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by Nuniek Ina Ratnaningtyas

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Costs Analysis of Fungal Basic Production Cost On Purbalingga Farmers' and Private Sectors Group

i Lestari¹, Nuniek Ina Ratnaningtyas², Okti Herliana³, dan Ali Maksum³

¹Faculty of Economic and Business, Jenderal Soedirman University

²Faculty of Biology Jenderal Soedirman University

³Faculty of Agriculture Jenderal Soedirman University

Email: o.herliana@gmail.com

Abstract. The research titled is "Cost Analysis of Fungal Basic Production Cost on Purbalingga Farmers and Private Sector Group". This research activity is part of the community service program of the Hi-Link scheme which is carried out by the Team in order to increase the income of the community, especially members of Fungal Farmers and Private Sector Group in Purbalingga. This group has been being developed by the Bappelitbangda of the Purbalingga regency since 2015. This study aimed to analyze the calculation of Basic Production Cost and Statement of Profit or Loss conducted by center manager and farmers that will be compared to the calculation based on accounting concept. Therefore, the sample in this study are members of Private Sector Group and Fungal Farmers in Purbalingga. The analysis technique used are calculating the basic production cost and statement of profit or loss according to the center manager and farmers then compared with the calculations result at the center and at the farmer level based on the accounting concept by using the full costing method. The result showed: 1) there is a difference in determining the Basic Production Cost and Statement of Profit or Loss of bag-log products at the center according to the calculation of the center manager compared to accounting concepts; 2) there is a difference in determining the Basic Production Cost and Statement of Profit or Loss in fungal growth according to the calculation of farmers compared to accounting concept. This result implies that the center manager and farmers should calculate the Basic Production Cost and the Statement of Profit or Loss based on the accounting concept in order to ensure the continuity of their business.

Keyword: Baglog, Fungal, Basic Production Cost, Full Costing Method.

1. Introduction

To support food security, increase production and to achieve national self-sufficiency in food, since 2015, Purbalingga Regency government has established a Food Sovereignty Program. Through this program the Purbalingga Regency Government seeks to open business opportunities in the field of agriculture, become a facilitator for farmers, conduct socialization and communication with farmers so that the problems that exist in farmers can be found a solution. In order to support the program, the Development Planning Agency at Sub-National Level (Bappelitbangda) of Purbalingga Regency through the Forum for Economic Development and Employment Promotion (FEDEP) trying to find and develop agricultural products in Purbalingga Regency which can be developed into leading sectors.

One of the featured products that are being developed in Purbalingga was fresh fungal businesses and processed fungal products, because the demand for both products is now very large. The need for fungals in Purbalingga Regency only 40% can be fulfilled, while the remaining 60% is met from other regions. The data was obtained from the management of Purbalingga's Fungal Farmers and Private Sector Group (KPPJP) which has been incorporated under the Ministry of Justice and Human Rights No. AHU-0059231.AH.01.07 in 2016. KPPJP which currently consists of 21 fungal farmers and 8 fungal processed entrepreneurs and it was established on November 16, 2014 under the name of Purbalingga's Fungal Farmers Association (PPJP).



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In order to support the program that launched by the Purbalingga Regency Government, PKM Hi-Link was held which was a collaboration between Team Hi-Link, partners of the PPJP Group with full support from the Bappeda of Purbalingga Regency through Agriculture and Forestry office and FEDEP. The main activity carried out is making fungal business center together. The first stage is to create a baglog center where baglog is made in the center for further distribution to farmers to grow, then the products are sold back to the center and the center will sell to the market. With the center, the fungal business will be done through one door system, where production will be carried out together and sales will also be carried out together in groups.

The existence of baglog manufacturing centers can overcome the problems faced by fungal farmers including the high failure rate in making baglog, low baglog quality so that the harvest of fresh fungals is also low quality, as well as the skills of farmers in low fungal cultivation. Based on the preliminary survey, it was found that both baglog center managers and fungal farmers have not been accurate in calculating the Basic Production Cost and Profit and Loss of their businesses, whereas the accuracy in determining the Basic Production Cost is very important because it is used as a basis in determining the selling price of the product [11]

In calculating the Cost of Production, companies can use the full costing method or variable costing [2]. Full costing method is a method of determining the cost of a product that charges all production costs, both variable costs and fixed costs to the product. In this method the Factory Overhead Cost is charged to the Finished Product based on the rates determined in normal or actual activities [3].

This research aims to evaluate and compare the calculation of Basic Production Cost and Statement of Profit or Loss that commonly carried out by center managers in baglog production and farmers in conducting fungal growth business compared to the correct calculation method based on the accounting concept using full costing.

