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Application of Organic Fertilizer from Rabbit and Cattle Farm Waste on the Growth and Yield of Chili peppers (*Capsicum annuum* L.)

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ABSTRACT

Chili peppers are one of the important vegetable commodities for the community both in terms of economic value and nutritional content. This study aims to determine the effectiveness of providing organic fertilizers from rabbit farm waste combined with organic fertilizers from cattle farm waste on the growth and yield of chili pepper plants. The study was conducted using an experimental method, with the experimental design used being a factorial Randomized Block Design with 3 replications. There were two factors studied, namely: the dose of Rabbit Farm Waste Fertilizer (R) consisting of 3 levels and the dose of Cattle farm waste fertilizer (C) consisting of 3 levels. Each type of fertilizer treatment consisted of 3 levels, namely: 0 ton/ha; 10 tons/ha; 20 tons/ha. The results of this study indicate that rabbit manure has a significant effect, especially on the oven dry weight of fruit, the number of fruits, and the fresh weight of harvested fruit, as well as the dry weight of the stove. Meanwhile, cow manure significantly affects plant height and fresh weight of the stover and has a very real effect on other variables. The highest oven dry weight of harvested fruit per plant was obtained in the rabbit manure treatment of 30 tons/ha, which was 26.68g, which was 78.3% higher than the lowest in treatment of 0 tons/ha, which was 14.98g. Meanwhile, the highest oven dry weight of fruit per plant was in the cow manure treatment at a dose of 30 tons/ha, which was 34.07 g, which increased by 151.1% with the lowest treatment of 0 ton/ha, which was 13.56g.

Contribution to Sustainable Development Goals (SDGs):
SDG 2: Zero Hunger
SDG 3: Good Health and Well-being
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action
SDG 15: Life on Land

1. INTRODUCTION

1.1. Background

The big red chili (Capsicum annuum L.) is a type of vegetable that has high economic value. Chili contains various compounds that are useful for human health. Chili is a fruit and plant member of the genus Capsicum. The fruit can be classified as a vegetable or spice, depending on how it is used. As a spice, hot chili fruit is very popular in Southeast Asia as a flavor enhancer for food [1][2][3]. Chili is a shrub from the eggplant family that contains capsaicin, dihydrocapsaicin, vitamins (A, C), resin, capsanthin dye, carotene, capsarubin, zeaxanthin, cryptoxanthin, and lutein. It also contains minerals, such as iron, potassium, calcium, phosphorus, and niacin. The active ingredient capsaicin is effective as a stimulant, if someone consumes too much capsaicin it will cause a burning sensation in the mouth and tears. In addition to capsaicin, chilies also contain capsididine, which is effective in facilitating gastric acid secretion and preventing

digestive system infections. Another element in chilies is capsicol which is used to reduce aches, toothaches, shortness of breath, and itching [4].

Various methods of cultivating large chilies continue to be carried out to increase yields both in quantity and quality, such as by applying various organic fertilizers. The use of organic fertilizers from rabbit farm waste has been widely applied to various types of plants and has shown results that can increase production [5][6][7]. In addition, organic fertilizers made from cattle waste have also been widely known and have been proven to increase the yield of various types of cultivated plants [8][9][10]. Based on the description above, a study was conducted to determine the effectiveness of organic fertilizers from rabbit farm waste combined with organic fertilizers made from cattle waste on the growth and yield of large chilies (*Capsicum annuum* L.).

1.2. Objective

The objectives of this study are as follows**;** 1) **t**o examine the effectiveness of organic fertilizer made from rabbit farm waste on the growth and yield of large chilies**,** 2) **t**o examine the effectiveness of organic fertilizer made from cattle farm waste on the growth and yield of large chilies**,** 3) **t**o examine the level of interaction between the effectiveness of organic fertilizer made from rabbit farm waste combined with organic fertilizer made from cattle farm waste on the growth and yield of large chilies**.**

2. Methodology

2.1. Place and Time of Implementation

This research will be conducted in an experimental garden located in Selat Village, Abiansemal District, Badung Regency at an altitude of approximately 400 m above sea level, starting from January to November 2024.

2.2. Research Design

The research was conducted using an experimental method, with the experimental design used being a factorial Randomized Block Design with 3 replications. There were two factors studied,. the first factor was: the dose of Rabbit Farm Waste Fertilizer (R) consisting of 3 levels. The second factor was the Dose of Cattle Farm Waste Fertilizer (C), consisting of 3 levels. Each type of fertilizer treatment consisted of 3 levels, namely: D0 (without using organic fertilizer); D1 (10 tons/ha); D2 (20 tons/ha).

