



Influencing Factors of Red Chillies Productio in Maligas Bandar, Simalungun Regency

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Abstract:

The purpose of this study was to investigate the factors that affect red chili farming's income in the village of Maligas Bandar, Simalungun Regency. This study's population consisted of forty red chili farmers. Quantitative descriptive research was used in this study. The results found in this research variable influence the production of red chili significantly in Maligas Bandar Village, Gunung Malela District, Simalungun Regency. According to the findings of the analysis, the variable land area (X1), seeds (X2) and fertilizer (X3) had a significant impact on the production of red chili or the variable (Y). The results of the calculation of R2 explain 0.850% or 85%. While the remaining 25% are variables not included in this study.

Keywords:

production factors; farming; red chili

I. Introduction

Farmers dominate people's means of subsistence in Indonesia. Currently, one industry that contributes significantly to Indonesia's economy is agriculture. The equatorial region of Indonesia, which is a tropical region with a humid climate and supports the cultivation of agricultural crops, particularly the horticulture subsector, is ideal. Horticulture has a strategic role in supporting national economic growth, for example, red chili plants.

One of the agricultural products that the community greatly needs is red chili, whose consumption tends to rise annually. Even though red chili is not the main food for our society, this commodity cannot be abandoned, it must be available every day and must be in fresh form. Availability regularly every day for housewives is a must. An increase in the price of red chilies or a shortage of supply on the market gets a very fast reaction from the public. Therefore, the supply of red chilies in fresh form every year needs to be well designed.

Currently the number of days demanded for chili is relatively constant all the time, while production is related to the growing season. Therefore the market will be in short supply if the main harvest season has not arrived. On occasions like this, it is lucky for farmers who can produce chili all year round. Considering that the demand for red chili is relatively stable throughout the year, it is necessary to regulate production management, so that there are no fluctuations in both production and price. The red chili production pattern so far has been very irregular so that what should be farming is very profitable, often causing losses to both farmers and consumers (Alexander, 2011).

However, the current fact is that red chili production fluctuates because farmers cannot allocate inputs properly. Red chili farming production can provide benefits if technically, the production is greater than the break-even point, while the price of red chili

provides an advantage if the price is greater than the break-even point. Although it has been declared economically profitable by Haki & Taena, (2017), it is not certain about the value of the break-even point of the red chili farming that is carried out.

The majority of people in Maligas Bandar Village, one of the villages in Simalungun Regency, earn their living as farmers. According to the initial survey, red chili farmers in Maligas Bandar Village saw fluctuations in their production as a result of using production factors that were not optimal. One example was using fertilizer production factors to support plant growth. In its application, the type and dose of fertilizer use between farmers is almost the same although in different areas. This is influenced by the experience of the farmers themselves.

Based on the preceding description, The authors are interested in examining the production factors of red chili production in Maligas Bandar, Simalungun Regency. Therefore, the anticipated objective of this research is to ascertain the impact of utilizing factors that influence the production of red chili in this village.

II. Research Methods

2.1. Research Method

The method used in this study is descriptive and quantitative. Descriptive analysis was used to investigate the characteristics of farmers and their relationship to income. Meanwhile, SPSS-calculated multiple linear analysis is used to examine the relationship between the independent and dependent variables.

This study was carried out in Maligas Bandar Village, which is located in the Simalungun Regency's Gunung Malela District. The deliberate selection of Maligas Bandar, one of the chili production centers. The data was taken from questionnaire that given to 40 red chili farmers in Maligas Bandar Village in the Gunung Malela District of the Simalungun Regency

2.2 Data Analysis

According to Soekarwati (2003), Cobb-Douglas analysis is a function or equation with two or more variables. One variable is referred to as the dependent variable (Y), and the other is referred to as the independent variable (X). where the variable X will have an impact on the variation of Y. In this study, the dependent variable (Y) is red chili production. While the independent variable (X) between others: land area, seeds and fertilizer. Data processing was carried out using the SPSS software tool.

The analysis in Ln form is as follows:

$$(ln): LnY = LnB_0 + B_1 LnX_1 + B_2 LnX_2 + B_3 LnX_3 + \dots + B_n LnX_n + e$$

Information :

Y = Red chili production

a = constant

X1 = land area (Ha)

X2 = seeds (Kg)

X3 = Fertilizer (Kg)

The equation that has been obtained is continued with a statistical test consisting of a coefficient of determination test, a simultaneous F test and a partial t test.

