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GREEN MUSTARD FARMING PERFORMANCE IN CARINGIN KULON VILLAGE, CARINGIN DISTRICT, SUKABUMI REGENCY

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ABSTRACT
Green mustard farming is one of the horticultural agricultural activities that plays an important role in supporting farmers' income, especially in Caringin Kulon Village, Caringin District, Sukabumi Regency. This study aims to describe the performance of green mustard farming and analyze the economic feasibility of this farming. The study was conducted in December 2025 using a quantitative descriptive method. The data used consisted of primary data obtained through direct interviews using questionnaires to 30 green mustard farmers selected by purposive sampling, as well as secondary data from related agencies and supporting literature. Data analysis included analysis of farming performance, production costs, revenue, income, and business feasibility using the Revenue Cost Ratio (R/C Ratio). The results showed that the average area of farmers' cultivated land was 0.13 ha with a farming management system that was still simple and dominated by hereditary experience. The total production cost of green mustard farming per planting season is Rp 1,546,612, with revenue of Rp 3,543,369 and net income of Rp 1,996,757. The R/C Ratio of 2.29 indicates that green mustard farming is economically viable and profitable for farmers. However, farmers still face obstacles in the form of price fluctuations and weak bargaining power in marketing. Overall, green mustard farming in Caringin Kulon Village has the potential to be developed as a source of income for farmers.

Keywords: Farming, Green Mustard, Farming Feasibility.

INTRODUCTION

The agricultural sector in Indonesia has a significant contribution to national economic growth, especially in facing the challenges of the globalization era. In addition, this sector plays a role as the main support for people's economic activities. Until now, agriculture is still a consistent sector in absorbing labor. This condition is influenced by the characteristics of relatively simple agricultural activities and the nature of agricultural products that are always needed by the community. Therefore, the agricultural sector does not always demand a high level of skills, so it has a more flexible ability to accommodate a workforce that is less able to compete in other economic sectors (Kusumaningrum, 2019).

Horticulture has an important and strategic role in the national food security system because it is one of the main components in the expected food pattern (PPH). Horticultural commodities, especially vegetables and fruits, contribute greatly to maintaining food balance so that their availability needs to be guaranteed in a sustainable manner, both in terms of quantity, quality, consumption safety, and affordability and access for all levels of society. The large population of Indonesia makes horticultural products a very potential market, which from time to time shows an increase in demand, both in terms of quantity and expected quality standards (Mardial et al., 2020).

Mustard greens are plants that come from the Asian region and are not native to Indonesia. However, Indonesia's agroclimatic conditions, which include climate, weather, and suitable soil characteristics, make this plant able to grow and develop properly. Mustard greens have extensive adaptability because they are able to grow optimally in both hot and cool areas, so they can be cultivated in lowland to highland areas (Ngantung et al., 2018). Mustard greens contain a variety of essential nutrients, including protein, fat, carbohydrates, fiber, calcium, phosphorus, and iron, as well as a number of vitamins such as A, B1, B2, B3, and C (Oktabriana, 2017).

Farming is an activity carried out by individuals or groups in managing various factors of production, such as natural resources, labor, capital, and skills, with the aim of producing agricultural products. Thus, farming can be interpreted as an agricultural activity that involves the management

of natural resources, labor, management, capital, and other supporting factors to generate income, which is ultimately expected to be able to improve the welfare and improve the standard of living of farmers (Mandang et al., 2020).

Farming practices are an overview of the real conditions or performance of the implementation of farming activities which include technical, economic, and managerial aspects, ranging from the use of production facilities, cultivation processes, to production results and income obtained by farmers. Farming practices show how farmers manage their resources to achieve a certain level of production and profit.

The Sukabumi region has favorable agroclimatic conditions for the development of mustard green cultivation. However, during the harvest season, high production of mustard greens often causes an oversupply in the market so that the selling price decreases significantly. As a result, farmers are forced to sell their crops at low prices and are not proportional to the effort and costs that have been incurred during the cultivation process, even some of the crops are not absorbed by the market and become wasted. This condition generally occurs when the mustard green harvest time takes place simultaneously in various regions, while market demand is unable to keep up with the amount of supply available. This situation certainly has a detrimental impact on mustard green farmers (Arifiya & Setiowati, 2021).

According to the Central Statistics Agency of Sukabumi Regency (2023), Caringin District has a mustard planting area of 146 hectares with a total production of 1,485 tons. The data shows that mustard greens have a fairly important role in agricultural activities in Caringin District, both in terms of the size of the planting area and its contribution to vegetable production, so it has the potential to be the main source of income for local farmers.

