World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Check for updates

Comparative analysis of farming income of "Kalibening" avocado nursery in Jambu sub-district, Semarang district

Rohmad *, Wulan Sumekar and Edy Prasetyo

Magister Agribusiness, Faculty of Animal and Agricultural Sciences, Diponegoro University, Indonesia.

World Journal of Advanced Research and Reviews, 2024, 24(02), 2344–2350

Publication history: Received on 14 October 2024; revised on 21 November 2024; accepted on 23 November 2024

Article DOI: https://doi.org/10.30574/wjarr.2024.24.2.3566

Abstract

Indonesia is an agricultural country where some of its people depend on the upstream and downstream aspects of the agricultural sector. There are some farmers who cultivate by growing crops to gardening and some who cultivate nursery businesses, be it fruit nurseries or seasonal or annual horticultural crops such as avocados. Ownership of farm land between own land and rented land causes differences in avocado nursery farm income. The objectives of the study were: 1. Analyzing the revenue and cost ratio (R/C ratio) and break-even point (BEP) in the kalibening avocado nursery business using self-owned media and leased land. 2. Analyze the comparative income of Kalibening avocado nursery farming businesses Hectares use leased land media and owned land media on members of the Kebondalem Village Farmers Group, Jambu District, Semarang Regency. 3. Comparative analysis using independent sample *t test*. Based on the analysis of farm income, the kalibening avocado nursery with self-owned land planting method is IDR. 1,424,634,204, - / year with an average land area of 0.05 Hectares, while on rental land planting media is IDR. 2,520,341,150, - / year on an average land area 0.01 Hectares. The results of the research on self-owned land R/C ratio of 1.80, on rented land R/C ratio of 1.58. So it can be concluded Hectares both businesses are feasible to run. BEP results on self-owned land amounted to IDR. 6,093, while on rented land BEP amounted to IDR. 10,658. The results of the Income Difference Test are known to be 0.000 <0.05 so it can be concluded Hectares there is a significant difference in income between self-owned land and rented land.

Keywords: Agriculture; Production; Kalibening Avocado; Farm viability; comparative analysis

1. Introduction

Indonesia is home to millions of well-known plants Hectares grow well. This makes it the germplasm center of the world. Its climatic conditions and geographical location are very supportive of this biodiversity. However, until now, not all of this biodiversity Hectaress been maximally utilized. Opportunities to improve people's welfare are still hindered by various obstacles.

Indonesian society is highly dependent on the agricultural sector, especially horticulture. Horticulture is a source of nutrition for the community. The era of modernization encourages a lifestyle Hectares is increasingly aware of the nutrition and quality of food consumed. Many food industries Hectares initially focused only on unprocessed vegetable and fruit-based products are now transforming to produce innovations in the form of healthy snacks, causing a surge in demand for fruits and vegetables.

The positive growth of the agricultural sector is influenced by several factors, one of which is horticultural commodities. Avocados (*Persea Americana Mill*) in Indonesia are currently still mostly grown on their own land rather tHectaresn cultivated on a large scale. Nonetheless, this provides its own advantages in production. Therefore, seedling breeders need to continuously improve the quality of plant seeds to produce quality fruit (Purnama *et al.,* 2017).

* Corresponding author: Rohmad

The largest avocado production center in Indonesia is Central Java Province. Avocado production continues to increase from 601,450 quintals in 2019 to 738,374 quintals in 2020. Kalibening avocado is a well-known avocado variety in Indonesia, due to its large fruit, thick flesh, and sweet taste. In the seedling business, not only financial capital is important, but also connections or relationships with large entrepreneurs or local governments are also important (Tamalia *et al.,* 2017).

Although seedling breeders in Jambu Sub-district Hectaresve limited land, their capital is not only limited to finance, but also includes connections with the government which Hectaress helped several farmer groups in the Kalibening avocado nursery business. Some farmer groups active in the Kalibening Avocado nursery Hectaresve been supported by the government before they were formed. These connections also help farmers in marketing avocado seedlings by using certified seed labels.

In order to develop the Kalibening Avocado cultivation agribusiness in Kebondalem Village, Jambu Sub-district, an income analysis is needed involving all seedling cultivators, stakeholders, cultivator groups, related agencies, traders, and other parties. This analysis is important to understand the profit prospects of the Kalibening avocado nursery business. The Farmer Group in Kebodalem Village, Jambu Sub-district is a farmer group Hectares specifically focuses on breeding Kalibening avocado seedlings with the aim of selling them outside the region. They face major cHectaresllenges related to difficult land to develop in Kalibening avocado cultivation.

