SUMMARY

Yoga Andara Dwinata. 0910483033. Competition between Alternanthera sessilis with eggplant (Solanum melongena L.). Under the guidance Prof. Dr. Ir. Sudiarso, MS. and Prof. Dr. Ir. Eko Widaryanto, SU.

Eggplant (Solanum melongena L.) is vegetable crops that can be grown in lowland or highland with a low intensive treatment. The eggplant is useful as raw material for pharmaceuticals (Hanson, 2003). The nutrient content of 100 g of eggplant fruit consists of 92 g water, 1.6 g protein, 0.2 g fat, 4 g carbohydrates, 1 g fiber and vitamins. Potential nutrient content that many people use eggplant to lower blood chlolesterol levels and diabetes (Mueller, 2005). Market demand for eggplant always high indicated from increasing of land cultivation for this vegetable. Eggplant need to do an intensive plant care to improve and maintain harvest. The attempt at doing is through controlling weeds and fertilizing. The presence of weed between eggplant can cause competition into contested N fertilizers, because N fertilizer become limiting factor to eggplant. N fertilizer available to eggplant, but the weeds also needed N fertilizers, so there was a competition eggplant with weeds. The purpose of this research is study the effect of competition between weeds and eggplant crops by adding fertilizer and weed population to land cultivation. The hypothesis of this research is the weeds population is 0 - 80 weed m⁻², with fertilization treatment of 80 - 120 kg N ha⁻¹ can increased competitive between eggplant and weeds.

The research conducted in BulukertoVillage, District Bumiaji, Batu. It is located in bulukerto village \pm 850 m above sea level and average rainfall is 850-1000 mm.year⁻¹. It begins in February until July 2013. The tools that used were hoes, labels, rulers, Leaf Area Meter (LAM), scales, cutter, sprayer, oven and digital cameras. The materials are eggplant seedlings var. turangga F1 with 3 - 4 leaves, urea (46% N) 80 kg ha⁻¹, SP-36 (36% P₂O₅) 70 kg ha⁻¹ and KCl (60% K₂O) 105 kg ha⁻¹ and polybags. This research used Randomized Factorial Block Design (RFBD) consisting of a combination of two factors with repeated 3 times. The first factor consist of three level, that is P₁ = 80 kg N ha⁻¹, P₂ = 120 kg N ha⁻¹, P₃ = 160 kg N ha⁻¹. The second factor consisting of five level, that is G₀ = 0 weed m⁻², G₁ = 40 weed m⁻², G₂ = 80 weed m⁻², G₃ = 120 weed. m⁻², G₄ = 160 weed m⁻²

The observations consist of non-destructive and yield observation. Nondestructive observations were done 5 times, starting when the plants are 39, 48, 57, 66 and 75 days after planting. Application of plant weed doing together with planting seedling eggplant, whereas application of N fertilizer at the age 3 dap (days after planting). The yield observation were done in 20 weeks starting from 75 days after planting. Parameters of non destructive observations are plant height and number of leaves. The yield observation is calculate of the ripe fruit in one harvest period and fruit fresh weight. The data will be analyzed with analysis of variant in probably 5% and if there are a significant different can be continued with Least Significant Different (LSD) in probably 5%. The results of this research show that increasing doses of fertilizer turns can decrease the growth of Eggplant plants (plant height and branch number), while the weed population is significant different on plant growth and yield of Eggplant. Weed population increase from 80 to 160 weed m^{-2} turns out to lower the amount of interest amounted to 27.3%-36.4%. The increase in the population of weeds 160 weed m^{-2} was also lowered the number of pieces and weight of fruit for each plant around 35.2% and 17.6%. Eggplant plants can grow with giving fertilizer 80 kg N ha⁻¹ and weed populations that appeared was 80 weed m^{-2} . Weed started being able to compete with the plant in the age 66 dap. Weed population 40 weed m^{-2} has a high number of weeds and weed shoots are high. While the dry weight of weeds, the most severe weed populations in 120 to 160 weed m^{-2} .