THE EFFECT OF PRUNING AND CHICKEN MANURE ON VEGETATIVE GROWTH OF HONEY DELI (*Syzygium aqueum* Burn F.) IN 9 MONTHS AGE

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ABSTRACT
The study was conducted in April 2018 until June 2018, on the experimental field of the Faculty of Agriculture, Muhammadiyah University of North Sumatra Jl.Tuar No.65 Medan Amplas District, Medan.Place height ± 27 masl. This study aims to determine the effect of pruning and administration of chicken manure on the vegetative growth of deli honey (*Syzygium aqueum* Burn F.) at the age of 9 months.This study uses Factorial Randomized Block Design (RBD) with 2 treatment factors, namely Pruning with 3 levels, namely P_0: Without Pruning, P_1: 75 cm, P_2: 85 cm and Chicken Manure with 4 levels, namely A_0: control, A_1: 100 gram / polybag, A_2: 200 gram / poly bag, A_3: 300 gram / polybag.The parameters measured were plant height, stem diameter,leaf size, number of branches, leaf area, age of flowering, leaf chlorophyll.The results showed that pruning treatment had a significant effect on the parameters of the height of honey medicinal plants and the administration of chicken manure significantly affected stem diameter, number of leaves, number of branches, leaf area and age, and the interaction between pruning and chicken manure had no significant effect on all parameters observation.
Keywords*:guava honey,pruning,chicken manure.*

A. INTRODUCTION

Guava (*Syzygium aquaeum* Burn F. Alston) originates from the Indo-China and Indonesia regions spread to Malaysia and the islands in the Pacific. So far, it is still concentrated as a garden plant for family consumption.Guava water is not just sweet refreshing, but has diversity in appearance. Water guava is categorized as one of the potential fruit types that has not been widely cultivated for commercial purposes.Its perishable nature is an important problem that needs to be solved.The fruit can be said to be physically damaged skin so little on the fruit will accelerate rot on the green deli water buah.Jambu crops introduced into varieties that have been released in 2012. Based on the research that guava green deli has a water content of 81 596%, levels sugar 12.4˚brix, vitamin C 210.463 mg/100g and has a sweet taste like honey.This guava grows well at altitudes of 0-500 meters above sea level (Chairani et al., 2015).

Problems that are often faced in deli honey guava cultivation include plants that are late to bear fruit even though their age is supposed to produce.This is due to the lack of nutrients needed by deli honey guava plants in their growth so that production is not optimal.Besides that, the size and taste of fruit is often a problem, but among farmers there are still many who do not know how to get deli honey fruit with optimal size and taste.So often the production of guava honey deli with a small size of fruit with a tasteless taste.

According to Balitbu (2015), the criteria for guava which are suitable for harvesting have characteristics such as, having a fruit weight of 200-300 gr / seed and having a sweet range of 12-14 brix to obtain these criteria can be done by pruning and giving fertilizers that contains magnesium.

Fitria (2016), explained that pruning activities are activities to dispose of unproductive parts of plants so that new shoots can emerge that will produce fruit.The more crop branches that are pruned, the more productive shoots that emerge and produce fruit.

Pruning on guava honey is an attempt to improve environmental conditions such as temperature, humidity, light, wind circulation so that photosynthetic activity takes place normally.Pruning can improve plant health, flowering is aroused and production increases.There are several backgrounds that underlie why plants should be trimmed, ie plants tend to grow steadily, both grow upward and grow sideways.The benefits of top shoot pruning will reduce competition from photosynthesis between leaves and fruit and reduce the incidence of disease, as well as pruning on tomatoes, which increases fruit size.If excessive growth of leaf shoots is trimmed, the circulation of air around the canopy improves, this condition will reduce the humidity of the microclimate around the plant and so will reduce the incidence of disease in addition to increasing the yield of flowers can also improve the quality of flowers and appearance or plant figures for the better but it can hold declining flower production (Saladin, 2002).

Chicken manure is a fertilizer that comes from a mixture of chicken manure.Organic material plays an important role in the formation of good and stable soil structures so that the infiltration and ability to store water.According to the provision of manure, it significantly reduces the amount of surface flow because manure improves the physical properties of the soil, especially the structure so that permeability increases.

The way to deal with deli honey guava which is late in the fruit can be done by providing fertilizer to meet the nutrients needed by deli guava in its growth such as providing chicken manure containing macro nutrients such as N, P, and K. In addition to providing fertilizer, pruning can also speed up the honey guava plant to bear fruit.This is because the results of plant photosynthesis are not only channeled for vegetative growth of plants but also for the generative growth of plants such asflowers and fruit, thereby accelerating the production of deli guava honey.Besides that, pruning efforts can also affect the size of the fruit produced by pruning the resulting fruit will be even greater. Meanwhile, to get guava honey fruit with a sweet taste can be done by providing fertilizers containing magnesium.

Based on the above problems, this study was conducted to determine the effectiveness of giving chicken manure and pruning to the production of deli guava honey.So that later this research can provide benefits for those who do guava honey cultivation.