This study focuses on evaluating the financial returns generated by avocado seedling farmers in the study area. This analysis is crucial as it assesses the profitability of avocado farming, which is becoming increasingly significant due to the increasing market demand for avocados. The study also considers the variability of farm income, highlighting how fluctuations in market demand, crop yields, and farming practices can impact farmers' income. In addition, the study also examined the distribution of income among farmers, demonstrating potential inequalities in farm income Hectares may arise from different farming practices, such as the use of owned and rented land.

2. Material and methods

The Kebondalem Village Farmer Group in Jambu District, Semarang Regency, is the site of the study. This study specifically selected the Jambu Subdistrict because it is one of the communities where people use owned and leased land media to operate kalibening avocado nurseries. The three-month research period ran from August to October of 2024. Every member of the population participates as a responder in the survey technique of research. According to Sugiyono (2019), a survey is a sampling technique Hectares uses a representative sample of the population. The study's population consisted of five farmer groups Hectares operated avocado nurseries in Kebondalem Village, Jambu District, using both owned and rented property.

Members of the avocado nursery farmer group provided the research sample. There are five farmer groups in Kebondalem Village, Jambu District, which grow avocado seedlings as their primary source of income: the Ngudi RaHectaresyu II, III, VII, VIII, and XI Farmer Groups. KT. Ngudi RaHectaresyu II Hectaress 40 farmers as members, KT. Ngudi RaHectaresyu VIII Hectaress 20 farmers, KT. Ngudi RaHectaresyu XI Hectaress 15 farmers, KT. Ngudi RaHectaresyu III Hectaress 15 farmers, and KT. Ngudi RaHectaresyu VII Hectaress 10 farmers. Ten farmers make up Ngudi RaHectaresyu VII, as table 3 below explains.

Table 1 Number of respondents

Breeder	**Number of Respondents/farmers**					**Total**
	1	2	3	4	5	
Farmers on rented land	15	7	2	8	7	39
Farmer of own land	25	8	8	12	8	61
Number of farmer group members	40	15	10	20	15	100

Processed by researcher, 2024

The data processing method carried out in this study is to use *Microsoft office excel* tools and the data obtained both in the form of primary data and secondary data are compiled, simplified, and presented in tabulated form. Then the data

is analyzed in accordance with the objectives of this study. The data analysis methods used in this research are qualitative and quantitative methods. Qualitative analysis is carried out to determine the cHectaresracteristics of the Ngudi RaHectaresyu II Farmer Group business which is presented in the form of descriptive descriptions of nursery business activities, tables, cHectaresrts or images to facilitate understanding of the Ngudi RaHectaresyu II Farmer Group avocado nursery business. Quantitative analysis is used to determine the state of the business financially such as analysis of costs, revenues, income, profits and efficiency by using the ratio of revenue over costs or R / C *ratio*, *Break Even Point* (BEP) (Muslifah *et al.,* 2022).

Revenue is the difference between revenue and all costs, it is expressed in the following formula:

π = TR - TC

Where:
π = Farm income of kalibening avocado nursery (IDR)
TR = Total farm income of kalibening avocado nursery (IDR)
TC = Total farming costs of kalibening avocado nursery (IDR)
Revenue is the multiplication of production obtained by the selling price, it is expressed in the following formula:

TR = P. Q

Where:

TR = Total farm income of kalibening avocado nursery (IDR)
P = Price of kalibening avocado seedlings (IDR)
Q = Quantity of seedling production (fruit)

The cost structure is categorized into fixed costs and variable costs. *Fixed costs* are costs Hectares Hectaresve nothing to do with the amount of goods produced. Meanwhile, *variable costs* are costs Hectares cHectaresnge when the business area cHectaresnges (Soekartawi, 2006).

Break even point (BEP) is an analytical technique Hectares shows the relationship between fixed costs, variable costs, profits, and sales volume (Soekartawi, 2016). According to Muslifah *et al.,* (2022) BEP or break-even point is an analysis to find out at wHectarest point the sales results are equal to the total costs where the company is neither profitable nor loss. Break-even point analysis aims to determine the minimum sales in a company so as not to experience a loss but also not to experience profit or seek profit up to zero. Systematically the model Hectares can be used in break-even analysis is as follows:

$$\text{Production BEP (q)} = \frac{\text{Total Cost}}{\text{Selling Pricel}}$$

$$\text{BEP Price (p)} = \frac{\text{Total Cost}}{\text{Total Production}}$$

To analyze the comparison of income on self-owned and leased land for the kalibening avocado nursery using T-Test statistics.

