

Training on Virgin Coconut Oil (VCO) Processing in Banjar Lantangidung, Sukawati District, Gianyar District, Bali

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ABSTRACT

VCO is a processed food product. One area that processes coconuts into Virgin Coconut Oil (VCO) products is Family Welfare Development (PKK) Br. Lantangidung, Batuan, Sukawati, Gianyar, Bali. PKK Merta Nadi Bro. Lantanidung, Sukawati do not yet have adequate entrepreneurial, production management, or marketing skills. The solution to overcome partner problems is to provide the right technology for VCO processing, equipment assistance, product packaging and labeling knowledge, and marketing. Implementation of community service activities has been running smoothly. The number of participants who took part in this activity was 10. Based on the evaluation results, the group partners mastered VCO processing technology up to 100%. The resulting VCO products are of higher quality, have a longer shelf life, and have a wider market.

INTRODUCTION

Batuan Village is located in Sukawati District, Gianyar Regency, Bali Province. It is a low area stretching from north to south with an area of +410 ha, and its topography indicates that it is an agricultural area. In addition, Batuan Village consists of 17 official banjars, or hamlets, administratively. The Batuan Village area is bounded by Batuan Kaler Village to the north, Sukawati Village to the south, Central Singapadu Village to the west, and Kemenuh Village to the east (Ni Luh Putu Putri et al., 2022). The people of Batuan Village, Sukawati District, and Gianyar Regency are prioritized for assistance, especially in Br. Lantangidung, which concentrates on food issues. To maintain local wisdom in the field of food, all parties are responsible for protecting processed food. Figure 1 shows the location plan of Br. Lantangidung.



Figure 1. Location Plan Br. Lantangidung

Considering that the market competition in the snack business is very tight, uniqueness is needed to increase the selling value of the product. In addition to unique products, it also requires the selection of unique and attractive product packaging so that consumers who buy them can be immediately interested in buying them. Packaging is needed to minimize or control the process of decreasing the quality of a food product. According to Law Number 7 of 1996 concerning food, food packaging is a material used to contain and/or wrap food, whether in direct contact with food or not (Sabariyah et al., 2023).

Coconut is a multi-beneficial commodity, starting with its leaves, stems, and fruit. Coconut fruit, which consists of coir, shell, flesh, and coconut water nothing is wasted can be processed to produce industrial products such as nata de coco, raw materials for margarine, and cooking oil (Yanti et al., 2023). Coconut processing, which is widely used for basic needs, produces cooking oil and virgin coconut oil (VCO), especially for people on the island of Bali. One of the areas that process coconut into Virgin Coconut Oil (VCO) products is Family Welfare Development (PKK) Br. Lantangidung, Batuan, Sukawati, Gianyar, Bali. Based on the method of manufacture, coconut oil production can be divided into three categories: (1) industrial coconut oil made from copra as raw material through the RBC (refining, bleaching, and deodorizing) process; (2) occult coconut oil made traditionally by the community or farmers; and (3) pure coconut oil, or virgin coconut oil (VCO), which is fermented coconut oil that does not undergo a hydrogenation process. Of the three types of coconut oil, the one with the best quality and the highest economic value (selling price) is VCO. The high economic value of VCO is due to its well-known benefits for health and beauty (Karouw et al., 2019).

The potential of VCO, which is very beneficial for health and beauty, causes the selling price of VCO in the market to be very high, reaching Rp. 85,000.00–200,000.00 at Tokopedia and Shopee. This means that prices on the online and offline markets reach 5–12 times the price of bulk cooking oil. This condition provides very good prospects for coconut-producing communities to diversify their coconut products to become more economically valuable through the production of VCO. However, the community's knowledge and ability to make VCO are very low. Even though the technology for making VCO is traditionally very simple using simple equipment (Ekyastuti et al., 2023), According to (Fajri Hasibuan et al., 2018), the technology for making VCO can be done traditionally, which is very simple and can be done by anyone. Virgin Coconut Oil (VCO) contains caproic acid (0.187%), octanoic acid (1.12%), cyclopropane pentanoic acid (0.54%), lauric acid (32.73%), myristic acid (28.55%), palmitic (17.16%), oleic acid (14.09%), and stearic acid (5.68%). Based on the composition of the saturated and unsaturated acid content, lauric acid is the highest. This condition causes VCO to be more special than other types of coconut oil (Novilla et al., 2017).

