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Analysis of the Feasibility of Eco-enzyme Liquid Organic Fertilizer (POC) Business in Sumber Jaya Farmer Group, Puring District, Kebumen Regency

Nurlaila Fatmawati [1*], ***Heri Setyawan***[2], ***Wandha Atmaka Aji***[2]

[1]Department of Agrotechnology, Faculty of Agriculture and animal husbandry, Ma'arif Nahdlatul Ulama University, Kebumen, Indonesia
[2]Akademi Komunitas Perkebunan Yogyakarta, Indonesia
*Corresponding author: fatmawati.nurlaila95@gmail.com

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ABSTRACT

This research was carried out in Sidobunder Village, Puring District, Kebumen Regency. This research was carried out from December 2023 to January 2024. This study aims to analyze the income and feasibility of the eco-enzyme liquid organic fertilizer business in the Sumber Jaya Farmers Group, Puring District, Kebumen Regency from a financial perspective through the calculation of Break Even Point (BEP), Benefit Cost Ratio (BCR) and Revenue Cost Ratio (R/C). The method used is a survey through observation and direct interviews. The determination of farmers as research respondents was by Purposive Sampling, respondents were taken from 30 farmer members in the Sumber Jaya Farmers Group. This location was chosen because this village is one of the production places for eco-enzyme liquid fertilizers and has the potential for the development of eco-enzyme liquid fertilizers. The data was analyzed using an income analysis model and a financial feasibility analysis. Then the data is tabulated and processed mathematically, through addition, and the averages and percentages are then descriptively described. The results of this study show that the income/year in the Sumber Jaya Farmers Group, Puring District, Kebumen Regency is Rp. 14,447,834 or income/month is Rp. 1,203,986. Based on the feasibility of the eco-enzyme liquid organic fertilizer business in Sumber Jaya Farmers Group, Puring District, Kebumen Regency, it is feasible to be developed financially because of the BEP value of 14,400 bottles with a minimum of 142 bottles. BEP is priced at IDR 10,000 with a minimum price of IDR 8,997/bottle, and an R/C value of 1.11 means that the R/C value is feasible.

Keywords: *Eco-enzyme,* financial worthiness, liquid organic fertilizer, revenue

INTRODUCTION

Pouring District is one of the sub-districts in Kebumen Regency. The Purring District area is located at an altitude between 0 meters to 17 meters above sea level. The entire area is plain. Meanwhile, the area of Puring District is 82.7 Km2 or 5,739 ha consisting of 2471 ha of rice fields and 3716 ha of non-rice fields of the sub-district area [1]. The problem faced in vegetable cultivation is the large amount of crop residues in the form of leaves and stems of plants that are not used, [2] The waste from the remaining harvest by most farmers is left to rot on the land while waiting for the next land to be processed. The waste from the vegetable harvest can still be used as raw materials in the

manufacture of Liquid Organic Fertilizer. [3] ; [4]

Nitrogen as a good protein-building material for plants is an advantage of using liquid organic fertilizers, [5]. Liquid organic fertilizers are considered environmentally friendly and have a low risk of contamination. The use of organic fertilizers can also be an alternative to meeting plant nutrient needs. The manufacture of liquid organic fertilizer can come from raw materials that are available and easy to obtain, one of which comes from household waste. The abundance of raw materials for making liquid fertilizer is considered to be able to reduce the volume of household waste through organic waste management programs such as Ecoenzim. [6]

Ecoenzymes are liquid extracts produced from the fermentation of leftover vegetables and fruits with a brown sugar substrate. The principle of the Eco-enzyme manufacturing process itself is similar to the process of making compost, but with the addition of water as a growth medium, the final product obtained in the form of liquid is preferred because it is easier to use, [7].

The Ecoenzyme products produced can be sold and become another source of income for the surrounding community,[8];[9]. Based on this, it can provide community independence, [10] and make the level of welfare of the local community better, [11]; [5].

