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BITTER MELON CHIPS AGRIBUSINESS INNOVATION AS A PRODUCT OF PROCESSED HOUSEHOLD INDUSTRY IN RURAL AREAS

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Abstract

The processed bitter melon home industry is one of the innovations in rural areas, in an effort to attain higher prices for agricultural products. Characteristics of perishable agricultural products, such as the commodity bitter melon, cause prices to decline after a few days of storage. *KWT Ayu tangkas* is a group of housewives in *Megati* village. Trying to innovate so that the abundant bitter melon from the garden can be marketed at a decent price and provides benefits for the family life. This research objective is to analyze the value-added commodities in the industry processed bitter melon chips and calculate the marketing margin for bitter melon chips industries in rural home processing. The research was conducted at *KWT Ayu Tangkas, Megati* Village, *Selemadeg Timur* District, *Tabanan* Regency. The results showed that the industry processed bitter melon gave a profit of Rp 39.000 for each production with a capacity of 5 kg bitter melon. The processing of bitter melon chips shows a value-added ratio of 85%, remuneration for the owner of the production factors shows a margin IDR 55.000. The R / C value of 1.20 indicates that every Rp. 1.00 of costs incurred in the bitter melon processing industry gives revenue of 1.20 times the costs incurred.

Keyword: Bitter melon, agribusiness, bitter melon

INTRODUCTION

Agriculture is one of the people's livelihoods in rural areas. Almost all families own agricultural land or plantations which is a source of food production for rural families. Farmers who have rice fields are generally able to harvest twice a year, even 3 times a year if there is enough water to irrigate the rice fields. The main commodity grown in paddy fields is rice. However, in some places such as *Desa Megati*, farmers can only harvest once a year, this is due to limited water to irrigate their fields. So that farmers have to plant

crops other than rice or innovate in managing paddy fields in order to produce both food and horticultural crops. This condition made the farmers tied to find some efforts to create various kinds of income, both working in the non-agricultural sector and the home industry sector.

One of the commodities planted in *Megati village* is bitter melon. Bitter melon has been widely used by people as traditional medicine or herbal medicine. One of the benefits of this plant has not been explored much. Bitter melon is a type of fruit that has long been known by the

Balinese because it has medicinal properties and is widely used in traditional medical treatment. Traditional medicine treatment is generally considered to be safer than the use of modern medicine. This is because traditional medicine has relatively fewer side effects than modern medicine and it has several healthy properties (Alam, et al. (2015). Furthermore, Ekizce, and Ekici (2019) found that bitter melon has several pharmacological effects which can be used to promote health.

In respect to agricultural systems of planting, bitter melon can be planted in paddy fields or fields. Without the need for watering all the time. Bitter melon that is cultivated if it grows well will be able to harvest several harvests in one planting period. The price of bitter melon that is marketed by farmers also fluctuates, sometimes low and sometimes high, and often the bitter melon that is harvested is not sold, so that the housewives group innovates in the form of processed products, namely chips bitter melon. To measure the added value generated by the households industry chips processing, this study was conducted to reveal the innovation processing into chips production industry processing rural households. Bitter melon is not liked by many people and among young people to use bitter melon as a food that contains health benefits. Bitter melon has a lot of medicinal properties which can promote health (Saeed, et. Al. (2018). Due to this phenomenon, therefore, it is important to introduce bitter melon as a food that contains health benefits to young people and the older generation. The use of bitter melon as supplemental medicine should be considered carefully because it has several medicinal benefits (Alam, et al. (2015).

Based on the phenomenon described above and considering the importance of bitter melon to promote health, therefore this

study aims at analyzing the added value of bitter melon in the home industry of bitter melon chips processing. Furthermore, the study also intended to calculate the margin marketing for chips bitter melon industries in rural home processing. The findings of this study are expected to be beneficial for the readers especially for those who wish to study and develop healthy food businesses.

RESEARCH METHOD

The research was conducted at *KWT Ayu Tangkas, Megati Village, Selemadeg District, Tabanan Regency*. This research was conducted at *KWT Ayu Tangkas* as one of the partners in the community service activities of the *Mahasaraswati Denpasar University Partners Village development program*.

Data Analysis used in this research is qualitative and quantitative analysis. Qualitative analysis is used to get a picture of the business conditions of the tofu agro-industry. Quantitative analysis is used to see business analysis and some of the calculations carried out in this study. Quantitative analysis in the form of analysis of costs, revenues, profits, profitability, analysis of business efficiency and added value. added value from the processed industry as one of the rural-based agricultural products (Rahman, 2015). The data used in this study are primary and secondary data. Primary data was collected in June - August 2020 through in-depth interviews, and discussions with members, while secondary data was collected through scientific publications related to corn chip processing.