Lauric acid is a medium-chain fatty acid that can be directly converted into energy in our body cells. Lauric acid can also be converted into monolaurin compounds to increase the body's immunity against viruses, bacteria, and protozoa. Some research results show aspects of VCO as herbal or vegetable medicine, including preventing pressure sores in stroke patients (Sumah, 2020), antimicrobials, and premature aging (Wardani, 2012). In addition, VCO also nourishes the brain, reduces the risk of heart disease, burns calories (Fatkhil et al., 2023), and nourishes skin, hair, and teeth (Putri & Ali, 2021). Pure coconut oil is an oil that has many benefits and has long been used by Indonesians. Virgin coconut oil, better known in a foreign language as virgin coconut oil (VCO), can also be used in the health sector, for example, to make pharmaceutical preparations. The advantage of pure coconut oil is its activity, which can be used as an antibacterial and antiviral. Another advantage is its high bioavailability, making it easy to apply to various technical matters in the health sector (Clarissa Hanjaya, Franciscus Sinung Pranata, 2020). Various studies in the health sector have proven the benefits of virgin coconut oil as an antibacterial (Lavine et al., 2018). Apart from being antibacterial, virgin coconut oil is also known to have benefits as an anti-inflammatory (Varma et al., 2019). Based on the results of these studies, virgin coconut oil can also be used as an oil for massage because it has anti-inflammatory activity. anti-inflammatory.

In addition, because Br. Lantangidung is now a tourist spot, there is an opportunity to function as a market for food products. With this situation, the community has the opportunity to process their agricultural products, including coconut, which will be processed into VCO products that will be sold as souvenirs typical of Batuan Village. Our target this time is PKK member housewife Merta Nadi Br. Lantangidung. He comes from an economically less productive society but has a strong desire to become an entrepreneur. In addition, it can be used as an additional source of income that helps increase family income (Ni Luh Putu Putri et al., 2022).

The objectives of this community service activity include: 1) Providing appropriate technology (TTG) for processing coconut into VCO products 2) Providing knowledge on proper processing methods, processing sanitation and hygiene, product packaging, labeling, storage, and marketing 3) Providing knowledge on the implementation of the basic feasibility of GMP (good manufacturing practice) and SSOP (sanitation standard operating procedures) to produce quality VCO products 4) Improve skills in making processed coconut into VCO. 5) Providing equipment assistance and business capital so that the types of processed VCO become more diverse. With community service activities funded by Unwar, it is hoped that the people of Br. Lantangidung, Batuan, and Sukawati will have skills and insights in managing local natural resources and an entrepreneurial spirit to be able to open up business opportunities related to conditions in Banjar Lantangidung. By providing post-harvest technology training activities and coconut processing in VCO, it is hoped that the community will be able to produce and market their processed products, thereby increasing family income and welfare.

IMPLEMENTATION AND METHODS

Materials and Equipment

The raw material used is coconut, which is taken around Br. Lantangidung, Batuan, and Sukawati. Other additional materials are warm water, zeolite stones, tissue, cotton, and filter paper. The equipment used is a stove, mixer, pot, cracker container, basin, measuring cup, ladle, small hose, and several other types of equipment.

Implementation

In detail, the process of making simple VCO without heating is explained by (Khasbullah et al., 2021) as follows: (a) grate coconut meat and add warm water in a ratio (1:1) so that more coconut milk is squeezed out; (b) put it in a container that has been given a hole in the bottom and leave it for 1-2 hours until 2 layers of kanil are formed on the top and water on the bottom (Nasution et al., 2022); (c) open the bottom hole of the container so that the water is wasted and then store the container containing the canal in a place that is not exposed to direct sunlight at room temperature; (d) after 1-2 days 3 layers will form, namely virgin coconut oil/VCO (top), remaining coconut milk (middle) and water (bottom); (e) harvest the VCO by scooping the oil at the top and then pouring it into a container that has been lined with tissue, cotton and filter paper to separate the oil from the coconut milk that is included (Kasih Haryo Basuki, Silvia Septhiani, 2009). This very simple technique will be mastered by ordinary people, especially in Br. Lantangidung, so that the transfer of knowledge and skills from academics to the community will run smoothly. The target partners in this VCO training activity are PKK members Merta Nadi Br. Lantangidung.

RESULTS AND DISCUSSION

The activity was carried out on Sunday, June 11, 2023, with the title "Training on Virgin Coconut Oil (VCO) Processing at Banjar Langidung, Sukawati District, Gianyar Regency, Bali". Demonstration to provide an understanding of appropriate technology (TTG) for coconut products to become virgin coconut oil (VCO) and training on making VCO, providing knowledge about product packaging, labeling, marketing, and entrepreneurship. Participants who took part in this activity totaled 10 people from the PKK Merta Nadi Br. Loud nose. The PKM team also donated tools and materials to make coconut products into virgin coconut oil (VCO).

VCO has the appearance of natural oil properties, such as being colorless and having a slightly sour and caramel aroma. VCO contains approximately 0% saturated fatty acids, approximately 10% unsaturated fatty acids, and antioxidants, namely tocopherols and polyphenols (Harlinanda, 2017). The fatty acids in VCO are useful for providing energy to the body, preventing degenerative diseases (diabetes, liver disease, osteoporosis, and cancer), preventing obesity, lowering cholesterol, maintaining heart and blood vessel health, and being antimicrobial (Nurliah, Sajriawati, 2022). Apart from these advantages, making VCO is also very easy, effective, and practical for producing VCO both on a home industry scale and on a factory industrial scale (Zamaya et al., 2023).

