

## Assessment of Added Value of Cempedak Fruit as Raw Material of Mandai Chips in Sub-district Batu Mandi Balangan District, South Kalimantan (Case Study of Chips Mandai Cap Gundul)

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### ABSTRACT

This study aims to determine the added value of cempedak fruit raw materials and the technique of making mandai chips, the amount of cost, revenue, profit, net, gross and added value per ingredient in mandai chips entrepreneurs in Batu Mandi District, Balangan Regency. The study was conducted in Batu Mandi Sub-district, Balangan Regency, the study time began from March 2018 to July 2018. Sample with drawals used a case study method. The results of this study indicate that the technique of making mandai chips includes: cempedak fruit, separation between the skin and the contents of the cempedak fruit, stripping the outer skin of cempedak fruit, washing the cempedak fruit from sap, soaking using salt, mandai washing, mandai cutting, washing, spice mixing, mixing wheat flour, frying pan, draining using spiner, packaging and labeling. Financial analysis includes: An average explicit cost of Rp.4,935,992.00, - / month, an implicit average of Rp. 780,000.00 / month, an average total cost of Rp. 5,715,992.00 / month, then obtaining an average revenue of Rp.8,000,000.00, - / month, an average profit of Rp.2,284,008.00, - / month, an average gross added value of Rp.3,797,000.00, - / month, an average net added value Rp.3,764,008, - / month, average value added per raw material Rp.47,462.5, - / Kg.

**KEY WORDS:** Value added, net and gross, Making mandai chips

### INTRODUCTION

Processing result is one of the agribusiness sub-sectors which is not only to change the form from raw material to semi-finished or until the product is ready to be marketed, but agro-industry also aims to increase the added value of the product and also increase producer's income.

Cempedak is one of the original fruits that is quite popular in Indonesia. The main use of cempedak is the fruit that is consumed either directly (fresh) or processed foods such as jam and fried cempedak. In addition to being used as processed material, cempedak also has a content that is very good for health because it contains Energy, Vitamin A, Vitamin C and cempedak skin and bark contains components that can help prevent tumor and malaria.

Chips are one of the most popular snacks in Indonesia. There are various types of chips in Indonesia, one of which is mandai chips. Mandai chips are made from cempedak skin which have been cleaned or have gone through a process of immersion, with industrial activities that change the primary form into a new product with higher economic value, after processing to increase attractiveness and be consumed by utilizing mandaiso as to obtain high selling value in the market.

Batu Mandi Sub-district is one of the sub-districts located in Balangan Regency, which has a mandai processing entrepreneur, and it is the only mandai chip processor. Mandai chips are one of the special souvenirs of Balangan. The processed mandai chips are in great demand by people, adults, teenagers, and children so that they can increase economic income and have added value for mandai chips entrepreneur and the surrounding community.

This business is growing rapidly from 2015 until now due to having business progress very well seen from the development of its business; that is why Mandai Cap Gundul chipsare produced almost every day. The increase in value added by Mr. Abdul Hadi includes product development by giving brands to packaging and having a halal label to attract consumers' attention because of the increasing market demand and demand for consumers who want to buy mandai chips. This prompted researchers to find out more about the added value of cempedak skin as raw material for mandai chips in Batu Mandi Sub-District, Balangan Regency.

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## **RESEARCH METHODS**

The research was conducted in Batu Mandi Sub-District, Balangan Regency, South Kalimantan Province, starting in March 2018 until completion. The data used in this study include primary and secondary data:

1. Primary Data  
Primary data was collected by conducting observations and direct interviews assisted with a questionnaire to the mandai chips entrepreneur, Mr. Abdul Hadi.
2. Secondary Data  
Secondary data was data obtained by searching the literature of books, research reports, articles, magazines, scientific works related to research problems and through the internet. Secondary data was also obtained from government agencies.

This research was conducted by survey method with technical observation. Data collection was carried out with a case study method on the mandai chip business in Batu Mandi District. Data collected were in the form of primary data and secondary data; primary data were collected through direct interviews and observations using a list of questions (questionnaire). The primary data were from the identity of the entrepreneur and the business process of the Mandai Chips which included the technical manufacture of mandai chips and the costs used in the business of mandai chips, while the secondary data were obtained from the agencies involved in research, and included literature studies from various media related to research. Next step was to find out economic analysis which included: explicit costs, implicit costs, total costs, revenues, profits, net added value, gross added value and added value of raw materials.

