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THE INFLUENCE OF APPLICATION OF ORGANIC MANURES DOSAGE SOLID AND LIQUID DOSAGE SUPERFERTIFORT AGAINST GROWTH AND YIELD OF CROPS OF CELERY

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ABSTRACT

Celery is a vegetable plant grass-shaped spice used as food seasoning and efficacious medicine that lowers high blood pressure, treat hair loss, coping difficult sleep, improve waste water art and strengthen sinew. In terms of its benefits then to get the celery is high and good quality, besides observing the ideal growing, plants also require maintenance, such as the supply of nutrient elements and plants should continue to get sufficient nutrient elements during its growth. The aim of the research was to know the influence of application of organic fertilizer of solid and liquid organic fertilizer super fertifort against growth and plants production of celery on three different soil types. Then the second objective of this research is to know the influence of interaction of solid organic fertilizers and liquid organic fertilizer super fertifort towards the growth and development of crops of celery on three different soil types. An the last objective is to find out the optimum dosage of organic fertilizer and liquid manures dosage solid super fertifor on the growth and development of crops of celery on three types of different resistant. The methods used in this study was a randomized Design Group (RAK), with three replicates. The treatment arranged in factorial. The treatments tested consists of two factors, namely: 1. the solid organic fertilizer dose Factor (P) consisting of: P0 = 0 gr/plant, P1 = 500 gr/plant, P2 = 750 gr/plant, P3 = 1000 Gr./plant combined with three kinds of soil minerals. 2. liquid organic fertilizer dose Factor super fertifort (C) consist of: C0 = 0 ml/plant, C1 = 5 ml/plant, C2 = 10 ml/plant, C3 = 15 ml/plant combined with three kinds of soil minerals. The experiment consists of 16 units of treatment combinations and each treatment was repeated three times so that the required 48 pots/plants experiment. Based on the results of research that, solid fertilizer treatment 1000 Gr./plant combined with a dose of liquid organic fertilizer fertilizers super fertifort 15 ml/plant with the treatment code (P3C3) can increase plant growth and development, UN celery plants with a height ranging between 16.81 cm-22.66 cm, number of leaf celery plants ranged from 14.42 strands – strands of 22.92 and weight is the weight of wet clumps total fresh weight, weight gr 41.75 fresh heaviest consumption 40.08 gr. Occurs tangible interaction towards the growth and development of crops of celery on the treatment dose of solid fertilizers with fertilizer dose organic fertifort super liquid 15 ml/plant. Solid manure treatment on 1000 g/plant, which is the best dose with the result that the maximum dose of liquid organic fertilizer and super fertifort 15 ml/plant is the ideal dosage with maximum results.

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INTRODUCTION

Development intensified in East Timor, particularly in Dili and its surroundings causing much land that switches a function of farmland into construction areas especially housing development, widening roads and shops, with so the most

obvious impact on agriculture is increasingly narrows agricultural land indirectly lowered agricultural production, especially of farming and horticulture plants especially plants celery (*Apium graveolens* L). Celery is a vegetable plant grass-shaped spice that comes from the American continent used as food seasoning and efficacious medicine that lowers high

blood pressure, treat hair loss, coping, difficult to sleep, streamline and strengthen Arts urinating uric terms (Soewito, 1991). Many stated that this celery plants are utilized as an ingredient of drugs and cosmetics because in its leaves contain saponins, flavonoids and polyphenols. For example, drugs to treat high blood pressure, urine cloudy (chloric), a preventer and busting the nausea (Permadi, 2006). It further said that the celery also contains cholesterol which are used to fertilize and discolor the hair so the celery can be used as an ingredient of shampoos and cream bath. Empirically part bud green celery plant is effective as anti diabetic (Winarto, 2003), anti rheumatic, carminative (deciduous fart), prevent bleeding (hemostatic), deciduous, diuretic, menstrual and lowering blood pressure (hypotensive) (Hariana, 2006). In General a lot of celery plant was cultivated in the city of Dili and its surroundings is a kind of celery leaves and celery plants is commonly used as a condiment cook or sprinkles on a variety of foods, soups stems and leaves are used vegetables are eaten raw or cooked in a State. In addition the crops of celery have benefits can maintain the health of bones and teeth, as anti cancer and lowering cholesterol levels, lowering the heat and can nourish hair. Whole herbs celery contains glycosides *apiin* (flavones glycosides), *isoquersetin* and *umbelliferon*. Celery also contain *mannite*, *inosite*, *asparagine*, glutamine, choline, *linamarose*, pro-vitamin A, vitamin C, and B.

