

**PROFIT PLANNING WITH BREAK EVEN POINT (BEP) METHOD
(Case Study on Mr. Kantak's Oyster Mushroom Planting Media Making)**

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Abstract

The cultivation of oyster mushrooms belongs to Mr. Kantak is located on Jalan Sulawesi, Klampok Village, Sananwetan District, Blitar City. This business produces baglogs of white oyster mushroom growing media and sells its own mushrooms. The researcher focused on the cost of making baglog only. The purpose of the study was to find out (1) How big is the Break Even Point (BEP) as a Profit Planning Tool in the Making of Mr. Oyster Mushroom Planting Media Kantak (2) How much is the amount of margin of safety in business Making Oyster Mushroom growing media owned by Mr. Kantak (3) How big is the planning of profits obtained in the business of making an oyster mushroom growing media mr. Kantak. Through the calculation of the break-even point in the cultivation of oyster mushrooms can be easily used to calculate the sales volume, where the calculation can be used as a calculation tool to determine the desired profit. In this study using quantitative methods. The data used in this study are primary data and secondary data. From the results of interviews and observations made, researchers obtained the data needed to complete the data needed. Secondary data obtained in the form of organizational structure, history and business profile. The results of this study indicate that the sale of baglog sales is a minimum of 1,564 units with a break-even price for making baglog 4000 of Rp. 2,268 and in the making of baglogs which suffered 12% damage received a price of Rp. 2,200. In calculating the break-even point of making 4000 planting media obtained a safety point of 61%. So that the profit planning obtained in making 4000 planting media is Rp. 4,304,062 and in the case of the deduction of 12% damage received a profit plan of Rp. 4,488,566.

Keywords: Break Even Point, Margin Of Safety, Profit Planning

1. INTRODUCTION

In Indonesia, there are various types of mushrooms, such as mushrooms, shitake mushrooms, merang mushrooms, and oyster mushrooms. Mushrooms can be used for various purposes, for example, consumed as food ingredients or other ingredients. Since ancient times mushrooms have been used by ancestors, but in cultivation there are still very few of all types and numbers. So that with an adequate climate, the potential for mushroom cultivation business is increasing, and the materials needed when producing mushrooms are easily obtained, for example sawdust can be used as the main raw material that can be used

as a fungal growth medium, where fungi can grow in various plants containing cellulose [1].

Oyster mushrooms are a type of mushroom that is widely cultivated and oyster mushrooms also have a relatively high protein content compared to other mushrooms and lower fat content, so consuming oyster mushrooms is perfect for health. This can be seen in the table below.

Nutritional Value of Several Types of Mushrooms and Vegetables

No	Nutrient content	Jenis sayuran					
		Mushroom	Shitake mushrooms	Straw mushroom	Oyster mushroom	Beansprouts	Spinach
1.	Protein	7,7	17,7	16,0	30,4	9,0	3,5
2.	Fat	0,8	8,0	0,9	2,2	2,6	0,5
3.	Carbohydrate	87,6	67,5	64,5	57,6	6,4	6,5
4.	Fiber	14,6	8,0	4,0	8,7	-	-
5.	Vitamin C	-	-	0	0	-	80,6
6.	Calories	347	345	274	345	67	36
7.	Calcium	287	98	51	33	-	257

Source: Ministry of Agriculture 1982 in Manullang [2]

Description: (-) There is no data

By doing mushroom cultivation, the community can add to their income, so that it can be said to be an economic tool of the community itself. Because the current economy is experiencing ups and downs, where purchasing power and raw materials are changing. So that a manager must be able to compete and try to maximize the achievement of profits in accordance with previously agreed desires. In other words, a

manager must make a good plan. Good planning is done to determine the maximum profit, with a mature plan can take into account a risk that is influential in a production activity, product selling prices, and costs associated with the activities of the company itself [3]. So that a manager must be able to provide alternatives that can benefit his company [4]. The existence of good planning and supervision will make a job can be done effectively and efficiently. In order to support good management and create a job that can be said to be effective and efficient, the company requires an analytical technique that can be used as a tool to learn and know the relationship between costs, volume and profits in a sales and profit plan in the form of a Break analysis Even Point (BEP). Although Break Event Point (BEP) cannot replace a detailed capital budgeting analysis, this analysis is widely used in an analysis of feasibility studies [5]. Break Even Point (BEP) or break-even point itself can be interpreted as a situation where in a company operation, the company does not experience a loss and also does not experience a profit or can be claimed as (Income = total cost) "[6]. Break Even Point Analysis (BEP) is used as a tool to find out a relationship between production volume, sales volume, selling price, production costs and fixed and variable costs and profit and loss [7].