2. Materials and Methods

- Types of Research: case study
- Object of Research: farmers in Purbalingga's Fungal Farmers and Private Sector Group (PPJP)
- Population and Sample: the population in this study is 20 PPJP members, the sample is determined by purposive sampling with the criteria of being PPJP members who are active in 2017 and only distributing their products to PPJP baglog centre.
- Collection Method: interviews, observation and documentation
- Data and Types of Data: primary and secondary
- Variables and Measurement:
 - a. Production costs are costs incurred to produce baglog and grow fungals which include raw material costs, direct labor costs and factory overhead costs.
 - b. Raw material costs are costs incurred to buy materials that issued in baglog production and fungal growth, in rupiah units.
 - c. Direct labor costs are wage costs in making baglog and fungal growth, in rupiah units.
 - d. Factory overhead costs are costs incurred in producing baglog and growing mushrooms in addition to the costs of direct raw materials and direct labor such as auxiliary materials, indirect labor wages and maintenance of machines, in rupiah units.

2.1. Analysis Method

- Calculate Basic Production Cost according to baglogcenter
- Calculate Profit and Loss according to baglogcenter
- Calculate Basic Production Cost based on the accounting concept with the full costing method
- Calculate Profit and Loss based on accounting concept
- Calculate Basic Production Cost of fungal growth according to farmers
- Calculate Profit and Loss according to farmers

- Calculate the Basic Production Cost based on the accounting concept with the full costing method
- Calculate Profit and Loss based on accounting concept
- How to calculate Basic Production Cost based on full costing method [4] as follows:

Beginning inventory of goods in process	xxx	
Beginning inventory of raw materials	xxx	
Purchase of raw material	xxx	
Raw materials that available for use	xxx	
Less: ending inventory of raw materials	xxx	
Raw materials cost	xxx	
Add: direct labor cost	xxx	
Add: factory overhead cost	xxx	
Total production cost		xxx
Total goods ready for processing		xxx
Less: inventory in process		xxx
Basic production cost		

- Comparing between Basic Production Cost based on farmers and Basic Production Cost based on accounting concepts.

3. Results and Discussions

Table 1. Calculation of Basic Production Cost of Baglog by Center

Materials	Units	price		total
Powder	1,000	5,000		5,000,000
Bran	2,500	3,500		8,750,000
Chalk	400	1,000		400,000
Corn Flour	0	0		0
Nutrition/Molasses	100	8,000		800,000
Gypsum	200	2,000		400,000
Plastic	200	30,000		6,000,000
Seeds	1,425	4,000		5,700,000
Baglog Ring	50,000	150		7,500,000
Cotton Patch	50	6,000		300,000
Gas	63	80,000		5,040,000
Spirtus	10	12,000		120,000
Alcohol	7	35,000		245,000
Total of Material Cost				40,255,000

Raw Material Prices per Baglog = 805.1

	Total	Wages	
Labor for Mixer	1	45,000	45,000
Labor for Press Engine	3	45,000	135,000
Labor for Inoculation	2	45,000	90,000
Labor for Distribution	1	45,000	45,000
Labor for Supervision	1	65,000	65,000
Total			380,000
Labor for 4 Weeks (24 Days)			9,120,000
Total of Raw Materials and Labor			49,375,000
Basic Production Cost (HPP)	987.5		

Table 2. Calculation of Basic Production Cost of Baglog by Center According to Accounting

Production Cost			UNIT	RP
	Raw Material Cost	Powder	240	1,440,000
		Bran	600	2,100,000
		Chalk	72	86,400
		Gypsum	48	96,000
		Molasses	24	192,000
		Seeds	300	1,200,000
	TOTAL Raw Material Cost/Month			5,114,400
	Direct Labor Cost	Mixing		240,000
		Logging		1,440,000
		Sterilization		900,000
		Inoculation		900,000
	TOTAL Direct Labor Cost/Month			3,480,000
	Factory Overhead Cost	Depreciation Cost		850,000
		Assistance Cost		3,804,000
		Indirect Labor Cost		4,500,000
	TOTAL Factory Overhead Cost			9,154,000
BASIC PRODUCTION COST PERMONTH				17,748,400
BASIC PRODUCTION COST PERUNIT (12000UNIT)				1,479

- a. Comparison of Basic Production Cost of baglog production and Statement of Profit or Loss according to the center manager compared to calculations based on accounting concepts.
1. Analysis of comparative Basic Production Cost

Based on the results of the calculations contained in Table 1 and Table 2, there are differences in Basic Production Cost between centers calculations and accounting calculations that caused by:

- a. There are differences in understanding the concept of cost classification. Some items that should be included in the cost of assistance are included in the cost of raw materials. Although there is no significant effect on the final result of the calculation, things like this will be confusing and not in accordance with the accounting concept.
 - b. Central calculations do not take account depreciation into the calculation of basic production cost. Resulted in Basic Production Cost which is calculated by the centers becomes too low. In addition, business continuity, especially in the centers, is not good. There is no allocation for depreciation, resulting in centers will unable to buy or repair the facilities needed in the production process.
 - c. Central does not take account of indirect labor costs which should be included in the element of factory overhead costs. This also resulted in Basic Production Cost (HPP) of the centers being too low.
2. Analysis of calculation of Profit and Loss for baglog production
 - a. Based on the results of calculations in Tables 3 and 4 it is known that the profit generated by the calculation of the center manager appears to be greater than the profit according to accounting. The difference was due to the absence of depreciation and indirect labor costs on the Basic Production Cost calculated by the center.
 - b. Although the center profit appears to be bigger, but actually the center still has to spend costs that were not previously included in the calculation of Basic Production Cost.

