



The Effect of Lamtoro as Green Fertilizer On Growth And Results of Eggplant on Soil Red Yellow Podsolic

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Keywords :

Podsolic, Lamtoro, Eggplant

ABSTRACT

The aim of this study was to determine the effect of the administration of green fertilizer lamtoro and find the best dosage for growth and yield of eggplant on red yellow podzolic soil. This study uses a field experiment method with a completely randomized design (RAL) pattern, which consists of 5 levels of green fertilizer treatment and repeated 5 times, each replication consists of 3 plants. The treatment sample in question is l1 = 5 tons of green manure / ha (210 g green manure / poly bag), l2 = 10 tons of green manure / ha (420 g of green manure / poly bag), l3 = 15 tons of green manure / ha (630 g of green manure / polybag), l4 = 20 tons of green manure / ha (840 g of green manure / poly bag) and l5 = 25 tons of green manure / ha (1,050 g of green manure / poly bag). The variables observed in this study were plant height, percentage of flowers to fruit, number of fruits per plant, weight of fruit per plant and fruit length per plant. The results showed that the administration of green fertilizer Lamtoro had a significant effect on the number of fruits and weight of fruit. The administration of 840 g of green fertilizer Lamtoro and 1050 gave the highest growth in plant height. The administration of 630 g of green fertilizer Lamtoro gave the best results on the results of Eggplant plants, namely the number of fruit and weight of fruit.

INTRODUCTION

Eggplant (*Solanum melongena* L.) is one of the fruit vegetables that is popular with people because the fruit has various colors, especially purple, green, and white. Eggplant has smooth and soft meat fibers so that it tastes good when consumed as food (Samadi, 2002). Judging from its chemical composition, Eggplant fruit has a fairly high nutrient content. In every 100 g of fresh Eggplant there are substances as follows: 24 cal calories, 1.1 g protein, 0.2 g fat, 5.5 g Carbohydrates, 15.0 mg calcium, 37.0 mg phosphorus, 0.4 mg iron, 4.0SI vitamin A, 5 mg of vitamin C, 0.04 vitamin B1, 92.7 g of water (Directorate of Nutrition, Ministry of Health of Republic of Indonesia in Samadi, 2002).

The use of red yellow podzolic soil as cultivation land is faced with several obstacles that do not support optimal plant growth. These constraints are such as poor soil structure, relatively high level of soil acidity, low organic matter content and small availability of nutrients, especially N, P, and K.

The effort that can be made to increase the productivity of red yellow podzolic soil is by giving organic matter to the soil. Organic matter has a very important role especially in increasing the ability of soil to hold water, improve drainage and soil air management, increase nutrients and soil pH and increase the amount and activity of microorganisms in the soil.

Immersion process is needed to speed up the decomposition of the material for a month. High C / N organic matter can be reduced if composting is carried out, so that it can act as an organic fertilizer that contributes nutrients to Eggplant. By providing organic fertilizers, one of them is green manure, it is expected to improve physical properties, soil chemistry such as increasing the availability of nutrients, especially N, P, and K for plants and can improve the biological properties of the soil.

Research Problems

One effort to overcome the lack of availability of macro and micro nutrients for Eggplant plants grown on red yellow podzolic soil is by giving organic matter. One source of organic material that can be given is Lamtoro green fertilizer. Lamtoro green fertilizer has high organic matter content and N, P, K which is needed by Eggplant. According to Musnamar (2005) the total nutrient content produced by legumes such as lamtoro in kg / ha consists of: N (226-253), P (18-27), K (85-131), and Mg (15 -27). The application of lamtoro green fertilizer as organic fertilizer is expected in addition to improving physical properties, soil biology also aims to improve soil chemical properties.

Based on the description above, the research problem can be formulated as follows: whether green fertilizer lamtoro affects the growth and yield of Eggplant and what is the best dose to produce growth and yield Eggplant on the best yellow red podsolic soil?

Research Objectives

The aim of this study was to determine the effect of the administration of green fertilizer lamtoro and find the best dosage for growth and yield of eggplant on red yellow podzolic soil.