B. MATERIALS AND METHODS

Place and time

This research was conducted in April 2018 until June 2018, on the experimental field of the Faculty of Agriculture, Muhammadiyah University of North Sumatra Jl.Tuar No.65 Medan Amplas District, Medan.Place height ± 27 masl.

Materials and tools

The materials used in this study were 9 months old green deli honey guava seeds, topsoil soil, chicken manure, water, insecticides, fungicides, polybags measuring 25 cm x 35 cm, plant signposts.

The tools used are hoes, bolts, meters, raffia ropes, machetes, knives, buckets, scissors, calculators, barrels/buckets, wood, cameras and stationery.

Research methods

This study used factorial randomized block design (RBD) with two factors studied, namely: Pruning Factor (P) with 3 levels (P_0: Without pruning, P_1: 75 cm, P_2: 85 cm) and factors of giving solid chicken manure (A) with 4 levels (A_0: control, A_1: 100 gram/polybag, A_2: 200 gram/polybag, A_3: 300 gram/polybag).

The parameters measured were plant height, stem diameter, number of leaves, number of branches, leaf area, age and flowering leaf chlorophyll.

C. RESULTS AND DISCUSSION

Plant height

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK) showed that pruninghad a significant effect on plant height parameters while giving chicken manure and the interaction of the two factors has no significant effect on plant parameters 2, 4, 6, and 8 WAP.The average plant height can be seen in tables 1 - 3.

Table 1. Average of Honey Guava Plant Height 2, 4, 6, and 8 WAP in Pruning Treatment.

Pruning	Age (WAP)			
	2	4	6	8
	……..cm.....			
P_0 = Without pruning	120.92	125,17	130.29	135.29 a
P_1 = 75 cm	104.04	108,17	113.29	118.29 b
P_2 = 85 cm	103.42	108.67	112.88	118.13 bc

Note: Numbers followed by letters that are not the same in the same column are significantly different according to the 5% DMRT Test.

Table 2. Average height of guava plants aged 2, 4, 6 and 8 WAP in chicken manure fertilizer treatment.

Manure Chicken	Age (WAP)			
	2	4	6	8
	……..cm.....			
A_0 = control	111.06	115.89	120.39	124.94
A_1 = 100 gram/polybag	106.94	110.28	116.61	121.61
A_2 = 200 gram/polybag	112.22	116.33	120.39	125.56
A_3 = 300 gram/polybag	107.61	113.50	117.89	123.50

Table 3. Average Interaction of Treatment for Pruning and Manure of Chicken at Honeycomb Plant Height 2, 4, 6, and 8 WAP.

Interaction	Age (WAP)			
	2	4	6	8
	……..cm……..			
P_0A_0	130.17	135.17	140.17	144.83
P_0A_1	114.50	115.17	124.00	128.83
P_0A_2	122.00	123.33	125.17	130.33
P_0A_3	117.00	127.00	131.83	137.17
P_1A_0	102.00	104.50	109.50	113.83
P_1A_1	103.50	108.00	113.17	118.17
P_1A_2	112.33	118.00	123.33	128.33
P_1A_3	98.33	102.17	107.17	112.83
P_2A_0	101.00	108.00	111.50	116.17
P_2A_1	102.83	107.67	112.67	117.83
P_2A_2	102.33	107.67	112.67	118.00
P_2A_3	107.50	111.33	114.67	120.50

Based on Table 1, it can be seen that thehoney guavaplantheightwith the highest average is found in the treatment P_0 (control) is 135.29 cm which is significantly different from the treatment P_1 (75 cm) which is 118.29 cm and P_2 (85 cm) which is 118.13 cm.

Relationship between honey guava plant height and treatment pruning can be seen in Figure 1.

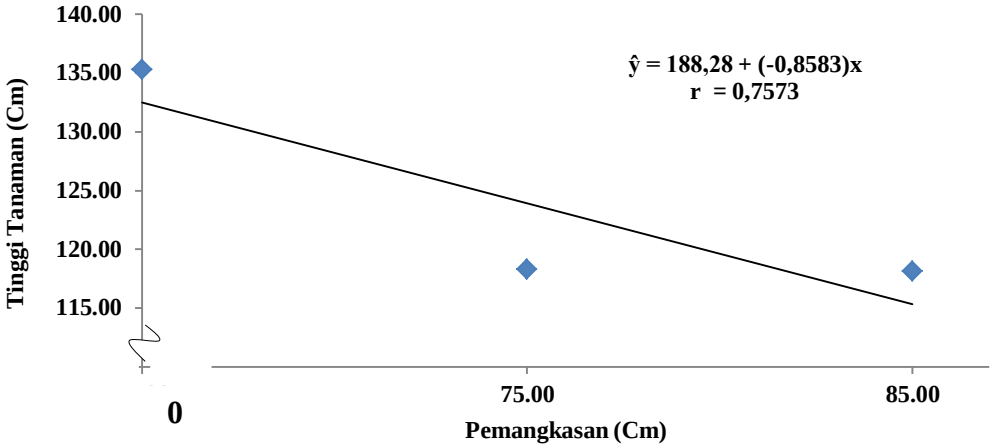

Figure 1.Graph of Plant Height with Pruning Treatment.

