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RESEARCH ARTICLE

THE INFLUENCE OF DOSING OF CHICKEN MANURE AND WATER WASHING RICE AGAINST GROWTH AND CROP YIELD PURPLE EGGPLANT (*Solanum melongena L.*) ON DRY LAND

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ABSTRACT

Plant a purple Eggplant (*Solanum melongena* L.) on dry land is one type of vegetable plants that are favored by the community because in addition to having a delicacy also contains a lot of vitamins and nutrients. But so far the public is still constrained by the increased crop production. One alternative is the awarding of organic fertilizer to the soil can influence and improve soil properties either physics, chemistry or biology of the soil. The purpose of the research was to know the influence of dosing of chicken manure and water washing rice against growth and crop yield of eggplants and to know the influence of the interaction between a dose of chicken manure and rice water washing against growth and crop yield of eggplants then to find out the optimum dose of chicken manure and rice water washing against growth and crop yield of eggplants. This experiment using Randomize Block Design (RBD) consisting of two factors. The chicken manure factor consists of 4 levels, namely: P0 = (without the chicken manure) P1 = (250 g chicken manure), P2 = (500 g chicken manure) and P3 = (750 g chicken manure). Factors of water washing the rice which consists of 4 levels, namely: A0 = (not use water washing rice), A1 = (250 ml rice water-washing), A2 = (500 ml rice water-washing) and A3 = (750 ml rice water washing) are combined into 16 treatment and repeated 3 times so that the retrieved 48 swath the experiment. Observation is only performed on four plant samples at each of the six treatment plant population in the swath of the experiment. The principle parameter in this research are available on the observation such as plant height, number of leaves, root growth and weight of fruits. The results of the research shows carry, granting chicken manure and water washing rice can increase growth and crop yield of eggplants. The real interaction occurs on plant colonization eggplant in treatment doses of chicken manure with a dose of water washing the rice. At doses of chicken manure 750 gr/plant showed a dose of chicken manure with optimum results and maximum dose 750 ml rice water washing/plants shows the optimum dose with maximum results. In treatment (P3A3) is the best treatment for giving the maximum yield that is 2,81 and 9,21 g/swath.

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INTRODUCTION

Plant a purple Eggplant (*Solanum melongena* L.) on dry land is one type of vegetable plants that are favored by the community because in addition to having a delicacy, also contain lots of vitamins and nutrients such as; vitamin A, vitamin B, vitamin C, potassium, phosphorus, iron, protein, fat, and carbohydrates (Bukhari, 2013). The development of the East Timorese population that continues to grow the implications on the increase of the needs of vegetables especially Eggplant for the community. But unfortunately farmers in East Timor especially at Suco Comoro, Dom Aleixo Administrative Post, the Municipality hasn't been able to Dili to meet the needs of the vegetables either in quantity or quality, by therefore effort towards that needs to be done, for example the selection of fertilizers for plants. Utilization Eggplant fruit as vegetables are extremely needed by the communities in the Suco Comoro. Vegetables Eggplant is widely found in traditional markets as well as in the modern market, because this community will demand the Eggplant is so high. So the cultivation of Eggplant is a good business opportunity to earn profits. More benefits, depending on the condition the quality of Eggplant, care and the way it has been noteworthy. The Eggplant was also familiar to all communities including the community in East Timor. These vegetables are often made of materials a variety of refined dishes, such as stir fry, vegetable stir fry-cooking liquid, and so on. It's like the typical and tasty makes the demand by society at large, in addition to the benefits of the Eggplant is very good for health, good nutrition content on Eggplant is very needed by the body. Because of the increase in crop-growing dwarf Eggplant and its production is insufficient, need to add organic materials to improve the content of nutrients in the soil (Lakitan, 1996). Fertilizers, organic fertilizers are used should, because in times like this now many farmers who use chemical fertilizers ahead of time so that the impact is damaging the environment, because farmers often use chemical fertilizers not appropriate doses and most fertilize the plants just using urea fertilizers/N then make the soil becomes hard.

