



Nutrition Education on Making Tempeh Carrot Nuggets as a High Protein Snack for Students of State Elementary School 011 Batam

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Abstract

This Community Service Program aimed to improve nutritional knowledge and healthy food processing skills among students of State Elementary School 011 Sekupang Batam through nutrition education and training in making tempeh-carrot nuggets as a high-protein snack. The program was conducted using educational sessions, demonstrations, and hands-on practice involving elementary school students as participants. The educational materials covered the importance of balanced nutrition, the role of protein in children's growth and development, and the nutritional benefits of tempeh and carrots. Following the educational session, participants took part in a practical training activity on preparing tempeh-carrot nuggets, from ingredient preparation to product serving. The results indicated that students showed high enthusiasm throughout the activity and demonstrated improved understanding of the importance of consuming nutritious foods. The tempeh-carrot nuggets produced during the training were well accepted by the participants due to their appealing taste and nutritional value. This activity demonstrates that the integration of nutrition education and food processing practice can be an effective strategy for enhancing knowledge and promoting healthy snacking habits among school-aged children.

Keywords: nutrition education, tempeh, carrot, nuggets, healthy snacks

INTRODUCTION

Good nutrition is an essential factor in supporting the growth, development, and learning abilities of school-aged children (Fajar & Bakri, 2016). Elementary school students require adequate nutrient intake, particularly protein, vitamins, and minerals, to support their physical and cognitive activities. However, many children still have the habit of consuming snacks that are high in sugar, salt, and fat but low in protein and dietary fiber (Sunita, 2019).

Tempeh is a local food ingredient that is rich in plant-based protein, readily available, and affordable. In addition, carrots contain vitamin A, fiber, and antioxidants that are beneficial to children's health (Koswara, 2013). The





combination of tempeh and carrots can be processed into nuggets that offer an appealing taste while providing good nutritional value (*Balanced Nutrition Guidelines*, 2023).

Through this community service program, nutrition education and training on the preparation of tempeh-carrot nuggets were conducted for students of State Elementary School 011 Sekupang, Batam. The activity aimed to increase students' knowledge about the importance of consuming nutritious foods and to introduce a healthy snack alternative that is easy to prepare and appealing to children (Supariasa, 2017).

COMMUNITY OVERVIEW

The partner institution for this community service program was State Elementary School 011 Sekupang, Batam, located on Jalan Gajah Mada, Taman Sari Hijau Housing Complex, Tiban Baru Village, Sekupang District, Batam City, Riau Islands Province. The school serves students from grades 1 to 6 and operates as a public elementary school under the Indonesian education system.

The school is situated in a residential area with convenient access to public roads and basic infrastructure, making it suitable for educational outreach activities. SD Negeri 011 Sekupang has approximately 14 classrooms and supporting facilities such as a library and sanitation facilities. The school implements a double-shift learning system to accommodate its student population.

A total of approximately 60 students participated in the program. As school-aged children are in a critical period of growth and development, adequate nutritional intake is essential to support their physical health, cognitive performance, and learning abilities. However, many children are still exposed to unhealthy snack choices that are high in sugar, salt, and fat while lacking sufficient protein and dietary fiber.

Considering these conditions, the school was selected as a partner institution for implementing nutrition education and healthy food processing training. The program aimed to enhance students awareness of balanced nutrition and introduce nutritious snack alternatives through hands-on experience in





preparing tempeh-carrot nuggets (Winarno, 2018). The school environment provided an appropriate setting for promoting healthy eating habits and encouraging the utilization of local food resources among elementary school students.

METHODOLOGY

The methods used in this community service activity included:

- a) Nutrition Education. The educational session covered the following topics:
 1. The importance of balanced nutrition for school-aged children.
 2. The role of protein in growth and body development.
 3. The benefits of consuming tempeh and vegetables.
 4. The importance of choosing healthy snacks.
 5. The materials were delivered through interactive presentations, question-and-answer sessions, and educational games.
- b) Demonstration and Training. The implementation team conducted a demonstration on The preparation of tempeh-carrot nuggets, which included:
 1. Introduction to the ingredients and equipment.
 2. Mixing of ingredients.
 3. Shaping the nugget mixture.
 4. Steaming process.
 5. Coating with breadcrumbs.
 6. Frying and serving.
- c) Evaluation. The evaluation was conducted through:
 1. Question-and-answer sessions following the educational presentation.
 2. Observation of students' participation during the training activities.
 3. Assessment of students' understanding of the materials presented.





Figure 1. Documentation of community service activities 2026



Figure 2. Documentation of community service activities 2026

SUTAINABLE RESULT AND POTENSIAL

The community service program was carried out successfully and received positive responses from both the school administration and the students. All





participants enthusiastically took part in the activities, from the nutrition education session to the practical nugget-making training.

During the nutrition education session, students demonstrated an improved understanding of the importance of consuming nutritious foods and the role of protein in maintaining good health. They also became more familiar with tempeh as an excellent source of plant-based protein and carrots as a rich source of vitamin A that supports eye health.

During the training session, students actively participated in the process of making tempeh-carrot nuggets. They showed great interest in transforming local food ingredients into attractive products with flavors that appeal to children. The tempeh-carrot nuggets produced during the activity had a good texture, savory taste, and appealing appearance. Based on observations, most students enjoyed the product and expressed their willingness to consume it again as a healthy snack alternative. This activity demonstrated that nutrition education combined with hands-on practice can be an effective method for increasing students' knowledge and interest in healthy foods.

CONCLUSION

Based on the implementation of the community service program at State Elementary School 011 Sekupang, Batam, the following conclusions can be drawn:

1. The nutrition education activities successfully improved students' knowledge regarding the importance of balanced nutrition and protein consumption.
2. The tempeh-carrot nugget preparation training provided students with basic skills in healthy food processing.
3. Tempeh-carrot nuggets can serve as a healthy, nutritious, and easy-to-prepare snack alternative.
4. The program received positive responses from both the students and the school staff.

SUGGESTION

Nutrition education programs should be conducted regularly to strengthen healthy eating habits among children. Schools are encouraged to support healthy canteen initiatives and promote local nutritious foods. Future programs may introduce additional healthy food innovations and involve parents in nutrition education activities.





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