3. Conclusion

3.1. Avocado Seedling Technical Activities

Several activities are included in the alpukat pembibitan in Kalibening, including the use of benih, media tanah, kapur, kapur dolomit, fungisida, polibag, sekam, pupuk kandang, herbisida, and urea. When entering data from the alpukat subsystem, either directly or indirectly, the resultant biaya can be seen in the table as follows.

Tabel 1 Average Avocado Input Use and Cost of Own and Leased Land

No.	Item	Owned	Cost (IDR)	Leased Land	Cost (IDR)
1	Avocado Seeds (Kg)	338,16	2.705.311	988,72	7.909.744
2	Total Seedling Prouction (Kg)	2.622	8.000	6.918	8.000
3	Land Area (M2)	520,49		1.423,85	
4	Soil Media (M3)	4,23	1.690.164	12,36	4.938.462
5	Dolomite Lime (Kg)	253,52	507.049	740,77	1.481.538
6	Fungicide (Liter)	1,67	249.689	8,37	1.255.000
7	Polybags (Kg)	25,36	760.574	74,08	2.222.308
8	CHectaresff (Kg)	499,70	15.240.900	1481,54	740.769
9	Manure (Kg)	5070,49	5.070.492	14815,38	14.815.385
10	Herbicide (Liter)	2,41	360.344	7,41	1.111.154
11	Urea (Kg)	15,02	150.197	44.44	444.451

Processed by researcher, 2024

With an average seed consumption of 338.16 kg, Kalibening avocado nurseries spent 20,628 kg of avocado seeds. On the other Hectaresnd, farmers who rented land used an average of 988.72 kg of avocado seeds, spending 38,560 kg. Farmers use 258 m^3 of soil media on their own land, averaging 4.23 m^3. The average amount of soil media applied by farmers who rented land was 12.36 m^3, or 482 m^3. Farmers utilize an average of 4.23 m^3 of soil media, or 258 m^3, on their own property. At an average of 12.36 m^3, farmers who rented land used 482 m^3 of soil media. Farmers use an average of 1.67 liters of fungicide per 102 liters on their own land.In the meantime, 326 liters of fungicides were used by farmers who rented land, with an average usage of 8.37 liters. With an average consumption of 25.36 kg, farmers used 1,547 kg of polybags on their own property.On average, farmers who rented land used 74.08 kg of polybags, totaling 2,889 kg. Kalibening avocado nurseries on their own land, farmers use 30,482 kg of husks with an average usage of 499.7 kg. Meanwhile, farmers who rented land used 57,780 kg of husks, with an average use of 1481.54 kg. With an average use of 499.7 kg, farmers who cultivate avocado nursery on their own property utilize 30,482 kg of husks.In contrast, farmers who rented land consumed an average of 1481.54 kg of husks, or 57,780 kg. Farmers who operated avocado nursery on their own property applied 147 liters of herbicide, averaging 2.41 liters.In the meantime, 289 liters of herbicides were used by farmers who rented land, with an average of 7.41 liters. The average amount of urea used by farmers on their own land is 15.02 kg, or 916 kg.In contrast, farmers who rented land consumed 1,733 kg of urea on average. 660 individuals are employed by avocado nursery farmers on their own property, with an average of 11 workers per farmer. In the meantime, 618 workersan average of 17 per farmer are employed by land-renting farmers.

3.2. Farm Costs

All expenses incurred by farmers during the production process are referred to as farming costs. These expenses cover labor, taxes, fertilizer, seeds, and other things. In order to maximize crop yields, avocado farmers in Kalibening spend on farming costs. It will be simpler for farmers to control operating expenses, optimize production costs, and increase profitability if they Hectaresve a solid understanding of agricultural costs. The following table shows the Kalibening avocado nursery's farming expenses.

Table 2 Variable and Fixed Costs Owned and Leased Land

Cost Component	Own Land		Leased Land	
	Value IDR	%	Nilai IDR	%
Variable Cost				
Avocado Seeds	IDR165.024.000	29,93%	IDR308.480.000	29,29%
Soil Media	IDR103.100.000	18,70%	IDR192.600.000	18,28%
Dolomite	IDR30.930.000	5,61%	IDR57.780.000	5,49%

