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The Processing of Steamed Cassava Brownies as an Enhancement of the Knowledge and Skills of the People of Suka Menang Village

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Abstract: Cassava is one of the food commodities grown in Suka Menang Village. The people of Suka Menang Village only sell fresh cassava and process it into daily foods such as boiled and fried cassava. Cassava also has the potential to be used as raw material for steamed brownies. Steamed cassava brownies do not use wheat flour, which is the advantage of steamed cassava brownies. This activity aimed to introduce steamed cassava brownies and to increase the Suka Menang Village community's knowledge of the processing technology of steamed cassava brownies. The target audience was the community of Suka Menang Village. The method used was Community Based Participatory Research (CBPR). The activity consisted of 2 stages: 1) a hedonic test of steamed brownies products, and 2)socialization of the potential of cassava and cassava steamed brownies processing and the practice of cassava steamed brownies processing. The results showed that cassava could be processed into steamed brownies. Based on the sensory properties test, the steamed cassava brownies were preferred and acceptable. In addition, there was an increase in the target audience's understanding of the material presented, which was 12.87%. Through this activity, the people of Suka Menang Village had skills in processing cassava-steamed brownies.
Keywords: brownies; cassava; suka menang village

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INTRODUCTION

Suka Menang Village is located in Gelumbang District, Muara Enim Regency, South Sumatra Province, and has an area of ± 1400 ha. Based on information from the village head, the

majority of the population of Suka Menang Village (76%) works as farmers and agricultural laborers. Agricultural products produced in Suka Menang Village include food commodities such as cassava and corn, horticulture such as vegetables and bananas, and plantations such as oil palm and rubber. Cassava is a food commodity that is widely produced in Suka Menang Village.

Suka Menang Village residents believe that cassava produce should only be sold fresh. Fresh cassava sells for between Rp 2,000 and Rp 3,000 per kilogram. The community has not been driven to convert cassava into economically valuable processed food products. So far, the community has boiled or fried cassava to make processed items for daily use. Some individuals also make cassava snacks like opak and rengginang, which are marketed around the village. However, no community in Suka Menang Village has evolved cassava into more processed products like cakes. According to Yulius et al. (2021), processing cassava into more attractive products might improve advantages, particularly in community income. According to Muzakki (2020), cassava has the potential to be turned into brownies.

As per the findings of Samuel et al. (2019), brownies are classified as a subtype of cakes that do not expand and have a texture that is marginally more rigid than that of cakes as a whole. Brownies are widely enjoyed in age groups, including young people, teens, and adults, because of their dominating chocolate flavor. Aimah et al. (2020) claim that brownies represent a superior category of cuisine or snack within society. Brownies, according to Widanti & Mustofa (2015), are among the most popular delicacies in Indonesia at the moment.

Brownies are classified into two categories based on how they are made: baked brownies and steamed brownies (Sani et al., 2018; Yuniartini & Dwiani, 2021). According to Mulaydi et al. (2022), steamed brownies have a softer texture due to the steaming process. Fatimah (2016) went on to say that, based on organoleptic testing, steamed brownies have the greatest average value, particularly for texture parameters, when compared to baked brownies since they are softer to chew.

The main ingredient in brownie processing is wheat flour (Fizriani et al., 2019), but wheat flour is not used in cassava-steamed brownies. This is one of the advantages of steamed cassava brownies. Until recently, the Suka Menang Village community never received information on making brownies with cassava as the primary ingredient. As a result, this activity is projected to strengthen the Suka Menang Village community's knowledge, understanding, and skills in the cassava-steamed brownie processing technology. Furthermore, this activity is intended to boost cassava's added value and commercial value, transforming cassava brownies into an exceptional village product. It could also be one of the measures to help the local food diversification program. This project seeks to expose cassava steamed brownies to the Suka Menang Village community and expand their understanding of the processing technique.

METHOD

This activity's target audience or object was the PKK women of Suka Menang Village. The implementation team consisted of two assistant professors and fifteen students from the Department of Agricultural Technology, Faculty of Agriculture, Sriwijaya University, who were members of the PPK Ormawa Team (Student Organization Capacity Strengthening Program) at Himateta Sriwijaya in 2023.

