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Article

Study Of The Combination Of Chicken Manure/urea And Watering Volume On The Growth Of Padi Sunggal (Oryza Sativa L.) Plant

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Abstract: The study aims to examine the effects of chicken manure /urea and the volume of water in the growth of the many varieties of rice (oryza sativa). The task is carried out in the Village of Argorejo, sedayu district, l district, Yogyakarta. The design of the experiment used in this study is a Complete Random Design (RAL). Treatment of combination of chicken manure and urea by 80%; 20%; 50%; 50% and 20%; 80%. The volume of water is 300 ml, 600 ml, and 900 ml. Variable observations include plant height, number of wildlings, the weight of wet safes, the weight of dry safes. Analysis of the observations using 5% variant print continued with Duncan's multipe range test (DMRT) at increased 5%. Analysis shows that there is no interaction between the combination of fertilizers and the water-giving. There is a real difference in the treatment of volume of water in the growth variables.

Keywords: Rice plants-Combination of Fertilizer and Water-Growth

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1. Introduction

Lacking in the genus oryza, some species known locally are oryza sativa, oryza glaberrima, oryza australiensis, oryza latifolia and oryza nivara. One of the species that has high economic value in some of these species is the oryza sativa l. which is an important food crop and is a source of carbohydrate (Utama, 2015).

Rice is a major food crop commodity in Indonesia. He said the rupiah was expected to strengthen to rp9,100 per dollar in the Jakarta interbank spot market on Tuesday. The advent of fertile irrigation fields due to the conversion of land to non-agricultural interests, and the advent of the phenomenon of fertility degradation led to an increase in productivity of irrigation rice fields tended to wane so that they could not keep up with the pace of increasing population growth (Putri, 2011).

Various ways are being made to increase rice production, both by using agricultural tools as pest control as well as by the use of organic and inorganic fertilizer. Fertilizer n plays a key role in the increase and production of rice paddies, while urea is the main source of fertilizer. But plants absorb only 30% of the given fertilizer (marzuki, 2011). In addition to urea fertilizer, organic fertilizers can also improve the soil while also improving qualities-the properties of the soil both the physical, the chemical, and the biological nature of the soil. One example of the organic fertilizer that farmers commonly use is cattle manure, such as manure from chicken manure.

Rice plants need more water than any other plant, so one of the obstacles to increasing rice production is the water shortage, whether caused by increasing water resources or an unpredictable climate change.

Rice plants need water during the growth phase, the better water is available in rice plants, and rice growth and production is improved. To maximize the availability of ever more limited water requires the use of adaptable rice varieties to its environment.

2. Materials and Methods

Observations of the impact of fertilizers and the volume of water on the growth and yield of rice in the same general parameters as the height, quantity, weight of wet safes, dry safes, have obtained the following results:

Table 1. Average Plant Height, Number of Saplings, Fresh Weight of Stove and Dry Weigh of Stove

Treatment	Variable			
	Plant Height (cm)	Number of Saplings	Fresh Fruit Weight (gr)	Dry Fruit Weight (gr)
80:20 (A1)	99,67a	16,11a	239,61a	43,82a
50:50 (A2)	99,33a	14,00a	207,50a	45,99a
20:80 (A3)	102,22a	15,67a	243,89a	44,61a
300 ml	99,00p	15,00p	231,51p	42,39q
600 ml	101,00p	14,56p	227,83p	44,82pq
900 ml	101,22p	16,22p	231,56p	47,23p
	(-)	(-)	(-)	(-)

Information : numbers followed by the same letter in the same column means no significant difference in the DMRT test at the 5% level, (-) no interaction.

3. Result and Discussion

The observed variables included plant height, number of tillers, fresh stover weight, and dry stover weight. Based on the results of variance analysis showed that there was no interaction between the treatment of the combination of chicken manure with urea fertiliser and the provision of water on all variables of rice plant growth. Growth variables include plant height, number of tillers, fresh weight of stover and dry weight of stover. It is suspected that fertiliser application and water volume application do not affect each other on all growth variables. This may be due to the fact that prior to the study the soil was already sufficiently nourished for plant growth. At the treatment of water treatment shows a real difference in the safe. Whereas the high variable of the plant, the number of incisions, the combination of fertilizers and variations in water giving show no real difference to the variable.

In high variable crops, the treatment of manure and the giving of water shows no real difference. It is suspected that the tiny mass of plant growth is influenced by internal and external factors. Internal factors are a factor derived from genetic or hereditary traits. So high plants can be affected by genetic traits. The external factors include environmental factors. Supandji et al. (2019) it states that the high percentage of rice plants can be affected by environmental factors such as soil fertility, water availability, and light scarcity and mentions that the use of fertilizers affects the growth of plants.

The treatment of the combination of fertilizer and the giving of water shows no real difference in amount. This is thought to be because fertilizers and water shipments have not been used perfectly for the growth of the rice plant. Sutedjo (2010) explains that in order to grow and develop to the full, plants need sufficient nutrients at the growth stage,

if hara is less available then the symptom will increase in growth and development levels in the field. In addition, it can be caused by competition between plants as well as between rice plants and weeds to absorb nutrients and sunlight in photosynthesis.

In fresh storage variables, the treatment of water treatment indicates no real difference. It can be caused by a lack of nutrition that plants receive, as well as by a lack of photosynthesis. According to nurshanti (2011), sunlight is significant to plants, primarily because of its role in physiological activities such as photosynthesis, respiration, growth and growth, stomata opening and closing, growth and plant growth.

The treatment of water giving has a noticeable effect on the brastronaut's dry weight. The braking of the water produced by 900 ml (rerata 47,233) is higher than the pumping of 300 ml (rerata 42.388) and the deposing of 600 ml (rerata 44,822). The dry weight of the brastronaut is a plant after all the water contained within it is eliminated. The weight of a safe is directly affected by photosynthesis. The heavier the dry vault shows photosynthesis is progressing more efficiently than crop growth becomes better (Pristianingsih dkk. , 2015).

Cultivation and watering greatly contribute to growth. This coincides with the study of the son (2012), which states that the giving of either a type of fertilizer or an antidote greatly influences the response of a rice plant and thus has a bearing on the growth of a rice plant.

4. Conclusions

The study concluded that there was no significant interaction between the combination of chicken manure and urea fertilizer and the volume of water on all growth variables of rice plants. Fertilizer combinations did not significantly affect plant height, number of tillers, fresh stover weight, or dry stover weight. However, the 900 ml water volume treatment had a significant positive effect on dry stover weight, emphasizing the importance of water availability during the vegetative phase of rice growth. Overall, the effectiveness of fertilization and irrigation depends greatly on initial soil fertility and other environmental factors such as light intensity, climate, and weed control.

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