III. Results and Discussion

3.1 Results

In Maligas Bandar Village, Gunung Malela District, and Simalungun Regency, red chili is the most common plant. In this study, 40 people were selected with the intention of farming red chili. They will be categorized according to age, level of education, number of dependents, and farming experience.

a. Respondent Age

The age structure of the population is divided into three groups (Priyono, 2005), namely, (a) children under the age of 15; (b) the productive age group, 15-64 years old; and (c) the elderly, those over the age of 65. If 40% or more of the population is younger than 40 years old and less than 5% of the population is older than 40 years old, the population is said to be young. According to the findings of the study, the ages of the people who took part in it ranged from 23 to 60 years old. This indicates that all of the people who took part in the study were in the productive age range.

b. Level of education

In this instance, a person's acceptance of knowledge and information is influenced by their level of education. The higher a person's education level, the greater the knowledge and information possessed by that person. Information on the education level of red chili farmer respondents have visible in table 1.

Table 1. Education Level of Red Chili Farmers in Maligas Bandar Village

NO	Education Level	Total (Person)	Percentage (%)
1.	SD	10	25%
2.	SMP	13	32.5%
3.	SMA	14	35%
4.	Bachelor (S1)	3	7.5%
Total		40	100%

Source: *Primary Data in 2022*

The average education level of respondents who were red chili farmers can be seen in Table 1, which shows that their levels of education range from elementary to undergraduate. For the number of farmers at the elementary level by 10 people from all respondents, SMP by 13 people all respondents, while at the high school level there were 14 people from all respondents, and at the Bachelor level 3 people all respondents. Based on the existing percentage, the number of farmers at the high school education level is more than other levels of education.

c. Number of dependents in the family

The number of family members who are dependent on the family patriarch, in this case the red chili farmer respondent is known as the family dependents. In this case, the more family dependents, the more needs needed to meet the essentials of life. The number of dependents of red chili farmer respondent families as shown in the second table below:

Table 2.Number of Dependents of Red Chili Farming Families in Maligas Bandar Village

NO	Total Dependents	Total (Person)	Percentage (%)
1.	1-2	16	40%
2.	3-4	17	42.5%
3.	5-6	7	17.5%
Total		40	100%

Source: Primary Data in 2022

According to Table 2, the majority of respondents who are red chili farmers have a total of 1-2 people with a percentage value of 40%. The quantity of dependent of the family is 3-4 with a value presentation of 42.5%. The quantity of dependent of the family is 5-6 with a value presentation of 17.5%. This means The quantity of dependent of the family is red chili farmers in Maligas Bandar Village, Gunung Malela District, Simalungun Regency the most dominant is 3-4 people.

d. Red Chili Farming Experience

One factor that influences the production of a farming business is previous farming experience. The farming business is better managed by those with more farming experience. In table 3 displays the red chili farmer respondents' farming experiences.

Table 3.The Experience of Farming Red Chili Farmers in Maligas Bandar Village

NO	Farming Experience (Year)	Total (Person)	Percentage (%)
1.	1-5 Years	23	57.5%
2.	6-10 Years	9	22.5%
3.	11-15 Years	8	20%
Total		40	100%

Source: Primary Data in 2022

According to Table 3, the majority of red chili farmer respondents have farming experience of 1-5 people with a value presentation of 57.5%. 6-10 years of farming experience with a value presentation of 22.5%. 11-15 years of farming experience with a value presentation of 20%. This means that the total farming experience of red chili farmers in Maligas Bandar Village, Gunung Malela District, Simalungun Regency, which is the most dominant, namely 1-5 years.

3.2 Discussion

a. Factors Affecting Red Chili Production

The production of red chili is influenced by a number of factors, according to this study. SPSS 21 was used to process the data, and multiple linear regression was used to analyze the factors. The analysis was done in stages to get a good guess equation. Red chili production (Y) was the dependent variable (dependent variable) were the independent variables (independent variables) land area (X1), seeds (X2), and fertilizer (X3)

The regression analysis revealed that the coefficient of determination (R²) was 0.850, indicating that although 85 percent of the variables in the observed model were land area, seeds, and fertilizer, not all of them were able to influence the variation in red chili production in Maligas Bandar Village. The remaining variables, on the other hand, are outside the scope of the utilized model.

