

SUMMARY

Lilis Styaningrum. 0810483011. Response of Common Bean (*Phaseolus vulgaris* L.) at the Various Dosage of Manure and Foliar Fertilizers. Under the guidance by Ir. Koesriharti, MS as a Major Supervisor and Dr.Ir. Moch. Dawam Maghfoer, MS as a Co-Supervisor.

The use of inorganic fertilizers and pesticides in excess to increase production of Common beans can reduce soil fertility. The use of manure can increase the value of organic matter and cation exchange capacity in soil fertilizing so that it can increase the efficiency of fertilization and improve the structure of the soil so that nutrients are bound in the soil can be used by plants. Foliar fertilizer used to complete the nutrients has been given through the soil. The purpose of this research were 1) to study the effect of application the various dosage of manure and foliar fertilizer to growth and yield of Common bean, 2) to determine a dose of manure and foliar fertilizer with high content of P and K which can increase growth and yield. The hypothesis were 1) Application of foliar fertilizer with P and K content higher than N can reduce fertilizer requirements so as to increase the growth and yield of Common bean, 2) Increasing doses of manure up to a certain dose can increase the growth and yield of Common bean, 3) Application of different foliar fertilizers will show plant growth and yield different common bean.

The research was conducted in May until August 2012 at Wonomulyo village, Poncokusumo, Malang. This research used Randomized Completely Block Design with 2 factor and 3 replications. The first factor was 4 levels of manure: 10 ton ha⁻¹ (M1), 20 ton ha⁻¹ (M2), 30 ton ha⁻¹ (M3) and 40 ton ha⁻¹ (M4). The second factor was 3 levels of foliar fertilizer: Growmore (6-30-30) (F1), Hyponex (10-40-15) (F2), Spesial K+ZPT (15-20-60) (F3). Observations of growth include plant length, number of leaves per plant, number of branches per plant. Observations destructive include leaf area and total plant dry weight. Observations of harvest include the days to flowers, days of pod fill, At the first harvest, last harvest, harvest period, fresh weight per pods, fresh weight of pods per plant, weight of pods per hectare, number of pods per plant, diameter of pods, length of pods and harvest index. Testing the effect of treatment is done by using the F test (analysis range) with a level of 5%, the event significant effect between treatments, the comparison test performed using LSD 5%.

The results showed that is no interaction between various dosage of manure and foliar fertilizers on the growth and yield of Common bean. Manure treatment significantly affect on plant length, number of leaves per plant, number of branches per plant (at the age 21, 28, 35 and 42 dap), leaf area, total plant dry weight, days to flowers, days of pod fill, At the first harvest, last harvest, fresh weight of pods per plant, number of pods per plant, diameter of pods, length of pods and harvest index. Application of manure at a dose of 10 tons ha⁻¹ up to a dose of 30 tons ha⁻¹ increased pod weight per hectare of 6,76 tons, whereas from the dose of 30 tons ha⁻¹ be doses of 40 tons ha⁻¹ an increase of 2,24 ton. Foliar fertilizer treatment significantly affect on plant length, number of leaves per plant, number of branches per plant (at the age 35 and 42 dap), leaf area, total plant dry

weight, days to flowers, days of pod fill, At the first harvest, last harvest, fresh weight of pods per plant, number of pods per plant and harvest index. Weight of pods per hectare on foliar fertilizer treatment with Hyponex (10-40-15) showed the highest yield, followed by treatment with Growmore (6-30-30) and Special K + ZPT (15-20-60) with the weights pods per hectare is 28,76 tons ha⁻¹, 25,43 tons ha⁻¹ and 21,77 tons ha⁻¹. R / C ratio of manure treatment at a dose of 10 tons ha⁻¹ and 20 ton ha⁻¹ showed high values (> 2), namely 2,59 and 2,12. While foliar fertilizer treatments Hyponex (10-40-15) showed the highest yield, followed by treatment with foliar fertilizer Growmore (6-30-30) with a value of 2,38 and 2,10.