LITERATURE REVIEW

A. Botanical Eggplant

Eggplant plants have rooting roots with side roots that propagate brownish white soil (Tjitrosoepomo, 2005). According to Cristina (2006) Eggplant leaves are ovoid, elliptical, or elongated, have a fairly wide surface (3-15 cm x 2-9 cm), the shape of the strands resembles ears, the location of the strands of leaves spread on branches, generally curved with wavy leaf edges, both sides of the leaf are generally covered with thin hair, each star-shaped gray, pinnate arranged leaf bone, on the spine which is often splayed out of thorns. The eggplant stem itself grows upright, its branches are tightly arranged, round in shape, purplish, generally covered with thin gray star-shaped hair, some have sticky spines and some don't.

B. Growing Requirements for Eggplant Plants

Eggplant plants can grow well and produce optimally in the range of air temperatures between 20 ° C - 32 ° C, but at 32 ° C flowering and the process of fruit formation will be disrupted, the fruit will cook faster, the fruit is small and not dense. If the temperature is too high, the plant will die which begins with symptoms such as burning and dead leaf tissue, because at temperatures above 32 ° C or higher extremes the respiration process is higher, so that the results of photosynthesis are more widely used for respiratory energy than for growth and production . At temperatures below 20 ° C, these plants will produce low, long flowering and harvesting. The range of air humidity that is suitable for growth and production of this plant is between 80-90%. Low air humidity causes plants to be obstructed by growth, falling flowers, and small fruit. While at high humidity it will also inhibit growth and production because in this condition the stomata will close so that the absorption of CO₂ gas cannot enter into the leaves as a result of photosynthesis process cannot run optimally (Cahyono, 2003).

C. Red and yellow podsolic soil

In Indonesia the spread of yellow red podsolic land covers the regions of Sumatra, Sulawesi, Irian Jaya and Kalimantan (Harjowigeno, 1993). In West Kalimantan the area of red yellow podsolic land

reaches 10.5 million ha or 17.28% of the land area of West Kalimantan (Central Statistics Agency, 2010).

According to Sarief (1986), yellow red podsolc soil has a rather thick solum layer of soil that is 90-180 cm with a real horizon boundary, the color of this soil is reddish to yellow or yellowish. The organic matter content in the coating is less than 9%, generally 5%. Nutrient content such as N, P, K, and Ca is low and the pH is very low, 4 - 4,5.

D. Role of Lamtoro Green Fertilizer

Green fertilizers that are used to fertilize the soil are forage materials, namely young parts such as leaves, stems and stems of plants. The goal is to add organic matter to the soil and other elements, especially nitrogen (Lingga, 1995). Giving green fertilizer by immersing the forage material into the soil aims to improve soil fertility. The characteristics of good green manure plants in Thailand, put forward by Stratongkom (1976) and Chinapun (1982) in Musnamar (2003) are: can grow fast, tolerate drought, root systems are well developed, biomass is high, tolerant of diseases and insects, can causing soil to be easily plowed and decomposition easily produces large amounts of nutrients.

Concept Framework

Every plant including Eggplant requires certain soil and environmental conditions to accelerate optimal growth. Eggplant can grow well on various types of soil with adequate drainage and aeration. One type of land that has the potential and is widely used as a planting medium is a type of red yellow podzolic soil, although it still collides with land productivity. Lamtoro green fertilizer can improve the physical, chemical and biological properties of red yellow podzolic soil. This is because the green fertilizer lamtoro can improve soil structure into crumbs, contribute nutrients, increase the ability to bind water and encourage active soil microorganisms to work.

Hypothesis

Allegedly the administration of green fertilizer lamtoro will be able to increase growth and yield of Eggplant on red yellow podzolic soil

METHOD

A. Place and Time of Research

This research was conducted in Pontianak. The study was conducted from January 2, 2018 to June 12, 2018.

B. Materials and Tools

1. Research Materials

a. Red Yellow Podsolc Land

The type of soil used is a red yellow podsolc type taken at a depth of 0-20cm. Land is taken in the village of Antibar Mempawah.

b. Eggplant Seeds

Eggplant seeds used in the study were Eggplant varieties of mustang seeds

c. Green Fertilizer

The green fertilizer used is derived from the results of trimming the leaves and shoots of 5 months old lamtoro plants. Green manure is taken from the farmer's garden in the Sungai Kunyit village of Mempawah Regency.

d. Chalk

Chalk used is dolomite lime with 87% neutralization power.

e. Polybag

The polybag used is black with a size of 30x40cm (size for 10 kg of soil).