2.3. Implementation of Research

The implementation of the experiment was carried out through the following stages:

a) Land preparation for the experimental plot area.
b) Land processing and making experimental plots as planting media.
c) Implementation of treatment in the experimental plot
d) Sowing large chili seeds
e) Planting large chili seedlings
f) Plant maintenance, such as watering, weeding, pest and disease control, and replanting if necessary.
g) Observation of plant development and growth until harvest.
h) Measurement of observed variables

2.4. Observed Variables

The variables observed in this study were the growth and yield of large chili plants as follows:

1. Plant height (cm)
2. Number of leaves per plant (strands)
3. Number of fruits formed per plant (fruit)
4. Number of harvested fruits (fruit)
5. Fresh weight of fruit per plant (g)
6. Oven-dry weight of fruit per plant (g)
7. Fresh weight of stubble per plant (g)
8. Oven dry weight of stubble per (g).

3. RESULT AND DISCUSSION

3.1. Result

Based on the results of the statistical analysis of all parameters observed in the study, the significance of the effect of administering rabbit manure doses (R) and cow manure doses (C) and their interactions (RxC) on the observed variables is obtained, presented in Table 1.

Table 1. The significance of the effect of the combination of rabbit manure (R) and cow manure (C) on all observed variables.

Variables	R	C	R×C
1. Maximum Plant Height (cm)	ns	*	ns
2. Maximum Number of Leaves Per Plant	ns	**	ns
3. Number of Fruits Per Plant	*	**	ns
4. Number of Fruits Harvested Per Plant	*	**	ns
5. Fresh Weight of Harvested Fruit Per Plant (g)	*	**	ns
6. Oven Dry Weight of Harvested Fruit Per Plant (g)	**	**	ns
7. Fresh Weight of Saplings per plant (g)	ns	*	ns
8. Oven Dry Weight of Stove per plant (g)	*	**	ns

Description : ns = non significant effect (P≥0,05)
** = significant effect (P<0,01)
* = very significant effect (P<0,05)

The interaction between rabbit manure and cow manure (RXC) had no significant effect (P≥0.05) on all variables. Rabbit manure treatment had a very significant effect (P<0.01) on the oven dry weight of fruit per plant, a significant effect (P<0.05) on the number of fruits per plant, the number of harvested fruits, the fresh weight of harvested fruits, the oven dry weight of stover, and the oven dry weight of roots, and no significant effect (P≥0.05) on other variables. Cow manure treatment (C) had no significant effect (P≥0.05) on the fresh weight of roots and the harvest index, a significant effect (P<0.05) on maximum plant height, the fresh weight of stover, and the oven dry weight of roots, and a very significant effect (P<0.01) on other variables.

3.1.1. Maximum plant height (cm)

The interaction between rabbit manure and cow manure (RxC) had no significant effect (P≥0.05) on all variables. Rabbit manure treatment (R) had no significant effect (P≥0.05) on maximum plant height, and cow manure treatment (C) had a significant effect (P<0.05) on maximum plant height. The average maximum plant height in the rabbit manure (R) and cow manure (C) treatments is presented in (Table 2.). The average maximum plant height was obtained in the rabbit manure treatment of 30 tons.ha-1 (R2) which was 57.68 cm which was not significantly different

from the other treatments. The highest average maximum plant height was obtained in the cow manure of 30 tons kg ha-1 (C2), which was 59.66 cm, with the lowest maximum plant height obtained in the replication that was not given treatment (C0).

Table 2. The average maximum plant height and maximum number of leaves in the rabbit manure and cow manure treatments

Treatment	Plant Height (cm)	Number of leaves
Rabbit manure (R)		
R0 (0 ton.ha^{-1})	54.19 a	139.39 a
R1(15 ton.ha^{-1}	57.23 a	151.20 a
R2 (30 ton.ha^{-1})	57.68 a	151.32 a
LSD 5%		-
Cow manure (C)		
C0 (0 ton.ha^{-1})	53.86 b	130.60 b
C1(15 ton.ha^{-1})	55.57 ab	142.93 b
C2 (30 ton.ha^{-1})	59.66 a	168.38 a
LSD 5%	4.23	18.21

Description: The average value followed by the same letter in the same treatment and the same column means that it is not significantly different in the LSD test. 5%