All cultivation or business always wants to develop their business to be better and become successful, as well as what is expected by the cultivation of oyster mushrooms mr. Kantak. This cultivation is an oyster mushroom cultivation located on Jl. Sulawesi, Klampok Village, Sananwetan District, Blitar City. Optimal profit planning requires a mature plan to achieve a desired profit. So that the researcher takes the title of the thesis "Break Even Point Analysis (BEP) As A Tool To Determine Profit Planning In Baglog Sales (A Case Study Of The Making Of Mr. Kantak's Oyster Mushroom Planting Media)". So the formulation of the problem in this study is how much analysis of Break Even Point as a profit planning

tool and how much margin of safety in the business of the oyster mushroom growing media in the Break even point formula can be used as the basis for pricing and the amount of manufacture where the cultivation does not increase (profit) and decrease (loss). And the margin of safety is used as a tool to determine safety limits. And how much planning the profits obtained in the cultivation business.

2. RESEARCH METHODS

This research was conducted on the cultivation of making oyster mushroom growing media having its address at Jalan Sulawesi, Klampok Village, Sananwetan District, Blitar City. The type of research used in this study is quantitative research. The object used in this study is break even point analysis as a tool for determining profit planning. In this study the research subjects were the cultivation of oyster mushrooms.

Based on the type of data, this study uses (1) primary data, where data is obtained through interviews with the owners of research sites, (2) secondary data, available data collected by other parties so that the authors only use available data and in accordance with desired needs, where this data is obtained through the form of documents, archives, journals, and websites.

Data collection techniques used in this study are: (1) Observation is a way of collecting data through recording behavior (subject), objects (objects) or a systematic event without the existence of a question with the individuals studied, (2) Documentation usually conducted to collect secondary data from various sources, both personally and institutionally, (3) Interviews were conducted by researchers to obtain the required data from the subject. This collection technique is done by asking questions with the parties who know the overall data so that they can help the author in completing the required data (4) The literature study technique is done to obtain data by reading and studying books, journals, papers, scientific

works , and others in order to obtain information related to the theory, BEP concept and sales volume, profits related to the problems in the study.

The Analysis Method The data used in this study are (1) To calculate the amount of revenue in a Break Even Point (BEP) condition on cultivation or MSME making mushroom growing media (Baglog) the following formula is used:

Calculation of Break Even Point (BEP) on the basis of rupiah

$$BEP = \frac{FC}{1 - \frac{VC}{S}}$$

Where :

FC : *Fixed Cost (Biaya Tetap)*

VC : *Variabel Cost (Biaya Variabel)*

S : Sales Volume

BEP : *Break Event Point (Titik Impas)*

a. Break Even Point (BEP) calculation on the basis of the unit

$$BEP = \frac{FC}{P - VC}$$

Where :

BEP : Break Event Point (*Titik Impas*)

P : Price

VC : Variable Cost Per Unit

To find out a cultivation in a state of margin of safety (safe limit) where the company may suffer a decline but a company does not suffer a loss

$$MOS = \frac{\text{Planned Sales} - \text{BEP Sales}}{\text{Planned Sales}} \times 100\%$$

Dimana :

MOS : *Margin Of Safety (Batas Aman)*

P : Sales

BEP : *Break Event Point (Titik Impas)*

To find out a cultivation or MSME produces a desired profit or profit and in accordance with available resources, it is necessary to do calculations.

Profit Planning

$$1. TR = P \cdot Q$$

$$2. CM = TR - VC$$

$$3. CMR = \frac{CM}{TR}$$

$$4. \text{Sales Targets} = \frac{FC + \text{profit goal}}{CMR}$$

$$5. \text{Profit Planning} = TP - TC$$

TR = Total Revenue

P	= Sales
Q	= Price
CM	= Contribusi Margin
VC	= Variabel Cosh (<i>Biaya Variabel</i>)
CMR	= Ratio Contribusi Margin (<i>rasio margin kontribusi</i>)
FC	= Fixed Cosh (<i>Biaya Tetap</i>)
TP	= sales goal
TC	= Total Cosh (<i>Biaya Total</i>)

3. RESULT AND DISCUSSION

1. Measurements for Making Mushroom Planting Media per 100

In mixing the ingredients in 100 planting media (baglog), 7 tubers of wood powder were needed, 10 kg of pulses, 2.5 tubs of water and 1.5 kg of limestone.