This community service activity has been published in electronic media. Community Partnership Program activities entitled "Training for Virgin Coconut Oil (VCO) Processing in Banjar Lantangidung, Sukawati District, Gianyar Regency, Bali" have been running well and smoothly. This activity was held on Sunday, June 11, 2023, in the form of training and hands-on practice to provide an understanding of the material for developing virgin coconut oil (VCO) processing. Packaging techniques, marketing techniques, and strategies for making products that consumers like are also presented. This community service activity has been published in electronic mass media. The implementation of this activity involved 3 lecturers from the Food Science and Technology Study Program, Faculty of Agriculture, Warmadewa University, namely: 1) Ni Luh Putu Putri Setianingsih, S.Si., M.Sc.; 2) Ir. I Wayan Sudiarta, MP; and 3) Dr. Dewa Putu Yudi Pardita, S.E., M.Si. The implementation of activities and processed products of virgin coconut oil (VCO) can be seen in Figure 2.

Training and outreach are carried out with the practice of making food products to increase family economic income. Knowledge of food processing sanitation is carried out because food processing is a very influential factor in the quality of food served to consumers. Partners have used masks, gloves, aprons, and head coverings during processing. Thus it is expected that the food products produced will be of higher quality in terms of food safety. The benefits obtained from this PKM activity are in terms of Economic and Social Impacts. The group acquired skills in processing Virgin Coconut Oil (VCO). Of the 10 groups of participants, all participants have mastered manufacturing technology so that 100% can make Virgin Coconut Oil (VCO) products. In addition, the benefit in terms of the partner's contribution to the implementer is that the partner is very

enthusiastic about participating in the training process. All partners (100%) actively participate in direct practice activities and partners expect ongoing assistance in the development of Virgin Coconut Oil (VCO).



Figure 2. Implementation of training activities, practices, and product processing of virgin coconut oil (VCO)

Outcomes

The results achieved from this community service activity include appropriate technology (TTG), mass media publications, activity videos, and Virgin Coconut Oil (VCO) products.

Benefits

The implementation of this activity has had an impact on PKK Merta Nadi Banjar Lantangidung, namely that a group consisting of 10 representatives of PKK members can independently process coconuts into Virgin Coconut Oil (VCO) products that are ready to be marketed. With the diversification of food products, coconut-based Virgin Coconut Oil (VCO) products have added value and can increase the income of PKK Merta Nadi Banjar Lantangidung. Apart from being a body care product, virgin coconut oil (VCO) can be consumed by all groups of people, from children to the elderly, which can improve people's nutrition because of the coconut content in it. The PKM implementation team also donated tools for processing virgin coconut oil (VCO) products to support partners in starting to produce VCO products and marketing them so that they become another source of income. Thus, this activity can certainly improve the welfare of the community, especially PKK Merta Nadi Banjar Lantangidung.

Partner's Contribution to Implementation

Community Partnership Program activities regarding Virgin Coconut Oil (VCO) products by PKK Merta Nadi Banjar Lantangidung, Gianyar Regency, Bali were carried out on Sunday, June 11, 2023, in the form of counseling or theoretical studies to provide an understanding of Appropriate Technology (TTG) material coconut processing into Virgin Coconut Oil (VCO) products, packaging techniques, and marketing techniques, which were attended by 10 representatives from PKK members. All partners (100%) actively participate in activities, and partners expect continuous assistance in processing coconut into virgin coconut oil (VCO) products and other innovative products.

Inhibiting Factors

In the implementation of PKM activities, the inhibiting factor is the difficulty in finding a schedule for carrying out activities amidst the busyness of the community (partners) due to a large number of traditional activities in the village and several member representatives who work as silver craftsmen who cannot be sure of getting a holiday schedule so they can take part in training on making Virgin products. Coconut oil (VCO), so the implementation schedule is difficult to agree on.

Supporting Factors

PKK Merta Nadi Banjar Lantangidung is very enthusiastic about learning how to process coconut technology into innovative products such as virgin coconut oil (VCO). Participants independently want to practice making coconut-based virgin coconut oil (VCO) until they start marketing.

Solution and Follow-Up

Obstacles encountered in implementing PKM can be overcome by communicating with group leaders and village officials. Extension activities and hands-on practice can take place smoothly.

Strategic Steps for Further Realization

The strategic steps to realize the next plan are to provide counseling on GMP (good manufacturing practice), SSOP (sanitation standard operating procedures), how to make labels, and proper packaging of processed coconut products into virgin coconut oil (VCO) as preparation for applying for permits at the Health Office (P-IRT).

CONCLUSIONS AND RECOMMENDATIONS

Community service activities have been running smoothly. PKK Merta Nadi Br. Lantangidung has been able to independently apply coconut processing technology and has produced Virgin Coconut Oil (VCO) products. Partners are 100% familiar with good processing practices, simple product packaging and labeling, broader marketing, and entrepreneurship. It is hoped that through this service activity, Br. Lantangidung can make VCO one of the typical village products. Suggestions for further community service activities are about attractive packaging methods and procedures for obtaining business and product permits.

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