



The Influence of Organic Breastfeeding Doses, Waste of Pig and Waste of Sheep. The Growth of The Life of The (*Syzygium Malaccense*)

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A B S T R A C T

In general, green plants are planted in the field but a plant type, such as a plant that is used to provide shelter in front of the house. The benefits of red beans are foods that are sweet and tasteful, when consumed as a traditional medicine or alternative medicine, contain a large amount of vitamin C in the fruit, and increase human resistance, among others. The specific objective of this research is to find out the influence of organic breastfeeding, interactions and optimal doses of organic breastfeeding of pigs waste and sheep waste on the growth of green plants. The hypothesis of this research is that the use of organic breastfeeding of Tean and different sheep waste can increase the growth of red Tean plants, in the interaction between organic manure and in the optimal dose of organic manure pigs for the growth of green manure plants. The research design used in this section of the research is Randomized block Design o there are 2 (two) factors. Treatment Form with a factorial model. The first factor is the treatment of the organic breastfeeding of pigs at the 4th level and the second factor is the treatment of the breastfeeding of sheep at the 4th level. Treatment is estimated at 16 treatment units. The combination of treatment will be Repeat the 3rd time so that 48 polybag treatment units are needed. Observation of the growth of the red The following are the data to be taken: A). While the green plant nursery, B). The quantity of green plant nursery C). The diameter of the green plant. The research results show that the application of organic breastfeeding of waste of pigs and waste of sheep can be increase the growth of green plants. Plantation in the Faculty of Agriculture Technology, UNPAZ Satelit Fields, Liquica Municipality. significant interactions for the growth of green plants for the treatment of organic breastfeeding doses of manure and organic breastfeeding waste of sheep. The application of the organic dose of breastfeeding of 200 gr and the application of the organic dose of breastfeeding of 150 gr, indicates that the dose is the best with good results.

1. Introduction

The benefits of the Malay apple a sweet taste is a fruit, and it's a taste when you consume one of the fruits which is already ripe. The fruit contains vitamins A, B1, and C, which are high in its fruit and are also as a medicine for people, in other country the communities treat diabetes and fever. it can also make salad, juice, dessert alcohol, and so on. The Malacense Syzygium is also a best fruit and therefore efforts should be made to increase domestic production (Windy K.P.2012).

Currently, the fruit of Malay apple (*Syzygium Malacense*) is a plant that has great potential, to expand as an economic value. The expansion of the Malay apple (*Syzygium Malacense*) we need to have quality of the nursery. The manner of nursery preparation through research in the field, which aims to achieve the purpose of planting the plantation in the field.

To propagate the seeds of the Malay Apple plant that grow randomly on the roots of the Malay apple plant, in order to support and succeed in the activity of planting a plant, there must be a good living plant, good quality of life and adaptation to any place, fast living in the economic value and based on the sustainability of the plant.

The use of organic fertilizer pig manure and sheep manure to guarantee the growth of Malay apple plants, its good growth according to the ecology or biology and culture of the soil. will also depend on organic fertilizer pig manure and sheep manure in good PH nutrition to develop and become a storehouse for the roots of Malay apple.

2. Methodology

Research Design

The research design used in this part of the research is Randomized Block Design or Randomized Group Design (RAK). there are two (2) factors, the treatment will be formed with a factorial model. The first factor is the treatment of organic fertilizer Pig manure (FT) at level 4, and the second factor is the treatment of organic fertilizer sheep manure at level 4. The factors that will be tested are:

1. The factor of organic fertilizer Pig manure (PM) is as follows:

PM0= no organic fertilizer pig manure with volume 0 gr/polybag

PM1= use organic fertilizer pig manure with a volume of 100 gr/polybag

PM2= use organic fertilizer pig manure with a volume of 150 gr/polybag

PM3= use organic fertilizer pig manure with a volume of 200 gr/polybag

II. The Factor of Organic Fertilizer Goat Manure (GM) is as follows:

GM0= Do not use organic fertilizer black soil / top soil goat manure with volume 0 gr/polybag

GM1= use organic fertilizer black soil/ top soil goat manure with volume 100 gr/polybag

GM2= use organic fertilizer black soil/ top soil goat manure with a volume of 150 gr/polybag

GM3= use organic fertilizer black soil/ top soil goat manure with a volume of 200 gr/polybag.