Based on Figure 1 it can be seen that pruning with optimum length is 85 cm with the highest average of 135.29 cmwhich shows a negative linear relationship with the regression equation$\hat{y}$ = 188.28 + (-0.8583)x with r = 0.7573. Based on the equation, it can be seen that plant height will decrease along with the increase in length of pruning.

In the parameters of plant height it is known that shoot trimming can reduce the growth of plant height when compared with plants without pruning treatment.Pruning will result in reduced plant height due to organ removal.The removal of apical buds aims to stop the growth of shoots and help accelerate the growth of lateral shoots which give rise to new branches in the axillary main stem.

Pane, et al. (2013), stated that shoot trimming can suppress plant height. Plants that are not pruned have higher plant height while pruned plants have lower plant height. Plants that are not pruned will continue to grow because the hormone auxin in shoots is very high. Although the plants that were given pruning treatment had lower plant height, the plants had a greater number of branching when compared to plants that were not given shoot trimming treatment.

Trimming shoots can suppress the growth of apical shoots or shoots and maximize the growth of lateral shoots, so that the formation of new branches will be balanced and then have an impact on increasing plant productivity. Trimming shoots can be done by cutting the top of plants, branches

and leaves. According to Esrita (2012), that shoot trimming is proven to increase the number of productive branches on plants.

Stem diameter

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK) showed that the administration of chicken manure had a significant effect on stem diameter parameters while pruning and interaction of the two factors had no significant effect on plant parameters 2, 4, 6, and 8 WAP. The average number of branches can be seen in tables 4 – 6.

Table 4.Average Diameter of Honey Guava Age 2, 4, 6, and 8 WAP in Pruning Treatment.

Pruning	Age (WAP)			
	2	4	6	8
	.....cm.....			
P_0 = Without pruning	2.35	2.45	2.55	2.69
P_1 = 75 cm	2.29	2.40	2.51	2.65
P_2 = 85 cm	2.33	2.42	2.55	2.68

Table 5.Average Diameter of Honeycomb Age 2, 4, 6, and 8 WAP in Chicken Cage Fertilizer Treatment.

Manure Chicken	Age (WAP)			
	2	4	6	8
	.....cm.....			
A_0 = control	2.22	2.33	2.44	2,53cd
A_1 = 100 gram/polybag	2.28	2.39	2.51	2.61bc
A_2 = 200 gram/polybag	2.41	2.49	2.59	2.69b
A_3 = 300 gram/polybag	2.38	2.48	2.62	2.85a

Note: Numbers followed by letters that are not the same in the same column are significantly different according to the 5% DMRT Test.

Based on Table5, it can be seen that thenumber of leavesguava honeywith the highest average is found in the treatmentA_3(300gram/ polybag) which is2.85 cmwhich is significantly different from the treatmentA_2(200gram/ polybag) which is2.69 cm,A_1(100gram/ polybag), which is2.61 cmand A_0(control) which is2.53 cm

Table 6. Average Interaction of Pruning and Chicken Manure Treatment on 2, 4, 6, and 8 WAP Honeycomb Stem Diameter.

Interaction	Age (WAP)			
	2	4	6	8
	.....cm.....			
P_0A_0	2.23	2.33	2.42	2.52
P_0A_1	2.30	2.42	2.55	2.65
P_0A_2	2.43	2.48	2.60	2.67
P_0A_3	2.45	2.55	2.65	2.92
P_1A_0	2.23	2.37	2.48	2.57
P_1A_1	2.20	2.32	2.43	2.55
P_1A_2	2.45	2.55	2.65	2.75
P_1A_3	2.27	2.37	2.48	2.73
P_2A_0	2.20	2.28	2.42	2.50
P_2A_1	2.35	2.43	2.53	2.63
P_2A_2	2.35	2.43	2.53	2.67
P_2A_3	2.43	2.52	2.73	2.90

Relationship between the honey guava plant height and the administration of chicken manure can be seen in Figure 2.

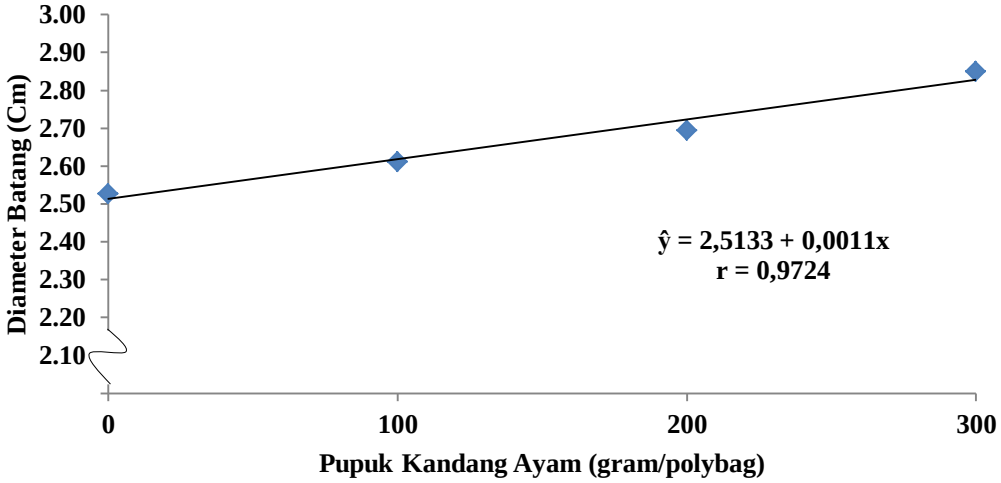

Figure 2. Graph of Stem Diameter with Chicken Manure Fertilizer Treatment.