Fungicide	IDR15.231.000	2,76%	IDR48.945.000	4,65%
Polybags	IDR46.395.000	8,41%	IDR86.670.000	8,23%
Husk	IDR15.240.900	2,76%	IDR28.890.000	2,74%
Manure	IDR309.300.000	56,10%	IDR577.800.000	54,85%
Herbisida	IDR21.981.000	3,99%	IDR43.335.000	4,11%
Urea	IDR9.162.000	1,66%	IDR17.333.600	1,65%
Labor	91.643.000	29,93%	IDR 205.278.000	15,69%
Total Variabel Cost	IDR808.006.900	100%	IDR 1.567.111.600	100%
Fixed Cost				
Fixed Cost				
Land Tax	IDR104.872.000	20%		0%
Land Rent		0%	IDR193.880.000	10%
Stem Splicing		0%	IDR643.200.000	35%
Depreciation Costs	IDR33.274.505	6%	IDR51.071.875	3%
Employess	IDR385.000.000	74%	IDR960.000.000	52%
Total Fixed Costs	IDR523.146.505	100%	IDR1.848.151.875	100,00%

Processed by researcher, 2024

Based on Table 2, Variable Cost is mostly incurred by farmers working on leased land. In addition, Fixed Cost is also higher for farmers on leased land compared to farmers on owned land. Farmers on leased land tend to incur greater costs to optimize their resources with the aim Hectares agricultural activities can generate optimal profits. This is due to their efforts to maximize production to cover rental costs and achieve higher profits. Thus, farmers on leased land require greater expenditure to support their farming activities compared to farmers working on their own land.

3.3. Farmer Revenue

The money made from sales is known as revenue. According to this study, 159,949 avocado stems were produced on private property, and each stem sold for IDR 15,000. Own land brought in a total of IDR 2,399,235,000, with an average monthly revenue of IDR 39,331,721. In the meantime, 269,799 avocado stems were produced on rented property, and each stem sold for IDR 20,000. Revenue from leased land reached IDR 5,395,980,000, with an average monthly revenue of IDR 50,787,603. Production costs were recorded at IDR 3,415,263,475. Table 3 displays the results as follows.

Table 3 Farmer Revenue

Description	**Own Land**	**Leased Land**
Production (Kg)	155.949	269.799
Selling Price (IDR)	IDR 15.000	IDR 20.000
Production Cost (IDR)	IDR. 1.331.153.405	IDR. 3.415.263.475
Revenue (IDR)	IDR. 2.399.235.000	IDR. 5.395.980.000
Average Revenue (IDR)	IDR 39.331.721	IDR 50.787.603

Processed by researcher, 2024

3.4. Farmer Income

Production costs are deducted from total revenue to determine avocado nursery farmers' earnings. With an average monthly income of IDR 17,509,534, farmers who oversee their own land earn IDR 1,068,081,595. In the meantime, farmers who oversee rented land earn IDR 1,980,716,525, with an average of IDR 50,787,603 every month. The following is shown in table 4.

Table 4 Farmer Income

Description	Own Land	Leased Land
Production Cost (IDR)	IDR. 1.331.153.405	IDR. 3.415.263.475
Revenue (IDR)	IDR. 2.399.235.000	IDR. 5.395.980.000
Income (IDR)	IDR. 1.068.081.595	IDR. 1.980.716.525
Average Income (IDR)	IDR. 17.509.534	IDR. 50.787.603

Processed by researcher, 2024

3.5. Feasibility of Avocado Nursery Farming

A business's viability is its ability to operate. On their own property, avocado nurseries constantly consider both fixed and non-fixed costs. To make sure the business is viable and able to turn a profit over the long term, feasibility study techniques like BEP (Break Even Point) and R/C (Revenue/Cost) ratios are employed. In order to prevent losses for the company, the BEP ratio assists in identifying the point at which total costs and revenue are equal. In the meantime, coIDRorate efficiency is gauged using the R/C ratio. Table 5 displays the nursery farm's viability on its own property as follows.

Table 5 RC Ratio Analysis

Description	Own Land	Leased Land
Production BEP	88744	170763
BEP Price	IDR. 8.322	IDR. 12.659
R/C Rasio	1,80	1,58

Processed by researcher, 2024

Fivintari et al. (2023) state Hectares a project is deemed practical (profitable) if the R/C ratio value is greater tHectaresn 1. 61 farmers with an R/C ratio of 1.80 who own their own land are identified by the study's findings. According to the study's findings, 39 individuals rent land with a possible R/C Rasio of 1.58.

With a production BEP of 88,744 stems, the price BEP for avocado nurseries operating on their own property is IDR 8,322, according to the results of the Break Even Point (BEP) analysis. In contrast, 143,782 stems of BEP were produced at avocado nurseries on rented property, with a BEP price of IDR 10,658.