III. The treatment combination is as follows:

PM0GM0 PM0GM1 PM0GM2 PM0GM3

PM1GM0 PM1GM1 PM1GM2 PM1GM3

PM2GM0 PM2GM1 PM2GM2 PM2GM3

Treatment totals 16 treatment units. The combination of each treatment will be repeated three (3) times, thus requiring 48 polybag treatment units.

3. Result and Discussion

During the research on nursery Malay apple plants are not threatened by the pests and diseases and other threats. The results of statistical analysis indicate that the dose of organic fertilizer pig manure (PM) has a very significant influence ($P < 0.01$) on the variable of leaf quantity in the nursery for the Malay apple 2,4 and 6 in a week.

Stem diameter in weeks 2, 4, and 6. Similarly the variable height of nursery of Malay Apple plants at 4 and 6 weeks gave a significant influence ($P < 0.05$) the plant nursery of Malay Apple height of growth of 2 week did not have a significant influence ($P \geq 0.05$) (Table 4.1).

The dose of organic fertilizer goat Manure (GM) had a significant influence ($P < 0.01$) on the variable height of the Malay apple plants in weeks 2,4, and 6. The variable of leaf quantity in weeks 2,4, and 6. Stem diameter in weeks 2, 4, and 6 (Table 4.1). The interaction between the dose of pig manure organic fertilizer and the dose of goat manure organic fertilizer (PM x GM) gave a very significant influence ($P < 0.01$) on the variable of leaf quantity 4 weeks after cultivation.

For the nursery height variable 6 weeks of Malay apple plants had an influence ($P \geq 0.05$). In addition to the variable height of Malay apple plant in the nursery at 2 and 4 weeks, The quantity of the leaf at 2,4 and 6 weeks, the root diameter of Malay apple plants weeks 2,4, and 6 did not give a significant influence ($P \geq 0.05$) (Table 4.1).

Table 4.1 Influence of Organic Fertilizer Dose Pig Manure (PM) and Organic Fertilizer Dose Goat Manure (GM) and Interaction Between (PM x GM) on Nursery Growth of plant Malay Apple are as follows:

Research Variables No.	Treatment		
	PM	GM	PM X GM
1. Height of Malay apple on Nursery			
➤ 2 Weeks After cultivate	12.64 **	17.06 **	22.29 **
➤ 4 weeks after cultivate	69.09 **	59.61 **	59.74 **
➤ 6 weeks after cultivate	342.32 **	335.88 **	326.49 **
2. Nursery Leaf quantity of Malay apple on nursery			
➤ 2 weeks after cultivate	36.82 **	14.18 **	7.31 **
➤ 4 weeks after cultivate	3.01 *	0.11 ns	1.78 ns
➤ 6 weeks after cultivate	0.87 ns	3.23 *	0.32 ns
3. Stem diameter of the Malay apple on nursery			
➤ 2 weeks after cultivate	3.39 *	2.35 ns	0.96 ns
➤ 4 weeks after cultivate	0.34 ns	1.08 ns	1.58 ns
➤ 6 weeks after cultivate	4.22 *	1.78 ns	0.77 ns

Observation: NS = No significant influence ($P \geq 0.05$)

* = Significant Influence ($P < 0.05$)

** = Highly significant influence ($P < 0.01$)

Height of Malay Apple plant of nursery

Results of analysis of variance (Anova) for height of nursery plants Malay Apple (Annex 2) indicates that the application of organic fertilizer of Pig Manure (PM) has a significant influence ($P < 0.05$) on the height of Malay apple plants 4 and 6 weeks after cultivation. However, the height of the nursery plants of Malay apple 2 weeks did not give a significant influence ($P > 0.05$). Application of organic fertilizer Goat Manure. (GM) had a very significant influence ($P < 0.01$) on the height of Malay apple plants 2, 4 and 6 weeks after cultivation.