Based on Figure 2, it can be seen that the administration of chicken manure with the optimum dose is 300 grams/polybag with the highest average 2.85 cm which shows a positive linear relationship with the regression equation ŷ= 2.5133 + 0.0011x with r = 0.9724. Based on this equation, it can be seen that the stem diameter will increase along with the increase in chicken manure dosage. Increasing vegetative growth in stem diameter parameters is strongly influenced by the role of nutrients such as N, P and K. Lingga and Marsono (2003) explain that the role of nitrogen in plants is to stimulate overall growth, especially branches, stems and leaves. Nitrogen functions as a form of chlorophyll, protein and fat. Nitrogen is also a constituent of enzymes contained in cells, thus affecting the growth of carbohydrates which play a role in plant growth.

Sosrosoedirdjo (2004) added that carbohydrates are a material that is very necessary in cell division, cell extension, cell enlargement and tissue formation for the development of stems, leaves and roots. Phosphorus functions to overcome the negative effects of nitrogen, improve root development and improve the quality of results. Then K functions in regulating the balance of nitrogen and phosphorus fertilizers (Jumin, 2000).

Good growth is indicated by the ability of plants to photosynthesize higher and produce more photosynthesis (photosynthate). Photosynthate which is more translocated through phloem and can be used to stimulate secondary growth, namely expansion of stem cells and indicated by wider stem diameter. According toGardner, et al. (1991) growth and development of plants and their organs will depend on the availability of meristems, hormones and photosynthesis (carbohydrates) and the supporting environment.

Number of leaves

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK) showed that administration of chicken manurehad a significant effect on the parameters of theamount ofdungwhile trimmingand the interaction of the two factors has no significant effect on the parameters of number 2, 4, 6, and 8 WAP leaves.The average number of leaves can be seen in Tables 7-9.

Table 7. Average Amount of Honey Leaf 2, 4, 6, and 8 WAP in Pruning Treatment.

Pruning	Age (WAP)			
	2	4	6	8
	.....strands.....			
P_0 = Without pruning	5.63	10.83	20.83	30.88
P_1 = 75 cm	6.08	11.21	21.21	31.75
P_2 = 85 cm	5.96	10.83	20.83	30.96

Table 8. Average Amount of Honey Leaf 2, 4, 6, and 8 WAP in Chicken Cage Fertilizer Treatment.

Manure Chicken	Age (WAP)			
	2	4	6	8
	..... strands.....			
A_0 = control	5.33	10.28	20.33	28.94 cd
A_1 = 100 gram/polybag	5.44	10.50	20.50	30.44 bc
A_2 = 200 gram/polybag	5.78	10.72	20.72	31.61b
A_3 = 300 gram/polybag	7.00	12.33	22.28	33.78 a

Note: Numbers followed by letters that are not the same in the same column are significantly different according to the 5% DMRT Test.

Based on Table 8, it can be seen that thenumber of leavesguava honeywith the highest average is found in the treatment A_3(300gram/ polybag) which is 33.78 strands which is significantly different from the treatment A_2 (200gram/polybag), which is 31.61 strands, A_1 (100gram/ polybag), which is 30.44 strands and A_0 (control), which is 28.94 strands.

Table 9. Average Interaction of Pruning and Chicken Manure Treatment in Amount of 2, 4, 6, and 8 WAP Guava Leaf Leaves.

Interaction	Age (WAP)			
	2	4	6	8
	..... strands.....			
P_0A_0	5.33	10.33	20,33	27.83
P_0A_1	5.33	10.33	20.50	30.83
P_0A_2	5.50	10.50	22,17	31,17
P_0A_3	6.33	12,17	20.50	33.67
P_1A_0	5.33	10.33	20.50	29.50
P_1A_1	5.50	10.50	21.00	30,33
P_1A_2	6.00	11.00	22.83	32.67
P_1A_3	7.50	13.00	20,17	34.50
P_2A_0	5.33	10.17	20.67	29.50
P_2A_1	5.50	10.67	20.67	30,17
P_2A_2	5.83	10.67	21.83	31.00
P_2A_3	7.17	11.83	20,33	33.17

The relationship between the heigh tofguava honey and the administration of chicken manure can be seen in Figure 3.