Table 1
Measurements for Making Mushroom Planting Media Per 100 Media

Materials	Unit	Needs
Sawdust	Bak	7
Katul	Kg	10
Water	Bak	2.5
Gamping	Kg	1.5

Source: *Measurements for Making Oyster Mushroom Planting in Mr. Kantak*

1. Variable Costs

Variable costs used for the process of making baglog in one month requires as many as 40 bottles of seedlings, 4 wood powder assa, 400 kg as a pulley, 4 kg of plastic media, a cap used in plastic ends requires 2000 seeds, newspaper used for coating the lid needs 3 kg, the ring needs 4000 seeds, the rubber band needs 3 kg, the gas used for sterilizing requires 5 seeds that weigh 3 kg, the lifting cost when shipping costs 300 rupiah per 1 baglog, and requires 60 kg of limestone.

Table 2
 Variable Costs

No	Component	Needs	Unit	Price	Value
1	Seeds	40	Botol	7000	280000
2	Sawdust	4	Tosa	175000	700000
3	bran	400	Kg	2300	920000
4	Plastic Media	4	Kg	29000	116000
5	Closed	2000	Biji	75	150000
6	Newspaper	3	Kg	8000	24000
7	Ring	4000	Biji	75	300000
8	Rubber	3	Kg	19500	58500
9	Gas	5	Biji	17000	85000
10	lift fee	4000	Biji	350	1400000
11	Gamping	60	Kg	600	36000
12	Electrick				13698
Total					4083198
total Bag log					4000
Variable Cost Results per Unit					1.021

Sumber : Biaya Variabel Pembuatan baglog Mr. Katak tahun 2018

Calculation of electricity costs needed include:

1. Electricity Costs

The electrical equipment used in the production of the oyster jmaur bag is a mushroom baglog press machine, water pump and lamp. With the description as follows;

$$\text{Electricity cost} = \frac{\text{watt Peralatan}}{1000 / kWh} \times \text{Hours Use of} \times \text{Electricity Rates per kWh}$$

Rates per kWh

$$\text{Water pump} = \frac{150 \text{ Watt}}{1000 / kWh} \times 6 \text{ hour} \times \text{Rp. } 1.488$$

$$= \text{Rp. } 1.339$$

$$\text{Press machine} = \frac{370 \text{ Watt}}{1000 / kWh} \times 20 \text{ Hour} \times \text{Rp. } 1.488$$

$$= \text{Rp. } 11.011$$

$$\text{Lamp} = \frac{50 \text{ watt}}{1000 / kWh} \times 18 \text{ Hour} \times \text{Rp. } 488$$

$$= \text{Rp. } 1.399$$

So 1 month electricity costs = Rp. 1,339 + Rp. 11. 011 + Rp. 1,339
 = Rp. 13.689

1. Fixed costs

Table 3
 Fixed costs

No	Component	Unit	Total	Price	Value
1	Pres Machine	Seed	1	4.500.000	4500000
2	Making Kumbung	Seed	4	200000	800000
3	Drum	Seed	3	125000	375000
4	gas cylinders	Seed	5	80000	400000
5	Hose	Meter	3	30000	90000
6	scales	Seed	1	60000	60000
7	Sekrop	Seed	2	45000	90000
8	Sorong	Seed	1	400000	400000
9	plastic inside the drum	Meter	3	15000	45000
10	Bak	Seed	1	35000	35000
11	kabulator + Iron Stove	Seed	3	150000	450000
12	Fabric	Meter	3	30000	90000
Total					7355000

Source: Primary Data

2. Analysis of Depreciation Costs

Table 4
 Depreciation Cost Analysis

No	Component	Unit	Price per Unit	Acquisition cost	Year	Depreciation / year	Depreciation / Period
1	Mesin Pres	1	Rp4.500.000	Rp4.500.000	5	Rp900.000	Rp75.000
2	Drum	3	Rp125.000	Rp375.000	1	Rp375.000	Rp31.250
3	Tabung Gas	5	Rp80.000	Rp400.000	10	Rp40.000	Rp3.333
4	Selang	3	Rp30.000	Rp90.000	1	Rp90.000	Rp7.500
5	Kompor Gas	3	Rp150.000	Rp450.000	5	Rp90.000	Rp7.500
6	Timbangan	1	Rp60.000	Rp60.000	1	Rp60.000	Rp5.000
7	Sekrop	2	Rp45.000	Rp90.000	5	Rp18.000	Rp1.500
8	Sorong	1	Rp400.000	Rp400.000	7	Rp57.143	Rp4.762
9	Plastik didalam drum	3	Rp15.000	Rp45.000			Rp15.000
10	Bak	1	Rp35.000	Rp35.000	5	Rp7.000	Rp583
11	Kain	3	Rp30.000	Rp90.000	7	Rp12.857	Rp1.071