Acid-acid in essential oils on the beans among other: resin acids, fatty acids are mainly Palmitic, oleic, linoleic, and *petroselinat*. Other coumarone compounds found in the seeds, namely *bergapten*, *seselin*, *isomperatorin*, *osthenol*, and *isopimpinelin*. Celery leaves rich in antioxidants such as *betakaroten*, phosphates and containing *indol* nutritious herbs and natural fiber can maintain the health of the digestive organs. The diversity of the chemical substances they contain making the celery plant multi benefit (Sudarsono., 1996). In terms of its benefits then to get the celery is high and good quality, besides observing the ideal growing, plants also require maintenance, such as the supply of nutrient elements i.e. plants should continue to get sufficient nutrient elements during its growth. If the available nutrient elements in soils, the amount would be adequate for the needs of less celery plant then needs to be added from the outside by fertilization. But because the celery consumed in fresh form, then it has got to be free from the use of chemicals, fertilizers or pesticides, it means in cultivating celery must be organically. Organic farming is an agricultural farming techniques that rely on natural ingredients without the use of artificial chemicals factory. Organic fertilizer is the collective name for all types of organic material the origin of the plants and animals that can be dismantled into a nutrient is available to the plant. The fertilizer is organic fertilizer which is mostly or entirely composed of organic material derived from plants or animals and who have been through the process of engineering, solid or liquid can be used to supply organic matter to improve the nature of the physical, chemical, and biological soil. This definition shows that organic fertilizers are more targeted to the content of C-organic or inorganic materials rather than levels of element nutrient; value of C-organic is become a differentiator with inorganic fertilizers. When the C-organic low and is not included in the provisions of the organic fertilizer then classified as organic soil revamping. Seen from the function, the prospect of the celery very bright, either in the domestic market (domestic), and outside the country as an export commodity. But cultivating celery in East Timor, mostly on a small scale is done as work part-time

(moonlighting). Some evidence about the celery cultivation in East Timor generally and especially in the city of Dili and its surroundings turned out to be not yet commercially managed and can refer to the data from DNAHE/ The Ministry of Agriculture and Fisheries (MAF) in 2016/2017 about the production of crops of celery apparently has not found widespread data harvest and production of celery nationally. Similarly in horticultural research and development program in East Timor on a research and Development Center or National Board of Statistics, Information and Research Geography (DNEPIG) in the Ministry of Agriculture and Fisheries (MAF) 2016/2017 year, It turns out the celery plant hasn't gotten the priority of research, both as the mainstay, potential as well as the introduction, (Data DNAHE and DNEPIG years 2016/2017). See the importance of the plant as the plant multi benefits and celery can be in consumption as fresh vegetables and decorate dishes, to increasing from time to time with increasing population. While the production and productivity of celery at the level of farmers in Timor-Leste, especially around the city of Dili, from year to year is still very low. This certainly is a real gap between production and consumption the present farmer or market. Therefore, this gap needs to be addressed through the efforts of increased production and productivity. One of the efforts to increase production and productivity is the application of fertilizers and organic manure fertilization application mainly solid or liquid organic fertilizer. Fertilizer is a material that is added on the media for planting or crop nutrient needs to fulfill the required plant so that is able to produce well. Fertilizer material can be either organic or inorganic (mineral). Fertilizer different from additional supplements. Fertilizers contain the raw material of plant growth and development, while supplements like plant hormones help smooth the process of metabolism. Into fertilizers, artificial fertilizers in particular, a number of materials can add supplements.