The interaction between the dose of pig manure organic fertilizer and the dose of Goat manure organic fertilizer (PM x GT) had a significant influence ($P < 0.05$) on the height of Malay apple plants 6 weeks after cultivation. However, the height of the nursery plants of Malay apple plants 2 and 4 weeks did not give a significant influence ($P > 0.05$) (Table 5.1). The results of the 5% DMRT test (Annex 7.) indicated in (Table 4.2) indicate that the height of the nurseries of Malay apple plants aged 2, 4 and 6 weeks, after cultivation indicates that the average value of the nursery height of Malay apple plants is higher than indicated in the treatment (FT33). Height of Malay apple on Nursery plants aged 2 weeks after cultivation was too high indicated for treatment (PM3 GT3). But there was no difference with treatment (PM1GM2), (PM2GM2), (PMoGM2), (PM1GM3), (PM2GM3), (PM3GM2), (PMoGM3), (MP1GM1), (PM2GM1). Height of Malay apple plants on nursery aged 4 weeks after cultivation was higher indicating treatment (PM3 GM3), but no different from treatment (PM1GM2), (PM1GM3), (PM2GM2), (PM2GM3) to (PM3GM2). (PM1GMo), (PM1GM1), (PMoGMo), (PM2GM1), (PM3GMo) to (PM3GM1).

Height of Malay apple on nursery plants aged 6 weeks after cultivation was too high indicated for treatment (PM3 GM3). But significant differences with treatment (PMoGMo), (PMoGM1) to (PM3GM2). Nurseries before the age of 2 weeks, Malay apple plants on nursery will be small so the plants need to harmonize life for apical meristem cell development activity with a relatively small amount. The application of doses of pig manure (PM) organic fertilizer combined with Goat manure (GM) organic fertilizer gave very good results for the height of Malay apple plant on nursery for all treatments. Except for treatment organic fertilizer is not applied. With this, it is suspected that treatment without applying organic fertilizer will not be able to meet the needs of the plant itself. In the process of increasing the height of Malay apple plants on nursery because of this treatment that does not apply organic fertilizer pig manure and organic fertilizer Goat manure, so the nutrition needed by plants in the growth phase will not be needed, because the nutrition needed by plants can only come from the soil. The application of organic fertilizer pig manure and Goat manure to the soil is very good, because it can need and availability of nutrition in the soil, so the need for nutrition for Malay apple on nursery can be realized in the vegetative growth phase itself.

Table 4.2. Average Value of Height of Malay Plants on Nursery Caused by Combination of Dose of Organic Fertilizer Pig manure (PM) and Dose of Organic Fertilizer Goat Manure (GM) for Different Ages

	Height of Malay apple plant on nursery (cm)		
	2 not yet	4 not yet	6 not yet
PMoGMo	2.67a	5.13a	8.67ab
PMoGM1	3.80ab	7.00abc	12.67ab
PMoGM2	4.10abc	5.15cde	12.67bcd
PMoGM3	4.10abc	6.67abcd	13.03abc
PM1GMo	3.83a	6.33abc	12.33a
PM1GM1	3.73abc	6.96bcde	12.67bcd
PM1GM2	4.67c	7.00ef	13.00d
PM1GM3	4.10abc	4.96def	12.33cd
PM2GMo	3.86a	6.96ab	13.00a
PM2GM1	3.90abc	7.10abcd	12.67abc
PM2GM2	3.83bc	6.90def	13.00cd
PM2GM3	3.76abc	6.86def	13.00cd
PM3GMo	4.67a	7.00ab	12.67a
PM3GM1	3.33ab	7.00abcd	13.33abc
PM3GM2	3.80abc	6.90ef	13.00d
PM3GM3	4.10c	6.33f	13.33e

Treatment:

Remark: The number followed by the same letter for each different column does not significantly influence the DMRT5% test.

By increasing the age of Malay apple on nursery will also increase the hormones needed for the growth process of plants. This shows that the height of Malay apple plant on nursery aged 2, 4 and 6 weeks after cultivation, the highest average value of nursery height indicates the treatment combination (PM3GM3) and a significant difference with the treatment without applying organic fertilizer (PMoGMo).

