Education on Utilizing Soy Milk Pulp into Healthy Snacks to Improve Family Economy in Mendalo Darat Village

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ABSTRACT

Background: Soybeans are among the legumes with the highest protein content, containing around 35–40% protein and complete essential amino acids compared to other legumes. Due to this, soybeans are widely processed into products such as tofu, tempeh, and soy milk. The growing demand for soy milk as a plant-based protein source—especially for individuals allergic to animal protein—has led to an increase in soy milk pulp waste. Unfortunately, this by-product is often discarded or only used as animal feed or tempeh oncom. In fact, soy milk pulp retains nutritional components such as fiber, protein, minerals, monosaccharides, and oligosaccharides. When processed properly, soy milk pulp can become a marketable food product and provide additional family income. Method: The program involved several stages: conducting a survey, securing community participation, delivering health education and technical training, facilitating hands-on practice in production, calculating costs, packaging, and conducting marketing trials.Results: Participants successfully processed soy milk pulp into snacks ready for market. The products were simple to make, required accessible ingredients, had a savory, crunchy flavor, and good nutritional value. Further development is recommended in terms of packaging and pricing strategies.
Keywords: Soy milk pulp, Snack, Protein

A. INTRODUCTION

Public awareness of the need for fiber should be the main reason for business actors, especially snacks, to consider fiber content that can be beneficial for the body. The daily fiber requirement for a person in adolescence and early adulthood can reach 37 grams/day, and will decrease with age. In some cases, not everyone likes types of foods that contain fiber such as vegetables and types of fruits. To overcome this situation, the content of soy milk dregs, if processed properly, will help increase the source of fiber needed. So that the results of the dregs product also have a selling value that can be an additional source of family income.

In addition to fiber, soy milk dregs also still have nutritional value, as explained by Putri.AD, Zuhro.F & Alhabib IL in the results of their research conducted in 2018, using soy milk dregs made into flour, has a higher fiber content than wheat flour (2.4%), as well as other nutritional content, namely Protein 6.7%, Carbohydrates 26%, fat 0.5%, & water 66%. However, in reality, for several home business actors in Mendalo Darat village, the existence of soy milk dregs is only wasted.

B. METHODS

The forms of activities carried out are forming groups of Small and Medium Enterprises (SMEs) in the immediate environment with business actors, as well as interested residents, conducting education on processed foods made from soy milk dregs, conducting demonstrations on making processed snacks from soy milk dregs, plus other complementary ingredients, and conducting product interest trials and conducting sales trials with product testers.

As for this community service activity, it is in accordance with the following stages:

a. Approach method with business owners by subscribing to soy milk together
b. Conducting an inventory of tools & complementary materials as well as supporting facilities and infrastructure needed
c. Partner Contribution → Supporting community service activities carried out by the FKIK UNJA nursing lecturer team
d. Helping to identify and establish working groups/teams (one team consists of 2-3 people) to be given education on processing soy milk dregs into healthy, nutrient-rich foods
e. Working together in preparing the stages of activities carried out, place and time as well as facilities and infrastructure needed during community service activities
f. Preparing and conducting evaluations together with the FKIK-Unja community service team.

C. RESULTS

Evaluation of this activity is carried out from the beginning of the activity, during the process and at the end of the implementation activity by conducting an assessment on:

1. Evaluation during the implementation of the activity, carried out on each activity.
2. Evaluation of support for facilities and infrastructure is carried out by taking inventory of the availability of facilities and infrastructure at the time
3. Evaluation of the follow-up plan is carried out when the business actor distributes its products.

The indicators of the success of the implementation of this activity are:

- Input indicators, namely:

a. Business actors → able to carry out processing
b. Availability → supporting facilities and infrastructure

- Process indicators

a. Able to work together

b. Active during discussions

c. Participation in practice/ simulations & demonstrations

d. Implementation of activities according to schedule

e. Following the entire series of activities until completion.

- Output indicators

a. Availability of supporting facilities and infrastructure

b. There are a number of packages ready to be tested or marketed

Results Achieved

The implementation of activities was carried out in accordance with the stages with the results achieved in the activities being the group's understanding of the benefits of the activities carried out, among others, as illustrated in table 3.1 below:

Stages	**Materials**	**Method**	**Results Achieved**
Initial meeting, time contract, identification Participants	Socialization of activities, Explaining the purpose of community service activities, forming a work team	Discussion	- Group agrees to implement the activity - 1 work group is formed when the activity is carried out (consisting of 6 heads of families).
Conducting activity consolidation	Coordination for the implementation time of the	Discussion	- The activity time is agreed upon together - Residents prepare a place for discussion
Education on processing soy milk dregs	Material about: 1. How to process soy milk dregs 2. Additional materials needed for processing 3. Nutritional content & benefits in soy milk dregs.	Q&A Discussion	- The group can understand the material presented - A number of additional materials are prepared by the community service team - The group understands how to maintain the quality of the dregs so that they remain fresh.
Demonstrating	- Preparing fresh soy milk dregs - Measuring the amount of dregs with other additional ingredients to balance - Mix all ingredients until well blended - Print and cook until done - Pack the results	Simulation, Demonstration Q&A	- Groups Prepare fresh soy milk dregs - Groups Measure the amount of dregs, additional ingredients (eggs, tapioca flour, salt & flavorings to taste) - Group Mix all ingredients and Print to then cook and, Pack - Packaging is not weighed but measured manually with a plastic size of ¼ kg

Stages	Materials	Method	Results Achieved
Conducting interest trials	- Free trials - Sales trials - Comparing acceptable capital & profit	- Free trials in small packages - Sales	- During the free trial, sample responses; delicious, savory and crispy - Price per ¼ kg plastic packaging is sold for 2 packs of Rp.5,000 - Sales together with, when selling soy milk
Evaluation of marketable goods	Sell well on the market	- Guidance and sharing	- Sales results still need promotion, as well as reducing the size of the packaging with a cheaper price in the range of Rp. 1000. - Residents do not yet recognize it, so they are still hesitant to buy

The respondents who participated in this activity consisted of 6 heads of families who had soy milk manufacturing businesses, and several were ordinary traders who had stalls at home, but were interested in participating in learning.

The following image shows the entire process of processing soy milk dregs, which is carried out together with the working group:

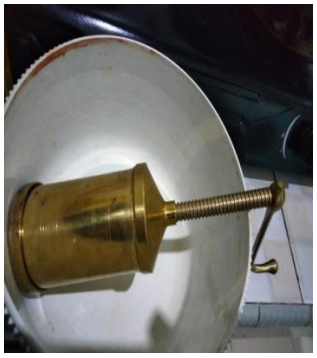
Activity Process

a. Soaking process 4-6 hours, separating the skin, washing & draining

b. Refining & separating soybean juice and dregs

c. Additional ingredients & tools needed (for 500 grams of pulp; 2 eggs, 10-15 spoons / 200-250 grams of tapioca, salt and seasoning to taste, vegetable oil for frying). As

well as a mold or if you don't have one, you can use a strainer




d. Dough Process (mix all ingredients then add enough water, stir evenly & ready to be molded)

e. Cooking & production results (print on a frying pan, then cook until cooked & ready to be served

D. CONCLUSION

Processing soy milk pulp is simple and cost-effective. The ingredients are easy to find, and the resulting snack is nutritious and appealing. With attractive packaging and affordable pricing, the product has potential to become a local specialty and a source of family income. Continued support and promotion will help improve product quality and recognition.

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