The Effect Of Leaf Cutting (P Running) On Vegetative Growth Of Red Chillies (Capsicum Annum L.)

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Abstract.
This research was carried out in Afd II Village, West Bilah District, Labuhan Batu Regency, starting in October 2021. The aim of the study was to determine the effect on the growth of Red Chili (Capsium Annum L) plants on cutting shoots on chili leaves. Chili is a staple for consumption in everyday life. Chili peppers can be made more productive by using the right gardening techniques. Maintenance measures such as cutting shoots of chili plants with a dichotomous are one approach to increase chili yields. Pruning dichotomous shoots seeks to remove less productive plant parts to maximize. This study used a completely randomized design (CRD) with 4 treatments with 5 replications, in order to obtain 22 experimental units, each bed planted with 30 chili plants. The total number of plants is 30 x 5 = 150 plants. For the experimental unit, 3 were selected to be used as plant samples. From the observations, if the F test shows a significant effect, it will be continued with the Duncan' New Multiple Range test (DNMRT) at a 5% significance level. As treatment, namely: A = Pruning 7 DAP, B = Pruning 4th branch, C = No pruning, D = Pruning 14 DAP. Cutting the tops of leaves to increase the yield of the red chili, the results of the study concluded: 1. Red chili plants that were trimmed branches made the chili plants taller, 2. Trimming leaves caused the emergence of new leaf blades to increase 3. And cutting leaf shoots was useful for improve the yield of chili plant quality. Based on the results of the study, it is recommended to trim the 4th branch because it can increase growth.

Keywords: *Pruning, Effects of Cutting, Chili Leaves, Vegetative Growth, Red Chili*

I. INTRODUCTION

Red chili (Capsicum annum L.) is a horticultural plant that is popular in the daily diet of many people. Curly chili can be used for various industrial applications, including the food business and the pharmaceutical or herbal medicine industry. This curly chili has the potential to boost farmers' income other than as fresh vegetables or spices for daily cooking (Yuda et al., 2018). Community demand for chili that continues to make farmers must be able to produce chili with good quality as needed so that it can be processed and used as food. (Muliati & Ete, 2017) Besides being used for food, chili can also be preserved.Chili is used in a variety of ways, including, processed as (sambal and other spices), and industrial ingredients (ground, dry, flour). Chili can also be found in medicines, cosmetics, and dyes.(Perdana et al., 2021) Increased production is something that farmers must pay attention to in processing the growth of chili plants(Swastika et al., 2017) giving a lot of chemicals can damage the quality of chili, there are various ways that are used to be able to produce chili with good quality, one of which is useful for increasing the usability and quality of chili, namely by trimming the shoots on the leaves.(Prawanto et al., 2021). The color of the old fruit of this type of curly chili is red, but the shape of the fruit is different from other chilies. And it contains many compounds that function for health. (Prasetyo, 2014). Curly chili is one of the varieties of large chili or red chili (C.annum var. longom), the color of the old fruit of this chili is red, but the shape of the fruit is slightly larger than other chilies.(Npk et al., 2020) Curly chilies are smaller in size and have a curved shape similar to curls.

The color of the old fruit of these two types of chili is the same red, but the shape of the fruit is different. (Yuda et al., 2018) Curly chili is one of the varieties of large chili or red chili (C.annum var. longom), the color of the old fruit of these two types of chili is the same red, but the shape of the fruit is different. Curly chilies are smaller in size and have a curved shape similar to curls, hence the name curly chili.Chili has a fairly high demand. On the other hand, the supply of chili is not consistent throughout the year. In 2014, Indonesia produced 1.075 million tons of fresh red chilies. Production increased by 61.73 thousand tons in 2014 compared to 2013. (6.09 percent). An increase in productivity of 0.19 percent ton per

hectare (2.33 percent) and an increase in area are the causes of this increase. 4.62 thousand hectares (3.73 percent) were harvested (Central Bureau of Statistics, 2014). (Ali, 2017) Meanwhile, in 2014, West Sumatra Province produced 59,390 tons of red chilies. Compared to the previous year's production of 60,981 tons, a decrease of 2%. 1,591 metric tons (-2.61 percent). This decrease in output was caused by a decrease in productivity. (Capsicum, 2021) Chili peppers can be made more productive by using the right gardening techniques. Maintenance measures such as cutting shoots of dichotomous chili plants are one approach to increase chili yields. (Feriawati & Kusuma, 2020) Dichotomous shoot pruning seeks to remove less productive plant parts to maximize. (Produksi Berbagai et al., 2018). Growth of the remaining plant parts. Pruning dichotomous shoots improves nutrient delivery to more productive areas of the plant, such as stems, flowers, and fruit.(Srirejeki et al., 2015) Pruning leaf shoots by vegetative means has a higher impact than generative pruning, leaves that are trimmed have an effect on the production of leaf shoots that grow more after pruning. (Kardino, 2019) In addition to pruning leaf shoots, fertilizer application is also useful for the fertility of chili plants.(Suherman et al., 2018)