2. Research Tools

The tools used in this study were hoes, cutting tools, ground sieves, meters, analytical scales, loose, scissors, thermohigrometers, ombrometers, pH meters, writing instruments, ovens, cameras and measuring cups.

C. Research Design

This study uses a field experiment method with a completely randomized design pattern (CRD), which consists of 5 levels of green manure treatment of lamtoro and repeated 5 times, each replication consisting of 3 sample plants so that the total plant is 75 plants.

The treatment in question is:

11 = 5 tons of green manure / ha (210 g green manure / poly bag)

12 = 10 tons of green manure / ha (420 g green manure / poly bag)

13 = 15 tons of green manure / ha (630 g of green manure / poly bag)

14 = 20 tons of green manure / ha (840 g green manure / poly bag)

15 = 25 tons of green manure / ha (1,050 g of green manure / poly bag)

RESULTS AND DISCUSSIONS

A. Result

1. Plant Height (cm)

The average plant height data can be seen in Appendix 11. The results of the analysis of the diversity of the effects of lamtoro as green fertilizer on plant height can be seen in Table 1.

Table 1. Analysis of the diversity of the effects of lamtoro as green manure on plant height

Source of diversity	Free degree	Number of squares	Middle Squares	F. count	F. Table 5%
2 nd week					
Treatment	4	36,000056	9,000010	1,81 ^{tn}	2,67
Error	20	99.519440	16,290018		
Total	24	135.519496		KK= 11,09 %	
4 th Week					
Treatment	4	5,658824	1,414706	0,51 ^{tn}	2,67
Error	20	54,943680	2,747184		
Total	24	60,602504		KK= 5,38 %	
6 th week					
Treatment	4	15.620920	3.905230	0,04 ^{tn}	2,67
Error	20	1957.685280			
Total	24	1973.306200		KK= 20,63 %	
8 th week					
Treatment	4	33,402400	8,350600	0,71 ^{tn}	2,67
Error	20	235,556000	11,7778000		
Total	24	268,958400		KK= 6.28 %	
10 th week					
Treatment	4	18,020984	4,505246	0,38 ^{tn}	2,67
Error	20	239,931800	11,996590		
Total	24	257,952784		KK= 5,32 %	

Description : ^{tn} Unreal influence

The results of the diversity analysis (Table 1), showed that the administration of green fertilizer Lamtoro had no significant effect on plant height at weeks 2,4, 6, 8,10 after planting. The height of the Eggplant plant with various treatments for the administration of green manure is shown in Figure 1.

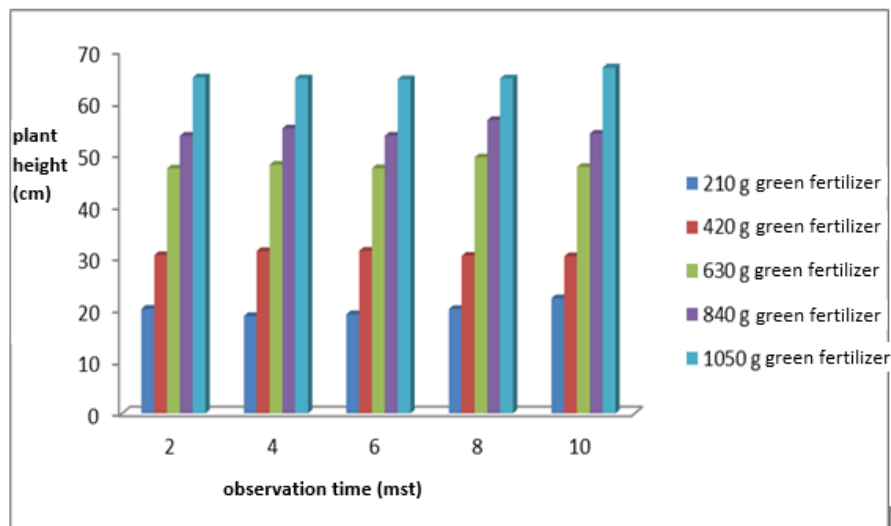


Figure 1. Plant height in various treatments for lamtoro green manure

Figure 1 shows that there is no difference in the effect of lamtoro green fertilizer on plant height increase at each observation time when the plants are 2 weeks to 10 weeks after planting.