What is the study of fertilization is important especially the chicken manure and water washing rice in Timor-Leste, and also Eggplant is one of those vegetables that its marketing very well and always needed by people in the local market. Because farmers generally less make use of organic materials in plants especially waste water washing rice every family there is always a but rarely use, and even chicken manure in each family will surely keep livestock was epileptic but litter is not utilized. The use of organic fertilizers, is quite supportive of growth and crop production. Organically Cultivated crops will have the prospect is promising. Organic agriculture demand that land use is not contaminated by chemicals as well as have a good accessibility and sustainability. For that land use should be noted, do not use chemicals and stay awake until the preserved land have been worn remained fertile and not threatened the damage. The awarding of the organic fertilizers into the soil can influence and improve soil properties either physics, chemistry or biology (Nurhasanah, 2011). In general the land always requires the addition of organic matter to improve the nutrients in the soil, so that the soil remains fertile and used for the cultivation of increasing production of a plant. The granting of water chicken manure washing rice is the key to success in boosting crop production in tropical climates, because of its ability to better retain soil moisture and improve the structure and porosity ground. This condition is the rehabilitation of the land thoroughly. This condition not only the effect on the layout of air and water but also against activity remains miniscule and the process of provision of nutrient elements for plants (Afandie, 2002).

There is a researcher in the area of tropical land dry, but moist soil was good enough for the cultivation of eggplants. Utilization of beneficial ingredients such as ground water washing rice is one example of the application of the concept of technology of low input (low input technology) in the handling of soil fertility (Alibasyah, 2000). Need to deliver new innovations to farmers and their families through counseling about ways of usage of water washing the rice. Granting and repayment of organic wastes in the form of solid water washing first rice on land-agricultural land, is also an environmental improvement Act of growing a crop which is expected to reduce land degradation, supporting stability improved the productivity of land and the sustainable farming system (sustainable farming agriculture)(Alibasyah, 2000). Water washing rice contains abundant nutrients of which carbohydrates could be the formation of an intermediary generative and vegetative growth so that will add to increased productivity, nutrient content of these badly needed by Eggplant plants (Nurhasanah, 2011). Eggplant plants as well as other plants need food or nutrient to live and breed. Plant food mainly from mineral deposits that exist in the soil contained in organic material, organic wastes, nitrogen deposition, its loop fastening system bacteria through the air, and others. Nutrient elements retrieved plants from the soil is converted into carbohydrate through the process of photosynthesis of the plant or plants. Plant food availability is affected by soil fertility, soil fertility is the ability of the soil provides a nutrient in an amount sufficient to support growth and breeding. This definition is often understood too narrowly by only considering the nature of chemistry or soil fertility which concerns only the number and availability of nutrient elements contained in the soil. The concept of soil fertility is actually much broader. Fertility aspect is the physical properties of the soil, the density of the soil, into the rooting follow-up, structure and porosity of soil or soil and the ability spans permeate water. To get the necessary soil fertility replenishment of materials containing nutrient elements. Organic nutrient elements can be obtained. One step to restore soil fertility. Organic farming venture. Influence of organic fertilizer, despite its weaknesses, organic fertilizer has many benefits and advantages of the combination of chicken manure and water washing the rice. The use of organic fertilizer to make the ground became conductive so easy going air circulation and easily penetrated rooting plants.

It is therefore for the textured sand soil organic material will enhance the binding between particles of soil and improve water binding ability. In addition to fixing the physical properties of the soil organic fertilizers also improve soil chemical properties, i.e. with the help of the mineral material weathering processes. Organic ingredients also provide food for the life in the soil microbial. An organic material in the soil affects the amount of microbial that exists in the soil. For improving the cultivation of eggplants productivity need to be organized with the addition of chicken manure and waste water washing rice to be able to improve the content of nutrient elements in soil. Based on the above, the authors wished problems the last influence of the giving of the chicken manure and water washing rice against growth and crop yield of Eggplant. Because research in place of sub-village 30 de August, village Comoro, Dom Aleixo Administrative Post, the Municipality of Dili, the farmers do not yet know about the make the water washing the rice when young can the material in each household, always available manure and dirt chicken can procure-by farmers because the chicken easy keep. Eggplant plants are usually grown on dry land that is the antithesis of an agricultural wetlands. Dry land farming is a type of agriculture that has a low moisture content even extreme or arid and tend to have no of the definite sources of water such as a river, Lake or irrigation canals. Eggplant plants for cultivation in dry land needs to handle more specialized irrigation, such as creation of a tub drip irrigation water and shelter. The purpose of the study is to know the influence of dosing of chicken manure, water-washing rice and the interaction of both towards growth and crop yield of eggplants.

