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Profitability of Clove Leaf Oil Agroindustry Business in Gantarang District, Bulukumba Regency, South Sulawesi

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Abstract

Cloves are a plantation commodity that has multiple functions, ranging from health, beauty, industry, cooking spices, and so on. This study aims to determine the income and feasibility of the clove leaf oil agroindustry in Benteng Gantarang Village, Gantarang District, Bulukumba Regency. The sampling technique in this study used purposive sampling technique, namely the owner of the clove leaf oil distillation business. The sample of clove leaf oil entrepreneurs was obtained from 5 home industries. The types of data include primary data and secondary data. Data analysis used quantitative descriptive analysis. The results of this study indicate that the clove leaf oil agroindustry business in Benteng Village, Gantarang District, Bulukumba Regency has an average production of 240 liters per month, with a price of IDR 200,000.00 per liter, the revenue is IDR 48,000,000.00, while the total cost reaches IDR 7,226,951.49 so that the income of this business is IDR 40,773,048.51 per month. The clove leaf oil agroindustry business in this village has an average R/C ratio of 6.62, making it very profitable. This means that for every one rupiah of costs incurred for the clove leaf oil agro-industry business, the revenue obtained reaches IDR 6.62. Thus, the clove leaf oil agroindustry business is very feasible to be developed because it is very profitable.

Key words: agroindustry, clove oil, income, feasibility.

INTRODUCTION

Clove (*Syzygium aromaticum*) is one of the plantation commodities that has a high selling value, especially in the form of essential oils. Clove oil is known to be rich in eugenol, which has various benefits, including as an antiseptic, analgesic, and antifungal (Ranova, 2023; Ermawati & Zulphadly, 2023). With the increasing demand for natural and

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environmentally friendly products, the clove leaf oil distillation business is becoming increasingly relevant and interesting to study further. The market potential for clove oil is increasingly wide open, so the development of this agroindustry is very relevant.

From the market side, the demand for clove oil continues to increase, both for the health, cosmetics, and food industries. Clove oil is often used in products such as soap, hand sanitizers, and herbal medicines (Ranova, 2023; Ermawati & Zulphadly, 2023; Hizrianti et al., 2021). With increasing public awareness of the importance of natural products, market opportunities for clove oil are increasingly wide open. Research in various regions shows that clove oil-based products have high market appeal, so this business has the potential to grow (Guntarti et al., 2023; Oktari et al., 2022).

From an economic perspective, the development of clove oil agroindustry can make a significant contribution to farmers' income and the local economy. Research shows that processing cloves into essential oils can increase the added value of products and provide greater profits compared to selling cloves in their raw form (Guntarti et al., 2023). In addition, this agroindustry also has the potential to create new jobs, which in turn can improve the welfare of people in clove-producing areas (Santoso et al., 2020). Thus, the development of clove oil agroindustry is not only beneficial for individuals, but also for the community as a whole.

In general, the development of the clove oil agroindustry in Indonesia has enormous potential to provide economic, social, and environmental benefits. With the right approach and support from various parties, this agro-industry can become one of the pillars of sustainable local economic development. Therefore, further research and in-depth analysis of these aspects of business feasibility are urgently needed to ensure that the existing potential can be utilized optimally.

Bulukumba Regency has a large potential for clove cultivation. Research shows that this area has climatic and soil conditions that support the growth of clove plants (Akbar, 2023; Siahay, 2023). In addition, the results of research in other regions show that the processing of clove leaves into essential oils can provide significant added value for farmers and business actors (Hariyono, 2024; Israwati et al., 2021). Therefore, an analysis of the feasibility of a clove leaf oil refining business in Bulukumba Regency needs to be carried out to understand the potential income and sustainability of this business. This study aims to determine the income and feasibility of the clove leaf oil agroindustry business in Benteng Gantarang Village, Gantarang District, Bulukumba Regency, South Sulawesi Province.

LITERATURE ANALYSIS AND METHODOLOGY

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LITERATURE ANALYSIS

Clove oil, which is extracted from clove leaves and flowers, is known to have a wide range of benefits, including antimicrobial and antiseptic properties, which makes it in demand in the global market (Hugar et al., 2017; Purwasena et al., 2020). In this context, the profitability of the clove oil agroindustry can be analyzed from several aspects, including production costs, added value, and market dynamics.