2. Percentage of Interest to Fruit (%)

The average data on the percentage of flowers into fruit can be seen in Appendix 12. The results of the analysis of the diversity of the effects of lamtoro as green fertilizer on the percentage of flowers into fruit can be seen in Table 2.

Table 2. Analysis of the diversity of the effects of lamtoro as green manure on the percentage of flowers to fruit

Source of diversity	Free degree	Number of squares	Middle Squares	F. count	F. Table 5%
Treatment	4	67,010624	16,752656	0,51 ^{tn}	2,67
Error	20	659,540240			
Total	24	726,550864			KK=14,80 %

Description: ^{tn} Unreal influence

The results of the diversity analysis in Table 3 show that the administration of green fertilizer from Lamtoro has no significant effect on the percentage of flowers to fruit. The percentage of flowers to fruit in various treatments is presented in Figure 2.

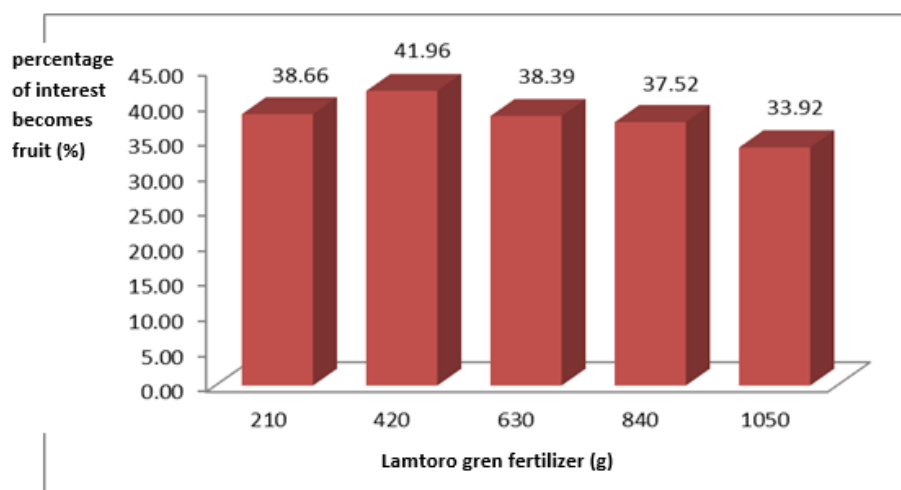


Figure 2. Percentage of interest into Eggplant fruit in various treatments for green manure
 Figure 2 shows that Eggplant plants given 420 g of green fertilizer lamtoro had the highest percentage of flowers as fruit with 41.96%, although not different from Eggplant plants treated with other doses.

3. Number of fruits (fruit)

The average data on the number of fruits per plant can be seen in Appendix 13. The results of the analysis of the diversity of the effects of lamtoro as green fertilizer on the number of fruits per plant can be seen in Table 3.

Table 3. Analysis of the diversity of the effect of lamtoro as a green manure on the number of fruits per plant

Source of diversity	Free degree	Number of squares	Middle Squares	F. count	F. Table 5%
Treatment	4	17,840000	4,460000	6,24*	2,67
Error	20	14,300000			
Total	24	32,140000			KK=10,73 %

Description: real influence

The results of the diversity analysis (Table 3), showed that the administration of green fertilizer Lamtoro significantly affected the number of fruits per plant. Furthermore, to see the difference between the treatment of green fertilizer Lamtoro which had a significant effect, it was followed by an Honest Real Difference Test (BNJ) (Table 4).

Table 4. Different test Honest effect of lamtoro green fertilizer on the number of fruits per plant (fruit)

Lamtoro green fertilizer (g / polybag)	mean
210	6,30 a
1.050	7,70 ab
840	8,40 b
420	8,50 b
630	8,50 b
BNJ 5% = 1,60	

Remarks: Numbers followed by the same letters in one column are not significant at the test level of BNJ 5%.

