

## SUMMARY

**Dosmauli Aruan (105040200111132). Effect Of Casein Hydrolyzate on The Growth And Yield of Local Variety Berastagi Plant Strawberries (*Fragaria x ananassa Duchesne*) Meristem Culture Results. Supervised by Dr. Ir. Moch. Dawam Maghfoer, MS as Main Supervisor, Ir. Moch. Nawawi, MS. as Second Supervisor and Oka Ardiana Banaty, SP., MSc. as the Third Supervisor**

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Plant strawberry (*Fragaria x ananassa Duchesne*) is a wild plant that is in the mountains and can only be grown in subtropical areas. Strawberry production in Indonesia in 2009 amounted to 19 132 tonnes and has developed production of 29.87% (5,714 tons) in 2010, where the number of production as much as 24 846 tons in 2010 (Badan Pusat Statistik, 2011). Strawberry cultivation in Indonesia continues to increase but the potential productivity is still low and it can not compete with developed countries. This happens because of the technology used by farmers cultivating strawberries remains low so that the quality and quantity of the resulting production is also low. These problems can be overcome by administration of amino acids with the appropriate dose and time of administration gradually to prevent losing the element of N. One source of organic N is commonly used casein hydrolyzate which is a combination of 20 types of amino acids and ammonium (Mayang *et al.*, 2011). The purpose of this study to get a dose and time of administration of amino acids using casein hydrolyzate on the growth and yield of strawberries. The experiment was conducted in the Screen House Research Institute for Citrus and Subtropical Fruit, Tlekung, District Junrejo, Batu City using polybags.

The experiment was conducted in December until April 2014. Instruments used in this study is hoe, analytical balance, a digital camera, pengaris, calipers, hand sprayer and a trowel. The materials used in this study is a strawberry seed varieties Berastagi of meristem tissue culture, animal manure, NPK 16:16:16 fertilizer, husk charcoal, soil, polybags, insecticides prefonofos 500 g/L, fungicides propineb 70% and tebuconazole 25%. This research uses design by Randomized Block Design (RBD) consisting of 9 treatments with 3 replications and each treatment consisted of 4 plants in order to obtain 108 plants. The treatment consists of without casein hydrolyzate 0 ml (D0), casein hydrolyzate 5,81 mg/100/ml per plant given every 1 week (D1), casein hydrolyzate 11,62 mg/100/ml per plant given every 1 week (D2), casein hydrolyzate 23,31 mg/100/ml per plant given every 1 week (D3), casein hydrolyzate 46,62 mg/100/ml per plant given every 1 week (D4), casein hydrolyzate 11,62 mg/100/ml per plant given every 2 weeks (D5), casein hydrolyzate 23,24 mg/100/ml per plant given every 2 weeks (D6), casein hydrolyzate 46,62 mg/100/ml per plant given every 2 weeks (D7) and casein hydrolyzate 93,24 mg/100/ml per plant given every 2 weeks (D8). Observations were made on the growth and harvest. Growth observations performed 2 weeks after planting. Growth observations are plant height, number of leaves, number of stolon, leaf area and fruitset (%). Harvest observations on 33 days after planting until 84 dap. Harvest observations are plant fresh weight, number of fruit and fruit diameter. The data obtained from the analysis of the observations using analysis of variance

(F test) with a level of 5% to determine the effect of a given. If there is a significant difference, then followed by LSD test at 5% level to determine whether there are significant differences between treatments.

Based on the results, the conclusion that the control treatment without the administration of casein hydrolyzate (D0) is shown to have a high value plant, number of leaves, number of stolon, leaf area, fresh fruit weight and fruit diameter lower than other treatments. Treatment timing of casein hydrolyzate dose mg/100/ml 93.24 per clump (D8) had an average fresh fruit weight higher and did not differ significantly with treatment doses of 46.62 mg/100/ml per clump (D4), doses of 11, 62 mg/100/ml per clump (D5), dosing 23.24 mg/100/ml per clump (D6) and 46.62 mg/100/ml dose per clump (D7). But 11.62 mg/100/ml dose treatment per clump (D5) is more effective than other treatments. Treatment of various dose and gift time of casein hydrolyzate no significant effect on the percentage fruitset and number of fruit at harvest.