Caringin Kulon Village is one of the areas in Caringin District that has considerable potential in the development of mustard green farming. The agroclimatic conditions and the availability of agricultural land in this village support mustard green cultivation activities carried out by the local community. Most of the farmers in Caringin Kulon Village depend on the agricultural sector, especially vegetable commodities, so mustard greens are one of the important commodities in supporting the farmer's household economy. However, farmers in this village also face similar problems in other areas, especially price fluctuations during the harvest.

Based on this phenomenon, this study aims to describe mustard green farming, including actors, activities, and management of farming. In addition, this study also aims to analyze the economic feasibility of mustard green farming, so that it can provide an overview of management efficiency and income potential for farmers.

MATERIALS AND METHODS

This research was carried out in Caringin Kulon Village, Caringin District, Sukabumi Regency, with the consideration that the area is one of the areas that actively carry out mustard green farming activities. The research will be carried out in December 2025.

The type of research used is quantitative descriptive research. A descriptive approach is used to describe the diversity of mustard green farming, which includes the use of production facilities, production costs, production outputs, and farmers' income. A quantitative approach is used to analyze numerical data obtained from these farming activities.

The data used in this study consisted of primary data and secondary data. Primary data were obtained through direct interviews with mustard greens farmers using structured questionnaires, while secondary data were obtained from relevant agencies and relevant library sources.

The population in this study is all farmers who cultivate mustard greens in Caringin Kulon Village. The determination of respondents was carried out using the nonprobability sampling method through the purposive sampling technique, with a total of 30 farmers respondents. Respondents were selected based on certain criteria, namely farmers who are actively cultivating mustard greens, have at least one year of farming experience, live or own land in the research area, and manage farming independently.

Data analysis was carried out descriptively and quantitatively. Descriptive analysis is used to describe mustard green farming practices, while quantitative analysis is used to calculate production costs, revenue, income, and calculate the feasibility of farming. The results of the analysis

were used to provide a comprehensive picture of the condition and performance of mustard green farming in the research area.

RESULTS AND DISCUSSION

A. Characteristics of Farmers

1. Farmer Age

The age of farmers is one of the important factors that affect productivity and ability to run farming. Farmers in the productive age range tend to have better energy and physical endurance to carry out various cultivation activities, land management, and plant maintenance consistently, compared to older farmers. The age distribution of the respondent farmers is presented in the following table.

Table 1. Distribution of Farmer Age Group

Yes	Age Group (Years)	Number (People)	Percentage (%)
1	26 - 40	8	26,67
2	41 - 60	14	46,66
3	> 60	8	26,67
	Total	30	100

Source: Primary Data Processed, 2025

Based on table 1, it can be seen that the majority of respondents are in the age group of 41 - 60 years old as many as 14 people (46.66%), which shows that farmers are dominated by productive age with quite mature farming experience. The age group of 26 - 40 years and over 60 years old amounted to 8 people each (26.67%). This shows the involvement of young farmers and elderly farmers in farming activities, so that the age structure of the respondents is quite diverse and supports the sustainability of farming.

2. Farmer Education

The level of education of farmers is one of the social characteristics that affects the ability of farmers to receive information, understand technology, and manage farming more efficiently. The distribution of the education level of the respondent farmers is presented in the following table.

Table 2. Farmer Education Level

No	Education Level	Number (People)	Percentage (%)
1	Primary School	22	73,33
2	Junior High School	4	13,33
3	Senior High School	2	6,67
4	Bachelor	2	6,67
	Total	30	100

Source: Primary Data Processed, 2025

Based on table 2, it can be seen that the majority of respondent farmers have a primary school education level of 22 people (73.33%). This condition shows that most farmers have a relatively low formal education background, but are still able to carry out farming activities based on experience and practical knowledge. Farmers with junior high school education amounted to 4 people, while high school and undergraduate education amounted to 2 people each. This difference in education level reflects the variation in farmers' ability to receive information and adopt innovations in farming management.

The level of education has an influence on the ability of farmers to accept and apply technology and expand their horizons in farming activities. In addition to formal education, farmers also obtain non-formal education through various activities such as training and exchange of experiences related to farming management (Listyora et al., 2023).

3. Farmers' Land Area

The area of land owned by farmers is one of the determining factors in the scale and level of agricultural production. The more land is managed, the greater the potential for production that can be obtained, while limited land requires farmers to optimize the efficiency of resource management in order to increase income.

Table 3. Percentage of Farmers' Land Area

No	Land Area (ha)	Number (People)	Percentage (%)
1	0,03 – 0,1	14	46,67
2	0,11 – 0,2	12	40
3	> 0,2	4	13,33
	Total	30	100

Source: Primary Data Processed, 2025

Based on table 3, it can be seen that the majority of respondent farmers have a cultivated land area of 0.03-0.1 ha, which is 14 people (46.67%), which shows that farming is classified as small-scale. Farmers with a land area of 0.11–0.2 ha amounted to 12 people (40%), while farmers who cultivated land of more than 0.2 ha were 4 people (13.33%). The average land area in the research area is 0.13 ha.