Table 4 shows that Eggplant plants that were given green fertilizer lamtoro as much as 420 g, 630 g and 840 g produced more fruit than Eggplant plants who were given lamtoro green fertilizer 210 g. With the increase in the dose of green manure given to the dose of 1,050 g there was a decrease in the number of fruits even though the decrease was not significantly different. Eggplant plants that produce the most fruit are treated with 420 g and 630 g, although not different from Eggplant plants with 840 g and 1,050 g of green fertilizer.

4. Fruit Weight (g)

The average fruit weight data per plant can be seen in Appendix 14. The results of the analysis of the diversity of the effects of lamtoro as green manure on fruit weight per plant can be seen in Table 5.

Table 5. Analysis of the diversity of the effects of lamtoro as green manure on fruit weight per plant

Source of diversity	Free degree	Number of squares	Middle Squares	F. count	F. Table 5%
Treatment	4	358810,8182	89702,7045	5,79 *	2,67
Error	20	309840,5746			
Total	24	668651,3928		KK= 15,84 %	

Description: * real influence

Description: * Real influence

The results of the diversity analysis in (Table 6), showed that the administration of green fertilizer Lamtoro significantly affected the weight of fruit per plant. Furthermore, to see the difference between each treatment which was significantly influential, it was continued by an Honest Real Difference Test (BNJ) (Table 6).

Table 6. Test Differences Honestly the effect of lamtoro green fertilizer on fruit weight per plant (g)

Lamtoro green fertilizer (g / polybag)	mean
210	615,60 a
1.050	676,60 ab
420	830,26 abc
840	880,23 bc
630	927,15 c
BNJ 5% = 235,56	

Remarks: Numbers followed by the same letters in one column are not significant at the test level of BNJ 5%.

BNJ test results (Table 6), showed that Eggplant plants given 630 g of lamtoro green fertilizer produced different fruit weights with Eggplant plants in the treatment of green fertilizer lamtoro as much as 210 g and Eggplant plants that were given lamtoro green fertilizer as much as 1,050 g. Whereas in Eggplant plants that were given green manure lamtoro 420 g and 840 g showed fruit weight that was not different from Eggplant plants which were given green fertilizer lamtoro and Eggplant plants which were treated with 1,050 g. Eggplant plants that were given green fertilizer lamtoro as much as 630 g produced the heaviest fruit compared to the Eggplant plants which were given green fertilizer lamtoro with other doses although not different in the treatment of 420 g and 840 g.

1. Fruit Length (cm)

The average fruit length per plant, can be seen in Appendix 15. The results of the analysis of the diversity of the effect of lamtoro as green manure on fruit length can be seen in Table 7.

Table 7. Analysis of the diversity of the effects of lamtoro as green manure on fruit length

Source of diversity	Free degree	Number of squares	Middle Squares	F. count	F. Table 5%
Treatment	4	4,451896	1,112974	0,91 ^{tn}	2,67
Error	20	24,561800			
Total	24	29,013696			KK= 5,48 %

Description: ^{tn} Unreal influence

Remarks: The effect is not real

The results of the diversity analysis (Table 7), showed that the administration of green fertilizer Lamtoro had no significant effect on fruit length. Eggplant fruit length in various treatments of lamtoro green fertilizer can be seen in Figure 3.