Fertilization is a very important factor to support the productivity of crops and to improve soil fertility. However, this should be considered properly given the cost and impact of the negative against the land and the environment. According to Sahiri (2003), the use of inorganic fertilizers will add excessive levels of pollution of land that eventually resulted in a balance of nutrient in the soil is disturbed. To keep the nutrient in the soil remains available and balanced, then one step is leveraging the solid or liquid organic fertilizer. Compost is the result of partial or incomplete decomposition of a mixture of organic materials that can be accelerated artificially by populations of a variety of microbes in the environment of a warm, humid, and the aerobic or anaerobic. While composting is the process by which organic material is experiencing is the biological decomposition, especially by microbes-microbes that make use of organic materials as an energy source (Isroi, 2003). The fertilizer is organic fertilizer which is mostly or entirely composed of organic material derived from plants or animals that have been through the process of engineering, solid or liquid can be used for supplying organic material, refine the nature of the physical, chemical and biological soil (Firmansyah, 2011). The main source of organic matter for the soil derived from plant tissue, either in the form of litter or the remains of dead plants. Organic materials derived from the litter, the remains of dead plants, sewage or animal waste and carcasses of animals itself, in the soil decomposes and will be moved by a miniscule remains next to the activities of the various bodies of the ground material organic through a complicated processes

overhauled into soil organic matter that has any significance (Kartasapoetra and Sutejo, 1987). Organic fertilizer is beneficial to the improvement of agricultural production, good quality as well as quantity, reduce environmental pollution, and improve the quality of sustainable land use of organic fertilizer in the long term can increase the productivity of the land and preventing land degradation. But organic fertilizers have low nutrient levels, low solubility, produce relatively long time more nutrients available that are ready to be absorbed at the plant, and the plant's response against the granting of organic fertilizers aren't as good as inorganic fertilizers. So the organic fertilizer is not much use, because it is considered not to meet the nutritional needs of plants (Musnamar, 2005). Additionally the utilization of rice husk as planting media mix is very important, because its like a boat and have a stomach, so it is able to hold nutrients longer. In addition, rice husk is also useful as a binder nutrient elements in soils, creating room for growth remains miniscule, strengthening the growth of the leaves of the plant, and encourage the development of plant cells. The husk contains several important elements i.e. the moisture content (9.02%), rough (3.03%) protein, fats (1.18%), coarse fiber (35.68%), dust (17.17%), and the basic carbohydrate (33.71, Suharno, 1979). Furthermore the chemical composition of rice husk according to DTC-IPB husks contain carbon (charcoal) amounted to 1.33%, 1.54% of hydrogen, oxygen and silica 33.64% of 16.98%. With the composition of these deposits, the husk can be utilized for various purposes including organic materials to plants as vegetables (Putro, the 2011). *Leucaena* is one leguminous tree containing high protein and carotenoids that very potential. Content of *Leucaenaleucocephala* is 90.02% dry ingredients, 22.69% rude protein, fat, fiber 2.55% coarse 16.77% 11.25%, ash, Ca and P 1.92 0.25% and β -carotene 331.07 ppm (anonymous, 2010). Next Abdurahman (2005) the selected *Leucaena* for compost for being able to maintain the fertility of the soil and prevent erosion. The company PT Fertifort Indonesia Super Corporation explained that the Liquid fertilizer is organic fertilizer Fertifort Super liquid compound full of nutrients, among other things: 1. ZPT/natural hormones: Gibberellin and Cytokine, Axim, 2. There are 17 kinds of acid amino and protein from fish, animals and plants, 3. Macro nutrient elements of micro and T & race Elements (t. e), 4. Vitamins, enzymes and several kinds of Bioactive elements, HUMIC Acid and 5-FULVIK, 6. MICROBIAL GROWTH Stimulant, Stimulant and CHLOROPHYL 7.8. CHITIN like Substance.

