodo Agung Suedy and Endang Saptiningsih

Sand soil has a coarse texture, macro pores, and high drainage which causes the quality of sand soil to be low. Climate change, especially during the dry season, can reduce the availability of water in the soil so that soil conditioner applications and mycorrhizal inoculation are needed to maintain the productivity of sand soil and support vegetative growth and production of mung beans (*Vigna radiata* L.). The purpose of this study was to determine the effect of compost and humic acid applications and mycorrhizal inoculation on the vegetative growth response and yield of mung beans (*Vigna radiata* L.) under drought stress. The study was conducted experimentally using a factorial Completely Randomized Design (CRD) with two treatment factors, namely media composition and mycorrhizal inoculation. Mung bean plants 7 days after sowing (DAS) were planted in a mixture of pure sand, sand – mycorrhizal, compost sand – non-mycorrhizal, compost sand – mycorrhizal, humic acid sand – non-mycorrhizal, and humic acid sand – mycorrhizal with excessive watering in the early vegetative phase (25 DAS) and drought stress during the late vegetative phase (35 DAS) until harvest (42 DAS). Data analysis using Two Way ANNOVA followed by LSD test with a significance level of 5%. The parameters observed were soil water content, number of roots, mycorrhizal infection, plant height, leaf area, RWC, fresh weight of roots; stems; leaves, dry weight of roots; stems; leaves, number of pods, and dry weight of pods. The results showed that soil conditioners can improve the quality and water and nutrient retention capacity of sand soil. The mixture of humic acid sand media – non-mycorrhizal is able to optimize the vegetative growth of green beans (*Vigna radiata* L.). While in the final generative phase, humic acid sand – mycorrhizal is very effective in increasing crop yields.

*Key words: green beans, compost, humic acid, mycorrhiza, drought stress*