The stages of the analysis of financial feasibility and added value include analysis of production costs, revenues, profits, business efficiency (R / C and B / C ratios), and added value. (Adi & Elisabeth, 2018).

Data analysis method

The types of data collected in this study were obtained from direct interviews with member respondents *KWT Ayu Tangkas* with a list of questionnaire questions that had been prebitter melond in accordance with the research objectives. Secondary data is complementary data obtained from previous research results and other literature used as supporting and complementary data.

Data Analysis

To identify problems analyzed using qualitative descriptive analysis method. This method is used to determine the feasibility of the home industry in the village of *Megati*. The method used to analyze the data is to calculate the cost, revenue, income, profit and feasibility of the bitter melon processing business with RC Ratio analysis. According to Soekartawi, 2003, to calculate the cost of the household processing industry in the study area, it was analyzed using the formula:

1. Production costs

Formula : $TC = FC + VC$; TC = Total production costs in the production period; FC = The amount of fixed costs (IDR); VC = The amount of variable costs (IDR).

2. Processed industry acceptance.

The revenue from the bitter melon processing industry is the result of multiplying the number of chips produced multiplied by the price of chips per kg. To calculate revenue using the formula: $TR = Y \cdot Py$; TR = Total business revenue; Y = amount of production (Kg); Py = Product price (Soekartawi, 1995.)

3. Income of Bitter melon processed

Bitter melon processed product revenue is the difference between revenue and costs incurred during one cycle of Bitter melon chips production. To calculate income, it is analyzed using the formula. Information: Pd = farm income (IDR). TR = Total revenue (IDR). TC = total cost Rp. Soekartawi, 2001. $Pd = TR - TC$. $TR = Y \cdot Py$.

4. RC Ratio Analysis

Revenue Cost Ratio (RC) is the division between business revenue and costs of the business. This analysis is used to combitter melon the total revenue with the total cost of the business. If the value of the RC is above one rupiah, you will get a benefit. Systematically, the RC ratio can be formulated as follows: $RC \text{ Ratio} = \frac{TR}{TC}$. This analysis is used to see the benefits and feasibility of the household processed industry. The business is said to be profitable if the value of the RC ratio is greater than one RC 1. This shows that every rupiah value spent in production will benefit from the amount of revenue earned (Harmono and Andoko, 2005).

RESULT AND DISCUSSION

KWT Ayu Tangkas Profile

Women Farmers Group Rural is one of the places that can be a hope for farming families because the resources contained there can be utilized. As an organization that accommodates women farmers in efforts to empower their families, the role of the Rural Women Farmers Group is expected so that the farmer families involved in the group can be empowered by exploring the various potentials possessed by women (Ervinawati, Fatmawati, & L, 2015).

KWT ayu tangkas is an association of housewives who have the main job as farmers and process agricultural products to

be marketed in the surrounding area. *KWT Ayu tangkas* totaled 14 people, all of whom are engaged in the processing of agricultural products produced in the village of *Megati*. This group is engaged in the production of home industry processed products. Bitter Melon processing into post-harvest processed products in the form of bitter melon chips. Bitter melon provides health benefits against various ailments for improving the quality of life.

To increase the added value of bitter melon, they process bitter melon into household-based processed industrial products. Bitter melon is processed in an effort to promote the consumption of bitter melon. So that it can be consumed at all ages. According to (Tan & Lee, 2005) opinion that steps should be undertaken to boost the processed products industry due to its potential marketability is nutrient-dense plant-based food containing the versatility of bioactive compounds such as alkaloids, polypeptide, vitamins, and minerals. (Saeed et al., 2018)

Characteristics of *KWT Ayu Tangkas*.

KWT Ayu Tangkas is a group consisting of housewives who have livelihoods as farmers and traders. *KWT* members market products processed from agricultural products produced in the village of *Megati*, in an effort to increase the added value of the agricultural products they produce.

Based on business experience, *KWT Ayu Tangkas* is a group that has been established in 2014, with an average business experience of 5 years. Based on experience in doing business and processing products as an industry home, it is one of the assets owned by members in an effort to innovate in processing agricultural products into products that have a higher selling value. The results of research on *KWT Ayu*

Tangkas show that 100% of the members obtain raw materials from agricultural products produced by farmers in the village of *Megati*.