As for the benefits of organic fertilizer liquid Super Fertifort are: 1. Perfecting the metabolic processes in plants, 2. Increase the formation of chlorophyll, the growth of buds, flowering and fertilization, 3. Increase the quantity and quality of results with real, 4. Fertilizing more efficiently, reducing the use of chemical fertilizers (inorganic), 5. Improve soil microbial activity which will maintain availability and improve nutrient absorption, 6. Enhance resistance to pests and diseases, so the use of pesticides may be reduced, 7. Improve the structure of the soil naturally and prevent soil compaction, 8. Extend production and rehabilitate less productive plants and 9. Speeding up the harvest. It further explained that the liquid fertilizer is organic fertilizer Fertifort Super liquid organic nutrients which have a very complete and high quality soil and plants. Liquid fertilizer Fertifort Super macro nutrient balanced C-0.3% Organic, 2.70% P₂O₅, K₂O 3.23% 0.70%, SO₄, NH₄ 0.21% and micro Mn 67.34 ppm, Fe N 75.27% and 5.60%. Until recently research about applications of solid organic

fertilizers in the form of legume, rice husk, cow manure and liquid manure Super Fertifort against growth and plants production of celery in Timor-Leste is not yet known with certainty. Thus, the problem is examined in this study is how the influence of application of organic fertilizer of solid and liquid organic fertilizer Super Fertifort against growth and plants production of celery. Therefore, the need to look for some alternative to increase crop production of celery with land use lawns to its full potential through the application of solid organic fertilizers and organic liquid fertilizers as well as supported by application techniques precise and correct so it can increase production of celery as hoped and in turn can increase the value added in the family. The aim of the research was: 1) to know the influence of application of organic fertilizer of solid and liquid organic fertilizer Super Fertifort against growth and yield of crops of celery on three different soil types. 2) to know the influence of interaction of solid and liquid organic fertilizer Super Fertifort against growth and yield of crops of celery on three different soil types. 3) to find out the optimum dose of solid and liquid organic fertilizer Super Fertifort towards the growth and development of crops of celery on three different soil types.

MATERIAL AND METHODS

This research was carried out in the village Lemocari, Village Manleuana, Post Administrative Dom Aleixo, The municipality of Dili at a height of 150 meters above sea level. This research was conducted in the month of may until August 2018. The materials used in this research is the seed of celery varieties amigo purchased from agriculture, topsoil (atop soil), rice husk, cow dung is already in *Leucaena* leaves fermentation, (legume) and liquid organic fertilizer type of POC Super Fertifort. Tools used in this research are: the pot size diameter 14 x 18 cm, stationery, plastic ruler, the label measurements, hoes, knives, hammers, nails, wood, saws, meter, camera, gembor and analytical scales. This research was conducted in the form of a pot experiment and compiled based on Random Design Group (RAK) arranged in factorial (4 x 4) so there are 16 treatment combinations. Then each treatment was repeated three times, thus there are 48 units unit experiment. The first factor is a solid organic fertilizers (P), consists of four (4) levels namely: P₀ = Top soil 1 kg/plant (control), P₁ = P₂ = 500 g, 750 g and P₃ = 1000 g. The second factor is a liquid organic fertilizer Fertifort Super (C), composed of four (4) levels namely: C₀ = Without a dose of liquid fertilizer Super Fertifort/control, C₁ = 5 cc Super Fertifort/liter water/plant, C₂ = 10 cc Super Fertifort/liter water/plants and C₃ = 15 cc Super Fertifort/liter water/plant Observations made at the time the seeds of three weeks after planting (MST) from a seedbed, and subsequent observations carried out with intervals of two weeks until the optimum growth. Observations made growth (morphology) that includes a high number of plants, leaves, clumps and weight clumps weight wet. The data analysis done with test range on F α level 0.05. If the results of the real range of influential prints, then conducted further trials with DMRT (Mattjik and Sumartajaya 2006).