The research results showed that the application of organic fertilizer dose of pig manure 200gr / plant combined with organic fertilizer dose of goat manure 150gr / plant gives the height of the highest of Malay apple on nursery is 5.83. The application of organic fertilizers can increase nutrition in the soil, so plant growth increases because of the availability of nutrients. This is supported by the theory of Baswarsati (2009) that there is synchronization between nutrient availability and plant needs so it can help accelerate plant growth. This is also reinforced by Adam (2010), who said that organic fertilizer applied to the soil will make the decomposition of microorganisms and nutrients from the decomposition become adequate and taken from the roots of plants, so that plant growth will be able to increase its height.

Leaf quantity of Malay apple plant on nursery

The results of analysis of variance (Anova) for the leaf quantity of Malay apple plant on nursery (Annex 3) indicated that the application of organic fertilizer (PM) had a very significant influence ($P < 0.01$) on the leaf quantity of Malay apple on nursery 2, 4 and 6 weeks after cultivation. Also, the application of organic fertilizer of goat manure (GM) had a significant influence ($P < 0.01$) on the amount of Malay apple plant on nursery 2, 4 and 6 weeks after cultivation. The interaction between the dose of pig manure organic fertilizer and the dose of goat manure organic fertilizer (PMxGM) had a very significant influence ($P < 0.01$) on the amount of leaf for Malay apple plant on nursery 4 weeks after cultivation. However, the leaf quantity of the Malay apple plant on nursery 2 and 6 week did not give a significant influence ($P > 0.05$) (Table 5.1).

The results of the 5% DMRT test (Annex 10.e) indicated in (Table 4.3) indicate that the amount of leaf quantity for the Malay apple on nursery at the age of 2, 4 and 6 weeks after cultivation indicates that the leaf quantity of Malay apple plant on nursery the average value is a higher. Indicated on treatment (PM3 GM3). The leaf quantity of Malay apple plant on nursery at aged 2 weeks after cultivation was higher than indicated for treatment (PM3 GM3). But significant differences with treatment (PMoGMo), (PMoGM1) to (PM3GM2). The leaf quantity of Malay apple plant on nursery with age weeks 4 after cultivation is higher indicate for the treatment (PM3 GM3). But significant differences with treatment (FToBT0), (FToBT1) to (FT3BT2).

The leaf quantity of Malay apple plant on nursery at 6 weeks of age after cultivation was mostly indicated for the treatment (PM3 GM3), but not different from the treatment (FT2BT3), (PM3GM1) to (PM3GM2). But significant differences with treatment (PMoGMo), (PMoGM1), (PMoGM2), (PMoGM3), (PM1GM0), (PM1GM1), (PM1GM2), (PM1GM3), (PM2GM0), (PM2GM1), (PM2GM2) to (PM3GM0). The Application of dose organic fertilizer pig manure (PM) combined with organic fertilizer Goat manure (GM) Gave very good result for leaf quantity of Malay apple plant on nursery for all treatment. Except for treatment organic fertilizer is not applied.

In general, the difference in dose application with various pig manure organic fertilizers combined with goat manure organic fertilizers has a very significant influence on the vegetative growth of plants. From the data of the average value of the research results, showed that there is a tendency to increase plant growth as well as accompanied by increasing the dose of organic fertilizer. By increasing the amount of organic fertilizer offered to the under the soil, as well as the amount of nutrition will also increase, so the availability of nutrition under the soil that needed for plants will remain sufficient. In other words, plants whose nutritional needs are satisfied will be able to stimulate new leaf growth.

Table 4.3. Average Value Of leaf quantity for the Malay apple plant on nursery Cause Of Combination of Organic Fertilizer Dose of pig manure (PM) and dose of Organic Fertilizer of Goat manure (GM) for Different Ages.