3.1.2. Maximum number of leaves per plant

The interaction between the administration of rabbit manure and cow manure (RXC) and the treatment of rabbit manure (R) had no significant effect (P0≥.05) and the treatment of cow manure (C) had a very significant effect (P<0.01) on the maximum number of leaves per plant (Table 1). The average maximum number of leaves per plant in the treatment of rabbit manure (R) and cow manure (C) is presented in Table 2. The highest average maximum number of leaves per plant was found in the treatment of 30 tons.ha-1 rabbit manure (R2), which was 151.32 strands, which increased by 8.55% with the lowest maximum number of leaves per plant obtained in the replication that did not have a treatment (R0) 139.39 strands. The highest average maximum number of leaves per plant was obtained in the 30 ton.ha-1 cow manure treatment (C2), namely 168.38 leaves, which increased by 28.9%, with the lowest maximum number of leaves per plant obtained in the replication that did not have a treatment (C0).

3.1.3. Number of fruits per plant

The interaction between the administration of rabbit manure and cow manure (RXC) treatments had no significant effect (P≥ 0.05) on the number of fruits per plant. Rabbit manure (R) treatment had a significant effect (P<0.05) on the number of fruits per plant, and cow manure (C) treatment had a very significant effect (P<0.01) on the number of fruits (Table 1). The average number of fruits per plant in the rabbit manure (R) and cow manure (C) treatments is presented in Table 3. The average number of fruits per plant was higher in the 30 ton.ha-1 rabbit manure (R2) treatment, which was 48.93 fruits, which was significantly different from the treatment without fertilizer (R0) (Table 3.). The average number of fruits per plant was higher in the 15 ton.ha-1 cow manure (C2) treatment, which was 56.07, which was significantly different from the cow manure (C1) treatment, which was very significant with the treatment without fertilizer (Table 3.).

3.1.4. Number of fruits harvested per plant

The interaction between the administration of rabbit manure and cow manure (K x L) treatment had no significant effect (P ≥ 0.05) on the number of harvested fruits per plant. The treatment of rabbit manure (R) had a significant effect (P <0.05) and cow manure (C) had a very significant effect (P <0.01) on the number of harvested fruits per plant (Table 1). The average number of harvested fruits per plant in the rabbit manure (R) and cow manure (C) treatments is presented in Table 3. The average number of harvested fruits per plant was higher in the 30 ton.ha-1 rabbit manure (R2) treatment, namely 25.80 fruits, which was significantly different from the treatment without fertilizer (R0) (Table 3). The average number of harvested fruits per plant was higher in the 15 ton kg ha-1 cow manure (C2) treatment, namely 28.46 fruits, which was significantly different from the other treatments (Table 3).

Table 3. The average number of fruits per plant and the number of fruits harvested when given rabbit manure and cow manure treatments

Treatment	Number of Fruits Per Plant	Number of Harvested Fruits
Rabbit manure (R)		
R0 (0 ton.ha^{-1})	37.22 b	18.85 b
R1(15 ton.ha^{-1})	46.96 a	24.51 a
R2 (30 ton.ha^{-1})	48.93 a	25.80 a
LSD 5%	8.10	4.75
Cow manure (C)		
C0 (0 ton.ha^{-1})	34.15 c	18.23 b
C1(15 ton.ha^{-1})	42.89 b	22.48 b
C2 (30 ton.ha^{-1})	56.07 a	28.46 a
LSD 5%	8.10	4.75

Description: The average value followed by the same letter in the same treatment and the same column means that it is not significantly different in the LSD test. 5%

3.1.5. Fresh weight of harvested fruit per plant (g)

Interaction between the administration of rabbit manure and cow manure (RXC) treatments, cow manure had no significant effect (P≥ 0.05) on the fresh weight of harvested fruit per plant and rabbit manure (R) treatment had a very significant effect (P<0.01) on the fresh weight of harvested fruit (Table 1 and Appendix 5). The average fresh weight of harvested fruit in the rabbit manure (R) and Cow Manure (C) treatments is presented in Table 4). The average fresh weight of harvested fruit was higher in the 15 ton.ha-1 rabbit manure (R1) treatment, namely 157.41 g, which was not significantly different from the 30 ton.ha-1 rabbit manure (R2), significantly different from the treatment without fertilizer (R0) (Table 4) The average fresh weight of harvested fruit was higher in the 30 ton.ha-1 cow manure (C2) treatment, namely 187.41 g, which was significantly different from the other treatments (Table 4.)