RESULTS AND DISCUSSION

Celery Plant Height (cm): The results of the analysis (Anova) variety fingerprints against height plant celery showed that fertilization with solid fertilizer doses (P) gives a very real influence (P < 0.01) at high plant celery 2, 4, 6 and 8 WAP.

Fertilizing with a dose of Liquid organic fertilizer (C) gives a very real influence ($P < 0.01$) at high plant celery 2, 4, 6, and 8MST. Interaction of solid fertilizer dosage and dosage of liquid organic fertilizers provide no real influence ($P \geq 0.05$) against high plants either 2, 4, 6 and 8 WAP. For more details can be seen in table 1 DMRT 5% test results are as follows:

Table 1. Average Plant Height (cm), due to a dose of Manure (P) and a dose of Liquid organic fertilizer (C) on several different Celery Age

Treatment	2 WAP	4 WAP	6 WAP	8 WAP
P0C0	4.62a	7.41a	12.75a	16.81a
P1C0	5.71bcd	11.46cde	14.43abc	17.37ab
P2C0	5.61abcd	9.76bc	14.82abc	18.46abcd
P3C0	6.04bcde	10.19bcd	15.58abc	18.68abcde
P0C1	4.87ab	10.39bcd	13.65ab	19.24abcdef
P1C1	6.43def	13.03ef	14.17abc	19.97bcdefg
P2C1	6.6def	11.88cdef	15.66abc	20.63cdefg
P3C1	6.64def	13.69f	16.74bcd	21.01defg
P0C2	4.94abc	7.03a	15.15abc	19.86bcdefg
P1C2	6.36def	11.80cdef	15.25abc	20.53cdefg
P2C2	6.12cde	11.77cdef	16.00bc	20.79cdefg
P3C2	5.67abcd	11.55cdef	17.81bcd	21.09defg
P0C3	4.83ab	7.88a	14.09abc	17.56abc
P1C3	6.93ef	12.50def	17.38bcd	21.55efg
P2C3	6.56def	11.96cdef	19.94d	21.94fg
P3C3	7.56f	13.89f	20.25d	22.66g

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

Growing celery plants age more and more growing hormone needed to process value and the development of the plant. It is seen that the celery plant height at age 2 4 WAP, WAP, 6 WAP and 8 WAP, the average height of higher plants obtained on combination treatment (P3C3) real and distinct treatment without fertilization. Based on the results of the research are listed in table 5.2. above that treatment combination wet fertilizer (P3) with a dose of liquid organic fertilizer (C3) is the best treatment against other treatments. At the end of observation, celery plant height ranges between 16,81 cm - 22,66 cm. It 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 are absorbed by plants, thus rooting growth the plant will increase especially tall plants.

The number of Plant Leaf Celery (strands)

The results of the analysis of the multifactorial prints (Anova) against the amount of leaf celery plants showed that fertilization with solid fertilizer doses (P) gives a very real influence ($P < 0.01$) On the amount of leaf celery plants aged 4, 6 and 8 WAP. But with a dose of solid manure fertilization (P) gives no real influence ($P \geq 0.05$) in the amount of plant leaf celery 2 WAP. Fertilizing with a dose of Liquid organic fertilizers (C) gives a very real influence ($P < 0.01$) in the amount of leaf celery plants aged 2, 4, 6 and 8 WAP. Interaction of solid fertilizer dosage and dosage of liquid organic fertilizer influence are not real ($P \geq 0.05$) against the amount of leaf celery plants either 2, 4, 6 and 8 WAP. On the amount of leaf celery plants aged 2, 4, 6 and 8 WAP.