The method employed in this activity was Community-Based Participatory Research (CBPR). Khurniawati et al. (2022) noted that the CBPR method incorporates a community or society into the research process. According to Kusnawan et al. (2022) and Novianti & Mardiati (2022), the CBPR technique requires the implementation team and the activity's target to collaborate to reach a choice.

This program was conducted from August to September 2023 in Suka Menang Village Hall. Data collecting was carried out in three stages of activity:

1. Pratama (2013) conducted a hedonic or favorability test on cassava brownies. The hedonic test worked by asking panelists to provide personal reactions about enjoying or hating the product being evaluated using a hedonic scale (Tarwendah, 2017). The hedonic scale used to evaluate cassava brownies is 1 (dislike) to 2 (like). There were 55 panelists involved. This test was designed to establish panelists' preferences for steamed cassava brownies in three distinct formulations.
2. Socialization of cassava's potential and the manufacturing of cassava-steamed brownies. Lectures and discussions were used to facilitate socialization activities. At this point, the target audience completed an understanding questionnaire to assess their level of comprehension. The questionnaire was completed twice: before the content was provided (pre-test) and after (post-test).
3. Practical processing of steamed cassava brownies involving the target audience.

The ingredients used to process steamed cassava brownies include cassava, eggs, sugar, margarine, baking powder, SP, cocoa powder, and cheese. The tools for processing steamed cassava brownies consist of a mixer, spatula, grater, basin, spoon, digital scales, cake pan, pans, and stove.

The work method for making cassava-steamed brownies starts with preparing the ingredients and tools that will be used. Then, three chicken eggs were cracked and put into a container, and then 140 g of sugar and ¼ tablespoon of SP were added. Next, it was mixed and homogenized using a mixer for 10 minutes until fluffy. After fluffy, ½ teaspoon of baking powder was added, then stirred until homogeneous. Then, add melted margarine (150 g) and cocoa powder (20 g) and stir again using a spatula until homogeneous. In the next stage, 200 g of grated cassava (squeezed to reduce the water content) was added to the batter and stirred until homogeneous. Next, the dough was poured into the brownie pan and then steamed using a steamer for ± 30 minutes. The steamed brownies were cooled and then topped with cheese.

RESULTS AND DISCUSSION

This activity began by conducting a sensory test on steamed cassava brownies which was carried out on August 17 2023. The test carried out was a hedonic test or liking test for Cassava steamed brownies with three different formulations. The three formulations are:

1. F1 (3 eggs, 125 g sugar, 100 g margarine, 200 g unpressed sweet potato, 8 g cocoa powder, ½ teaspoon baking powder, and ½ teaspoon SP).
2. F2 (3 chicken eggs, 140 g sugar, 150 g margarine, 200 g squeezed cassava, 20 g cocoa powder, ½ teaspoon baking powder, and ½ teaspoon SP).
3. F3 (2 chicken eggs, 125 g sugar, 100 g margarine, 250 g squeezed cassava, 8 g cocoa powder, ½ teaspoon baking powder, ½ teaspoon SP).

The hedonic test results showed that the mean hedonic value ranged from 1.05 (dislike) to 1.58 (like) (Figure 1). Formulation F2 had the highest hedonic

mean value of 1.58 (like), so formulation F2 was used in the second stage, namely socialization activities and the practice of steamed cassava brownie processing.

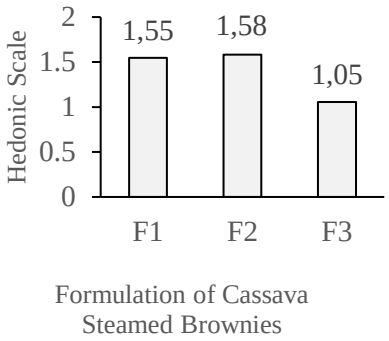

Figure 1 Hedonic test results cassava steamed brownies

The next stage was the socialization of the potential of cassava and the processing of cassava-steamed brownies, which was held at Suka Menang Village Hall on August 28, 2023. The Head of Suka Menang Village and other village officials, the Head of the Suka Menang Village PKK, and the community of Suka Menang Village attended this activity. The purpose of this activity is to provide counseling and deliver material, as well as socialize that cassava contains nutrients and has the potential to be used as raw material for processed food products such as brownies.