Treatment	The leaf quantity of Malay apple plant on nursery		
	(Count)		
	2 not yet	4 not yet	6 not yet
PMoGMo	2.00a	5.33a	7.00a

PMoGM1	2.33b	5.67ab	7.00ab
PMoGM2	2.33b	6.00ab	6.67bc
PMoGM3	2.33bc	5.33ab	6.33cd
PM1GM0	2.33bc	6.33ab	6.33cd
PM1GM1	2.67bc	5.67abc	7.67cde
PM1GM2	3.00bcd	5.67bc	6.33de
PM1GM3	3.67cde	4.67abc	6.67def
PM2GM0	3.67bc	4.67abc	6.33fg
PM2GM1	3.00bcd	5.33bc	6.67gh
PM2GM2	3.00cde	5.33bc	7.00fg
PM2GM3	3.33e	6.00c	7.33gh
PM3GM0	3.00de	6.33bc	7.00fg
PM3GM1	3.00de	6.00bc	8.00gh
PM3GM2	4.33e	6.00d	7.67gh
PM3GM3	6.33f	6.33e	8.33h

Observation: The number followed by the same letter for each different column does not significantly influence the test of DMRT5%

By increasing the age of Malay apple plant on nursery will also increase the hormones needed for the growth process of plants. This, seeing that the amount of the leaf quantity of Malay apple plant on nursery at aged 2, 4 and 6 weeks after cultivation, the average value of leaf quantity is more indicative of the treatment combination (PM3GM3) and significantly different with the treatment without applying organic fertilizer (PMoGMo).

The research results indicate that the application of organic fertilizer dose of pig manure 200gr / plant combined with organic fertilizer dose of goat manure 150gr gives the leaf quantity of Malay apple plant on nursery is more than 8.00. Research results show that the application of organic fertilizers has the possibility to increase nutrition in the soil, so that plant growth increases to availability for nutrition. Plants whose needs are satisfied for nutrition itself, will be able to stimulate the growth of new leaf. The amount of leaf has a positive relationship with the height of the plant, the more increase the height of the tree then it will also increase the amount of leaf. Increasing the height of the plant will cause the number of roots (roots) will increase as well as the number of leaf will also increase, this is because roots (roots) as a place to hold wrapped. This is supported by the theory of Badam and Adam (2009) Sayed that, the trees are formed by roost (roots) as a place for the leaf for stuck. Reinforced by Jamaludin (2016) Sayed that, elements of N are very important for the formation of stems because with the availability of N photosynthesis process will be able to increase and the photosynthate that will be obtained can be used by plants for leaf formation.

Diameter of the Tree of Malay apple on nursery

The results of analysis of variance (Anova) for the diameter of the tree of Malay apple plant on nursery (Annex 4) indicated that the application of organic fertilizer pig manure (PM) had a very significant influence ($P < 0.01$) on the tree diameter of Malay apple plant on nursery on 2, 6 and 4 weeks after cultivation. Also, the application of organic fertilizer of Pig manure (PM) had a significant influence ($P < 0.01$) on the diameter of the tree of Malay apple plant on nursery on 2, 4 and 6 weeks after cultivation. The interaction between the dose of organic fertilizer of pig manure and the dose of organic fertilizer (PMxGM) on the diameter of the tree of Malay apple plan on nursery in weeks 2, 4 and 6 did not give a significant influence ($P > 0.05$) (Table 5.1).

The results of the DMRT 5% test (Annex 13.e) indicated in (Table 4.4) indicate that the diameter of the tree of Malay apple plant on nursery at the age of 2, 4 and 6 weeks after cultivation showed that the average value of the tree diameter of Malay apple plants indicated in the treatment (PM3GM3). The diameter of the Malay apple plant on nursery with the age of 2 weeks after cultivation is too large indicated for treatment (FTBT3). But significant differences with treatment (PMoGMo), (PMoGM1) to (PM3GM2). The diameter of the tree of Malay apple plant at the age of 4 weeks after cultivation was larger indicating the treatment (PM3GM3), but there was no difference with the treatment (PM3GM1) and (PM3GM2). But the difference was significant with the treatment (PMoGMo), (PMoGM1) to (PM3GMo).