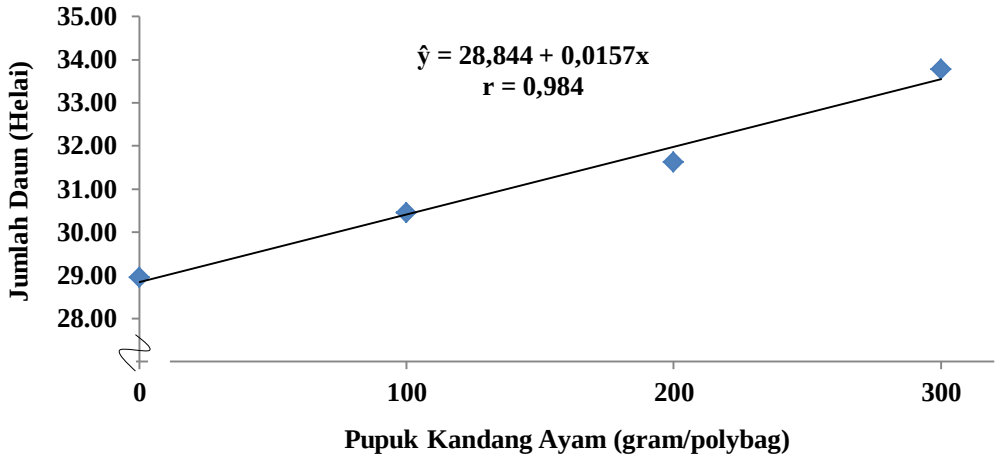

Figure 3.Graph of Number of Leaves with Chicken Cage Fertilizer Treatment.

Based on Figure 3, it can be seen that the administration of chicken manure with optimum dosage is 300 grams/polybag with the highest average of 33.78 strands which shows a positive linear relationship with the regression equation $\hat{y}$ = 28.844 + 0.0157 x with r = 0.984. Based on these equations it can be seen that the number of leaves will increase with increasing doses of chicken manure.

Provision of chicken manure significantly affected the number of leaves of guava honey.This is because manure contains complete macro and micro nutrients.Nutrient content of N (2.71%) which is high in chicken manure stimulates plant growth in general.Nitrogen plays a role in the formation of chlorophyll, amino acids, fats and enzymes.While nutrient P (6.31%) plays a role in root growth and development.Element K (2.01%) helps the formation of proteins and minerals and increases plant resistance to disease (Purwa, 2009).

The presence of nitrogen elements will increase the growth of vegetative parts such as leaves.This is in accordance with the opinion of Lingga and Marsono (2003), that the main role of nitrogen for plants is to stimulate overall growth, especially the stems, branches and leaves.High nitrogen content in chicken manure stimulates the growth rate of plant leaves.Sutedjo (2002) added that nitrogen is the main nutrient needed for the growth of vegetative parts of leaves, stems and roots, but if given excessively it can inhibit flowering and fertilization in plants.

Number of branches

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK) showed that administration of chicken manure significantly affected the parameters of thenumber of branches while pruning and the interaction of the two factors has no significant effect on the parameters of number 2, 4, 6, and 8 WAP branches. The average number of branches can be seen in tables 10-12.

Table 10. Average Number of Branches of Honey Guava Age 2, 4, 6, and 8 WAP in Pruning Treatment.

Pruning	Age (WAP)			
	2	4	6	8
	.....branches.....			
P_0 = Without pruning	4.50	4.50	4.50	4.92
P_1 = 75 cm	4.54	4.46	4.46	5.08
P_2 = 85 cm	4.50	4.50	4.54	5.33

Table 11. Average Interaction of Chicken Cage Pruning and Fertilizer Treatment in Number of 2, 4, 6, and 8 WAP Guava Branches.

Interaction	Age (WAP)			
	2	4	6	8
	.....branches.....			
P_0A_0	4.17	4.17	4.17	4.17
P_0A_1	4.00	4.00	4.17	4.50
P_0A_2	4.17	4.17	4.00	4.67
P_0A_3	5.67	5.67	5.67	6.33
P_1A_0	4.00	4.00	4.00	4.17
P_1A_1	4.33	4.33	4.33	4.83
P_1A_2	4.33	4.33	4.33	5.17
P_1A_3	5.50	5.17	5.17	6.17
P_2A_0	4.17	4.17	4.33	4.67
P_2A_1	4.33	4.33	4.33	5.00
P_2A_2	4.00	4.00	4.00	5.17
P_2A_3	5.50	5.50	5.50	6.50

Based on Table11, it can be seen that the number of branches guava honey with the highest average is found in the treatment A_3 (300gram/ polybag) which is 6.33 branches which is significantly different from the treatment A_2 (200 gram/polybag) which is 5.00 branches, A_1 (100 gram/polybag) which is4.78 branches and A_0 (control) which is4.33 branches.

Table 12. Average Number of Branches of Honey Guava Age 2, 4, 6, and 8 WAP in Chicken Manure Fertilizer Treatment.

