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ANALYSIS FARMING CHILLI RED (*CAPSICUM ANNUM* L.) VARIETY *HOT BEAUTY* (STUDIES CASE IN SEI MENCIRIM VILLAGE, KUTALIMBARU DISTRICT, DELI SERDANG REGENCY)

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Abstract

The purpose of this study was to determine: 1) The average cost and revenue of red chili farming per hectare in one planting season in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. 2) The average income of red chili farming per hectare in one planting season in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. 3) The average R/C of red chili farming in one planting season in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. The type of research used in this study is a case study, which is an in-depth study of a particular characteristic of the research object, this research is in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. The sampling technique was carried out by census of 30 farmers. The results of the study indicate that: 1) The total cost was Rp. 34,385,907.09, the revenue was Rp. 57,600,000 per planting season, obtained from an average red chili harvest of 6,400 kilograms at a price of Rp. 9,000 per kilogram. 2) The income is Rp. 73,940,928.57 per hectare per planting season. 3) The R/C (Revenue Cost Ratio) is Rp. 2.51, meaning that red chili farmers have earned a profit of Rp. 2.51.

Keywords : Farming, Red Chili, Deli Serdang Regency

INTRODUCTION

Agricultural development encompasses the food crops, plantations, forestry, fisheries, and livestock sectors, with the aim of improving public welfare. The agricultural sector's role in the national economy can be measured by its contribution to production and foreign exchange earnings (Ghatak and Ingersent, 1984 in Sihotang, 2010). One horticultural commodity that has received increased attention for development is red chili peppers. Red chili peppers (*Capsicum annuum L.*) are a type of vegetable that is quite popular with consumers. Along with the development of the national food industry, chili peppers are a raw material that is needed and widely cultivated by producers at various farm scales (Santika, 2008). Deli Serdang Regency is a leading horticultural area in North Sumatra, particularly for red chilies. Vegetable production in Deli Serdang Regency has generally fluctuated over the past five years, but has tended to increase.

The amount of chili production in the last five years, namely in 2018 reached 6,120 tons, in 2019 reached 6,845 tons, in 2020 reached 7,230 tons, while in 2021 reached 6,980 tons, then in 2022 reached 7,560 tons with a land area reaching 720 hectares (Deli Serdang Regency Agriculture Service, 2023). The area and productivity of red chili peppers in Deli Serdang Regency fluctuate from year to year. In 2021, productivity decreased by 69.80 tons, but rebounded in 2022 to 75.60 tons with a harvested area of 720 hectares. Meanwhile, in 2023, it experienced a slight decline to 70.15 tons per hectare with a harvested area of 680 hectares (BPS Deli Serdang, 2024).
In 2023, the harvested land area in Deli Serdang Regency was 680 hectares, resulting in a production of 4,769.20 tons and a productivity of 70.15 quintals per hectare (BPS Deli Serdang, 2024).

In the order of red chili farming, the area with the largest chili production is Kutalimbaru District at 1,250 tons with a harvest area of 180 hectares, followed by Pancur Batu District in second place at 980 tons with a harvest area of 150 hectares, Sibolangit District in third place at 620 tons with a harvest area of 90 hectares and STM Hulu District in fourth place at 540 tons with a harvest area of 80 hectares (Deli Serdang Agriculture Service, 2023). Kutalimbaru District consists of several villages. Sei Mencirim Village, which boasts a high red chili production, covers 20 hectares and produces 1,200 quintals per hectare, with a productivity of 60 quintals per hectare

(Kutalimbaru Agricultural Extension Center, 2023).
Sei Mencirim Village, located in Kutalimbaru District, Deli Serdang Regency, boasts significant potential and resources for red chili farming. This is supported by an adequate irrigation system and approximately 20 hectares of cultivated land (Sei Mencirim Village Profile, 2023).

Identification of problems

1. How much does it cost farmers per hectare in one planting season?
2. How much income and revenue do farmers receive per hectare in one planting season?
3. What is the break-even point for cabbage farming per hectare in one planting season?

Research purposes

1. The costs obtained by farmers per hectare in one planting season.
2. Revenue and income obtained by farmers per hectare in one planting season.
3. Break-even point in cabbage farming per hectare in one planting season.

METHOD STUDY

Place And Time Study

This research was conducted in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. The location was chosen intentionally because this village is one of the chili production centers in Deli Serdang Regency. The research was conducted in March 2024.

Types of research

The type of research used in this study is a case study, in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency. Based on the objectives to be achieved in this study, the type of research used in this study is a case study according to Nazr (2011), "a case study is an in-depth study of a particular characteristic of the research object". This research is in Sei Mencirim Village, Kutalimbaru District , Deli Serdang Regency, North Sumatra Province.