3.1.6. Oven-dry weight of harvested fruit per plant (g)

The interaction between the administration of rabbit manure and cow manure (RXC) treatments had no significant effect (P≥ 0.05) on the oven-dry weight of harvested fruit. The rabbit manure (R) treatment had a significant effect (P<0.05) and the cow manure (C) treatment had a very significant effect (P<0.01) on the oven dry weight of harvested fruit per plant (Table 1). The average oven dry weight of harvested fruit per plant in the administration of rabbit manure (R) and cow manure (C) treatments is presented in (Table 4).

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Table 4. Average fresh weight of fruit in the treatment of rabbit manure and cow manure

Treatment	Fresh Weight of Harvested Fruit (g)	Oven Dry Weight of Fruit (g)
Rabbit manure (R)		
R0 (0 ton.ha^{-1})	107.88 b	14.96 b
R1(15 ton.ha^{-1}	157.40 a	24.28 a
R2 (30 ton.ha^{-1})	150.52 a	26.68 a
LSD 5%	41.24	6.08
Cow manure (C)		
C0 (0 ton.ha^{-1})	96.85 b	13.56 b
C1(15 ton.ha^{-1})	131.56 b	18.31 b
C2 (30 ton.ha^{-1})	187.41 a	34.07 a
LSD 5%	41.24	6.08

Description: The average value followed by the same letter in the same treatment and the same column means that it is not significantly different in the LSD test. 5%

The highest average oven-dry weight of fruit was obtained in the rabbit manure treatment of 30 tons.ha-1 (R2), which was 26.68 g which increased by 78.3% with the lowest oven dry weight of harvested fruit obtained in the treatment without fertilizer (R0) which was 14.97 g. The highest average oven-dry weight of fruit was obtained in the cow manure treatment of 30 tons.ha-1 (C2), which was 34.07 g, increased by 151.1% with the lowest oven dry weight of harvested fruit obtained in cow manure without treatment (C0), which was 13.56 g.

3.1.7. Fresh weight of the stove (g)

Interaction between the administration of rabbit manure and cow manure (RXC) treatments, rabbit manure (R) treatment had no significant effect (P≥0.05) on the fresh weight of the stubble and cow manure (C) treatment had a significant effect (p<0.05) on the fresh weight of the stubble (Table 4.1 and Appendix 7). The average fresh weight of the stubble in the rabbit manure (R) and cow manure (C) treatments is presented in Table 4. The average fresh weight of the stubble was higher in the rabbit manure treatment of 30 tons.ha-1 (R1), which was 303.30 g which was not significantly different from the other treatments (Table 4). The average fresh weight of the stubble was higher in the cow manure treatment of 15 tons kg ha-1 (C1) which was 314.74 g which was significantly different from the replication that was not given treatment (C0) (Table 5).

3.1.8. Dry weight of stove oven (g)

The interaction between the administration of rabbit manure and cow manure (RXC) treatments had no significant effect on the dry weight of the stove oven. The rabbit manure (R) treatment had a significant effect (P<0.05) on the dry weight of the stove oven, and the cow manure (C) treatment had a very significant effect (P<0.01) on the dry weight of the stove oven (Table 1.). The average dry weight of the stove oven in the rabbit manure (R) and cow manure (C) treatments is presented in (Table 5). The average dry weight of the stove oven was higher in the rabbit manure treatment of 30 tons.ha-1 (R2) which was 58.64 g which was significantly different from the replication that was not given treatment (R0) (Table 3.5). The average dry weight of the stove oven was higher in the cow manure treatment of 30 tons.ha-1 (C2) which was 96.15 g which was significantly different from the replication that was not given treatment (Table 5).

Table 5. Average fresh weight of the compost after treatment with rabbit manure and cow manure

Treatment	Fresh Weight of Plant Parts (g)	Oven Dry Weight of Plant Parts (g)
Rabbit manure (R)		
R0 (0 ton.ha^{-1})	227.48 a	36.87 b
R1(15 ton.ha^{-1}	303.30 a	57.75 a
R2 (30 ton.ha^{-1})	300.30 a	58.64 a
LSD 5%	-	17.11
Cow manure (C)		
C0 (0 ton.ha^{-1})	216.41 b	32.98 b
C1(15 ton.ha^{-1})	314.74 a	58.72 a
C2 (30 ton.ha^{-1})	299.93 a	61.56 a
LSD 5%	76.89	17.11