Manure Chicken	Age (WAP)			
	2	4	6	8
	.....branches.....			
A_0 = control	4.11	4.11	4.17	4.33cd
A_1 = 100 gram/polybag	4.22	4.22	4.28	4.78bc
A_2 = 200 gram/polybag	4.17	4.17	4.11	5.00b
A_3 = 300 gram/polybag	5.56	5.44	5.44	6.33a

Note: Numbers followed by letters that are not the same in the same column are significantly different according to the 5% DMRT Test.

Relationship between thenumber of branches guava honey by giving chicken manure can be seen in Figure 4.

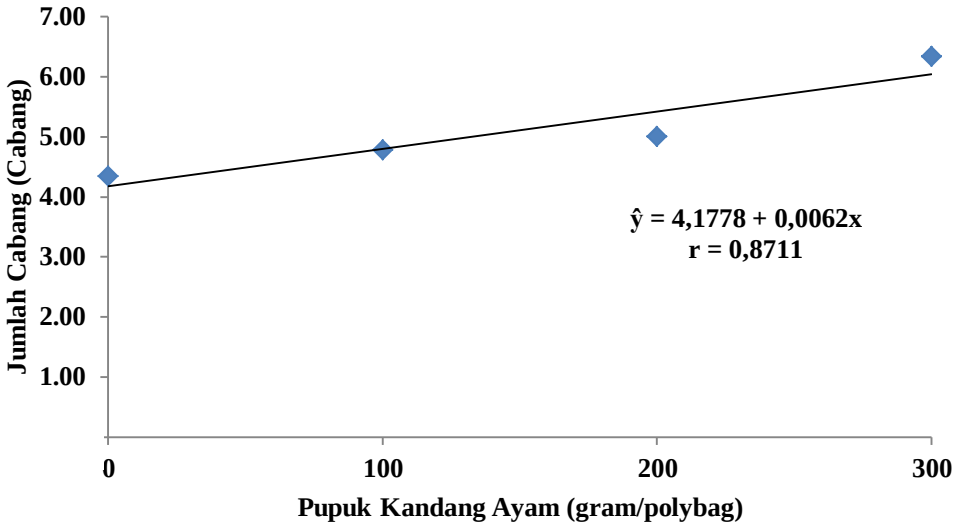

Figure 4.Graph of Number of Branches with Chicken Manure Fertilizer Treatment.

Based on Figure 4, it can be seen that the administration of chicken manure with the optimum dose is 300 grams / polybag with the highest average6.33 brancheswhich show a positive linear relationship with the regression equationŷ= 4.1778+0.0062xwith r= 0.8711.Based on these equations it can be seen that the number of branches will increase with increasing doses of chicken manure.

FertilizerChicken coops have an influence on the number of branches because chicken manure has a high N content, so that more branches are formed.Increased value of vegetative characters such as plant height and number of branches caused by the role of nitrogen elements.The main role of nitrogen for plants is to stimulate overall growth, especially the stems, branches, and leaves (Hardjowigeno, 2007).This is in accordance with the opinion of Gardner (1991), that in addition to environmental factors such as water availability, nutrient deficiencies in the soil can also affect vegetative growth.Sutedjo and Kartasapoetra (1987), said that plants need nutrients that are suitable for their needs in the process of growth and development.

According to Suryanto (1999), the availability of sufficient nitrogen is needed to support plant growth and development.Elements of nitrogen absorbed by plants in sufficient amounts will stimulate meristematic tissue at the point where the stem grows more active.This can spur plant growth.

Leaf area

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK)showed that administration of chicken manure significantly affectedleaf area parameters while pruning and the interaction of the two factors has no significant effect on leaf area parameters 2, 4, 6, and 8 WAP. The average leaf area can be seen in tables 13-15.

Table 13.Average Area of Honey Guava Leaf Age 2, 4, 6, and 8 WAP in Pruning Treatment.

Pruning	Age (WAP)			
	2	4	6	8
	.....cm^2.....			
P_0 = Without pruning	44.33	77.56	124.00	168.44
P_1 = 75 cm	46.65	77.19	127.19	173.68
P_2 = 85 cm	47.01	70.09	124.13	173.19

Table 14. Average Area of Honey Guava Leaf Age 2, 4, 6, and 8 WAP in Chicken Cage Fertilizer Treatment.

Treatment Manure Chicken	Age (WAP)			
	2	4	6	8
	.....cm^2.....			
A_0 = control	41.13	73.84	116.01	163.70bcd
A_1 = 100 gram/polybag	41.94	74.32	116.62	165.53bc
A_2 = 200 gram/polybag	44.61	74.22	124.88	172.21b
A_3 = 300 gram/polybag	56.31	77.39	142.91	185.63a

Note: Numbers followed by letters that are not the same in the same column are significantly different according to the 5% DMRT Test.

Based on Table 14, it can be seen that the number of leaves guava honey with the highest average is found in the treatment A_3(300 gram/ polybag) which is185.63 cm^2 which is significantly different from the treatment A_2 (200gram/ polybag) which is 172.21 cm^2, A_1 (100gram/ polybag), is 165.53 cm^2 and A_0 (control), which is 163.70 cm^2.

Table 15. Average Interaction of Treatment of Pruning and Chicken Manure in the Area of 2, 4, 6, and 8 WAP Guava Leaves.