According to Milla (2020) Family farming is generally carried out on relatively narrow land, which is often categorized as gurem farmers if the cultivated land area is less than 0.5 hectares. This condition is in line with the results of the study which showed that the average area of cultivated land by respondent farmers was only 0.13 hectares. This indicates that most farming is carried out on a limited land scale, so efficiency in land use and management is an important factor to increase farmers' production and income.

4. Farming Experience

Experience in farming is one of the important indicators in carrying out farming activities. The longer a person has been in farming, the more knowledge and experience gained in managing the business (Tunas et al., 2023).

Table 4. Distribution of Farming Experience

No	Farming Experience (Years)	Number (People)	Percentage (%)
1	1 – 5	12	40
2	5 – 10	7	23,33
3	> 10	11	36,67
	Total	30	100

Source: Primary Data Processed, 2025

Based on table 4, it can be seen that most of the respondent farmers have 1-5 years of farming experience, which is as many as 12 people (40%), which shows that quite a lot of farmers are relatively new in running farming. Farmers with more than 10 years of experience amounted to 11 people (36.67%), while farmers with 5-10 years of experience were 7 people (23.33%). This variation in farming experience shows a combination of experienced farmers and emerging farmers, which can affect technical skills and decision-making in farm management.

5. Farmer Group

Farmer groups are a form of organization that functions as a forum for cooperation between farmers in supporting farming activities. In the process of agricultural development, the existence of farmer groups plays a role in encouraging better implementation of farming, which is reflected in increased productivity. The increase in productivity ultimately contributes to increasing farmers' income, so that it can support the welfare of farmers and their families. However, there is still an assumption among the community that farmer groups do not have a significant role in increasing farmers' income (Mawarni et al., 2017).

Based on the results of the study of 30 respondents, it was recorded that as many as 17 farmers have joined farmer groups, while 13 other farmers have not become members. The main reason why farmers do not join is because farmer groups in the region are considered less active in carrying out their activities. This condition indicates that the role of farmer groups as a forum for farmer organizations has not functioned optimally. The lack of activity of farmer groups has the potential to reduce farmers' interest in joining, because the benefits that should be obtained such as extension activities, information exchange, and ease of access to government assistance and programs have not been felt by farmers.

B. Mustard Green Farming Management

Mustard green farming activities carried out by farmers in Caringin Kulon Village include stages of seed procurement, land cultivation, planting, plant maintenance, and harvesting. The entire series of activities is carried out in stages and most of them still rely on the experience of farmers from generation to generation.

The procurement of mustard green seeds is generally obtained from local agricultural stalls. However, some farmers also obtain seeds from other farmers or do their own seeding to reduce production costs. This variety of seed sources shows the existence of farmers' strategies in adjusting the availability of inputs to economic conditions and farming experience they have. In addition to seeds, other production inputs such as fertilizers, medicines, and agricultural lime were mostly obtained from agricultural stalls, while manure was obtained from farmers around the research site.

Land cultivation is done manually using simple tools such as hoes and forks. The land is cultivated until loose with the aim of improving soil structure and facilitating the growth of plant roots. After land cultivation, farmers form beds and plant mustard greens with planting distances adjusted to the conditions of the land and the habits of the farmers. Planting is generally done in the morning or evening to reduce the risk of plant stress. The creation of beds aims to ensure smooth water flow so that there is no inundation on the plantation land (Sukmana et al., 2019).

Maintenance of mustard green plants includes embroidery, watering, fertilization, weeding, and pest and disease control. Fertilization is carried out using a combination of inorganic fertilizer and manure to maintain soil fertility and support plant growth. Pest and disease control is carried out chemically with the use of pesticides, especially in less favorable weather conditions, such as high rainfall that increases the risk of attack by plant pest organisms. The high maintenance intensity causes the need for pesticides to be relatively large in mustard green farming activities.

Mustard mustard harvest is carried out when the plant has reached harvest age, which is about 20 days after transplanting and the leaf size is considered optimal by the farmer. Harvesting is generally carried out in the morning to maintain the freshness of the harvest. The harvested mustard greens are then tied up before being marketed. The relatively short harvest life of mustard greens makes this commodity a crop that can be harvested quickly and repeatedly, but also susceptible to fluctuations in market prices.