MATERIALS AND METHODS

This research was carried out at the CCT/NCBA in Aldeia 30 de Agosto, Post Administrative Dom Aleixo, Municipality, Dili, Timor-Leste in May until October 2018. And the location of the CCT/NCBA research place in Dili have temperature 23-300C with an elevation of 82.95 m above sea level, measured by manual. The materials used in this research are the seeds of Eggplant Purple varieties of Bungo formula buy from stores farms in Dili, and chicken manure and water washing the rice. The tools used are analytic scales 5000gr, bucket, hoe, rake, machetes, knives, gembor, meter, rope raphia, wood, bamboo, plywood, saws, measuring cup, notebooks, pens, the thermometer temperature, caliper, rules, and small PVC. This experiment using Random Design Group (RAK) factorial pattern of 4 x 4. There are two actors who researched, namely the granting of chicken manure and the granting of water washing the rice each consists of 4 levels. Chicken manure (P) consists of 4 levels, namely: P0 (without the chicken manure), P1 (250 g/plant), P2 (500 g/plant) and P3 (750 g/plant). The second factor is the granting of water washing rice (A) also consists of 4 levels, namely: A0 (unannounced) A1 (250 ml/plant), A2 (500 ml/plant) and A3 (750 ml/plant). In total there are 16 treatment combinations and repeated 3 times, thus obtained 48 units of the experiment. Observation is only

performed on four plant samples at each of the six treatment plant population in the compartments on each plot. Observations made include: plant height, number of leaves, stem diameter and weight of fruit for each plot. Eggplant plants high measured from the neck root to stem growing and highest on the measure at the age of 20, 30 and 40 days after planting, the number of plants of Eggplant leaf branch growing from the primary to the secondary branch of rods and calculated at the age of 20, 30 and 40 days after planting. The weight of the fruit per plot will be weighed using scales on any number of crops harvested until harvest to stage 3. Then in the accumulation to get the results of total plot of each treatment. The data analysis done with test range on youth F α level 0.05. If the results of the real range of influential prints, then conducted further trials with DMRT (Mattijik, 2006).

RESULTS AND DISCUSSION

Higher plants: The results of the analysis (ANOVA) variety fingerprints against height plant Eggplant showed that fertilization with chicken manure dose (P) gives no real influence (P > 0.05) at high plant Eggplant aged 20, 30 and 40 HST. Treatment doses of water washing rice (A) gives a very real influence (P < 0.01) at high plant Eggplant aged 20, 30 and 40 HST. Interaction of chicken manure doses and doses of laundry water rice (PxA) exert influence are not real (P = > 0.05) in high plant Eggplant aged 20, 30 and 40 HST. For more details can be seen in Table 1, DMRT 5% test results the U.S. follows: Growing Eggplant plants age more and more growing hormone needed to process value and the development of the plant. It is seen that high plant Eggplant at age 20, 30 DAPDAP and HST 40, the average height of higher plants obtained on combination treatment (P1A3) real and distinct treatment not use fertilization. Based on the results of the research are listed in table 5.2. on top of that combination treatment doses of chicken manure (P1) with a dose of water washing rice (A3) is the best treatment against other treatments. At the end of observation, high plant Eggplant ranging between 6.08 cm-24.42 cm.'t' is because the grant was able to add organic fertilizer nutrient elements in soils, so plant growth increased with the availability of nutrient elements. This is supported by the theory of Lakitan (1996), there is a synchronization between the availability of nutrient needs of the plants so that it can help the speed of growing plants. It is also supported by the Sarief (1989), which States that the organic fertilizer which is inserted into the ground will be decomposed by microorganisms and nutrient elements released from the decomposition becomes available and absorbed by plants, thus rooting plant growth will increase especially tall plants.