The target audience received materials on the potential of cassava and cassava brownie processing from resource people. In the delivery of the material, it was conveyed that cassava is one of the alternative food sources (Dewi & Hapsari, 2019). Cassava contains nutrients that are beneficial to the human body, especially carbohydrates. This is in line with Bambang & Aprianis' (2020) statement that cassava is an energy-source food and is rich in carbohydrates. According to Ariani et al. (2017), cassava contains carbohydrates ranging from 24.08% to 33.69%. Novaldi et al. (2022) added that the glycemic index of cassava is relatively low, contains high dietary fiber, has the potential to become a prebiotic in the intestine, and has high starch digestibility. In addition, cassava also contains 0.53% to 3.22% protein, 0.13% to 1.21% fat, and 0.83% to 2.13% ash. Hartati (2016) added that the high mineral content in cassava is calcium.

This activity also explained that cassava can be converted into raw materials for cakes, such as cassava cake (Ariani & Ninsix, 2014), although the cake still contains wheat flour. Cassava can be turned into cake or cake goods that do not contain wheat flour, such as caramel cake (Apriyani et al., 2022), steamed sponge cake, getuk gulung (Setyawati et al., 2021), sponge cake, chiffon cake (Yunieta & Sutrisno, 2018), and steamed brownies (Muzakki, 2020). According to the activity implementation team, steaming cassava brownies have a flavor and texture similar to steamed wheat flour brownies and are sensorially acceptable and liked. Figure 2 depicts the socialization of cassava potential and the manufacturing of cassava-steamed brownies.

Figure 2 Socialization of cassava potential and cassava steamed brownie processing in the community of Suka Menang Village

This socialization activity was accompanied by completing a questionnaire on the target audience's

comprehension, which was completed before and after the content was delivered (pretest and post-test). The pre-test questionnaire asked the same questions as the post-test questionnaire. According to Artanti & Mariani (2022), the purpose was to determine whether the participants' understanding or knowledge improved before and after the exercise. Filling out the questionnaire resulted in a gain in target audience comprehension of 12.87% on average. Furthermore, the target audience closely observed and listened to the activity material and actively participated in discussions and question-and-answer sessions with the resource person. As a result, the socialization activities related to cassava's potential and the production of cassava-steamed brownies can be considered successful.

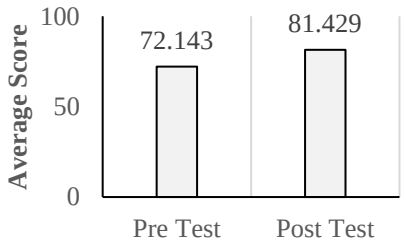

Figure 3 Average score of pre-tests and post-test

Following the socialization session, steamed cassava brownies were processed. This event occurred at Suka Menang Village Hall on September 2, 2023. In this activity, the target audience was separated into groups, and each group practiced creating steamed cassava brownies with guidance from the activity implementation team.

Cassava-steamed brownies are made with readily available ingredients; cassava, the key ingredient in steamed brownie production, is one of Suka Menang Village's agricultural products. As a result, the residents of Suka Menang Village may easily get these ingredients. The formulation of components used to make steamed cassava brownies had the greatest average hedonic value during the hedonic test, which was formulation F2. Furthermore, the tools employed are regular home items society employs to create baked goods. The phases of the steamed brownie production process are also extremely simple and easy to complete, so this cassava steamed brownie product has the potential to be developed, as illustrated in Figure 4.

Figure 4 Steamed cassava brownie product

The target audience was very enthusiastic about participating in this steamed cassava brownie processing practice activity. Each group succeeded in making steamed cassava brownie products, as shown in Figure 5:

Figure 5 The results of the steamed cassava brownie processing practice activity

CONCLUSION

The conclusion obtained from this activity was that cassava has the potential to be processed into steamed brownie products. The cassava-steamed brownie

product did not use wheat flour. According to the sensory test (hedonic test), steamed cassava brownies were popular in the community. In addition, there was an increase in the target audience's understanding of the potential of cassava and cassava steamed brownie processing technology, which amounted to 12.87%. Through this service activity, the community of Suka Menang Village gained skills in processing cassava-steamed brownies.

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