RESPONSE TO THE GROWTH AND PRODUCTION OF MUNG BEAN (*Vigna radiata* L.) CROPS IN THE APPLICATION OF RHIZOBIUM INOCULANTS AND ORGANIC FERTILIZERS

By : **Sinta Puspita Sari**
Supervised by : **Darban Haryanto and Ellen Rosyelina Sasmita**

ABSTRACT

The need for mung beans increases every year, but the demand is not proportional to the production of mung beans, so efforts are needed to increase yields. The aims of this study were to determine the best interaction between Rhizobium and petroganic fertilizer for growth and yield of mung bean and to determine the best Rhizobium dose and petroganic fertilizer dose for mung bean growth and yield. The research was conducted from June to September 2022 in Selomartani, Sleman, Yogyakarta. The research used a Completely Randomized Block Design (CRBD) with two factor Rhizobium doses and petroganic fertilizer doses as well as control with 3 replicates and 10 plants per experimental plot, so that 300 plants were obtained. The first factor was the dose of Rhizobium with three levels, namely 5 $g.kg^{-1}$, 10 $g.kg^{-1}$ and 15 $g.kg^{-1}$ of seed. The second factor is the dose of petroganic fertilizer with levels of 800 $kg.ha^{-1}$, 1000 $kg.ha^{-1}$ and 1200 $kg.ha^{-1}$. Control using soil media and manure. The data obtained were analyzed by ANOVA, to determine the effect and control DMRT test level of 5%. The results showed that there was an interaction between Rhizobium and petroganic fertilizers on parameter 28 HST and the number of productive branches. Rhizobium dose of 10 $g.kg^{-1}$ seed gave the best effect on parameters 21 DAP, 28 DAP, days of flower appearance, number of productive branches, number of pods per plant, seed weight per plot and yield. Treatment of petroganic fertilizer dose of 1000 $kg.ha^{-1}$ gave the best effect on plant height parameters 14, 28 DAP, number of productive branches, weight of 100 seeds and yield.

Keyword : *mung bean, Rhizobium, petroganic fertilizer*