

SUMMARY

John Pradana Bancin. 10504020011136. The Effect of Urea, SP36, KCl Fertilizer and Chicken Manure on Growth and Yield of Sweet Potato (*Ipomoea batatas* L.). Under the Guidance of Prof. Dr. Ir. Bambang Guritno as the main supervisor and Dr. Ir. Titin Sumarni, MS. as the assistant supervisor.

Sweet potatoes are one type of plant crops as a group producer of carbohydrates. The sweet potato demand in Indonesia has increased as with population growth and advancement of the industry sectors that utilize sweet potatoes as the main raw material. The potential yield of sweet potato in Indonesia in 2013 reached 30.57 tons / ha while the average yield of sweet potato only reached 23.37 tons / ha. Sweet potato production is not optimal due to be planted in dry land which low soil organic matter so that the efforts made by the addition of organic matter. Manure fertilizer application is one way to increase the organic matter in the soil. However, the need for fertilization is combination of organic and inorganic fertilizer that is by the application of organic fertilizer before planting and application of inorganic fertilizers when planting.

This research purposes to determine the effect of manure in increasing result and growth of sweet potato plants, it reducing the use of inorganic fertilizers. The hypothesis raised is the use of manure can increase the result and growth of sweet potato and reduce the use of inorganic fertilizers. This research was done at desa Tawang Sari Kecamatan Karangploso, Kabupaten Malang with altitude 700 m above sea level. The average rainfall of 150 mm / year, air temperatures between 17°C - 30°C and humidity between 50-60%. The research was done for 5 months from the month of August 2014 to January 2014.

The tools use in this research are : machetes, hoes, rakes, water, shovel, stakes, rope, knife, ruler, meter rollers, plastic bags, paper labels, one yells, scissors cuttings, analytical balance, and the oven, while the materials use in this research are: varieties of sweet potato cuttings Antin, manure fertilizer (from chicken manure) which has decomposed well as organic fertilizer, urea (as fertilizer N), SP-36 fertilizer (as fertilizer P), and KCl (as fertilizer K). The design will use a Randomized Complete Block Design (RCBD) with three repetitions. This research found that eight treatments: (A1) 100% Inorganic Fertilizer, (A2) 100% Inorganic Fertilizer + 2.5 tons Organic Fertilizer, (A3) 75% Inorganic Fertilizer + 5 tons Organic Fertilizer, (A4) 75% Inorganic Fertilizers + 2.5 tons of organic fertilizer, (A5) 50% Inorganic Fertilizer + 5 tons Organic Fertilizer, (A6) 50% Inorganic Fertilizer + 2.5 tons Organic Fertilizer, and (A7) 25% Inorganic Fertilizer + 5 tons Organic Fertilizer and (A8) 25% Inorganic Fertilizer + 2.5 tons Organic Fertilizer. Observation parameters will observe that is (1) the growth component includes length of the tendrils, total number of leaf, leaf area, and total plant dry weight, (2) production component includes tuber weight (g/plant), tuber weight economically, tuber diameter, tuber length, yield (tons/ha), yield economically (ton/ha). Data were analyzed using analysis of variance F test level of 5%. If there is a significantly different effect will

be tested further with the Least Significant Difference test (LSD) at the 5% level to determine differences between treatments.

Results analysis of variant the treatment of organic fertilizer and NPK fertilizer on the growth of sweet potato looks like significantly different from the length of tendrils (60 days after planting), total number of leaves (60, 74, and 88 days after planting), and leaf area (60, 74, and 88 days after planting). While the results analysis of variant showed that organic fertilizer and NPK fertilizer did not show real effect on the parameters tuber weight, tuber length, tuber diameter, yield (ton/ha), and yield economically (ton/ha). But the results analysis of variant the treatment of organic fertilizer and NPK fertilizer to sweet potato result look significantly different at tuber weight economically by 302,1 g followed by yield economically of sweet potato by 33,03 ton/ha. The conclusion is chicken manure as organic fertilizer can reduce the use of inorganic fertilizer and can increasing the weight economically of sweet potato.