Operationalization Variables

The observed variables are operationalized as follows:

1. Red chilies are plants *from the Capsicum genus* or woody shrubs, and the fruit has a spicy taste caused by the capsaicin content.
2. The analysis is carried out once a planting season, starting from seed provision, land preparation, planting, plant care, harvesting, to post-harvest which lasts for 6 months.
3. Total costs or production costs are all costs incurred in red chili farming per hectare during one planting season which includes:
   - Cost Still (*Fixed Cost*) is a type of cost whose size does not depend on big small volume production or sales generated, and the nature of which is not used up in one planting season, which is included in fixed costs, namely land rent, depreciation of equipment and capital interest in rupiah units (Rp).
   - Rent is an obligation that must be paid by the tenant to the land owner or company for the receipt of ownership from the owner to the tenant based on an agreement between the tenant and the lessor.
4. Depreciation of equipment, expressed in rupiah (Rp) per planting season, Amount of depreciation tool counted by using the straight line method (*Straight Line Method*) with the following formula (Suratiyah, 2006).
   $$\text{Depreciation tool} = \frac{\text{Value Purchase} - \text{Residual Value}}{\text{Economic Life}}$$
5. Capital interest is calculated in percentage units based on the bank interest rate in effect at the time of the research, and is expressed in rupiah (Rp) per planting season.
   - Variable Costs *are* costs whose size depends on size volume production or sales generated (Rahardja and Manurung, 2008). Some components included in variable costs include: seeds, fertilizers, pesticides, insecticides and labor.
   - The number of red chili seeds used is calculated in unit kilogram (Kg), and assessed in rupiah (Rp) per hectare per planting season.
   - The fertilizer used is calculated in kilograms (Kg), and valued in rupiah (Rp) per hectare per planting season.
   - The pesticides used are calculated in liters (lt), and valued in rupiah (Rp) per hectare per season. planting.
   - Insecticides used in unit liter (lt), And assessed in rupiah (Rp) per hectare per planting season.
   - The black silver plastic mulch used is calculated in roll units, and valued in rupiah per hectare per planting season.
   - The raffia rope used is calculated in rolls and valued in rupiah (Rp). per hectare per planting season.

- Stake Which used counted per stick, and valued in rupiah units (Rp) per hectares per planting season .
- Labor is a person who carries out activities related to the production process, whether from the family or outside the family, which is calculated in days. Working Persons (HOK), and is assessed in rupiah (Rp) per hectare per planting season.

6. Income is the result obtained from each red chili farming business for one planting season, namely the amount of chili production multiplied by the selling price, and is valued in rupiah (Rp) per hectare per planting season.
7. Income is the difference between mark production with total production costs, calculated in rupiah (Rp) per hectare per planting season.
8. R/ *C (Revenue to Cost Ratio Analysis):* R/C *is* an analysis tool that looks at the relative profits of a business in one period against the costs used in activities. farming, where R/C shows the amount of income Which obtained of every rupiah spent. Assumption Which used R/C during the research, namely:
   - The price in effect at the time of the research was Rp. 9,000 per kilogram.
   - Goods finished sold.
   - The technology used is the same.

Technique Collection Data

1. Primary data is data that is obtained from red chili farmer respondents through direct interviews using a questionnaire as a tool that had been prepared in advance.
2. Secondary data is data obtained from related services or agencies (Food Crops and Horticulture Agriculture Service, Agency Statistics Center (BPS) and libraries that support research activities).

Technique Withdrawal Sample

The determination of the research location, namely Sei Mencirim Village, was determined purposively with the consideration that it has the highest land area and red chili production in Deli Serdang Regency, according to Sugiyono (2012) "Purposive sampling is a sample determination technique with certain considerations".

The sampling technique used for this study for red chili farmers was a census, meaning all red chili farmers were selected as respondents. This totaled 30 red chili farmers in Sei Mencirim Village. According to Sugiyono (2012), a census is a sampling technique where all members of a population are used as samples. This is often done when the population is relatively small, less than 30 people. This means that census sampling involves all members of the population being selected as respondents.

Design Analysis Data

By examining the problems raised in problem identification, the data analysis problem structure is compiled as follows:

1) Cost Analysis

According to Soekartawi (2002) To calculate the total cost (*Total Cost*), it is obtained by adding up the fixed costs. (*Fixed Cost/ FC*) with variable costs (*Variable Cost/ VC*) using the formula:

TC = FC + VC

Where :

TC = *Total cost* (Cost total)

FC = *Fixed cost* (Cost (still total)

VC= *Variable cost* (Cost total variable)

2) Revenue Analysis

According to Soekartawi (2002), Revenue is the difference between revenue (TR) and total costs (TC) and is expressed using the formula:

Pd = TR – TC

Where :

Pd = Income

TR = *Total reve* nue (Reception total) TC = *Total cost* (Total cost)

3) For count R/C

According to Soekartawi (2002), R/C is the comparison between acceptance with total costs, expressed using the formula :

$$R/C = \frac{\text{Total Revenue}}{\text{Cost Total}}$$

From the results of the analysis, it can be seen how much revenue will be received. obtained by farmers from every rupiah spent by farmers in chili farming red, with the following provisions :

a. R/C > 1, then the red chili farming business is profitable, so the business is worth pursuing.
b. R/C = 1, then the red chili farming business is equal, so the business there is no profit or loss.

c. R/C < 1, then the red chili farming business is a loss, so the business is not worth pursuing.