Description: The average value followed by the same letter in the same treatment and the same column means that it is not significantly different in the LSD test. 5%

3.2. Discussion

The interaction between rabbit manure and cow manure (RXC) had no significant effect (P≥0.05) on all variables. Rabbit manure treatment had a very significant effect (P<0.01) on the oven dry weight of fruit per plant, a significant effect (P<0.05) on the number of fruits per plant, the number of harvested fruits, the fresh weight of harvested fruits, the oven dry weight of the stove, and the oven dry weight of the roots, and no significant effect (P≥0.05) on other variables. Cow manure treatment (C) had no significant effect (P≥0.05) on the fresh weight of the roots and the harvest index, had a significant effect (P<0.05) on the maximum plant height, the fresh weight of the stove, and the oven dry weight of the roots, and had a very significant effect (P<0.01) on other variables (Table 1). The highest average dry weight of harvested fruit per plant was obtained in the rabbit manure treatment (R2) which was 26.69 g which increased by 78.3% with the lowest dry weight of fruit obtained in the treatment without fertilizer (R0) which was 14.97 g, which was not significantly different from the administration of rabbit manure (R1) which was 24.29 g which increased by 9.8%. The highest average fresh weight of harvested fruit per plant was obtained in the rabbit manure treatment (R1) which was 157.41 g which increased by 45.8% with the lowest fresh weight of harvested fruit obtained in the administration of rabbit manure (R0) which was 107.89 g, which was not significantly different from the administration of rabbit manure (R2) which was 150.52 g which increased by 4.57%. The highest average fresh root weight was obtained in the rabbit manure treatment (R2), namely 31.07 g, which increased by 22.8%, with the lowest fresh weight of harvested fruit obtained in the administration of rabbit manure (R0), namely 25.30 g, which was not significantly different from the administration of rabbit manure (R1), namely 28.70 g, which increased by 8.26%. The high fresh weight of harvested fruit in the rabbit manure treatment (R2) is supported by the presence of a very significant correlation in the variables of maximum plant height (r=0.897**), maximum number of leaves (r=0.843**), number of flowers formed (r=0.892**), number of fruits per plant (r=0.914**), number of harvested fruits (r=0.921**), oven dry weight of fruit (r=0.830**), wet weight of stover (r=0.819**), oven dry weight of stover (r=0.858**), wet weight of roots (r=0.988**), and oven dry weight of roots (r=0.975**). The highest average root oven dry weight was obtained in the rabbit manure treatment (R2) which was 8.73 g which increased by 61.3% with the lowest root oven dry weight obtained in the rabbit manure treatment (R0)

which was 5.41 g, which was not significantly different from the rabbit manure treatment (R1) which was 7.57 g which increased by 15.32%. Manure from rabbit farm waste can provide growth and yield of horticultural plants and food crops [25].

The highest average oven dry weight of fruit per plant was obtained in the cow manure (C2) treatment, which was 34.08 g, which increased by 151.1%, with the lowest oven dry weight of fruit obtained in the administration of cow manure (C0) which was 13.57 g, significantly different from the administration of cow manure (C1) which was 18.31 g, which increased by 86.1% g. The average maximum plant height was obtained in the cow manure (C2) treatment, which was 59.66 cm, which increased by 10.7%, with the lowest maximum plant height obtained in the administration of cow manure (C0) which was 53.86 cm, which was not significantly different from the administration of Cow Manure (C2) which was 55.57 cm, which increased by 7.36%. The highest average maximum number of leaves was obtained in the treatment of Cow Manure (C2) which was 168.38 pieces, significantly different from the administration of cow manure (C1) which was 142.93 pieces which increased by 17.81%, with the lowest maximum number of leaves obtained in the administration of cow manure (C0) which was 130.60 pieces which increased by 28.9%. The highest average number of fruits per plant was obtained in the treatment of cow manure (C2) which was 56.07 pieces which increased by 64.19% with the lowest number of fruits per plant obtained in the administration of cow manure (C0) which was 34.15 pieces, which was significantly different from the administration of rabbit manure (C1) which was 42.89 pieces which increased by 30.72%. The highest average number of harvested fruits per plant was obtained in the cow manure (C2) treatment, which was 28.46 fruits, which increased by 56.1%, with the lowest number of harvested fruits per plant obtained in the cow manure (C0) treatment, which was 18.23 fruits, significantly different from the cow manure (C1) treatment, which was 22.48 fruits, which increased by 26.6%. The highest average fresh weight of harvested fruits per plant was obtained in the cow manure (C2) treatment, which was 187.41 g, which increased by 93.5%, with the lowest fresh weight of harvested fruits obtained in the cow manure (C0) treatment, which was 96.85 g, which was not significantly different from the cow manure (C1) treatment, which was 131.56 g, which increased by 42.5%. The high fresh weight of harvested fruit in the cow manure treatment (C2) was supported by a very significant correlation in the variables of maximum plant height (r = 0.897 **), maximum number of leaves (r = 0.843 **), wet weight of stover (r = 0.819 **), and oven dry weight of stover (r = 0.858 **). The highest average oven dry weight of stover was obtained in the cow manure treatment (C2) which was 61.56 g which increased by 86.6% with the lowest oven dry weight of stover obtained in the administration of cow manure (C0) which was 32.98 g, which was not significantly different from the administration of cow manure (C1) which was 58.72 which increased by 4.83%.

