

**APPLICATION OF RHIZOBIUM AND VARIOUS DOSES OF FERTILIZER  
ON GROWTH AND PRODUCTION OF GREEN BEANS (*Vigna radiata*) IN  
ALLEYCROPPING CROPTING PATTERNS**

*Supervised by Jumiatus, S.P., M.Si*

**Dina Malia**

Studi Program of Food Crop Production Technology  
Department of Agricultural Production

**ABSTRACT**

*Land use in perennial plants needs to be optimized by using an alleycropping planting system, one of which is planting legumes, such as green beans. This study aims to examine the timing of rhizobium application and the right dose of NPK fertilizer on the growth and production of green beans planted in alleycropping. This experiment was conducted at the Polije oil palm collection garden (coordinates 8 ° 09'29.2 "S and 113 ° 43'29.0" E, rainfall 1,969-3,394 mm per year, air temperature 21 ° C - 34 ° C). The experiment was conducted using a nested randomized block design using 2 factors and 3 replications. The Rhizobium treatment (10.7 ml / liter) nested from the NPK treatment consisted of 3 levels, namely application during seed treatment, 14 HST, and 21 HST. The NPK fertilizer dose treatment consisted of 3 levels, namely 0%, 25%, and 50% of the standard fertilizer dose (100 kg/ha). The results of the experiment showed that the rhizobium treatment of 14 HST had a significant effect on the number of branches of 21 HST (3 branches) and 28 HST (4.7 branches) fresh pod weight (65.8 g) and dry pod weight (44.7 g). The 25% NPK fertilizer treatment showed a significant effect on fresh pod weight (26.8 g). While the 50% NPK treatment showed a significant difference in dry pod weight (16.2 g). This is suspected that the combination of NPK and Rhizobium fertilizers at the right time and dose makes the bacteria easily adapt well and symbiosis occurs in the root zone of green bean plants so that it can trigger the growth of green beans through biological nitrogen fixation.*

**Keywords:** *Alleycropping, Compound Fertilizers, Microorganism, Organic Matter*