Based on the education that the members of the *KWT Ayu Tangkas* farmer group have, all of them have taken education equivalent to senior high school. So that members easily look for opportunities and innovations in processing products in order to create customer satisfaction and create consumer loyalty in buying the products produced.

Added Value of Bitter Melon Processing In The Home Industry In Rural Areas.

Value-added analysis is useful for describing the production process according to the contribution of each production factor. The basis for calculating this added value analysis method uses the calculation of Kg of raw material for bitter melon. The added value is calculated based on the size of the chips. Efforts are made for post-harvest processing to increase processing industrial activities in rural areas. Furthermore, it is hoped that it can increase household income and build small industries in rural areas starting from the family environment.

In the concept of financial performance appraisal, Economic Value Added (EVA) is examined. Meanwhile, the concept of the added value of companies studied by Financial Value Added (Fva) ("Financial Value Added: A Paradigm In Measuring Performance And Added Value Of Companies," 2005)

Value-Added Analysis of the added value of bitter melon chips processed industrial products using the Hayami method. According to Hayami (1990) in Sudiyono (2004), added value for processing and added value for marketing. The calculation procedure for added value

according to the Hayami method can be seen in following Table

	Variable		Nominal
	Output, input and price		
1	output	Kg	4
2	input	Kg	8
3	labor	HOK	2
4	Conversion factor		0.5
5	labor coefficient	HOK / Kg	0.25
6	Output price	IDR / kg	60.000
7	Wage for labor	IDR / HOK	50.000
	Revenue and profit		
8	Raw material price	IDR / kg	5.000
	Other input		
9	contribution	IDR	4.000
10	Output Value	IDR / Kg	60.000
11	value added	IDR / kg	51.000
12	ratio of value	%	85%
13	Revenue labor	IDR/ kg	12 500
14	share of the	%	41.60%
15	profit	IDR / kg	38500
16	levels of profit	%	58%
17	margin	IDR / kg	55 000
18	gains	%	31.80%

Based on the table, it can be explained that the added value obtained from the bitter melon chips is IDR 55,000 / kg. This added value is obtained from reducing the output value with the cost of raw materials and costs of other supporting materials. Meanwhile, the value-added ratio is 85%, meaning that 85% of the output value (bitter melon chips) is the added value obtained from the agro-industrial processing of bitter melon.

Processing fresh bitter melon into processed chips is a process to change the shape, taste and color without reducing the benefits contained in bitter melon. Bitter melon chips so that all people can consume, without the bitter taste. The process of changing form and taste is a percentage that

requires a touch of technological innovation carried out by women in rural Megati Village in a household industry group. This is in accordance with the research results (Wright & Annes, 2016) show that value-added agriculture provides a unique context for women's empowerment.

Processing bitter melons into a form that is more attractive to consumers is also one of the strategies in marketing agricultural products. In order to be accepted by the wider community. And introduce products that are owned so that they can be consumed by the public in an effort to increase sales (Herath & De Silva, 2011). The results product differentiation, cost leadership, and customer focus were the

most prominent strategies adopted by the firms.

Revenue, Cost, Profits

component	Production	Output Price	Total Price
Cost			200,500.00
Acceptance	4	60000	240.000
Profit			39.500
R / C			1.20

So the total revenue of the bitter melon chips processing industry entrepreneur is IDR 240,000. The profit of the bitter melon chips business is the difference between the total cost and the total revenue. The profit earned is Rp. 39,500 for every production with a production capacity of 5 kg. The R / C value of 1.20 indicates that every Rp. 1.00 of costs incurred in the bitter melon processing industry gives revenue of 1.20 times the costs incurred. The results showed a ratio of more than 1 means that the bitter melon chips processing industry will provide benefits and is feasible to develop (Rangkuti, Ainul, & Putri, 2015) The cassava chips business at KUK Desa Sipare pare is one of the businesses that is managed simply by using limited technology, processing cassava into cassava chips in one production process. The R / C Ratio obtained is equal to 1.57.

CONCLUSION

Based on the results of the research above, it can be concluded that the industry is bitter melon chips processing carried out by *KWT Ayu Tangkas* in the village of *Megati*. The results of the study on KWT showed that processing bitter melon into bitter melon chips provided benefits for the

The production of the bitter melon chips processing industry is calculated using 5 kg of raw material for each product in one day to find out the added value of the product in quantity per kg.

Output Price Total Price

200,500.00
60000 240.000
39.500

1.20

women farmer group with an added value of up to 85%. this shows that the industry processing in rural areas provides benefits so that it can be done in improving the economy rural. R / C ratio of 1.2 means that the bitter melon chip home processing industry is feasible to develop

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