Interaction of solid fertilizer dosage and dosage of liquid organic fertilizer influence are not real ($P \geq 0.05$) against the amount of leaf celery plants either 2, 4, 6 and 8 ($P < 0.01$) in the amount of leaf celery plants aged 2, 4, 6 and 8MST. Interaction of solid fertilizer dosage and dosage of liquid organic fertilizers provide no real influence ($P \geq 0.05$) against the amount of leaf celery plants either 2, 4, 6 and 8 WAP. For more details can be seen in table 2 results of test DMRT 5% are as follows:

Table 2. The average number of Plant Leaves (strands), due to a dose of Manure (P) and a dose of Liquid organic fertilizer (C) on several different Celery Age

Treatment	2 WAP	4 WAP	6 WAP	8 WAP
P0C0	3.67a	7.67a	8.33a	14.42a
P1C0	4.33abc	8.00a	10.33ab	14.83a
P2C0	4.67bcd	8.67ab	12.33bcd	19.75bcd
P3C0	5.00cd	8.67ab	13.33bcde	19.75bcd
P0C1	3.67a	7.33a	11.33abc	18.92bc
P1C1	4.67bcd	8.67abc	13.33bcdef	20.42bcd
P2C1	4.67bcd	10.33bcde	15.33cdefg	20.83bcd
P3C1	4.67bcd	11.33de	15.67defg	21.25cd
P0C2	3.67a	8.67abc	14.67cdef	17.25ab
P1C2	3.67a	9.00abcd	15.00cdefg	19.75bcd
P2C2	4.00ab	9.33abcd	16.00defg	20.25bcd
P3C2	4.33abc	9.67abcde	16.33efg	21.83cd
P0C3	3.67a	9.33abcd	11.67abcd	20.42bcd
P1C3	4.00ab	10.67bcde	12.67bcde	21.00cd
P2C3	4.33abcd	11.00cde	16.33efg	21.33cd
P3C3	5.33d	12.00e	19.00g	22.92d

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

Based on the results of the research are listed in table 2 above that solid manure combination treatment (P3) with a dose of liquid organic fertilizer (C3) is the best treatment against other treatments. At the end of observation, the amount of leaf celery plants ranged from 14.42 strands-22.92 strands. This is because plants that have leaves most will catch most rays. Because the organ is the site of leaf photosynthesis and other metabolic processes. The greater number of leaves will be getting many carbohydrates are produced. The carbohydrates that will be used by the plant in support of growth and development. It is appropriate with Sari (2002) that, the more the number of leaves of a plant owned by the many photosynthesis were produced. This was confirmed by 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, a direct role in the leaf provides backup energy that serves to support the growth of the crops of celery.

The Weight of the Wet Plant (gr)

The results of the analysis of the multifactorial prints (Anova) against heavy wet plant celery plants showed that fertilization with solid fertilizers doses (P) gives a very real influence ($P < 0.01$) on a fresh weight and the weight of Fresh celery plant Consumption 8 WAP. Fertilizing with a dose of Liquid organic fertilizers (C) gives a very real influence ($P < 0.01$) on a fresh weight of total Fresh Weight and consumption of celery plant age 8 WAP. Interaction of solid fertilizers, dosage and dosage of liquid organic fertilizers provide no real influence ($P \geq 0.05$) against the fresh weight of the total Fresh Weight and consumption of celery plants either 8 WAP. For more details can be seen in table 3 DMRT 5% test results are follows:

Table 3. The average weight of Wet plant (strands) (Fresh weight of Total Fresh Weight and Consumption), due to a dose of Manure (P) and a dose of Liquid organic fertilizer (C) on several different Ages of celery