MATERIALS AND METHODS

This research was carried out in Sidobunder Village, Puring District, Kebumen Regency. This research was carried out from December 2023 to January 2024. This research was conducted by a survey method through observation and direct interviews. The recruitment of farmers as research respondents was by Purposive Sampling, respondents were taken by 30 farmer members in the Sumber Jaya Farmers Group. This location was chosen because this village is one of the production places for eco-enzyme liquid fertilizers and has the potential for the development of eco-enzyme liquid fertilizers.

The data was analyzed using an income analysis model and financial feasibility analysis through BEP, BCR, and R/C calculations. Then the data is tabulated and processed mathematically, through summation, mean, and percentages then descriptively described.

Income.

To calculate income from cattle farming activities, it can be calculated with the formula

$$\Pi = TR - TC$$

Where :

π = Operating Income

TR = Total Revenue

TC = Total Cost

Break Even Point

Break Even Point or BEP is an analysis to determine and find the amount of goods or services that must be sold to consumers at a certain price to cover the costs incurred and get profits. Here's the formula to calculate BEP [12]:

$$BEP\ unit = \frac{\text{FC}}{\text{Py} - \text{AVC}}$$

Information :

FC = Fixed fees

AVC = Variable cost per unit

Py = Production price

The business criteria are said to be feasible if the production > the BEP production

$$BEP\ \text{Price} = \frac{\text{C}}{\text{Y}}$$

Information :

C = Total cost

Y = Total Production

The business criteria are said to be feasible if the price > BEP price

Revenue Cost Ratio **(R/C)**

Revenue Cost Ratio is the ratio between total revenue and total costs of a business activity. An investment or business activity can be said to be feasible if the R/C is greater than one and is said to be unfeasible if the R/C is less than one.

$$R/C = \frac{\text{Total Sales Revenue}}{\text{Total production cost}}$$

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RESULTS AND DISCUSSION

Acceptance

In Sumber Jaya Farmer Group, Puring District, Kebumen Regency, the average production process of eco-enzyme Organic Liquid Fertilizer (POC) per year can be seen in Table

Table 1. Profit and Loss Report of Sumber Jaya Farmer Group, Puring District, Kebumen Regency

No	Description	Sum (Rp)
1	Acceptance	
	Liquid Organic Fertilizer (Eco-enzyme)	144.000.000
	Total Admissions	144.000.000
2	Fixed Fees	
	Equipment shrinkage	144.167
	Total Fixed Costs	144.167
3	Variable Costs	
	Sticker	16.800.000
	Bottle	14.112.000
	Gula jawa	32.256.000
	Gula aren	36.960.000
	Vegetable waste	10.080.000
	Fruit waste	10.080.000
	Water	6.720.000
	Labor Wages	2.400.000
	Total Variable Costs	129.408.000
	Revenue/year	14.447.834
	Revenue/month	1.203.986

Description: The average number followed by the same letter in the same row or column shows no real difference based on the DMRT test at the real level of 5%.

Receipts from business results are everything that is produced from a farming product. The larger the product produced, the greater the revenue we get. The business revenue of Liquid Organic Fertilizer (POC) eco-enzyme Sumber Jaya Farmers Group, Puring District, Kebumen Regency is Rp. 144,000,000 which comes from the sale of 14,400 bottles/year at a price bottle of Rp. 10,000.

Fixed Fees

Fixed costs are costs that come from fixed inputs, namely costs whose amount does not depend on the output produced,[13];[14] The eco-enzyme Liquid Organic Fertilizer business requires equipment depreciation costs, which is Rp. 144.167.

Variable Costs

Variable Cost is a production cost that includes all the costs incurred by each company to obtain the production factors and raw materials that will be used to make the products that will be produced by the company (Philip, 1997.) Variable Costs in the eco-enzyme Liquid Organic Fertilizer business consist of stickers, bottles, java sugar, palm sugar, vegetable waste, fruit waste, water, and wages. The amount of variable costs incurred is Rp. 129.408.000.