The results of the study showed that by administering 30 tons.ha-1 rabbit manure (R2) on large chili plants gave the best results on the variable of dry fruit oven weight than other treatments. This rabbit manure (R) had a significant effect on the number of fruits per plant, the number of harvested fruits per plant, the dry fruit oven weight, the dry stove oven weight and the dry root oven weight because rabbit manure contains very high organic C elements, nitrogen (N), phosphorus (P), and potassium (R), in addition, rabbit manure also has macro nutrients and micro nutrients that can improve the physical, chemical, and biological properties of the soil. availability and absorption of P nutrients by plants which can then accelerate the flowering process, fruit formation and fruit ripening. In this experiment, the treatment of administering a dose of 30 tons ha- of rabbit organic fertilizer increased compared to other rabbit organic fertilizer doses because the high nutrient content in rabbit manure has the property of being quickly available so that it can be absorbed well by plants. Fruit formation and fruit filling are greatly influenced by the elements N, P and K which will be used in the process of photosynthesis, namely as components of carbohydrates, fats, proteins, minerals, and vitamins which will be translocated to the fruit storage section. Solid organic rabbit fertilizer contains very high levels of N, P, K. Vegetative and generative growth of plants requires nutrients, especially N, P, and K. The element N is needed for the formation of carbohydrates, proteins, fats and other organic compounds. The element P plays a role in the formation of the generative part of the plant. Providing organic materials such as solid rabbit manure can spur changes in plant height, stimulate the growth of the root system, and increase leaf growth and number of leaves so that it can increase the process of photosynthesis. Previous research also showed that the use of 30 tons.ha-1 manure increased more than other doses. The fresh weight of the fruit is influenced by the water content in the chili and in addition it is also influenced by the nutrient content of the fertilizer given. Phosphorus element functions to support the formation of flowers, fruits and seeds, while potassium element functions to strengthen plant organs such as leaves, flowers and fruits so that they do not fall easily, increase plant resistance to disease attacks and improve flower quality [23]. The results of the study also showed that the provision of 30 tons.ha-1 cow manure gave the best results on the variable of dry weight of fruit ovens than other treatments. This is because the treatment of the fertilizer dose is sufficient to meet the needs of plant nutrients, especially N, P and K. These elements can affect plant growth and yields, especially when plants enter the generative phase in this case the flowering phase. In the flowering phase, plants need more potassium and phosphorus elements. The P element plays an important role in accelerating flowering and fruit ripening, increasing the percentage of fruit or seed formation. While the K element plays an important role in the process of photosynthesis, helping the formation of carbohydrates and improving the quality of the results in the form of flowers and fruit, their taste and color. During the formation of flower buds, plants absorb a lot of nutrients or nitrogen and phosphorus which are provided through fertilization so that it can speed up the flowering process and ripening of fruit or seeds [22][24].

4. CONCLUSION

Based on the research results, the following conclusions were drawn:

1) Rabbit manure is particularly effective in increasing the oven dry weight and fresh weight of fruit, and also has a strong influence on the number of fruits.
2) Cow manure, on the other hand, shows a more significant impact on plant height and stove weight, as well as a very significant overall effect on other growth variables.

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3) Both manures result in considerable improvements in the oven dry weight of fruit, with cow manure showing the greatest overall percentage increase. The use of both rabbit and cow manure as fertilizers seems to have substantial benefits in terms of fruit production and plant growth, with specific doses (e.g., 30 tons/ha) yielding the best results.

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