Vol. 4 No. 01 (2024)

Andalasian International Journal of Social and Entrepreneurial Development (AIJSED)

ISSN: 2808-6732 (Online)

Available at: http://aijsed.lppm.unand.ac.id/index.php/aijsed

DOI: https://doi.org/10.25077/aijsed.4.01.5-9.2024

Article

Innovation in Making Wet Noodles from Local Ingredients: Assistance to The Use of Natural Coloring in The PKK Community in Nagari Padang Toboh Ulakan

Wellyalina[1]*, Donard Games[2], Dessy Kurnia Sari[2]

[1]Department of Food Technology and Agricultural Products, Faculty of Agricultural Technology, Andalas University
[2]Department of Management, Faculty of Economics and Business, Andalas University

Article Information

Received : 2024-01-23
Revised : 2024-02-11
Accepted : 2024-02-23
Published: 2024-04-22

Keywords

Keyword: wet noodles, pakcoy, natural coloring, innovation, local food

*Corresponding Author

wellyalina@ae.unand.ac.id

Abstract

Nagari Padang Toboh Ulakan in Pariaman Regency faces the challenge of low education with the majority of the population having only completed basic education. Focus on earning income replaces interest in pursuing higher education. However, local agriculture has not had a significant economic impact, and the lack of product marketing become a problem. Community empowerment programs, including hydroponic gardening, are one solution to this problem. The PKK community has vegetables such as pakcoy that have not been utilized optimally. In discussions, the processing of pakcoy into noodles has not been optimally successful. In fact, pakcoy can be a healthy natural coloring for noodles. The training aims to increase PKK community's knowledge about the use of natural pakcoy coloring in noodles. Various methods are applied, ranging from education, training, to demonstrations. After the training, there was increased understanding and innovation in pakcoy processing, improving the nutritional value and appearance of the noodles. Discussions with resource persons help understand the stages of serving noodles according to standards. Training also improves knowledge of the right ingredients for noodles and product storage skills. This activity provides a broad understanding of the use of natural pakcoy coloring in noodles. Apart from improving the quality of noodle products, it also contributes to better marketing and improving the economic welfare of local communities.

INTRODUCTION

Nagari Padang Toboh Ulakan is an area in Pariaman Regency with a relatively low level of education. The majority of people only complete primary education, while interest in continuing to a higher level of education is relatively low. In contrast, the interest in seeking income and decent work is getting higher. This is not balanced with the potential of the community's human resources.

In terms of occupational demographics, the majority of the population work as farmers or agricultural laborers. However, agricultural products from this area have not had a significant impact on the community's economy. There is a lack of empowerment and skills in marketing agricultural products, including local MSMEs such as mukenah embroidery production.

Given this situation, a community empowerment program is needed, one of which is the development of gardening activities with hydroponic techniques. Through a survey conducted by KKN Unand students, it was identified that the fields of the farmer women / PKK group in this area have various types of vegetables, such as pakcoy. However, these plants are only sold as raw products, without significant innovation in processing.

In a discussion with one of the PKK members, it was found that they had tried to innovate by processing pakcoy vegetables into noodles, but the results were unsatisfactory and the noodles broke easily. In fact, pakcoy is known as a source of natural coloring in noodle processing, provides antioxidant benefits, and has a positive impact on health. According to Galdeano et al. (2022) the use of natural colorants is highly recommended, but the use of artificial colorants to make food more attractive has been associated with harmful effects, such as hyperactivity and allergic reactions, which has increased interest in labeling as "natural", "no artificial additives", or "clean label". Currently, limiting the amount of artificial colorants allowed in food is well regulated, both at the National and International levels, by various committees established by the World Health Organization (WHO), Food and Agriculture Organization (FAO), and European Communities' Commission (EFSA) and the legislation of each country (Mota et al., 2021).

The approach to this problem involves the need for training and guidance on innovations in agro-processing, including the use of pakcoy vegetables as a natural colorant and added value in noodle products. Skills development is needed in product marketing, not only for agricultural products but also for local MSME products such as mukenah embroidery. Thus, it is expected to improve the economy and provide new knowledge and skills to the people of Nagari Padang Toboh Ulakan.

Through the assistance of making wet noodles with local raw materials and natural dyes for PKK mothers, the main objectives are: (1) Community Empowerment: Through the improvement of cooking skills and the use of local raw materials, it is expected to increase community independence in producing their own food, and increase economic value at the local level. (2) Health Improvement: The use of natural colorants from natural ingredients such as vegetables or spices provides a healthy alternative compared to synthetic colorants that can have certain side effects on health. (3) Continuous Learning: Through mentoring, PKK members can continue to learn and develop in terms of cooking, use of local ingredients, and understanding of the health benefits of natural ingredients. (4) Reduced Use of Chemicals: By utilizing natural dyes, this mentoring also contributes to the reduction of the use of chemicals and synthetic dyes in food.