Variables are objects of research, or what is the focus of research. The variables observed include:

1. Technical Processing of mandai chips
2. Input and input prices
3. Output and output prices
4. Problems

## **RESULTS AND DISCUSSION**

The materials used in the business of mandai chips Cap Gundul in one production were mandai, salt, onion, garlic, flour, and flavoring, as for the comparison of spices in one production of the making of mandai chips was as follows:

1. A total of 10 kg of half-cooked cempedak skin that had been peeled and had been soaked in salt water of 3 packs of 250 gr salt for 2-3 days or more,
2. Red onion  $\frac{1}{4}$  kg, and garlic  $\frac{1}{4}$  kg
3. 1 kg of flour
4. 54 gr / 0.054 kg of flavorings.

The steps in making mandai chips Cap Gundul were as follows:

1. Cempedak fruit which was still half cooked and then separated between the contents of cempedak and cempedak skin or commonly called mandai which would be used for raw material for chips. Cempedak skin that had been peeled then washed thoroughly and soaked in salt water of 3 packs of 250 gr salt for 2-3 days could be used to make mandai chips while those with more than 2-3 days could also be used as raw material but seen from the mandai texture if the mandai was soft then it could not be used to make mandai chips, because if it was soft it would affect the taste and crispness of the mandai chips. The purpose of soaking the raw material for mandai chips using salt was that it could last a long time or not easily rot, after soaking the mandai it was washed until it was clean.
2. Cutting mandai which had been soaked in salt water using a knife, thinly sliced mandai with a size of approximately 1 cm then washed mandai again until mandai did not taste too salty but did not remove the salty taste that was on mandai then drained and put in into the basin.
3. Prepare the spices such as red onion, garlic and flavoring that had been mashed using a blender.
4. Mandai which had been cut into thin pieces mixed with the seasonings gradually until evenly spread.
5. After the spices were mixed and then put in dry flour gradually until evenly spread, the mandai which had been mixed with the spices should not soak too long into the flour because if it was too long the flour would clot and reduce the crispness of the chips.
6. Then mandai which had been mixed with spices and flour floured until it became crispy or cooked which was indicated by the change in color to become brownish.
7. Mandai chips that had been cooked were then put into a spinner or oil-draining device then put into a variety of plastic containers (jars) before entering the packaging process. This aimed to not reduce the crispness of the chips.
8. Mandai chips were packaged into packets with net 80 gr then labeled the packaging, and finally mandai chips were ready to be marketed.

Meanwhile, according to Rahma (2014) the ingredients needed to make cempedak chips included garlic, rice flour, pepper, cempedak skin, salt, and flavoring. Here's how to make mandai chips:

1. Brush the knife with cooking oil then peel the cempedak fruit so that the knife is not sticky from the sap from cempedak.
2. Cut the cempedak fruit lengthwise
3. Take and set aside the fruit
4. Cut into the cempedak fruit small pieces and then wash and drain
5. Boil the cempedak skin that has been cut by giving the pounded garlic until the skins soft enough, then add a little salt.
6. After it is tender, lift and drain. Squeeze so that the water content comes out, then shred thinly.
7. Put all flour and give pepper. Stir and spread evenly on cempedak skin
8. Fry with hot oil then lift and drain.

The materials and technical processing of mandai chips Cap Gundul in this study are slightly different from the literature according to Rahma, (2014), namely the peeled fruit was washed then cut into pieces and boiled with pounded garlic until the skin was soft enough, then it was added with a little salt, while the ingredients used by Mr. Abdul Hadi was mandai which had gone through the process of soaking in salt water for approximately 2-3 days. The ingredients used by Rahma (2014) were adding pepper, rice flour and flavoring while the ingredients used by Mr. Abdul Hadi did not use pepper. The reason for the entrepreneur was that the chips did not taste spicy and so that the flavor itself did not change. While the reason that the entrepreneur did not use rice flour was that the resulting chips would not be hard. The entrepreneur also did not do boiling first because if it was through the boiling process the mandai chips would not last long.

### **Recapitulation of Costs Used**

The results of recapitulation of explicit cost, implicit cost, total cost, revenue, profit, gross added value, net added value and value added per raw material in one month of production in mandai chips business in Batu Mandi Sub-District, Balangan Regency can be seen in Table 2.

