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Optimization of Gula Semut Merah Innovation Based on Palm Sap in Supporting the Local Economy of Way Kalam Village, South Lampung

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Abstrak

Pengabdian kepada masyarakat merupakan kegiatan yang bertujuan untuk berkontribusi kepada masyarakat tanpa mengharapkan imbalan finansial. Mahasiswa Program Kuliah Kerja Nyata (KKN) telah melaksanakan kegiatan tersebut di Desa Way Kalam, Kecamatan Penengahan, dengan memanfaatkan sumber daya alam yang tersedia di daerah tersebut. Fokus utama program ini adalah pengolahan nira aren menjadi gula aren, yang memiliki cita rasa unik dan tekstur butiran halus. Selama pelaksanaannya, masyarakat setempat diperkenalkan dengan metode inovatif pengolahan nira aren menjadi gula aren. Respons masyarakat sangat positif, tercermin dari antusiasme dan partisipasi aktif mereka. Selain itu, mereka menyadari bahwa proses produksinya relatif sederhana dan memiliki potensi pasar yang menjanjikan. Inisiatif pengabdian kepada masyarakat ini telah memberikan dampak yang berarti, tidak hanya dengan meningkatkan pengetahuan tentang peluang usaha alternatif tetapi juga dengan berkontribusi pada peningkatan ekonomi penduduk setempat.

Kata Kunci: *Pengabdian Kepada Masyarakat, Gula Aren, Pengolahan Nira, Pemberdayaan, Ekonomi Lokal.*

Abstract

Community service is an activity aimed at contributing to society without expecting financial compensation. Students participating in the Community Service Program (KKN) have carried out such activities in Way Kalam Village, Penengahan District, by utilizing the natural resources available in the area. The main focus of the program was the processing of palm sap into palm sugar, characterized by its unique flavor and fine-grain texture. During the implementation, the local community was introduced to an innovative method of processing palm sap into palm sugar. The community's response was highly positive, as reflected in their enthusiasm and active participation. Moreover, they came to understand that the production process is relatively simple and holds promising market potential. This community service initiative has had a meaningful impact, not only by enhancing knowledge about alternative business opportunities but also by contributing to the economic improvement of the local population.

Kata Kunci: *Community Service, Palm Sugar, Sap Processing, Empowerment, Local Economy.*

INTRODUCTION

Aren or enau is a palm plant that grows widely in tropical Asia, including Indonesia, and has great potential as a source of income for local communities (Chawa et al., 2020). The utilization of aren is very diverse, ranging from the trunk for crafts, fiber for brooms, leaves for decoration, fruit for sugar palm, to sap for brown sugar and traditional drinks (Arief et al., 2017). The innovation of brown sugar based on aren sap has significant potential in increasing the added value of local products and empowering rural communities (Nurhayati et al., 2021). Diversification of aren products into brown sugar can open up wider market opportunities, including modern markets and exports.

Way Kalam village is located in the Penengahan sub-district of South Lampung which has abundant natural resource potential, especially the aren plant (Ilham & Saliem, 2016) (Lisanty et al., 2022) (ADI et al., 2018). However, the utilization of aren potential in this village is still limited to the production of traditional brown sugar, which has a relatively low selling value. In addition, the production of traditional brown sugar often faces obstacles such as inconsistent quality, limited marketing, and lack of product innovation. Brown sugar is a derivative product of aren sap which has a fine grain shape like sand and an attractive reddish brown color. Brown sugar has advantages over traditional brown sugar, including being more practical in use, more durable, and having a higher selling value. Ant sugar can be applied in various food and beverage products, such as coffee, tea, cakes, bread, and other snacks. Increasing the added value of products through changes in shape, packaging, and branding can also maintain competitiveness (Sarmawa et al., 2023).

One of the processed products that can be produced from palm sap is palm sugar. Palm sugar is a natural sweetener made from palm sap that is cooked and processed into powder or small granules. The process of making palm sugar involves several stages, starting from tapping palm sap, filtering, cooking, crystallization, to drying and packaging. The development of red palm sugar products based on palm sap in Way Kalam Village can have a positive impact on the local economy.

However, the processing of palm sap into palm sugar still faces various obstacles, such as low business innovation capabilities (Sutrisno et al., 2019). The process involves cleaning the palm bunches, then the bunches are swung and beaten so that the sap can flow smoothly through the capillary vessels (Aulia et al., 2023). cutting the bunches, then placing a bamboo container specially made to collect the sap right under the bunches that have been cut (Anggraini et al., 2021). Or, the end of the cut bunch can also be inserted a little into the mouth of the bamboo (Alamsyah et al., 2021).

Seeing this, students of the Real Work Program (KKN) are enthusiastic about developing a new method in making palm sugar to improve the economy of the community in Way Kalam Village. The purpose of this activity is to present a method of processing palm sap into palm sugar that can be consumed

by all ages, from young children to the elderly. Aspects such as taste, aroma, cleanliness, packaging, and cost must be considered in the development of palm sugar products.