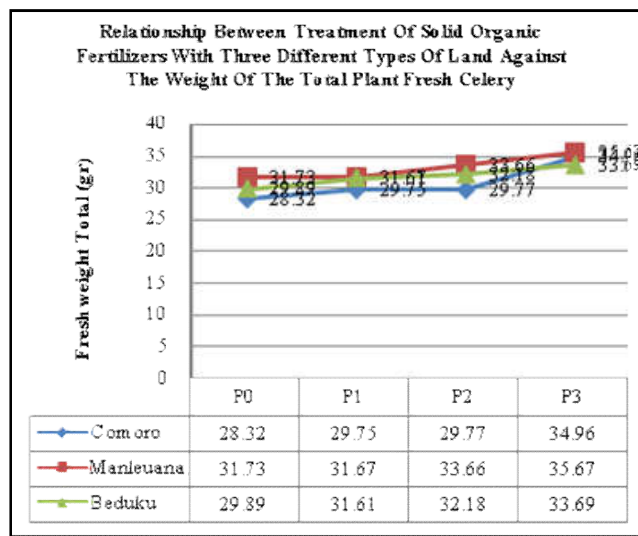
Treatment	The Weight Of The Wet	
	Fresh weight Total (gr)	Consumption of Fresh weight (gr)
P0C0	24.63a	21.29a
P1C0	30.92bc	28.58bc
P2C0	31.13bc	28.47bc
P3C0	33.23cd	31.23cd
P0C1	28.23ab	25.9b
P1C1	30.67bc	28.67bc
P2C1	31.63bc	29.63bc
P3C1	33.5cd	30.5bcd
P0C2	30.68bc	28.35bc
P1C2	31.06bc	29.06bc
P2C2	32.23bc	29.89bc
P3C2	33.51cd	31.18cd
P0C3	27.98ab	25.98b
P1C3	32.14bc	30.14bc
P2C3	37.22de	35.22de
P3C3	41.75e	40.08e

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

Based on the results of research on table 3 above about the average weight of the heavier plants wet clumps retrieved on combination treatment (P3C3) real and distinct treatment without fertilization. The results of the research on the average weight is the weight of wet total fresh weight, weight gr 41.75 Fresh heaviest Consumption 40.08 gr. It is suspected that the more solid manures dosage applied then the nutrient absorption are also getting larger and optimal so the effect on yield and crop production of celery. This was confirmed (Sarief, 1989) the more organic fertilizer in the media grew, the more nutrient elements available to plants, plant growth will take place so well that certainly will increase the weight of fresh plants celery. Organic matter is able to fix some of the physical properties of the soil so that the absorption of nutrient elements in plants became more optimal because of the soil conditions are more conducive, fertile, and the absorption of water into better (Lakitan, 1996). Research results Indrasari and (Gratitude, 2006), indicating also that the granting of micro-nutrient elements increases the concentration of these elements in the tissues of the plant so that it can increase weight wet plants become higher. The increase in the weight of the wet plant thought that the content of the main nutrient elements that exist in the N fertilizer can increase the growth and production of the plant optimally so that affect plant biomass. Item N is macro nutrient elements required by plants in large quantities, because this element also plays an active role in the growth and development of plants. By day et al., (2009) the weight of the wet plant is the abundance of nutrients contained plants, thus the weight of plants depending on the rate of respiration and photosynthetic rate and plant nutrient is absorbed (Sudarsono., 1996).