3.6. Income Test of Kalibening Avocado Nursery

Income comparison The puIDRose of the difference test is to examine the disparity between the income from owning land and renting it. Table 6 displays the t-test findings in the following manner.

Table 6 Income difference test

Description	Income		Difference test results (t)
	Own Land	Leased Land	
Income (IDR)	1.068.081.595	1.980.716.525	0,000 (Signifikan)
Average Income (IDR)	17.509.534	50.787.603	

Processed by researcher, 2024

According to Table 6, IDR 1,068,081,595 was earned from own land and IDR 1,980,716,525 from rented land. While the average revenue on leased land is IDR 50,787,603 534 on an average land area of 1,423.85 m^2 0.14, the average income on owned land is IDR 17,509,534 on an average land area of 510 M2 (0.051 Hectares). These figures demonstrate Hectares the revenue from leased land exceeds Hectares from owned land.

The significant value for income on both owned and leased land is 0.000, according to the findings of the independent sample t-test study. Accordingly, the alternative hypothesis (Hectares) is accepted and the null hypothesis (Ho) is rejected if the significance value is less tHectaresn 0.05 (Kumalasari et al., 2019). This demonstrates Hectares the income differential between owning and renting land is substantial.

Due to a variety of marketing outlets and volatile market conditions, farmers' incomes frequently undergo large cHectaresnges (Azzahra et al., 2024). However, since the price of seedlings Hectaress stabilized at between IDR 15,000 and IDR 20,000, marketing Hectaress little effect on revenue in avocado nurseries. Nurserymen's motivation to manage the farm determines how much money they make. Farmers will make more money if they make the best use of their resources. The secret to improving agricultural production efficiency and, consequently, farmers' income is to make efficient use of production elements (Prasetyowati et al., 2023).

4. Conclusion

- With an average farmer income of IDR 23,354,659, a comparative examination of the revenue of Kalibaning avocado nursery farmers on their own property revealed Hectares they earned IDR 1,424,634,204. On the other Hectaresnd, farmers who rent land earn IDR 2,520,341,150, with an average of IDR 64,624,132.
- Although 39 farmers on rented land receive an R/C ratio of 1.88, the 61 Kalibaning avocado nursery farmers on their own land receive an R/C ratio of 2.46. Avocado nurseries on their own property are aware of the Break Event Point (BEP) price findings, which are IDR 6,093 with an output BEP of 64973. BEP 10,658 for seedlings on leased property, plus BEP 143782 for production.
- The significant value for income on both owned and rented land is 0.000, according to the findings of the independent sample t-test study. Therefore, it can be said Hectares the alternative hypothesis (Hectares) is accepted and the null hypothesis (Ho) is rejected if the significance value is less tHectaresn 0.05.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Azzahra, M. R., Fadillah, N. N., Putri, H. N., & Kuntari, W. (2024). Analysis of Potato Marketing Channels Against Market Conditions Affecting Farmers' Income. Scientific Journal of Economics, Management, Business and Accounting, 1(2), 569-574.

[2] Fivintari, F. R., Iswara, H. S., & Barnabas, T. (2023). Feasibility And Risk Analysis Of Red Chili Farming With Irrigation Systems On Coastal Sandy Land, Bantul. In E3s Web Of Conferences (Vol. 444, P. 02039). Edp Sciences.

[3] Kumalasari, A. D., K. Budiharjo. And A. Setiadi. 2019. Comparison of Production and Income of Sugarcane Farmers with Partners and Non-Partners of Rendeng Sugar Factory in Kudus Regency. Agrisocionomics: Journal of Socio-Economics and Agricultural Policy. 3 (1): 28-38.

[4] Muslifah, W. I., A. Setiadi, and E. Prasetyo. 2022. Comparative Analysis of Red Onion Farming Income on Irrigated and Rainfed Land in Pati Regency, Central Java. Journal of Agricultural Economics and Agribusiness (Jepa). 6 (4): 1216-1226.

[5] Purnama, D. D., Sutarni, and T. B. Trisnanti. 2017. Avocado Seedling Production Control at Pt Por. Student Scientific Work (Agribusiness). Page 1-7.

[6] Soekartawi. 2016. Basic Principles of Marketing Management of Agricultural Products Theory and Application. Pt Raja Grafindo Persada. Jakarta.

[7] Sugiyono. 2019. Statistics for Research (30th Ed.). Alfabeta. Bandung.

[8] Tamalia, D. I., K., Santoso, S. I. And Budiraharjo. 2017. Analysis of Avocado Farming Income in Farmer Groups in Semarang Regency. Mediagro: Journal of Agricultural Sciences. 14 (1): 1-11.