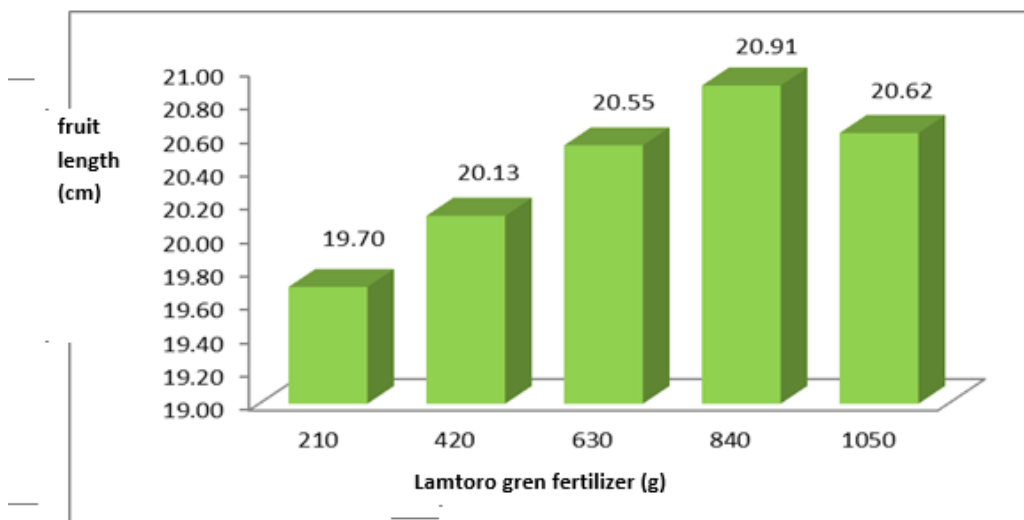


Figure 3. Eggplant fruit length in various treatments for green manure

Figure 3 shows that the longest eggplant fruit was produced by the plant which was 20.91 cm and the treatment was 20.91 cm.

B. Discussion

The results showed that administration of green manure gave a significant influence on the number of fruits and fruit weight (Table 3 and Table 5) and had no significant effect on plant height 2, 4, 6, 8 and 10 weeks after planting, the percentage of flowers being The fruit and fruit length (Table 1, 2 and table 7) are thought to be caused by the treatment of lamtoro green manure at various treatment doses can affect the growth and yield of Eggplant plants. Hardjowigeno (1995) states that organic matter can improve the physical, chemical and biological properties of the soil. The physical properties of the soil cause better root development and can increase nutrient absorption by roots. Giving organic matter can also influence the chemical properties of soil, which is to improve soil pH Buckman and Brady (1982) state that soil pH can affect nutrient availability. Soil pH after incubation ranged from 6-7.2 (Appendix 7). Soil pH for Eggplant plants to grow and produce well is 6.8 so that the soil pH during the study is suitable for Eggplant plants so as to provide good growth and production. The application of lamtoro green fertilizer can improve the biological properties of the soil and support the life of soil microorganisms.

Plant height is one indicator of plant growth although it is not a leading indicator. Plant height is a form of cell division and enlargement from photosynthate plants. The results of these photosynthates in Eggplant plants are used for the growth of various plant organs such as stems, roots and leaves. Vegetative growth of plants requires high N elements to help in the process of cell growth and division. According to Poerwowidodo (1992) if N is given in sufficient quantities, the leaves of the plant will grow large and expand the leaf surface available for photosynthesis.

During the vegetative growth of the Purple Eggplant plant, it was very necessary for the availability of nutrients both macro nutrients, especially nitrogen. The function of nitrogen is to stimulate the growth of leaves, stems and help the formation of roots. In high quantities, nitrogen can cause increased vegetative growth. But in environmental conditions that do not support the plant growth will be hampered and plants easily attacked by diseases and pests.

According to Cahyono (2003) Eggplant plants grow well in the temperature range of 20oC - 32oC, humidity 80-90%, rainfall throughout the year with 3 - 4.5 dry months / year. While during the study the average temperature was 32.42 oC - 34.18 oC with air humidity 68.50 - 72.75% which was not optimal temperature for Eggplant plant growth and air temperature data at the time the study showed that the air temperature was high enough so that affect the plant height variable. Low air humidity also affects plant growth, and the rate of transpiration will increase which eventually causes the plant to wilt.

Darjanto and Satifah (1990), states that environmental factors around plants can also affect plant growth and development, namely temperature, humidity and rainfall. These environmental conditions are related to flowering. According to Soetasad (2003), the ambient temperature for flowering processes in Eggplant plants ranged from 28°C-32°C and rainfall was not too high while in the study, the flowering period of the average temperature ranged from 32.42°C-34.18°C, but the temperature during the day could reaching the range of 33°C-37° which can disrupt the flowering process because the air temperature is too high. Whereas the rainfall during the study reached 2570 mm (Appendix 8-10), so that many flowers were killed because the flower stalks were susceptible to fracture and the unsuccessful pollination phase caused by pollen did not stick to the pistil. Another factor that affects flowering is photosynthesis. Photosynthesis functions as a process to produce food in plants. The higher the air temperature, the higher the rate of photosynthesis, so that the activity of plants in dividing cells is getting faster too.