Based on the background that has been described, KKN students are interested in conducting " Optimization of Gula Semut Merah Innovation Based on Palm Sap in Supporting the Local Economy of Way Kalam Village, South Lampung", so that the community knows how to process palm sap into palm sugar that can be consumed by all levels of society, from children to the elderly. The development of palm sugar needs to be considered in terms of taste, aroma, cleanliness, packaging, and price.

METHOD

Making palm sugar from palm sap is a process that involves removing some of the water from the sap (aroma tree sap) and purifying the natural sugar contained in the sap. This is a process that is commonly used in several countries in the world, especially in Southeast Asia. The materials used in this activity are Palm sap (aroma tree sap or coconut), Besan pot, Frying pan or other heating tool, Stirring tool, Filter cloth or sieve, and Standing pouch for packaging palm sugar.

By creating creative business prospects for palm sugar made from palm sap, this community service project empowers the people of Way Kalam Village to improve their standard of living and family income. The people of Way Kalam Village, including housewives and other local residents, are the targets of this activity. To create palm sugar products that maintain their original taste and are more resistant to weather changes, socialization, provision of knowledge and markets, and processing of palm sap into palm sugar are carried out.

The sap is put into a container in the form of a large frying pan to be heated or boiled immediately, but when the process is put into the pan, it is filtered at the same time, so that dirt does not get involved when heated. The sap is heated for 1-3 hours, the length of time depends on the amount of sap being heated. During the heating process, the sap is stirred continuously until it boils. If foam appears during heating, then the foam on the surface must be removed so that the palm sugar has a color that is not too dark, drier, and lasts longer. After the sap becomes thick and thick, then the heat is reduced, after 10 minutes, the pan is removed from the stove and the thick sap is stirred slowly until crystallization occurs. After the thick sap crystallizes, stir faster until a coarse powder is formed. Then the crystallized sap is ground and sieved using a sieve to get good ant sugar results.

RESULT AND DISCUSSION

Community service activities entitled "Improving Community Economy Through Innovation in Processing Palm Sap Water into Palm Sugar in Way Kalam Village, South Lampung Regency" were held on August 24, 2023, located in Way Kalam Village, South Lampung Regency. This activity involved the

participation of cadre mothers, students from Cikate Middle School, and local residents.

Information about the progress of palm sugar production and the application of digital marketing techniques was provided in the context of this activity. The palm trees found throughout Indonesia, especially in Way Kalam Village, South Lampung Regency, show untapped potential. So far, only traditional palm sugar has been made from palm sap. However, the KKN Student Team aims to educate the public about the potential of palm sap as a raw material for palm sugar production through this community service project. Palm sugar is a processed product that is in demand and has high demand in the community. This condition opens up promising business opportunities through processing palm sap water into palm sugar products. The manufacturing process takes between 1 to 3 hours, depending on the amount of palm sap processed. Therefore, this innovation is expected to provide a positive economic impact on the surrounding community.

Table 1. Process of making brown sugar from palm sap

Stage	Caption	Image
1. Heating & Filtering Palm Sap	Niren aren is heated at low temperatures until it reaches around 70-80 C to remove high water content and speed up the thickening process. After being heated, the nira aren is filtered using gauze or a fine sieve to remove coarse dirt and debris.	
2. Stirring the thick sap	After the thick sap crystallizes, stir it faster until a coarse powder forms. This coarse powder is called semi-finished palm sugar.	
3. Grinding/refining semi-finished ant sugar	The semi-finished palm sugar is then ground using a grinding machine to reduce the size of the powder and remove sugar lumps.	
4. Sifting Palm Sugar	After rolling, the ant sugar is sifted according to the size we want.	

5. Packaging	Packaging is the final stage of a food processing product manufacturing process.	

This community service activity aims to provide socialization to various community groups, including business actors, housewives or cadre mothers, and junior high school students or teenagers. The main goal is to introduce the latest innovation in making palm sugar, while also providing an understanding of marketing through digital strategies. Socialization documentation can be seen in the following image.

Figure 1. Socialization of innovation in making palm sugar from palm sap

After the socialization, there was an increase in public knowledge regarding the processing of palm sap into high-quality palm sugar. This innovation can work on various age groups, from children, teenagers, to adults, thus expanding the market share for this palm sugar business. Affordable prices make this palm sugar product accessible to various levels of society. In terms of product marketing, there are various strategies that can be applied, both offline (using banners and brochures) and online through electronic media and social media. With this approach, the marketing of palm sugar products becomes more effective and can reach more consumers.

CONCLUSION

Based on this activity, it can be concluded that the processing of palm sap into palm sugar is a new innovation introduced to the community in Way Kalam Village. The positive response received from the community towards palm sugar shows the high interest in this innovation. In addition, the community also gained new knowledge about how to produce high-quality palm sugar and its marketing strategies. This palm sugar product has great market potential, making it a profitable business opportunity and can have a positive impact on the local economy.

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