Production costs are a key factor that affects profitability. Research shows that processing clove oil can involve a variety of costs, from raw material costs to operational and marketing costs (Öğretmen et al., 2013; Kusmiati, 2024). Therefore, it is important to conduct a comprehensive cost analysis to determine the break-even point and potential profits. For example, studies on other agroindustries show that efficient cost management can significantly increase profitability (Lestari et al., 2021). In the context of clove oil, the use of appropriate and efficient refining technology can help reduce production costs and increase oil yields (Widayat et al., 2015).

The added value of clove oil processing also contributes to profitability. A good extraction and refining process can improve the quality of clove oil, which in turn can increase the selling price in the market (Kusuma, 2023; Aguilar-González et al., 2015). Research shows that clove oil with a high eugenol content has a higher selling value, so it is important for manufacturers to ensure the quality of their products (Jastra, 2015). In addition, product diversification, such as the development of clove oil-based products for cosmetic and pharmaceutical purposes, can also open up new market opportunities and increase profitability (Jentzsch et al., 2017; Sulistyoningrum et al., 2017).

Market dynamics and demand for clove oil also affect profitability. With the increasing awareness of the health benefits of natural products, the demand for clove oil in the global market is increasing (Zahl et al., 2011; Vanin et al., 2014). Research shows that producers who are able to adapt to changing market demand and utilize effective distribution channels can increase their profits (Nagaraju et al., 2021). Therefore, a good marketing strategy and an understanding of market trends are essential for the success of the clove oil agroindustry.

Challenges in the development of this agro-industry also need to be considered. One of the main challenges is price fluctuations in the market, which can affect the incomes of farmers and producers (Hidayat, 2018; Apriono, 2023). Research shows that implementing risk management strategies and product diversification can help mitigate the negative impact of price fluctuations (Hutrik, 2024). Additionally, it is important to build strong partnerships between farmers, producers, and other stakeholders to create a more efficient and profitable supply chain (Babu et al., 2011; Zakir et al., 2021).

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The profitability of the clove leaf oil agroindustry in Indonesia is greatly influenced by production costs, added value, market dynamics, and challenges faced. With the right approach and support from various parties, the sector has the potential to grow and make a significant contribution to the local and national economy.

METHODOLOGY

This research was carried out in Benteng Gantarang Village, Gantarang District, Bulukumba Regency, South Sulawesi Province, in July-August 2024. The sample determination technique in this study uses purposive sampling, namely choosing clove leaf oil refining business owners who are more productive continuously. The sample of clove leaf oil business owners obtained was 5 household industries. The types of data include primary data and secondary data. Primary data was obtained from the results of direct interviews with clove leaf oil agroindustry business owners. Secondary data is obtained from various organizations, institutions, related agencies and other sources, in the form of records, documents, reports, and so on.

Data analysis uses quantitative descriptive analysis in the form of income and business feasibility analysis. The formula used is as follows:

Income formula:

π = TR – TC
TR = P x Q
TC = FC + VC
π = Profit / Income (IDR)
TR = Total Revenue (IDR)
TC = Total Cost (IDR)
P = Clove Leaf Oil Price (IDR/liter)
Q = Amount of Clove Leaf Oil Production (liter)
FC = Fixed Cost (IDR)
VC = Variable Cost (IDR)

Business feasibility formula:

$$\frac{R}{C} ratio = \frac{TR}{TC}$$

If the R/C > 1, it means that the business is worth developing (profit)
If R/C = 0, it means that the business is not profitable and does not lose (break even)
If the R/C < 1, it means that the business is not worth developing (loss)

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RESEARCH AND RESULTS

The financial aspect of the clove leaf oil refining business is also an important focus in the feasibility analysis. Research in various regions shows that this business can provide quite profitable income for business actors. In Benteng Gantarang Village, the income analysis showed positive results, with promising profit potential (Akbar, 2023); Israwati et al., 2021). In addition, with the right distillation technology, production efficiency can be improved, so that operational costs can be reduced (Hasan et al., 2021; Patmawati, 2023). This shows that with good management, the clove leaf oil refining business in Bulukumba Regency can be a sustainable source of income.

The income and feasibility of the clove leaf oil agroindustry business were analyzed in a production span of one month. Clove leaf oil business owners in Gantarang District, Bulukumba Regency, produce an average of 4 times a week. The average monthly production of clove leaf oil reaches 240 liters, with a selling price of IDR 200,000.00 per liter, so revenue of IDR 48,000,000.00 per month is obtained. The high price of ouput (clove leaf oil) provides high revenue gain.