Marketing of mustard green products is carried out by selling directly to middlemen. The selling price of mustard greens received by farmers tends to fluctuate and is greatly influenced by market conditions and seasons. This condition causes farmers to have a relatively weak bargaining position in determining the selling price. Despite this, most farmers still choose to grow mustard greens due to the rapid turnover of capital and relatively stable market needs. This is in line with Rihi (2022) which says that farmers sell their crops to middlemen as early buyers. Next, middlemen distribute the mustard greens to retailers, who then sell them to end consumers. Thus, the parties who act as intermediary traders between farmers and consumers are middlemen and retailers.

C. Analysis of Green Mustard Farming

Business analysis is a data analysis tool used to determine the feasibility of a business and to evaluate business activities that have taken place (Apriani et al., 2016). The feasibility analysis of mustard green farming is carried out to determine the level of efficiency and profitability of the business run by farmers. The feasibility of farming is analyzed through the calculation of production costs, revenue, and income, and continued with the analysis of financial feasibility using indicators Revenue Cost Ratio (R/C Ratio)**.**

According to Asnidar & Asrida (2017) If the R/C Ratio is more than 1, then the business is profitable or worthy of development. If the R/C Ratio is less than 1, then the business suffers a loss and is not feasible to develop.

Production costs in mustard greens farming consist of fixed costs and variable costs. Fixed costs include depreciation of agricultural equipment and land leases, while variable costs include expenditures on means of production and labor. Of the two components, variable costs occupy the largest portion, according to the character of vegetable farming which requires input and labor in high intensity.

Table 5. Details of the Production Cost of Green Mustard Farming per planting season

Yes	Description	Production Cost (0,13 ha)
1	Land Rental Fee (Rp)	272.679
2	Depreciation Fee (Rp)	48.607
3	Cost of Production Facilities	385.326
4	Labor Costs	840.000
	Total	1.546.612

Source: Primary Data Processed, 2025

Based on table 5, it can be seen that the production cost of mustard green farming on an area of 0.13 ha, the total production cost reached Rp 1,546,612, which consisted of a fixed cost of Rp 321,286 and a variable cost of Rp 1,225,326.

Farming revenue is obtained from the result of multiplying the amount of mustard green production and the selling price received by farmers at the time of harvest. The average selling price of mustard greens is IDR 2,053 per kilogram. In each harvest season, with a land area of 0.13 ha, mustard green production reaches around 1,726 kg. Thus, the total revenue obtained by farmers from sweet potato farming reached Rp 3,543,369.

Table 6. Income and R/C Ratio of Green Mustard Farming per planting season

Yes	Description	Green Mustard Farming (0,13 ha)
1	Production Cost (Rp)	1.546.612
2	Admission (Rp)	3.543.369
3	Income (Rp)	1.996.757
4	R/C Ratio	2,29

Source: Primary Data Processed, 2025

Based on table 6 of the results of the analysis of mustard greens farming on an area of 0.13 ha, the total production costs incurred by farmers reached Rp 1,546,612, while the total revenue from the sale of mustard greens amounted to Rp 3,543,369. With this difference, the income obtained by farmers from this farming reached Rp 1,996,757. The feasibility analysis using the R/C Ratio shows a value of 2.29, which means that every rupiah of costs incurred results in revenue of IDR 2.29. These results show that mustard green farming on an area of 0.13 ha is economically feasible and provides benefits for farmers.

CONCLUSION

Based on the results of the study, it can be concluded that the characteristics of mustard greens farmers are dominated by productive age farmers with a relatively low level of formal education, but have quite diverse farming experiences. The average area of cultivated land managed by farmers is relatively narrow, which is around 0.13 ha, so mustard green farming is included in the category of small-scale farming.

The management of mustard green farming is carried out simply and most of them still rely on hereditary experience. Cultivation activities include seed procurement, land cultivation, planting, maintenance, and harvesting, with the marketing of crops generally carried out through middlemen. This condition causes the bargaining position of farmers to be relatively weak and the selling price of mustard greens tends to fluctuate, especially during the harvest.

The results of the farming analysis show that mustard green farming in Caringin Kulon Village is economically feasible. On an area of 0.13 ha, the total production costs incurred by farmers are Rp 1,546,612 per planting season, with revenues of Rp 3,543,369 and net income of Rp 1,996,757. The R/C Ratio value of 2.29 shows that every rupiah of cost incurred is able to generate revenue of Rp 2.29, so that mustard green farming provides benefits and has the potential to continue to be developed.

Overall, mustard greens farming in Caringin Kulon Village has good prospects as a source of income for farmers, although it still faces several obstacles, especially price fluctuations and the role of farmer groups is not optimal. Therefore, efforts are needed to improve the efficiency of farming management and strengthen farmer institutions to improve the welfare of mustard greens farmers in the region.

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