Thus, this mentoring not only provides a practical understanding of wet noodle making with local ingredients and natural dyes, but also supports efforts to improve the health, sustainability, and empowerment of local communities.

ACTIVITY METHODOLOGY

1. Phase One (Visiting and Field Observation)

The team visited a group of PKK mothers in the Nagari Padang Toboh area to make direct observations of the fields or gardens owned by the group. Observations were made to understand the types of plants grown, especially pakcoy vegetables and other types of plants that have potential in food processing.

2. Phase Two (Providing Education)

The team organized an education session that included a detailed explanation of the benefits and process of using natural coloring from pakcoy vegetables in noodle processing. The educational material also covered the technique of processing noodles using natural coloring from pakcoy vegetables, including the stages of processing, the proportion of use, and methods so that the noodles do not break easily.

3. Stage Three (Practical Training)

A practical training session was conducted where the group of PKK mothers were taught directly how to process pakcoy vegetables into natural dyes used in noodle processing. The team demonstrated the steps of processing noodles using natural coloring from pakcoy vegetables with hands-on practice and provided detailed technical guidance to group members.

4. Stage Four (Brainstorming Session)

An open discussion session was conducted between the PKK women's group and the resource persons. The aim was to facilitate the exchange of ideas, experiences, and innovative ideas related to noodle processing and marketing of agricultural products. Resource persons provided input and solutions related to problems faced by the women's group, such as product marketing strategies or improving the quality of noodle products.

5. Stage Five (Live Demonstration by Resource Persons)

The resource person conducted a live demonstration on how to process noodles using natural coloring from pakcoy vegetables in front of the women's group. This aims to provide a deeper understanding and show the right technique in processing noodles with natural coloring from pakcoy

vegetables.

6. Stage Six (Monitoring and Evaluation)

After the training was completed, monitoring activities were carried out to evaluate the progress and understanding of the members of the Ibu PKK group on the material that had been taught. The team held a joint evaluation session to assess the level of acceptance, understanding, and skills acquired by the group members and determine corrective measures if needed.

ACTIVITY RESULTS

After the implementation of the training activities, there was a significant increase in the understanding of PKK group members regarding the utilization of natural dyes from vegetables, especially in the use of pakcoy vegetables in the noodle making process. Color is one of the most important attributes that consumers use to evaluate the freshness and quality of food. Natural colorants are becoming more commonly used in food product development. In addition to replacing synthetic pigments, these additives have many other benefits such as antioxidant and antimicrobial activities (Echegaray et al., 2023). Natural dyes have a variety of health benefits, including antioxidant, anticancer, and anti-inflammatory properties. Natural colorants are derived from various sources, including plants, microbes, animals/insects, and minerals (Singh et al., 2023). Therefore, the use of pakcoy vegetables in making wet noodles not only increases the nutritional and economic value, but also adds functional value.

Through this knowledge enhancement (Figure 1), they were able to better understand the technique of extracting natural pigments from pakcoy vegetables and its utilization as a natural colorant in noodle products. A more detailed understanding of the physicochemical properties of these natural pigments also helps them to optimize the extraction process for better dye quality, as color not only enhances the attractiveness of food appearance but is also important for food safety and nutritional quality (Zhou et al., 2022).

Figure 1: Delivery of noodle product innovation materials by resource persons

In addition, the trainees also gained new knowledge about antioxidant content in plants, especially in pakcoy vegetables. This knowledge gave them a deeper understanding of the health benefits of antioxidants and the success in utilizing the potential of antioxidant content in pakcoy vegetables as an added value in noodle products. With this understanding, they were able to link the nutritional content with the broader health benefits of consuming noodles with natural coloring from pakcoy vegetables. In addition, dietary recommendations around the world include the consumption of fruits and vegetables as a disease prevention strategy, because in addition to their macro- and micronutrient and fiber content, fruits and vegetables also contain phytochemical compounds that stand out for their antioxidant properties (Ali et al., 2021; Kaur et al., 2017; Lorenzo et al., 2021).

The training triggered innovations in the processing of pakcoy vegetables as raw materials for noodles that are more aesthetically appealing and nutritionally valuable. Members of the women's group began to consider various innovative processing techniques, including the appropriate use of natural pigments in the noodles, resulting in products with higher nutritional value and more prominent aesthetic appeal as shown in Figure 2 and Figure 3. According to Zou et al. (2021), pakcoy vegetables contain amino acids, vegetable sugars, essential minerals, vitamins (A, B9, E, and K1), so it is very good to consume for body health.

Pictures 2. Practical activity of making pakcoy noodles

Pictures 3. Raw materials and pakcoy wet noodles

The exchange of experiences between the resource persons and the members of the women's group was an important aspect that broadened their horizons and improved their practical skills in the process of making quality noodles. Discussions led to a more detailed knowledge of the noodle-making steps based on quality standards, especially in terms of moisture content in accordance with the Indonesian National Standard (SNI).