12	Bangunan Produksi	1	Rp20.000.000	Rp20.000.000	14	Rp1.428.571	Rp119.048
13	Ruang Kumbung	4	Rp200.000	Rp800.000	10	Rp80.000	Rp6.667
Total Penyusutan						Rp3.158.571	Rp278.214

S source: Processed Results in 2018

Discussion

Table 5
Klasifikasi Biaya

A	Variabel Cost				
1.	Growing media	Total	Unit	Price	Result
	Seeds	40	<i>Botol</i>	7000	280000
	Sawdust	4	<i>Tosa</i>	175000	700000
	Katul	400	<i>Kg</i>	2300	920000
	Plastic Media	4	<i>Kg</i>	29000	116000
	Closed	2000	<i>Biji</i>	75	150000
	Newspaper	3	<i>Kg</i>	8000	24000
	Ring	4000	<i>Biji</i>	75	300000
	Rubber	3	<i>Kg</i>	19500	58500
	Gas	5	<i>Biji</i>	17000	85000
	Gamping	60	<i>Kg</i>	600	36000
2.	lift fee	4000	<i>Biji</i>	350	1400000
3.	Electricity				13698
B	Variabel cost total				4083198
Fixed cost					
1.	Depreciation of Equipment				278174
2.	UN tax	1	<i>Siklus</i>	35200	35200
3.	Employee salary	500	<i>Biji</i>	4000	2000000
	Total Fixed Costs				2313374

Source: Researcher's Processed Results in 2018

Break Even Point (BEP) Calculation

a. Monthly calculation with baglog 4000

$$\begin{aligned} \text{BEP (Rp)} &= \frac{FC}{1 - \frac{VC}{S}} \\ &= \frac{2313374}{1 - \frac{4083198}{4000}} \\ &= \frac{2313374}{1 - 1020,79} \\ &= \frac{2313374}{-1019,79} \\ &= 2.268,4 \end{aligned}$$

Calculation of BEP prices that have been reduced by damage.

$$\begin{aligned} \text{BEP (Rp)} &= \frac{FC}{1 - \frac{VC}{S}} \\ &= \frac{2313374}{1 - \frac{4083198}{3880}} \\ &= \frac{2313374}{1 - 1052,3} \\ &= \frac{2313374}{-1051,3} \\ &= 2.200,4 \end{aligned}$$

Calculation of BEP units

$$\begin{aligned} \text{BEP (Q)} &= \frac{FC}{P - V} \\ &= \frac{2313374}{2500 - 1021} \\ &= \frac{2313374}{1479} \\ &= 1564,14 \end{aligned}$$

Calculation of *Margin Of Safety* (MOS)

$$\begin{aligned} \text{MOS} &= \frac{\text{Penjualan yang direncanakan} - \text{Penjualan BEP}}{\text{Penjualan yang Direncanakan}} \times 100\% \\ &= \frac{4000 - 1564}{4000} \times 100\% \\ &= \frac{2436}{4000} \times 100\% \\ &= 0,609 \times 100\% \\ &= 61\% \end{aligned}$$

Profit planning

Planning profits on making baglog 4000

$$\begin{aligned} \text{TR} &= P \cdot Q \\ &= 4000 \cdot 2500 \end{aligned}$$

$$\begin{aligned} &= 10.000.000 \\ \text{CM} &= \text{TR} - \text{VC} \\ &= 10.000.000 - 4.083.198 \\ &= 5.916.802 \end{aligned}$$

$$\begin{aligned} \text{CMR} &= \frac{\text{CM}}{\text{TR}} \\ &= \frac{5.916.802}{10.000.000} \\ &= 0,591 \\ &= 59\% \end{aligned}$$

$$\begin{aligned} \text{Sales Goal} &= \frac{\text{FC} + \text{Target Laba}}{\text{RCM}} \\ &= \frac{2.313.374 + 4.000.000}{59\%} \\ &= \frac{6.313.374}{59\%} \end{aligned}$$

$$\begin{aligned} &= 10.700.634 \\ \text{Profit Gial} &= \text{TP} - \text{TC} \\ &= 10.700.634 - 6.396.572 \\ &= \text{Rp } 4.304.062 \end{aligned}$$