RESULTS AND DISCUSSION

Respondent Identity

The number of respondents in the study was 30 people, consisting of 26 male respondents and 4 female respondents.

Age

Respondents' ages ranged from 30 to 59 years, meaning all respondents were of productive age. This aligns with Anjayani and Haryanto's (2009) opinion, which states that the productive age population is those aged 15 to 59. Respondents aged 30 to 59 tend to be more receptive to innovations that will increase their income.

Education

Respondents' education varied between those who completed elementary school (SD) and junior high school (SLTP). Education level influences a person's activities in running their business. While the majority (29 people) graduated from elementary school (SD), and only one (3.33%) graduated from junior high school, the education level of red chili farmers is generally considered low.

Business Experience

A person's experience generally influences the decision-making process. Respondents' experience as red chili farmers ranged from 4 to 17 years. The majority of red chili farmers had 13 (43.33%) years of experience, while 17 (56.67%) had 11 years or less.

Family Dependencies

The dependents of red chili farmers in this study consisted of wives, children, and other family members who are dependents of the heads of red chili farming families in Sei Mencirim Village. Most male red chili farmers had dependents of less than three people (20 people) and two female farmers (6.67%). Meanwhile, eight (26.67%) had dependents of more than three people.

Respondents' Red Chili Land Ownership

Based on direct field interviews, respondents generally cultivate land for red chili pepper farming. Land sizes ranged from 0.25 hectares to 0.80 hectares. Land ownership is a key asset for farmers in red chili cultivation. Most respondents (21 respondents) owned land between 0.25 and 0.50 hectares, while nine (30.00%) owned land between 0.50 and 0.25 hectares.

Analysis of Red Chili Farming (*Capsicum Annum L.*)

Analysis Cost

Cost Total

The total costs calculated from the start in this study include total fixed costs plus total variable costs. The calculations show that the average total cost incurred by red chili farmers in Sei Mencirim Village, Kutalimbaru District, is Rp 34,385,907.09 per hectare per planting season.

Table 1. Costs in Red Chili Farming Per Hectare in One Time Planting Season in Sukamaju Village

	Component Cost	Amount
A	**Cost Still**	
	Depreciation Tool	4,656,517.86
	Rent Land	721,428.57
	Flower Capital Still (4.50% in one time season (plant)	226,623.21
	Amount	**Rp. 5,604,569.64**
B	**Variable Costs**	
	Seed	2,107,142.85
	Fertilizer Organic Dirt Chicken	1,005,785.71
	NPK	5,833,142.85
	Urea	341,285.71
	ZA	775,892.85
	KCL	15,000
	Fungicide	395,000
	Insecticide	410,714.28
	SP- 36	420,892.85
	Power Work	5,945,000
	Flower Fixed Capital (4.50% in One time season (plant)	226,623.21
	Cost Variables Still	11,304,857.14
	Amount	**Rp. 28,781,337.45**
	Total Amount	**Rp. 34,385,907.09**

Source: Village Sukamaju 2015

Cost Still

Fixed costs calculated include equipment depreciation, capital interest (4.5%), and land rent. The study results show fixed costs of Rp 5,604,569.64 per hectare per planting season. Land rental costs are Rp 721,428.57 per hectare.

Cost Variables

Variable costs include seeds, fertilizers, pesticides, labor, and variable interest. The study results showed variable costs of Rp 28,781,337.45 per hectare per planting season. Labor costs were Rp 5,945,000, with a wage rate of Rp 30,000–37,000 per working day.

Analysis Income

Revenue is the difference between total revenue and total costs. The price of red chilies in the study area is Rp 9,000 per kilogram, with an average production of 6,400 kilograms per hectare, resulting in revenue of Rp 57,600,000 per planting season.

Analysis R/C

The R/C (Revenue Cost Ratio) value is obtained by comparing revenue to total costs. The results showed an R/C value of 2.51, meaning that every Rp 1.00 of costs incurred by farmers will generate Rp 2.51 in revenue. This indicates that red chili farming in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency is feasible.

CONCLUSION AND SUGGESTION

Conclusion

1. The average cost of white cabbage farming in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency is Rp 1,778,876.13 per planting season. Meanwhile, the income is Rp 3,000,000 per planting season, obtained from a cabbage harvest of 1,000 kilograms at a price of Rp 3,000 per kilogram.
2. The average income from white cabbage farming in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency is IDR 1,221,125.86 per planting season.
3. The break-even point for white cabbage farming in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency is divided into 4 parts, including:
   a. The break-even point for revenue is: Rp 683,846.84 b. The break-even point for production volume is: 227.94 kilograms c. The break-even point for land area is: 0.02 per hectare. The break-even point for price is: Rp 592.95

Suggestion

Based on the above conclusions, it is recommended that white cabbage farming activities in Sei Mencirim Village, Kutalimbaru District, Deli Serdang Regency, at least farmers must strive to maintain the minimum results that have been determined from the results of the amount of production, land area, price and income that have been determined so that cabbage farming activities do not experience losses.

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