The profile of chili plants that will grow is influenced by pruning cadikotomis shoots. Pruning dichotomous shoots increases the function of apical hormones, which causes the plant to grow more branches. (Capsicum, 2021). Pruning has an increasing impact on plants, chilies that are trimmed the top stimulates the growth of new shoot branches in the axillary stem, the number of shoots grows is influenced by several factors such as pruning height, plant age, and chili stem size. (Pemberian Berbagai & Mulsa, 2018) Pruning shoots that grow is one of the most common maintenance methods carried out by farmers (lateral shoots). Pruning is necessary to remove shoots that grow on the upper shoots.(Suwandi,2009) Pruning also results in high growth of chili plants. Pruning is a way to increase the production of chili plants.(Pemberian Berbagai & Mulsa, 2018) Pruning the shoots of chili plants significantly increased yields when compared to no pruning of the same chili varieties. Pruning under dichotomous branches is able to provide maximum impact on the distribution of elements to more productive parts of the stems, leaves and fruit of chili.(Prawanto et al., 2021) During the growing season, pruning is done 2-4 times. According to some sources, this pruning is done to strengthen the stems. Pruning leaf shoots also takes time so that the results look maximum.(Pribadi, 2020). During the growth period of the vegetative phase, young plants need proper nutrition to support their growth, water is also an indispensable component for early growth until the time of flower and fruit formation of red chili plants. When there is a drought during the vegetative period, red chili plants will experience a delay in growth. (Npk et al., 2020) The purpose of the research on leaf pruning is to increase the number of branches to produce abundant fruit. The overall goal is for plants to provide maximum yields and fruit quality.

II. METHODS

a. PLACE AND TIME

This research was carried out on land located in Afdeling II Kec. West Bar Kab. Labuhanbatu. The research implementation time starts from October 18, 2021 until the research is completed.

b. TOOL MATERIALS

The materials used during the research were: chili seeds, polybags, soil for sowing seeds. The tools used in this study were hand tractor, hoe, rake, tape measure, ruler, scissors, knife, raffia rope, label, machete, bucket, and stationery. Pruning treatments were as follows: A = Pruned at 7 DAP; B = Pruned on the fourth branch; C = No trimming; D = Trimmed 14 HST.

c. RESEACH METHODS

The method used is an experimental design. The research design used was a completely randomized design (CRD) with 4 treatments and 5 replications. Each bed was planted with 30 chili plants. The total number of plants is 30 X 5 = 150 plants. From the observations, if the F test shows a significant effect, it will be continued with the Duncan' New Multiple Range test (DNMRT) at a 5% significance level.

d. OBSERVATION

Observations observed in this study are:

1. Plant height (cm)

2. Number of branches (branches)
3. Number of leaves (strands)

III. RESULT AND DISCUSSION

Plant height (cm)

Table 1. The average height of red chili plants in several pruning treatments.

	Treantment	Plaint heigth (cm)
B	Branch pruning to 4	51,46 a
A	Age pruning 7 HST	38,41 ab
D	Cutting 14 HST	34,40 ab
C	Not cutting	22,37 b
	KK	3,29%

Figures in the table above are followed by lowercase letters which are not significant according to DNMR at the 5% level.The highest red chili plants in treatment B were pruning the 4th branch of chili plants to be tall, in pruning A and D the 2nd and 3rd branches appeared which were trimmed so that they would accelerate sideways growth. Chili plants have fast growth in show taller plants then the growth of red chili will be better, this will make productive branches grow better.

Number of branches (branches)

Table 2. Observation of the results of the number of branches from various pruning

	Perlakuan	Jumlah Cabang
B	Branch pruning to 4	29,64 a
A	Age pruning 7 HST	28,61 ab
D	Cutting 14 HST	26,67 b
C	Not cutting	26,57 b
	KK	2,69%

Figures in the table above are followed by lowercase letters which are not significant according to DNMR at the 5% level.The most branches are shown in treatment B, this shows that treatment B has maximum growth. After pruning will arise or new shoots will appear and new branches will also appear, and will increase the number of productive branches on the plant, shoot pruning causes the number of branches to increase so that plant growth will be better.

Number of leaves(strand)

Table 3. Observation of the number of leaves from various pruning

	Treathment	Number of leaves
B	Branch prunning to 4	19,00 a
A	Age prunning 7 HST	16,20 ab
D	Cutting 14 HS	11,00 ab
C	Not cutting	6,80 b
	KK	2,36%

Figures in the table above are followed by lowercase letters which are not significant according to DNMR at the 5% level.It can be seen that the highest number of leaves was found in treatment B (4th branch pruning), then treatment A (7 pruning age), then D treatment (14 pruning) and the lowest yield was in treatment C (without pruning). The highest number of leaves in treatment D was caused by the number of new branches that appeared so that the number of leaves also increased, while in other treatments also grew branches but had a small number of leaves, if the number of leaves increased then the photosynthesis process would run well to provide nutrients for plants.

IV. CONCLUSION

Pruning the shoots of chili plants greatly affects the growth of chili plants such as the effect of plant height, number of branches, and number of leaves. It can be seen from the effect of (B) pruning the 4th branch which provides good growth for the growth of plant height, number of branches, and number of leaves.

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