Planning profits on making baglog 4000 reduced by 12% to 3880

$$\begin{aligned} \text{TR} &= \text{P} \cdot \text{Q} \\ &= 3880 \cdot 2500 \\ &= 9.700.000 \end{aligned}$$

$$\begin{aligned} \text{CM} &= \text{TR} - \text{VC} \\ &= 9.700.000 - 4.083.198 \\ &= 5.616.802 \end{aligned}$$

$$\begin{aligned} \text{CMR} &= \frac{\text{CM}}{\text{TR}} \\ &= \frac{5.616.802}{9.700.000} \\ &= 0,579 \\ &= 58\% \end{aligned}$$

$$\begin{aligned} \text{Sales Goal} &= \frac{\text{FC} + \text{Target Laba}}{\text{RCM}} \\ &= \frac{2.313.374 + 4.000.000}{58\%} \\ &= \frac{6.313.374}{58\%} \end{aligned}$$

$$\begin{aligned} &= 10.885.128 \\ \text{Profit Goal} &= \text{TP} - \text{TC} \\ &= 10.885.128 - 6.396.572 = \text{Rp } 4.488.556. \end{aligned}$$

The results of the calculation of Break Even Point (BEP) in the manufacturing unit at 4000 reached 1564 units, while the break even point

in the rupiah received a price of Rp. 2,268 in making baglog 4000 and Rp. 2,200 in making baglogg which suffered 12% damage. The margin of safety obtained in making baglog reaches 61%, so that the cultivation may experience a 61% decrease but not experience a loss. And Profit Planning in making baglog 4000 earns Rp. 4,304,602 while baglog which experienced a 12% decline experienced a profit plan of Rp. 4,448,556.

The results of research conducted by [8] to show that industry A, B, C, D, E and F are optimal so that they get sales above break-even points.

It is different from the results of research conducted by [9] to show that the 2012-2013 has increased. In 2012 sugar receipts and production were greater than BEP (Rp) and BEP (units) which were 96,856 quintals and received revenues of Rp. 153,629,555,920 greater than BEP (Rp) 77,719,928,706.25 and BEP (units) 48,692, and while in 2013 it produced 111,407 with revenues of Rp. 179,274,484,000 greater than BEP (Rp) 93,946,841,304.35 and BEP (units) of 50,841.82. Furthermore, the research conducted by [10] Bakery Kediri reached sales of 70,000 units and BEP in rupiahs could be reached sales of Rp. 280,000,000. BEP after there is a change in costs to Rp. 35,000,000 with a total production reaching 87,000 units. If the company wants to achieve the desired profit of Rp. 500,000,000 with sales of goods amounting to 1,320,000 units. And if the company wants a sales target of 1,224,000 units, then the profit that will be obtained is Rp. 461,600,000. The results of the research conducted by [11] the results of the BEP (mix) study in 2014 amounted to Rp. 5,143,925,585 by obtaining a BEP unit value of 3,365 units. And the company's profit planning plans profits for 2015 of Rp. 1,500,000,000 to achieve an increase in profits, it must increase sales by 11,869 units and obtain rupiahs of Rp. 19,033,566,736 by obtaining a margin of safety of 72.97%.

4. CONCLUSION

1. Break Even Point in the baglog making unit of mushroom growing media in the manufacture of planting media owned by Mr. Not found in the sale of 1564.14 units, while the break even point in the rupiah that can be reached Rp.2688.4 and while the break even point in making calculated baglog rupiah has been damaged can be achieved with the selling price of Rp. 2200.4.
2. The margin of safety that can be used reaches 61%
3. In making baglog 4000, profit planning is Rp.4,304,062 and in making baglog 4000 which is damaged by 12%, the profit planning is Rp.4,488,556.

Suggestion

It is expected that the business needs to carry out a cost calculation using the break even point analysis and margin of safety analysis method to plan profits and targets. This calculation can help the entrepreneur to determine the profits he wants and make the company continue to experience an increase in sales volume and profits going forward.

Thank-You Note

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