Percentage of interest to fruit is the amount of flowers produced by plants that can survive until they become fruit. In Eggplant plants with administration of green fertilizer lamtoro as much as 420 g, have the highest percentage of flowers into fruit between administration of green fertilizer lamtoro at other doses, but not different from Eggplant plants which were given green lamtoro fertilizer at other doses. Factors that affect the decrease in the percentage of flowers into fruit even though more and more green manure is given because of extreme weather changes where high temperatures turn into high

intensity rain and then return to high temperatures. High temperatures can cause dryness in prospective flowers and eventually fall before becoming a perfect flower, this is due to the generative period, the temperature during the study during the day reaches 37°C and the lowest during the day reaches 32°C.

The number of fruit describes the ability of plants to produce fruit. The number of fruits is closely related to the amount of interest produced. Winarsih (1985) states that the more flowers are formed, the greater the chance of plants to produce fruit. This is not the only factor that influences it. Other factors can also affect, such as nutrients and environmental factors such as temperature, humidity and rainfall. P element is the most influential element where P plays a role in the formation of ATP which is a source of energy in glycolysis (carbohydrate breakdown and photosynthesis). Phosphorylation of ADP so that ATP is very dependent on phosphate. ATP is needed as an energy source for the synthesis of starch and protein for active nutrient absorption mechanisms, for the transfer of dissolved substances that cross the membrane. Judge et al. (1986) stated that adequate phosphorus supply would increase plant energy availability which had a role in improving the performance of chloroplasts as absorption of sunlight in photosynthesis. The energy produced from photosynthesis functions as the formation and ripening of fruit so that if it is deficient, the fruit produced will be small (Dwijoseputro, 1992). K element plays a role in facilitating the transport of carbohydrates and plays an important role in cell division, and affects the formation and ripening of fruit because K plays a role in cell division. According to Wirjodiharjo (1964), in the resistance of plants to the environment, K plays an important role so that the fruit is not easily damaged or deciduous if the temperature is high, or high rainfall. If nutrient deficiency occurs, then the rate of photosynthesis will decrease, this will cause the distribution of carbohydrates to decrease against fruit tissue so that the fruit is easily killed and the results are also small (Darjanto and Satifah, 1990).

Eggplant plants that were given lamtoo green fertilizer with a dose of 420 g and 630 g had the most number of fruits and were different from Eggplant plants by treating green manure with lamtoro as much as 210 g but not different from Eggplant plants with green fertilizer lamtoro doses of 840 g and 1,050 g. While Eggplant plants which have the most number of flowers are Eggplant plants which are given 1.050 g of green fertilizer lamtoro and the percentage of flowers into fruit, Eggplant plants which have the highest percentage are Eggplant plants that are given lamtoro green fertilizer as much as 420 g. This shows that not all flowers formed have the potential to be fruit. This is because there are flowers that fall before blooming or before pollination occurs, and there are young fruits that fall before harvest which are caused by rotten eaten by pests and broken fruit stalks.

The most number of fruits produced by the Eggplant plant are Eggplant plants which are given green fertilizer as much as 420 and 630 g. The number of fruits produced by the Eggplant plant by giving 630 g of lamtoro green fertilizer also produced the most severe fruit. But the longest Eggplant fruit was produced by the Eggplant plant with a treatment of 840 g of Lamtoro green fertilizer. This is allegedly due to the addition of soil organic matter which is expected to be one way to increase crop productivity where the addition of soil organic matter can improve the physical, chemical and biological properties of the soil so as to maximize plant growth and yield. In Eggplant plants that were given 630 g of green fertilizer lamtoro produced the best fruit weight and Eggplant plants with 840 g green fertilizer lamtoro produced the longest fruit due to sufficient P elements. According to Dwijoseputro (1992), that plants will produce fruits that are small and not even able to bear fruit if the plant experiences P. deficiency.