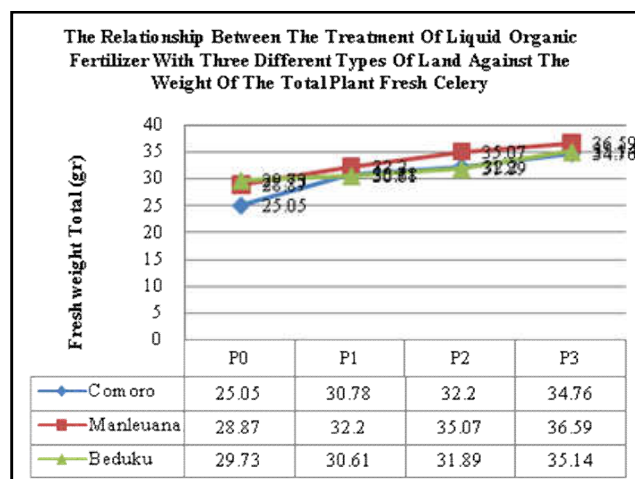
The relationship between Fertilizer Organic Solid with 3 different types of Soil on the weight of the Total Fresh Celery: The graph of the relationship between the treatment of solid fertilizers with 3 different types of land against the weight of fresh total presented on (Figure 1) the results of the analysis showed that treatment of solid fertilizers with soil type optimal Comoro obtained at treatment with code treatment (P3) can produce a total of fresh weight (34.96 gr), gift of solid organic fertilizers on soil type optimal Manleuana obtained at treatment with the treatment code (P3) can produce

fresh crops of celery total weight of (35.67 gr), gift of solid organic fertilizers on soil type optimal Beduku obtained at treatment with code treatment (P3) can produce fresh crops of celery total weight of (33.69 gr). This means that solid manure treatment on three different soil types can increase the weight of fresh celery per total plant.



Graph 1. Relationship Between Treatment Of Solid Organic Fertilizers With Three Different Types Of Land Against The Weight Of The Total Plant Fresh Celery

Granting of solid organic fertilizers to land in do to improve material, organic soil, add a good macro nutrient elements in soils as well as micro, moreover, it can increase the humus, soil structure and unequivocal puke inducing life remain miniscule in the soil. The awarding of the organic material in the form of solid fertilizers will improve the quality of the land that will be absorbed by the crops of celery.



Graph 2. The Relationship Between The Treatment Of Liquid Organic Fertilizer With Three Different Types Of Land Against The Weight Of The Total Plant Fresh Celery

The relationship between Organic Liquid Fertilizer with 3 different types of Soil on the weight of the Total Fresh Celery: The graph of the relationship between the treatment of liquid organic fertilizer with 3 different types of land against the weight of fresh total presented on (Figure 2) the results of the analysis showed that treatment of liquid organic fertilizer with soil type optimal Comoro retrieved on treatment with the treatment code (C3) can produce a total of fresh weight (34.76

gr), liquid organic fertilizers on the granting of this type of land optimal Manleuana obtained at treatment with the treatment code (C3) can produce fresh weight of total plant of celery (36, 59gr), organic liquid fertilizer on the granting of this type of land optimal Beduku obtained at treatment with the treatment code (C3) can produce fresh crops of celery total weight of (35.14 gr). Organic liquid fertilizer treatment means three different soil types can increase the weight of total fresh per crop of celery. 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 fitohormon Sitokinin, otherwise Sitokinin acts to increase the uptake of N was available so that it can influence the shape and size of the leaves. 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 differentiation, and running smoothly. So are Potassium acts as an 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 stomata (Agustina, 2004).

Conclusion

- Treatment of solid organic fertilizers 1000 Gr./plant combined with organic fertilizers, liquid fertilizers, dose 15 ml/plant with the treatment code (P3C3) can enhance the growth and development, celery that plants grown in sub-village Lemkari, village Manleuana Post Administrative Dom Aleixo, Municipality Of Dili.
- The real interaction occurs towards the growth and development of crops of celery on the treatment solid organic fertilizer dose with a dose of liquid organic fertilizer.
- Solid manure treatment on 1000 g/plant, which is the best dose with maximum results and organic manures dosage cair 15 ml/plant is the ideal dosage with maximum results celery plants with a height ranging between 16.81 cm-22.66 cm, number of leaf celery plants ranged from 14.42 strands – strands of 22.92 and weight is the weight of wet total fresh weight, weight gr 41.75 fresh heaviest consumption 40.08 gr.
- Soil type Manleuana is a type of land suitable for planting crops of celery.

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