The trainees also gained a better understanding of the right types of ingredients to use in noodle making to ensure the quality and deliciousness of the resulting product. This includes an in-depth understanding of the composition of raw materials and the right proportions to produce high-quality noodles. With this training, members of the Ibu PKK group gained knowledge on proper storage techniques to maintain the quality of the noodles. They became more skillful in managing the shelf life of their noodle products, improving their ability to maintain product quality until market time.

Overall, this mentoring activity succeeded in providing more comprehensive knowledge related to the utilization of natural coloring from pakcoy vegetables in noodle processing for the PKK women's group in Nagari Padang Toboh Ulakan. The knowledge gained includes technical aspects such as the extraction process, nutritional benefits, and health implications of using this natural ingredient in noodle products. In addition, discussions between resource persons and trainees also helped in a deeper understanding of the presentation stage of noodles in accordance with quality standards, becoming an important foundation in improving the quality of noodle products produced. This step is expected to contribute to better product marketing and improved economic welfare for local communities.

CONCLUSION

The training aims to increase the knowledge and skills of PKK members regarding the use of natural coloring from pakcoy vegetables in making noodles. The results of this training showed an increased understanding of the health benefits of natural coloring, innovation in pakcoy processing, and improved quality and nutritional value of noodle products. Discussions between resource persons and the women's group helped in understanding the stages of serving noodles in accordance with quality standards and selecting the right ingredients for the noodles. The training methods applied included field visits, education, practical training, discussions, demonstrations, and evaluations. Thus, this activity not only increases practical knowledge about making noodles with local raw materials and

natural dyes, but also supports efforts to improve health, sustainability, and empowerment of local communities. Through this effort, it is hoped that an improvement in the local economy can be achieved and provide new skills to the people of Nagari Padang Toboh Ulakan.

REFERENCES

Ali, M.Y., A.A.I. Sina, S.S. Khandker, L. Neesa, E.M.Tanvir, A. Kabir, M.I. Khalil, dan S.H. Gan. 2021. Nutritional composition and bioactive compounds in tomatoes and their impact on human health and disease: A review. *Foods*. 10(1):1-32. https://doi.org/10.3390/foods10010045

Echegaray, N., N. Guzel, M. Kumar, M. Guzel, A. Hassoun, J.M. Lorenzo. 2023. Recent advancements in natural colorants and their application as coloring in food and in intelligent food packaging. *Food Chemistry*. 404: 134453. https://doi.org/10.1016/j.foodchem.2022.134453

Galdeano, M.C., F.S. Gomes, D.W.H. Chávez, E.L. Almeida, L.C. Moulin, D.G.C.F. de Sá, dan R.V. Tonon. 2022. Lycopene-rich watermelon concentrate used as a natural food colorant: Stability during processing and storage. *Food Research International.* 160: 111691. https://doi.org/10.1016/j.foodres.2022.111691

Kaur, G., A. Sandal, dan N.S. Dhillon. 2017. Lycopene and human health-A review. *Agricultural Reviews*. 38(04): 282-289. https://doi.org/10.18805/AG.R-1741

Lorenzo, C.D., F. Colombo, S. Biella, C. Stockley, dan P. Restani. 2021. Polyphenols and human health: The role of bioavailability. *Nutrients*. 13(273):1-30. https://doi.org/10.3390/NU13010273

Mota, I.G.C., R.A.M.D. Neves, S.S.D.C. Nascimento, B.B.L. Maciel, A.H.D.A. Morais, dan P.T. Passos. 2021. Artificial dyes: Health risks and the need for revision of international regulations. *Food Reviews International*. 3: 1578-1593. https://doi.org/10.1080/87559129.2021.1934694

Singh, T., V.K. Pandey, K.K. Dash, S. Zanwar, R. Singh. 2023. Natural bio-colorant and pigments: Sources and applications in food processing. *Journal of Agriculture and Food Research*. 12: 100628. https://doi.org/10.1016/j.jafr.2023.100628

Zhou, J., M. Wang, C. Carrillo, A. Hassoun, M.C. Collado, dan F.J. Barba, F. 2022. Application of omics in food color. *Current Opinion in Food Science*. 46: 100848. https://doi.org/10.1016/j.cofs.2022.100848

Zou, L., W.K. Tan, Y. Du, H.W. Lee, X. Liang, J. Lei, L. Striegel, N. Weber, M. Rychlik, C.N. Ong. 2021. Nutritional metabolites in Brassica rapa subsp. chinensis var. parachinensis (choy sum) at three different growth stages: Microgreen, seedling and adult plant. Food Chemistry. 357: 129535. https://doi.org/10.1016/j.foodchem.2021.129535