The total variable costs incurred to produce clove leaf oil averaged IDR 6,967,000.00 per month. A relatively larger variable cost is for the purchase of firewood, although it is not much different from the expenditure for the purchase of clove leaf raw materials. Electricity is used for lighting or lighting and operates water pump machines and others, so it only has the lowest relative expenditure rate. The total fixed cost to produce clove leaf oil is an average of IDR 259,951.49 per month. Fixed costs are the average expenses for the depreciation value of the tool and taxes calculated per month. The tools used in the clove leaf oil production process include boilers, condensers, oil separators, oil funnels, water pumps, scales, jerry cans, and shovels. Thus, the total cost incurred to produce clove leaf oil in Benteng Gantarang Village, Gantarang District averages IDR 7,226,951.49 per month.

Table 1. Production, Income, and Business Feasibility of Clove Leaf Oil Agroindustry in Gantarang District, Bulukumba Regency

Description	Amount (unit)	Price per unit (IDR/unit)	Value (Rp/month)
1. Production (liters/month)	240	200,000.00	48,000,000.00
2. Variable Costs			6,967,000.00
a. Clove leaves (kg/month)	1,889	2,000.00	3,778,000.00
b. Firewood (cubic/month)	3.8	100,000.00	3,800,000.00
c. Labor (people)	3	800,000.00	2,720,000.00

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d. Electricity			89,000.00
3. Fixed Costs a. Tool depreciation (Rp/month) b. Tax (Rp/month)			259,951.49 223,518.16 36,433.33
4. Income (Rp/month)			40,773,048.51
5. Feasibility (R/C ratio)			6.62

Source: Primary data analysis, 2024.

The income of the clove leaf oil agroindustry business in Benteng Gantarang Village, Gantarang District averages IDR 40,773,048.51 per month. The R/C ratio value for the clove leaf oil business is relatively high, which is obtained on average reaching 6.62. This shows that for every one rupiah (IDR 1.00) spent to finance the entire clove leaf oil agro-industry business, the revenue value that will be obtained is IDR 6.62. This means that running a clove leaf oil agroindustry business is very profitable because the total costs incurred are much lower than the value of the revenue obtained. This situation can occur because input prices are relatively cheap, while output prices tend to be very high. The raw material in the form of clove leaves is waste from clove cultivation, so the price is very cheap. Thus, the clove leaf oil agroindustry business is very feasible to be developed.

However, challenges in the development of this agro-industry also need to be overcome. One of the main challenges is the availability of consistent, high-quality raw materials. Research shows that the results of clove oil extraction can vary depending on the distillation technique and the quality of the raw materials used (Jayanudin, 2018; Guntarti et al., 2023). Therefore, it is important for businesses to ensure that they have good access to quality raw materials and apply efficient distillation techniques to maximize yield (Tuslinah, 2023; Tuganyita et al., 2019).

The technical aspect is also an important factor in the feasibility of this clove leaf oil agroindustry business. Research shows that the use of appropriate technology in the distillation process can improve the efficiency and quality of the final product (Hasan et al., 2021; Patmawati, 2023). In addition, training for farmers and business actors on good distillation techniques is also very necessary to improve their skills and knowledge in managing this business (Akib et al., 2020; Saputro, 2023). Thus, investment in training and technology can be a strategic step to increase the competitiveness of the clove leaf oil agroindustry business in Bulukumba Regency.

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CONCLUSION AND RECOMMENDATIONS

The clove leaf oil agroindustry business in Benteng Village, Gantarang District, Bulukumba Regency has an average production of 240 liters per month, with a price of IDR 200,000.00 per liter, the revenue is IDR 48,000,000.00 while the total cost reaches IDR 7,226,951.49 so that the income of this business is IDR 40,773,048.51 per month. The clove leaf oil agro-industry business has an average R/C ratio of 6.62 so it is very profitable. This means that for every one rupiah of costs incurred for the clove leaf oil agro-industry business, the revenue obtained reaches IDR 6.62. The clove leaf oil agroindustry business is very feasible to develop because it is very profitable.

One of the main challenges is the continuous availability of raw materials (clove leaves). For business actors, it is very important to ensure good accessibility to high-quality raw materials and apply efficient clove leaf oil distillation techniques to achieve maximum production and profits. To support the sustainability of the clove oil agroindustry, cooperation between the government, academics, and business actors is needed. The government can play a role in providing policy support and facilities, while academics can support research and innovation to increase business efficiency and productivity.

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