Table 2. Explicit, Implicit Average Costs, Total Cost, Revenue, Profit, Gross Added Value, Net Added Value, and Added Value of Raw Material per Month in Mandai Chips Business in Batu Mandi Sub-District, Balangan Regency (Primary Data Processing, 2017)

No	Types of Costs	Average
1	Total of explicit cost	Rp 4,935,925.00
2	Total of implicit cost	Rp 780,000.00
3	Total Cost (TC)	Rp 5,715,992.00
4	Price (P)	Rp 20,000.00
5	Revenue (TR)	Rp 8,000,000.00
6	Profit	Rp 2,283,008.00
7	Gross Added Value	Rp 3,797,000.00
8	Net Added Value	Rp 3,764,008.00
9	Added Value Per Raw Material	Rp 47,462.50

From Table 2, it can be seen that the average total cost of explicit cost per month of production in mandai chips business in Batu Mandi Sub-District, Balangan Regency is Rp.4,935,925.00/month, where the explicit cost consists of the cost of raw materials with an average of Rp.1,600,000.00/month, the cost of supporting materials with an average cost of Rp.2,603,000.00/month, depreciation costs of equipment with an average cost of Rp.32,992.00/month, electricity and water costs amounting to Rp. 100,000.- /month, and labor costs outside the family of Rp. 600,000.00/month. While the total of implicit average cost per one month of production is Rp.780,000.00/month, which consists of labor costs in the family with an average of Rp.280,000.00/month and the cost of renting building with an average of Rp. 500,000.00/month. The total cost (explicit and implicit) of the mandai chip business per one month of production is Rp.5,715,992.00/month.

Revenues on the mandai chips business were obtained from the sale of mandai chips. With the price of mandai chips of Rp. 20,000.00 / package, the net weight on one package was 80 gr and with 50 packs in one production. The results of the research on mandai chips Cap Gundul business showed that the total of average income of the chips per production month was Rp.8,000,000.00/month. The profit obtained by mandai chips

entrepreneurs in one month of production was obtained from the total revenue minus the total costs (explicit and implicit costs) of Rp.2,283,008.00/month.

The added value of cempedak fruit as a raw material for chips was marked with a Gundul trade mark with a final product value of Rp.8,000,000.00/month. The cost was between Rp.4,203,000.00 /month which consistet of raw material costs of Rp. 1,600,000.00/month the cost of supporting materials wasRp. 2,603,000.00/month. Intermediate costs are costs that are once used up in the production process and are non-durable and services. Gross added value of Rp.3,797,000.00/month was obtained from the value of the final product minus intermediate costs. Net added value in mandai chips Cap Gundul business was Rp. 3,764,008.00/month obtained from gross added value of Rp.3,797,000.00/month minus the depreciation value, where the depreciation value was obtained from the initial value of the equipment minus the final value of the equipment and divided by the economic age in the month of Rp. 32,992.00/month. The added value per raw material for one kilogram of raw material for cempedak / mandai skin used in production provided added value of raw materials of Rp.47,462.5/kg. The amount of added value was obtained from the average gross added value of Rp.3,797,000.00/month divided by the number of raw materials used as much as 80 kg.

## CONCLUSION

From the results of the research of mandai chips Cap Gundul business in Batu Mandi Sub-District, Balangan Regency, it can be concluded:

1. The technical processing of mandai chips Cap Gundul in Batu Mandi Sub-District, Balangan Regency is as follows: cleansing, cutting, mixing of spices into mandai, mixing of flour, frying, draining, and packaging.
2. The average total cost of mandai chips Cap Gundul business in 1 month of production is Rp.5,216,925.00/month. The revenue of mandai chip business is Rp. 8,000,000.00 /month. The total average profit is Rp. 2,783,075.00/month. Gross added value is Rp. 3,797,000.00/month. Net added value is Rp. 3,763,075.00/month. The value added per raw material is Rp. 47,462.5 / month.
3. The problems faced only occur in the product promotion section which is not as vigorous in social media; therefore there are still many communities, especially outside Balangan Sub-District who do not know the product.

## SUGGESTION

In order to overcome the promotion problem that occurs in trying to mark this mandai chips Cap Gundulis by making online social media such as Instagram and Facebook so that the people of Balangan Regency and outside Balangan Regency can find out and buy the product, so that the marketing of the product can spread widely. The marketing tips that can be done according to Dimas (2015), namely:

1. Become your own salesman.
3. Price game is needed.
4. Use online media.
5. Hire a salesman.
6. Use promotional media.

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