1. F Test (Simultaneous)

In this study, the comparison between the F-count of 60.8 and the F-table (2.95) was significant at = 5%. The F test's findings show that the $F_{\text{count}} (60.8) > F_{\text{table}} (2.95)$ means that together all variables, namely land area (X1), seeds (X2), fertilizers (X3), affect chili production. red in the village of Maligas Bandar Village, Gunung Malela District, Simalungun Regency.

2. Test t (Partial)

Additionally, the t-test results conducted from the three variables used were only two variables that had a significant impact on the production of red chili. The regression results obtained that all variables had a significant impact on the production of red chili, including land area (X1), seeds (X2), and fertilizer (X3). This is based on a comparison of significance with an error rate of 5%. The dependent variable is significantly influenced by these variables. Estimation of the equation model of the factors that affect red chili farming in Maligas Bandar Village, Gunung Malela District, Simalungun Regency are:

$$Y = 5,910 + 155\text{Ln}X1 + 226\text{Ln}X2 + -487\text{Ln}X3$$

The following is a comprehensive description of the influence of each factor on red chili production:

3. Effect of Land Area (X1)

The regression results indicate that the variable land area (X1) has a partial significant effect, the significant value obtained is smaller than the specified significant level (0.05) with a regression coefficient of 0.155 indicating that every 0.155 kg increase in land area will result in an increase in red chili production. The results of the T test indicate that the variable area of land has a partial but significant impact on red chili production in the village of Maligas Bandar Village, Gunung Malela District, Simalungun Regency.

Furthermore, the results of research on the area of land cultivated by red chili farmer respondents in Maligas Bandar Village, Gunung Malela District, Simalungun Regency varies greatly, namely for a land area of 0.32 ha s/ 0.72. Land as one of the elements of creation which is the manufacturing plant of horticultural items which has a significant commitment to cultivating. Even though land area has a positive effect on increasing red chili production, the level of competition for land use for non-agricultural activities is difficult to stem due to the growing population. This limits the size of the production from farming. As stated by the agricultural service (Hernanto, 2003), that increasing land area is difficult to implement,

4. Effect of Seeds (X2)

The regression results indicate that the seed variable (X2) has a partial significant effect, with a regression coefficient value of 0.227 indicating that every increase in seed use will result in a 0.227 kg increase in red chili production. The significant value obtained is (0.025) smaller than the specified significant level (0.05). The results of the T-test indicate that the seed variable has a significant impact on red chili production in Maligas Bandar Village, Gunung Malela District, Simalungun Regency.

Thus, the more seeds used, the higher the production. In this case, the seeds in question are of course quality seeds, superior quality seeds have better adaptability, even on less productive land. Superior quality seeds have a big influence on increasing farmers' income and welfare.

5. Effect of Fertilizer (X3)

In addition, the regression results indicate that the fertilizer variable (X3) has a partial significant effect. The significant value obtained is (0.00), which is less than the specified significant level (0.05), and the regression coefficient is 0.887, indicating that the amount of red chili production will rise by 0.887 kg for each increase in fertilizer use. The results of the T-test indicate that the fertilizer variable had a significant impact on red chili production in Maligas Bandar Village, Gunung Malela District, Simalungun Regency.

Therefore, it can be said that fertilizer improves the quality of agricultural products and increases horticultural production. The availability of subsidized fertilizers to farmers is a top priority that must be considered by providers and related agencies, (Syahyuti, 2004). In areas with sufficient water, the use of fertilizers as a means of production contributes significantly to the increase in crop yields. As said by (Daniel, 2002) that maximum profit can be achieved, it is necessary to provide inputs, especially fertilizers and the right dosage according to the needs in providing treatment to the production of curly red chilies.

IV. Conclusion

It is possible to draw the conclusion, based on the results and discussion above, that the three variables have a significant impact on the production of red chili in Maligas Bandar Village, Gunung Malela District, Simalungun Regency. The analysis revealed that the variables land area (X1), fertilizer (X3), and seeds (X2) had a significant impact on the production of red pepper, or variable (Y). The calculation of R² yielded 0.850%, or 85%, of the explanation. The remaining 25% are unrelated variables that were not examined in this study..

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