The leaves: The results of the analysis of the variant (ANOVA) against the number of leaves and broad leaf plant Eggplant showed that fertilization with chicken manure dose (P) gives no real influence (P > 0.05) on the number of leaves and broad leaf plant Eggplant aged 20, 30 and 40 HST. Treatment doses of water washing rice (A) gives a very real influence (P < 0.01) on the number of leaves and broad leaf plant Eggplant aged 20, 30 and 40 HST. Interaction of chicken manure dose and dose the water washing rice (PxA) exert influence are not real (P≥0.05) on the number of leaves and broad leaf plant Eggplant aged 20, 30 and 40 HST. For more details can be seen in Table 2 results of test DMRT 5% as follows: Based on the results of the research are listed in Table 5.3 on top of that chicken manure combination treatment (P0) with a dose of water washing rice (A3) is the best treatment against other treatments. At the end of observation, the amount of plant leaves Eggplant ranged between 4.75 strands-14.75 strands. Similarly broad leaves ranged from 27.81 281.05 cm. cm-this is because the plant, which has the most extensive and largest leaf will capture the largest rays. Because the organ is the site of leaf photosynthesis and other metabolic processes. The more the number of leaves and broad leaves it will be getting many carbohydrates are produced. The carbohydrates that will be used by the plant in support of growth and development. It is in accordance with the statement of the Sari (2002) that, the more the number of leaves and broad leaf of a plant owned by the many photosyntate were produced. This was confirmed (Lakitan, 1996), the main function that leaves for the plant is as an organ of photosynthesis. When compared to other plant organs that are green and also carry out the process of photosynthesis, leaf has a greater capability for this activity. Therefore, the leaf acts directly in providing energy reserves which serves to support the growth and development of crops of eggplants.

Diameter: The results of the analysis of the variant (ANOVA) against the diameter of the rod plant Eggplant showed that fertilization with chicken manure dose (P) gives no real influence (P ≥ 0.05) on the diameter of the rod plant Eggplant aged 20, 30 and 40 HST. Treatment doses of water washing rice (A) gives a very real influence (P < 0.01) on the diameter of the rod plant Eggplant aged 20, 30 and 40 HST. Interaction of chicken manure dose and dose the water washing rice (PxA) exert influence are not real (P > 0.05) on the diameter of the rod plant Eggplant aged 20, 30 and 40 HST. For more details can be seen in Table 3, DMRT 5% test results as follows:

Based on the results of the research are listed in table 5.4. on top of that combination treatment doses of chicken manure (P3) with a dose of water washing rice (A3) is the best treatment against other treatments. At the end of the observation, the diameter of the rod plant Eggplant ranged between 4.25 mm-13.38 mm. It is because vegetative phase is the phase of use of carbohydrates in plants. The carbohydrates needed by plants to support the occurrence of important processes in plants, such as cell division, cell renewal, and the first stage of cell differentiation. Eggplant plants during vegetative growth phases require organic fertilizers such as manure with nitrogen (N) content is sufficient, however, to achieve optimum growth must be supported by adequacy of phosphorus (P) and potassium (K). Nitrogen is a nutrient that is very influential in the growth of vegetative plants (Widowati, 2005). Moko (2004) stated that the metabolism of nitrogen is the main factor of vegetative growth, stem, and leaves. Nitrogen contained in the crop will be formed into networks of proteins and other organic compounds to the growth and development of plants. It further said Sitompul and Bambang (1995) stating the difference large enough at the beginning of the growth will be the potential to generate capital growth differences.

The roots: The results of the analysis (ANOVA) variety fingerprints against the growth of plant roots eggplants showed that fertilization with chicken manure dose (P) gives a very real influence (P<0.01) On the length of the root and the number of root crops of eggplants. Treatment doses of water washing rice (A) gives a very real influence (P < 0.01) on the length of the root and the number of root crops of eggplants.

Interaction of chicken manure dose and dose the water washing rice (PxA) exert influence are not real (P≥0.05) in the root length and the number of root crops of eggplants. For more details can be seen in Table 4, DMRT 5% test results as follows: Observation on growth of plant roots is performed by measuring the length of the root and the number of plant roots was measured when the study ended. Based on the results of the study on Table 4 that, a combination of chicken manure with water washing rice gives a real influence on the length of the roots of Eggplant Purple.

At the end of the observation, the length of the roots ranged from 19.46 49.26 cm cm-and the number of root ranged from 16, 92 cm-39.42 cm. Combination treatment doses of manure 750 gr rice wash water and dose 750 ml (P3A3). At the end of the observation shows a length of root and root number of most comparable treatment of other combinations. The growth of the roots is one indication of the success of the planting is done because the roots play an important role for the plant. The function of the roots i.e. absorb water and dissolved minerals, transportation

Table 1. Average Plant Height (cm), due to a combination of doses of Chicken Manure (P) and a dose of Water Washing rice (A) on several different purple eggplant age