Interaction	Age (WAP)			
	2	4	6	8
	.....cm^2.....			
P_0A_0	41.19	73.48	115.50	161.74
P_0A_1	41.19	73.19	117.07	164.40
P_0A_2	44.05	77.18	133.22	170.43
P_0A_3	50.89	86.38	130.20	177.18
P_1A_0	41.31	75.83	117.13	164.99
P_1A_1	41.26	73.65	114.84	165.05
P_1A_2	48.79	83.51	127.22	179.93
P_1A_3	55.24	75.79	149.55	184.76
P_2A_0	40.89	72.22	115.40	164.38
P_2A_1	43.38	76.13	117.93	167.15
P_2A_2	40.99	61.99	114.19	166.28
P_2A_3	62.80	70.00	148.98	194.95

Relationship betweenleaf areaguava honeybyprovidingchicken manurecan be seen in Figure 5.

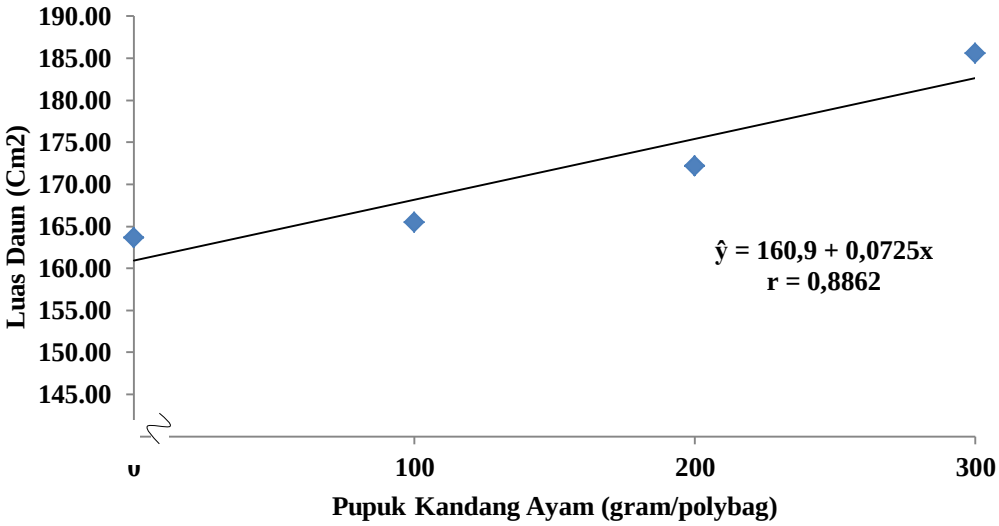

Figure 5.Wide Leaf Graph with Chicken Cage Fertilizer Treatment.

Based on Figure 5, it can be seen that the administration of chicken manure with the optimum dose is 300 grams / polybag with the highest average185.63 cm^2 which shows a linear positive relationship with the regression equation ŷ= 160.9+0.0725x with r= 0.8862. Based on these equations, it can be seen that leaf area will increase with increasing doses of chicken manure.

Chicken manure given to guava honey has a significant influence on leaf area parameters.This is because nutrients in chicken manure can be absorbed by plants for the process of division, cell enlargement and differentiation which causes additional volume in the leaves of plants. Nutrients that play an important role in this case are nutrients N, P and K. This is in accordance with the statement Damanik et al (2009) which states that nutrient N is very instrumental in the formation of plant cells, tissues and plant organs.N element is very necessary when plants enter the vegetative growth phase. P nutrients play an important role in absorbing plants against nutrients in the soil.K nutrients play a major role in photosynthesis and carbohydrate translocation and also regulate the distribution of water in plants. Lack of K elements will cause the leaves to fall.

Erawan (2013) added that the increase in leaf area of plants was due to the availability of nitrogen elements that can be absorbed by plants, so that plant growth such as leaf area also increased. The provision of chicken manure has the highest yield which shows that chicken manure can provide better nutrients than other manure.

Age begins to flower

Based on the analysis of variance (ANOVA) with Randomized Block Design (RAK) showed that administration of chicken manure had a significant effect on age parameters starting to flower while pruning and the interaction of the two factors has no significant effect on age parameters starting to flower. The average age of flowering can be seen in table 16

Table 16. Average age begins to flower guava in chicken cage pruning and fertilizer treatment.

Pruning	Chicken Manure				Average
	A_0	A_1	A_2	A_3	
	.....WAP.....				
P_0 = Without pruning	8.33	8.00	8.00	6.50	7.71
P_1 = 75 cm	8.50	8.33	8.00	7.00	7.96
P_2 = 85 cm	8.33	8.00	7.50	7.17	7.75
Average	8.39cd	8.11bc	7.83b	6.89a	

Description: Numbers followed by letters that are not the same on the same line are significantly different according to the 5% DMRT Test.

Based on Table16, can be in the know thatage start flowering guava honeywith the average tarcontained in the treatment A_3(300gram/ polybag) which is 6.89 WAPwhich is significantly different from the treatmentA_2(200gram/ polybag) which is 7.83 WAP, A_1(100gram/ polybag) which is8.11 WAP and A_0 (control) which is8.39 WAP.