Income

Farming net income is the difference between the gross income of farming and the total expenditure of farming (Soekartawi, 1987), [15]; [16]. In the Liquid Organic Fertilizer business eco-enzyme, this revenue is obtained by Rp. 14.447.834, Income/month of Rp. 1.203.986.

Break Even Point (BEP) Unit

BEP is a reflection of the production conditions that must be achieved to break even. If the amount of product sales in a certain period is equal to the amount of expenses incurred,[17] the project is considered to break even, meaning not only does not experience losses but also does not make a profit, [18]

$$BEP\ unit = \frac{\text{FC}}{\text{Py} - \text{AVC}}$$

$$BEP\ unit = \frac{144.167}{10.000 - 8987}$$

$$BEP\ unit = 142 \text{ botle}$$

Based on the analysis of the BEP calculation of the unit, it is known that the break-even point for the Eco-enzyme Liquid Organic Fertilizer business on the sale of 142 bottles to get a balanced condition between costs and profits. Production of eco-enzyme Liquid Organic Fertilizer for one year is 14,400. This means that the total units > BEP production so that the Eco-enzyme Liquid Organic Fertilizer business of the Sumber Jaya Farmers Group, Puring District, Kebumen Regency is feasible to be developed

Break-Even Point (BEP) Price

$$BEP\ price = \frac{\text{C}}{\text{Y}}$$

$$BEP\ price = \frac{129.552.167}{14.400}$$

$$BEP\ price = 8997$$

Based on the analysis of BEP price calculations, it is known that the break-even point for the Eco-enzyme Liquid Organic Fertilizer business at sales is Rp 8,997/bottle to get a balanced condition between costs and profits. The price of eco-enzyme Liquid Organic Fertilizer is IDR 10,000. This means that the price of the product > BEP so that the business of the Sumber Jaya Farmers Group Eco-enzyme Liquid Organic Fertilizer is feasible to be developed, [19]; [20].

Return Ratio (R/C)

R/C ratio is the amount of value that shows the comparison between Business Revenue (Revenue = R) and Total Costs (Cost = C)

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

$$R/C = \frac{144.000.000}{129.552.167}$$

$$R/C = 1{,}11$$

Based on the results of the R/C analysis, the Eco-enzyme Liquid Organic Fertilizer business of the Sumber Jaya Farmers Group, Puring District, Kebumen Regency which is run has a decent ratio to the value of R/C >.

The production process is as follows:

SWOT Analysis

It is an analysis of the internal environment of the business to find strengths and weaknesses (weakness-W) efforts and external analysis to identify opportunities (Opportunity-O) and threats (Threat-T) after compiling EFAS (External Strategic Factors Analysis Summary) and IFAS (Internal Strategic Factors Analysis Summary) to find some strategies Appropriate development.

	STRENGTHS	WEAKNESSES
OPPORTUNITIES	STRATEGI-SO Create strategies that use power to capitalize on opportunities	STRATEGI-WO Create strategies that minimize weaknesses and capitalize on opportunities
THREATS	STRATEGI-ST Create a strategy that uses force to address threats	STRATEGI-WT Develop strategies that minimize weaknesses and avoid threats

CONCLUSION

The results of the research on the Eco-enzyme Liquid Organic Fertilizer business of the Sumber Jaya Farmers Group, Puring District, Kebumen Regency amounted to 14,447,834 or income/month of Rp. 1,203,986. Based on the feasibility of the eco-enzyme liquid organic fertilizer business in the Sumber Jaya Farmers Group, Puring District, Kebumen Regency, it is feasible to be developed financially because the BEP value of 14,400 bottles with a minimum unit of 142 bottles. BEP is priced at IDR 10,000 with a minimum price of IDR 8,997/bottle, and an R/C value of 1.11 means that the R/C value is feasible.

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