Treatment	20 DAP	30 DAP	40 DAP
P0A0	3,28a	5,04a	6,08a
P0A1	3,72a	10,6bc	17,75bc
P0A2	3,75ab	12,42bc	21,92cd
P0A3	4,22abc	13,74c	22,75cd
P1A0	5,18cd	9,02b	12,58b
P1A1	6,08d	12,48bc	20,42cd
P1A2	5,48cd	13,18c	21,32cd
P1A3	5,62cd	13,75c	24,42d
P2A0	5,42cd	9,08b	11,92b
P2A1	6,15d	12,08bc	19,88cd
P2A2	5,48cd	11,78bc	21,42cd
P2A3	5,18cd	11,98bc	20,92cd
P3A0	6,22d	8,72b	12,08b
P3A1	6,15d	12,48bc	20,38cd
P3A2	5,08bcd	11,78bc	19,92cd
P3A3	5,78d	12,32bc	21,08cd

Description: The letters are followed by the same number do not give effect not unlike the real extent of DMRT at 5%.

Table 2. The average component of the leaves (Leaf Number and area of the leaf), due to a combination of doses of Chicken Manure (P) and a dose of Water Washing rice (A) on several different purple eggplant age

Treatment	The Components Of The Leaf					
	The number of leaves (strands)			Broad Leaf (cm)		
	20 DAP	30 DAP	40 DAP	20 DAP	30 DAP	40 DAP
P0A0	3,42ab	3,25a	4,75a	3,94a	14,11a	27,81a
P0A1	5,08c	6,75cd	12,42bc	29,79b	121,12c	202,47c
P0A2	5,08c	7,58d	13,92c	37,86bc	150,29cde	218,76cd
P0A3	5,58c	8,42e	14,75c	53,36c	187,16e	281,05d
P1A0	3,25a	4,92b	8,42ab	6,26a	58,14ab	104,69b
P1A1	5,42c	7,08d	11,92bc	39,85bc	153,58cde	225,55cd
P1A2	5,08c	7,75d	14,25c	34,8bc	159,42cde	235,82cd
P1A3	5,25c	7,75d	14,75c	41,85bc	174,48de	270,62cd
P2A0	3,25ab	5,08b	7,42a	5,39a	54,38ab	85,5ab
P2A1	5,08c	7,08d	13,75c	38,96bc	129,14cd	205,46cd
P2A2	4,92c	7,25d	13,25c	31,29bc	151,3cde	256,84cd
P2A3	5,25c	7,08d	13,75c	34,13bc	141,26cde	234,06cd
P3A0	3,25ab	5,25bc	8,25ab	5,63a	64,18b	98,09ab
P3A1	4,75c	7,42d	14,25c	35,72bc	145,64cde	237,59cd
P3A2	4,42bc	6,92cd	14,08c	36,7bc	142,48cde	246,65cd
P3A3	5,25c	7,58d	14,58c	39,88bc	145,95cde	209,45cd

Description: The letters are followed by the same number do not give effect not unlike the real extent of DMRT at 5%.

Table 3.The average Stem Diameter (mm) Induced a dose of Chicken Manure (P) and a dose of Water Washing rice (A) on several different purple eggplant age

Treatment	20 DAP	30 DAP	40 DAP
P0A0	2,58a	3,68a	4,25a
P0A1	4,25cd	7,42c	10,88cd
P0A2	5,08de	8,92cd	12,06d
P0A3	5,58e	9,52d	12,84d
P1A0	3,58bc	5,35b	6,55ab
P1A1	4,92de	8,12cd	11,25cd
P1A2	5,08de	8,62cd	11,28cd
P1A3	5,58e	9,25d	12,56d
P2A0	3,58bc	5,38b	6,98b
P2A1	4,58cd	7,82cd	10,71cd
P2A2	4,75de	8,25cd	11,82d
P2A3	5,08de	8,75cd	11,18cd
P3A0	3,08ab	5,68b	8,44bc
P3A1	5,08de	8,62cd	11,58d
P3A2	4,75de	8,08cd	11,48d
P3A3	5,58e	8,78cd	13,38d

Description: The letters are followed by the same number do not give effect not unlike the real extent of DMRT at 5%.

Table 4.The average growth of plant roots (Root Length and number of roots) due to a dose of Chicken Manure (P) and a dose of Water Washing rice (A) on the plant Eggplant Purple

Treatment	The Growth Of Plant Roots	
	Root length (cm)	The number of Roots (fruit)
P0A0	19.46a	16.92a
P0A1	26.6bc	22.42b
P0A2	25.97bc	26.75cde
P0A3	32.08cde	30.58efg
P1A0	23.61ab	22.75bc
P1A1	30.21cd	24.92bcd
P1A2	36.04def	26.75cde
P1A3	38.17efg	31.58fgh
P2A0	31.98cd	23.92bc
P2A1	34.5de	29.08def
P2A2	41.79fgh	35.92hij
P2A3	44.34ghi	37.58ij
P3A0	34.08de	29.58ef
P3A1	38.33efg	31.75fgh
P3A2	46.58hi	34.58ghi
P3A3	49.26i	39.42j

Description: The letters are followed by the same number do not give effect not unlike the real extent of DMRT at 5%.