The relationship betweenage begins to flowerguava honeybyprovidingchicken manurecan be seen in Figure6.

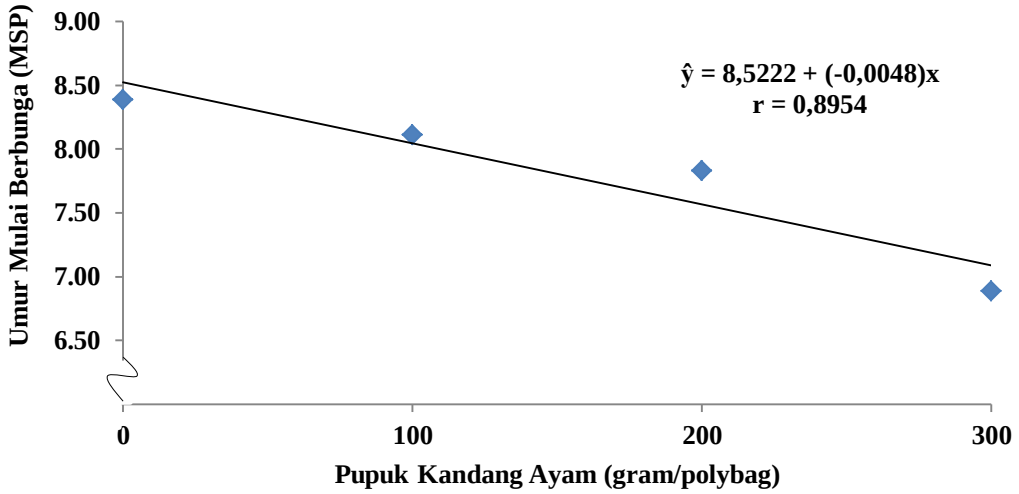

Figure 6. Age Chart Begins to Bloom with the Treatment of Chicken Cage Fertilizer.

Based on Figure 6, it can be seen that the administration of chicken manure with the optimum dose is 300 grams/polybag with the highest average 6.89 which shows a positive linear relationship with the regression equation ŷ = 8.5222 + (-0.0048)x with r = 0.8954. Based on these equations, it can be seen that the age of flowering will be faster with increasing doses of chicken manure.

Provision of chicken manure has an effect on the age of flowering of guava honey.This is because the speed of flowering is influenced by the availability of nutrients in the soil.Soil that is given chicken manure can add nutrients. Gardner et al. (1991), states that there are two factors that affect the speed of flowering in plants, first an external factor (environment), namely sunlight that plays an important role in the progress of photosynthesis, when sunlight is appropriate it will affect the speed of flowering of a plant and the availability of nutrients land that is related to the availability of energy supply and building materials for the formation and development of flowers.The second is internal factors (genetic), if the minimum age is met, the plants will flower.

According to Salisbury and Ross (1995) the age of flowering or when the first flower appears from a variety planted at the same time and environment, the possibility of age of flowering in plants is almost the same. Temperature is one of the environmental factors that influences flower formation.Temperature directly affects photosynthesis, respiration, transpiration, water absorption and nutrients.

Leaf chlorophyll

Based on the analysis of variance (ANOVA) with randomized block design (RBD)showed that pruning and administration of chicken manure and the interaction of the two factors had no significant effect on leaf chlorophyll parameters.The average chlorophyll of leaves can be seen in table 17.

Table 17. Average of Guava Leaf Chlorophyll in Chicken Cage Pruning and Fertilizer Treatment

Pruning	Chicken Manure				Average
	A_0	A_1	A_2	A_3	
	……mg/g……				
P_0 = Without pruning	42.37	43.08	40.48	33.60	39.88
P_1 = 75 cm	41.00	43.55	38.77	46.15	42.37
P_2 = 85 cm	45.08	42.33	43.83	43.47	43.68
Average	42.82	42.99	41.03	41.07	

Based on table 17, it can be seen that chlorophyll leaves with the highest average of pruning treatment were found in treatment P_2 (85 cm), which was 43.68 mg/g and the lowest in treatment P_0 (control) was 39.88 mg/g. While chlorophyll leaves with the highest average treatment of chicken manure are found in A_1 (100 grams/polybag), which is 41.07 mg/g and the

lowest is in treatment A $_2$ (200 grams/polybag), which is 41.03 mg/g. Of the two treatments, there was no significant effect and interaction on leaf chlorophyll.

D. CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results of analysis of experimental data in the field, it can be concluded as follows:

1. The pruning treatment has a significant effect on the parameters of the honey guava plant height.
2. Provision of chicken manure significantly affected stem diameter, number of leaves, number of branches, leaf area and age began to flower.
3. The interaction between pruning and chicken cage fertilizer did not significantly affect all observational parameters.

Suggestion

Based on the results of the study it is recommended that further research be conducted by using higher doses of chicken manure and higher pruning as well as on different locations to obtain maximum results on the cashew crop commodity.

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