According to Marthadi (2001), the fruit development phase includes the cell enlargement phase, starch accumulation and compounds related to fruit quality. Cell enlargement that occurs after cell division is an increase in size and weight of the fruit. The whole process requires large amounts of carbohydrates and proteins where the formation is related to nutrients absorbed by plants. In the formation and filling of fruit, it is strongly influenced by the availability of nutrients for photosynthesis, namely carbohydrates, fats, proteins, minerals and vitamins which will be translocated to the storage section for example in fruit (Harjadi, 1986). Setyamidjaja (1986), states that N plays a role in accelerating the conversion of carbohydrates into proteins that influence the division, elongation, and enlargement of

new cells so as to accelerate fertilization.

P element is an important element in fruit formation because P converts carbohydrates into other compounds such as sugar into flour which results will affect fruit formation. While K plays a role in the process of photosynthesis that is related to the power of photosynthesis and assimilate translocation to fruit parts. The more assimilates available in fruit tissue, the more fruit will be produced bigger and heavier (Hakim et al, 1986). Based on Eggplant plant descriptions in Appendix 1, the weight of fruit per plant can reach 4-5 kg per plant until harvest for 4 months with weight per fruit 150 g. Eggplant plants treated with green fertilizer lamtoro at a dose of 630 g had the highest fruit weight (927.15 g) and fruit length (20.91 cm). Compared to the description of Mustang Eggplant fruit, the average Eggplant fruit weight in this study is still low. This is presumably because the content of organic matter given in the form of nutrient availability in the green fertilizer of Lamtoro still has not reached the optimal level for growth and yield of Eggplant plants. Other factors that are thought to cause the average yield of Eggplant plants are still low in temperature and humidity, because the temperature in the study from the beginning of the study to the end of the temperature ranged from 26°C - 36.25°C and relative humidity during the study between 74.25% - 89%. While the optimal temperature and humidity desired by Eggplant plants ranges from 20 ° C - 32 ° C and 80% -90% (Rukmana, 2005). This shows that the temperature and humidity of the environment is less supportive for the growth and yield of Eggplant plants where the temperature of the day ranges from 33°C - 37°C which exceeds the maximum temperature (32°C) where this plant will easily lose water and N elements and in the generative phase, the flowers become prone to fall and the fruit will quickly cook before its time because the rate of photosynthesis will be faster.

C. Summary of Research Results

The results of diversity analysis on all variables observed, administration of green lamoro fertilizer had no significant effect on plant height of weeks 2,4, 6, 8 and 10 after planting, the percentage of flowers became fruit and fruit length, but significantly affected the number of fruits and weight fruit. The recapitulation of the effect of sea mud on all observation variables can be seen in Table 8.

Table 8. Average Recapitulation of Observation Results Effect of Lamtoro as Green Fertilizer on Growth and Results of Eggplant on Red Yellow Podsolc Soil

Lamto Green Fertilizer RO (G / Poly bag)	Plant height (cm) (mst)					Percentage of Fruit (%)	Number of fruit (fruit)	Fruit weight (g)	Long Fruit (cm)
	2	4	6	8	10				
210	20.22	30.58	47.31	53.63	64.90	38.66	6.30	615.60	19.70
420	18.80	31.38	48.05	55.06	64.73	41.96	8.50	830.26	20.13
630	19.16	31.42	47.39	53.63	64.55	38.39	8.50	927.15	20.55
840	20.17	30.44	49.46	56.67	64.70	37.52	8.40	880.23	20.91
1050	22.25	30.32	47.60	54.05	66.82	33.92	7.70	676.62	20.62
F Test	tn	tn	tn	tn	tn	tn	*	*	tn
KK (%)	17.09	5.38	20.63	6.28	5.32	14.80	10.73	15.84	5.48

Description: *Effective
^{tn}Not effective

CONCLUSION AND SUGGESTION

A. Conclusion

Based on observations during the study, the results of data analysis and discussion, conclusions can be drawn as follows:

1. Provision of green fertilizer Lamtoro has a significant effect on the number of fruits and fruit weight.
2. The administration of 630 g of green fertilizer lamtoro gave the best results on the results of Eggplant plants, namely the number of fruits and the weight of the fruit.

B. Suggestions

Based on the results of the research that has been done, it is suggested that further research needs to be carried out including:

1. Research needs to be done using green manure from other types of plants.
2. If you are going to do research on Eggplant plants, you should pay attention to environmental conditions such as temperature, humidity and rainfall so that the growth and results obtained are optimal.

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