Table 3. Calculation of Statement of Profit or Loss based on Center Manager

SALES			20,400,000
BASIC PRODUCTION COST			
	BEGINNING INVENTORY	0	
+	PRODUCTION COST	10,770,000	
-	ENDING INVENTORY		
BASIC PRODUCTION COST			10,770,000
GROSS PROFIT			9,630,000
OPERATIONAL COST			0
SHIPPING COST (200*12.000)			2,400,000
NET PROFIT			7,230,000

Note: Profit and Loss according to the center manager with sales of 12.000 units, selling price about 1.700/units (including 200/unit of transport costs) and basic production cost is 987.5/unit

Table 4. Calculation Statement of Profit or Loss based on Accounting Concept

SALES			20,400,000
BASIC PRODUCTION COST			
	BEGINNING INVENTORY	0	
+	PRODUCTION COST	17,748,000	
-	ENDING INVENTORY		
BASIC PRODUCTION			17,748,000

COST			
GROSS PROFIT			2,652,000
OPERATIONAL COST			0
SHIPPING COST (200*12.000)			2,400,000
NET PROFIT			252,000

Note: Profit and Loss according to Accounting Concept with sales of 12.000 units, selling price about 1.700/unit (including 200/unit of transport costs) and basic production cost is 1.479/unit

- b. Comparison of Basic Production Cost of fungal growth and Statement of Profit or Loss according to the farmers compared to calculations based on accounting concepts.

1. Analysis of comparative Basic Production Cost

Based on the results of the calculations contained in Table 5 and Table 6, there are differences in Basic Production Cost between farmers calculations and accounting calculations that caused by:

- Farmers calculations do not take account depreciation into the calculation of basic production cost. Resulted in Basic Production Cost which is calculated by the farmers becomes too low. In addition, business continuity, especially in the centers, is not good. There is no allocation for depreciation, resulting in the farmers will unable to buy or repair the facilities needed in the production process.
- Farmers does not take account of indirect labor costs which should be included in the element of Basic Production Cost. This also resulted in Basic Production Cost of the farmers being too low.

Table 5. Calculation Basic Production Cost of Fungal Growth by Farmers

Raw Material Costs	Rp14,400,000
Plastic	Rp10,000
Total Basic Production Cost	Rp14,410,000
Basic Production Cost Per Unit	Rp7,205

Note: So, in calculation of Basic Production Cost by farmers, only the purchase costs of baglog and plastic are included into account

Table 6. Calculation of Basic Production Cost of Fungal Growth based on Accounting Concept

Production Cost		UNIT	RP
Raw Material Cost	baglog	8000	14,400,000
Direct Labor Cost			1,000,000
Factory Overhead Cost	Depreciation Cost		208,000
	Assistance Cost		10,000
TOTAL Factory Overhead Cost			218,000
BASIC PRODUCTION COST PERMONTH			15,618,000
BASIC PRODUCTION COST PERUNIT			7,809

2. Analysis of calculation of Profit and Loss for fungal growth

Based on tables 7 and 8 it is known that there are differences between the calculation of profit and loss according to farmers and based on accounting concepts that caused by:

- a. The profit generated by the calculation of the farmers appears to be greater than the profit according to accounting. The difference was due to the absence of depreciation and indirect labor costs on the Basic Production Cost calculated by the farmers.
- b. Although the farmers profit appears to be bigger, but actually the farmers still has to spend costs that were not previously included in the Basic Production Cost calculation.

Table 7. Calculation of Statement of Profit or Loss based on Farmers

SALES			16,000,000
BASIC PRODUCTION COST			
	BEGINNING INVENTORY	0	
+	PRODUCTION COST	14,410,000	
-	ENDING INVENTORY		
BASIC PRODUCTION COST			14,410,000
GROSS PROFIT			1,590,000
OPERATIONAL COST			0
NET PROFIT			1,590,000

Note: Profit and Loss according to the farmers with sales of 2.000 kg, selling price about Rp. 8.000/kg and basic production cost is Rp. 7.205/kg

Table8. Calculation Statement of Profit or Loss based on Accounting Concept

SALES			16,000,000
BASIC PRODUCTION COST			
	BEGINNING INVENTORY	0	
+	PRODUCTION COST	15,618,000	
-	ENDING INVENTORY		
BASIC PRODUCTION COST			15,618,000
GROSS PROFIT			382,000
OPERATIONAL COST			0
NET PROFIT			382,000

Note: Profit and Loss according to Accounting Concept with sales of 2.000 kg, selling price about Rp. 8.000/kg and basic production cost is Rp. 7.809/kg

4. Conclusions

There is a difference between the calculation of Basic Production Cost in buglog production which is done by center manager and the calculation based on accounting concept. There is a difference between the calculation Statement of Profit or Loss which is done by center manager and the calculation based on accounting concept. There is a difference between the calculation of Basic Production Cost in fungal growth which is done by farmers and the calculation based on accounting concept. There is a difference between the calculation Statement of Profit or Loss which is done by farmers and the calculation based on accounting concept.

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