Table 5.The value of Different of BNT Assay Results and 5% against the weight of the Fruit per Plant Eggplant Blue on each Factor At Age 40 HST (gr)

Treatment	Water Washing rice (ml/plant)			
Chicken Manure (gr/plant) 40 DAP	A0	A1	A2	A3
	----------gr----------			
P0	547.88a A	1490.58b B	1640.79c C	2016.92d D
P1	1246.58b B	1406.25b B	1693.79c C	2035.46d D
P2	1513.92b B	1687.00c C	2132.04d D	2214.92d D
P3	1944.75c C	2237.75d D	2170.42d D	2819.21e E
BNT 5%	304,08			

Description: Based on youths effect, the effect of the interaction of chicken Manure and water Washing the rice. Average followed a similar letter on a line (a, b, c) and columns (A, B, C) of the same is no different of BNT assay based on levels 5%. Chicken Manure P =, A = Water Washing The Rice.

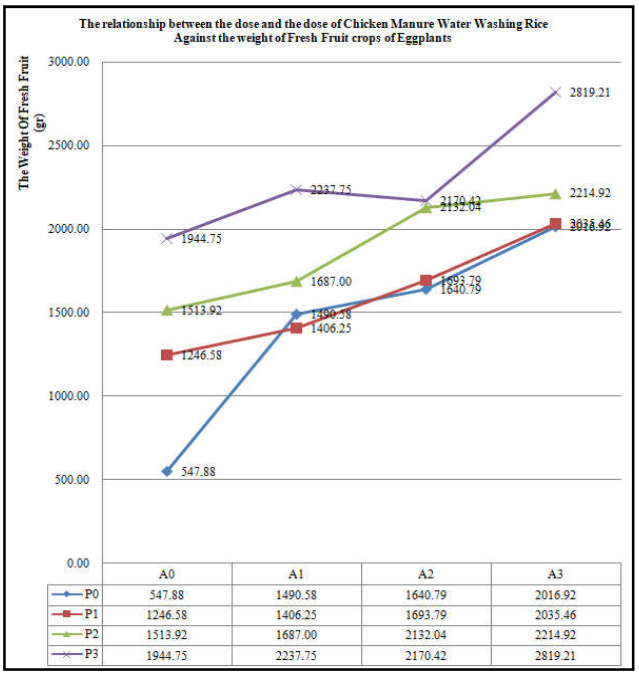

Figure 1.The relationship between the dose and the dose of chicken manure water washing rice against the weight of Fresh Fruit crops of Eggplants

nutrient, improve stems and reserve storage of food. Increasingly long roots that form the more ease in carrying out its functions, plant one in the absorption of nutrient elements. A large number of roots will cause the absorption of nutrients and water be optimized so that the process will last well physiology to compensate for the growth and development of cuttings in shaping the perfect plant. Aminah *et al*. (2006) States that the more the roots then the more nutrient elements that can be absorbed by plants, so that the plant will be empowered to live high. The rapid growth of the roots will be stimulating the growth of seedling of fast anyway. According to Harjadi (1989) stated a plant to make new cells, cell renewal, thickening tissue actually develop the stem, leaf and rooting system. The faster the rate of cell division of the extension and thickening of the tissues of the stem growth, leaf and root faster. The availability of nutrient elements and the water is very dependent on the ability of the land to provide both the material composition of the growing medium, each has different capabilities in providing nutrient and water for plant growth. According the opinion of Salisbury and Ross (1995) explains that in addition is determined by genetic factors, morphology, root determined by the State of the environmental media, and soilnutrient. When the nutrient is available in sufficient amount then the plant will form shallow rooting systems. Instead, the media treatment of plants with minimal cropping nutrient tend to expand rooting to get nutrient.