The diameter of the Malay apple plants on nursery aged 6 weeks after cultivation was larger than indicated for

the treatment (PM3 GM3), but not different from the treatment (PM3GM2). But significant differences with treatment (PMoGMO), (PMoGM1) to (PM3GM1). The application dose of the organic fertilizer of pig manure (PM) combines with the dose organic fertilizer of goat manure (GM) gave a very good result for the diameter of the tree of Malay apple plant for all treatments. In general, the difference in dose application with various organic pig manure fertilizers combined with goat manure organic fertilizers has a significant influence on the vegetative growth of plants.

From the average value data of the research results, it showed that there is a tendency to increase plant growth as well as accompanied by increasing the dose of organic fertilizer. By increasing the amount of organic fertilizer offered under the soil, as well as the amount of nutrition will also increase, so the availability of nutrition in the under the soil that is needed for plants will remain sufficient. In other words, plants that have satisfied nutritional needs will be able to stimulate the growth of tree diameter.

Table 4.4. Average Value Of the tree of Malay apple plant on nursery Caused By Combination of Organic Fertilizer Dose of pig (PM) and Organic Fertilizer of Goat (GM) for Different Ages

Treatment	Diameter of the Tree of Mlay apple on nursery (mm)		
	2 not yet	4 not yet	6 not yet
PMoGMO	0,07a	0,08a	0,15a
MPoGM1	0,08a	0,12ab	0,14b
MPoGM2	0,07a	0,10bcd	0,13cd
PMoGM3	0,05b	0,07cde	0,11cd
PM1GMO	0,08b	0,11bc	0,14bc
PM1GM1	0,06b	0,09bc	0,13cd
PM1GM2	0,06b	0,08def	0,13de
PM1GM3	0,06cd	0,09fgh	0,13e
PM2GMO	0,05bc	0,08efg	0,11ef
PM2GM1	0,0d	0,01fghi	0,14fg
PM2GM2	0,07de	0,10ghi	0,14gh
PM2GM3	0,07e	0,10hi	0,12fgh
PM3GMO	0,07ef	0,11i	0,16h
PM3GM1	0,07ef	0,12j	0,15i
PM3GM2	0,05f	0,09j	0,12i
PM3GM3	0,07g	0,01j	0,17i

Remark: The number followed by the same letter for each different column does not significantly influence the 5% DMRT test.

The research results showed that the application of organic fertilizer pig manure 200gr / plant combined with organic fertilizer of goat manure / plant (FT3FT3) resulted in the largest diameter of the tree of Malay apple plant is 6.81 mm, when compared to the diameter of the tree of Malay apple plant on nursery per plant without fertilizer applied organic (PMoGMO) is 0.87 mm. This is because the development of plant organs is greatly influenced by macro and micro nutrition in organic fertilizer pig manure and organic fertilizer goat manure. According to Soeroto (1985) stated that, nutrition needed to activate some enzymes that have functions for mitosis, cell division and elongation, cell division, protein synthesis and carbohydrate translocation. balance, so that nutrition provision will be in line with need.

Treatment dose of pig manure (PM) 200gr / plant combined with a dose of organic fertilizer goat manure 150gr / plant will possibly achieve optimal nitrogen (N) requirements that can increase photosynthesis activity so as to increase plant photosynthesis. The next photo syntax will translocate to the meristem, and the meristem will occur cell division and elongation thus causing the plant organs to increase in size. Marviana DKK (2014) stated that nitrogen (N) nutrition is required in large amounts for each stage of plant growth, especially for shoot formation and trunk development.

4. Conclusion

Based on the results of research on "Influence of Dose of Organic Fertilizer Pig manure and Dose of Organic Fertilizer goat manure on Nursery Growth of *Syzygium Malaccense* with the following conclusion:

1. Application of organic fertilizer pig manure and organic fertilizer goat manure can increase the growth of nursery planted in the nursery center of the faculty of agriculture in the Satellite Campus UNPAZ Liquisa Municipality
2. This was a significant interaction for the growth of the nursery Malay apple plant for the treatment of doses of organic fertilizer pig manure and organic fertilizer goat manure.
3. Application of organic fertilizer dose of pig manure 200 gr/plant and application of organic fertilizer dose of goat manure 150 gr/plant indicate that the dose is optimal with maximum result.

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