Fresh fruit weight (gr): The results of the analysis of the variant (ANOVA) of the weight of fresh fruit crops of eggplants showed that fertilization with chicken manure dose (P) gives a very real influence ($P < 0.01$) on a fresh weight fruit plant Eggplant age 40 HST. Treatment doses of water washing rice (A) gives a very real influence ($P < 0.01$) on a fresh weight fruit plant Eggplant age 40 HST. Interaction of chicken manure dose and dose the water washing rice (PxA) gives a very real influence ($P < 0.01$) on the weight of fresh fruit crops of eggplants age 40 HST. For more details can be seen in table 5 the value of Different of BNT test results and 5% as follows: Results of the study showed that dosing of chicken manure 750 gr/plant combined with the wash water 750 ml/rice plant gives the weight of fresh fruit per plant Eggplant heaviest i.e. 2819.21 grams, compared with the weight of fresh fruit per the plants obtained on treatment without organic fertilizer that is 547.88 grams. From the results of this research can be said that chicken manure treatment dose and dose the water washing rice has economic value. The weight of fresh fruit on the plant Eggplant depending on number and size of fruit produced. Generally, the higher the amount of fruit produced it will be also getting heavy weight fruit produced per plant. This looks at the treatment (P3A3) that generates the most amount of fruit also produces the highest fruit weight (table 4). The availability of the elements nitrogen, phosphorus, and potassium (N, P, K) on the chicken manure and water washing effect on rice yield fresh weight of the fruit. The elements of N are very important for the formation of chlorophyll is needed in the process of photosynthesis. The number of results of photosynthesis will increase the amount of food that will be distributed to the formation and development of the fruit. Indirectly it is associated with the formation of fruit that also affect the quality of the fruit. Addition element N, Eggplant plants also require more elements of P and K to generative growth. This is due to the role of nutrient elements of P to the formation of the fruit, and K nutrient elements to the quality of the fruit

produced (Styaningrum *et al*., 2013). The main factor giving of chicken manure gives a very real influence on the weight of fresh fruit per plant eggplant. Treatment doses of chicken manure 750 gr/plant (P3) was able to increase the weight of fresh fruit per plant eggplant. This is supposedly the higher dose of chicken manure is given then the greater activity of soil microorganisms and nutrient elements which are available. Soeroto. (1985) States that a plant will grow well and flourishing in all nutrient elements required are in a sufficient amount and available to the plant. The main factor of dosing the water washing the rice very real effect on the weight of fresh fruit per plant eggplant. Dose water washing rice 750 ml/plant (A3) was able to increase the weight of fresh fruit per plant eggplant. This is due to water washing rice provided contain aphrodisiac grows for plant growth so that can spur growth of vegetative and generative plant.

The relationship between the dose and the dose of chicken manure water washing rice against the weight of fresh fruit crops of eggplants: The graph of the relationship between dose of chicken manure with a dose of different rice water washing against the weight of fresh fruit plant Eggplant served on (Figure 1). The results of the analysis showed that the dosing of chicken manure combined with water washing rice is obtained at the optimum dose of chicken manure 750 gr/plant and 750 ml/plant can produce fresh fruit weight per plant of 2819.21 gr. Agustina (2004) stated that, the nutrients and minerals that exists and is available for plants, especially N has the most prominent influence towards the growth and development of plants because it can increase phytohormon Sitokinin, otherwise Sitokinin acts to increase the uptake of N was available so that it can influence the shape and size of the fruit. Phosphorus and potassium have a vital role in the metabolic processes of plants. Cause phosphorus metabolism goes well and smoothly that results in cell division, enlargement of the cells, cell finding, and running smoothly. So are Potassium acts as a activator of various enzymes that are important in the reactions of photosynthesis and respiration, so that it can set up and maintain the osmotic potential and the taking of water that has a positive influence against the closure and the opening of the stomata (Gardner *et al*., 1991). Novizan (2005) States that the availability of nutrient elements that can be occurs absorbed by the plant is one of the factors that can influence the growth rate and crop production.

Conclusion

- Grant of chicken manure and water washing rice can increase growth and eggplant crops planted in the hamlet of Malinamuk, Suco Comoro, Postu Administrative Dom Aleixo, Municipio Dili.
- The real interaction occurs on plant colonization eggplant in treatment doses of chicken manure with a dose of water washing the rice.
- At doses of chicken manure 750 gr/plant showed a dose of chicken manure with optimum results and maximum dose 750 ml rice water washing/plants shows the optimum dose with maximum results.
- In treatment (P3A3) is the best treatment for giving the maximum yield that is 2, 81 and 9,21 g/swath.

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