



Short Communication

Utilizing Moringa Leaves to Turn a Valuable Product in Kesemen Ngoro Village, Mojokerto

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This article contributes to:



Abstract. Moringa leaves have excellent potential to complement the nutritional needs of the human body. Moringa leaves can be used as processed products with high nutritional value and high economic value. Opportunities to develop in this field are also wide open because this sector has not been fully utilized by society. Moringa can be used as one of the mainstay commodities to be developed better. Therefore, we choose moringa as the object of research to be used as an article. In this article discusses the wise use of moringa leaves. The purpose of this activity is to increase public insight and knowledge about plants and their benefits, as well as increase public knowledge about processing and various moringa-based processed products. The method of implementing this activity is carried out directly through community socialization regarding the benefits and processing of Moringa leaves in Kesemen Ngoro Mojokerto.

Keywords: Moringa leaves, Utilization, Processed Products.

1. Introduction

Kesemen is a village located in Ngoro District, Mojokerto Regency, East Java Province. Kesemen's location, adjacent to the Trawas Mountains, creates a pristine landscape with rice fields stretching across its landscape [1]. Therefore, most of the population is engaged in farming. With such abundant natural resources, local residents can even cultivate crops in their own yards [2]. One of the plants frequently encountered in Kesemen Village is the moringa plant. While commonly used as a vegetable supplement, the moringa plant actually has a multitude of benefits that are rarely known by the local community [3]. Lack of public awareness about the use of moringa leaves as an ingredient in processed foods makes consuming moringa leaves less appealing to the public [4].

The moringa plant is characterized by its woody, upright, off-white stem, thin bark, and rough surface. Moringa trees are often planted as borders or fences in yards or fields. Its benefits and economic value have attracted many to cultivate this plant, given its extraordinary benefits, from its leaves and bark to its fruit and seeds [5]. This has led to several nicknames for the moringa plant, including The Miracle Tree, Tree for Life, and Amazing Tree [6]. Moringa leaves, which have the Latin name *Moringa Oleifera* Lamk, have very good benefits for the body, namely lowers blood pressure, reduces cholesterol, improves heart function, reduces blood sugar levels or diabetes, acting as an antioxidant, removes toxins from the body, acts as an anti-cancer and anti-tumor agent, prevents liver and kidney damage, overcomes infertility, accelerates red blood cell reproduction, strengthens the uterus, and helps relieve pain caused by gout and rheumatism.

The main problem facing the people of Kesemen Village is their lack of knowledge of moringa leaf processing technology. Most people only use it as a vegetable to complement meals [7]. Furthermore, throughout Indonesia, especially in Kesemen Village, moringa leaves are more commonly used for bathing corpses, dissolving amulets,

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and as animal feed. This is due to a lack of understanding of how to process moringa leaves into other processed products that can be made from moringa leaves [8]. Many assume that moringa leaves can only be consumed directly without any processing at all. However, with just a touch of simple technology, moringa leaves can be processed into high-value products compared to selling them unprocessed. One such product is processing moringa leaves into a healthy, beneficial snack: moringa leaf sticks [9].

Efforts to utilize moringa (*Moringa Oleifera*) into healthy and nutritious food preparations are carried out by the mothers of the Kesemen Village Family Welfare Empowerment Group, Ngoro District, Mojokerto Regency. It is hoped that this community service program by Stitnu Alhikmah students will create public awareness to develop various kinds of processed foods made from moringa leaves. This can increase their economic value and be useful in improving the economy of the mothers in the Kesemen Village Family Welfare Empowerment Group during the Covid-19 pandemic. This idea began with concern seeing the many moringa plants in the land around Kesemen Village that were left to grow unattended. So we looked for ideas on how to make these plants into processed foods that have added value [10].

2. Implementation Method

In this mentoring-based research, the method used is the Asset Based Community Development (ABCD) method [11]. The ABCD approach prioritizes the utilization of assets and potential around the area owned by the community [10]. This mentoring-based research activity is the Student Work Lecture (KKM) activity of STITNU ALHIKMAH MOJOKERTO which was carried out from June 14, 2023 to July 31, 2023, in Kesemen Village, Ngoro District, Mojokerto Regency. The stages are as follows:

2.1 Preparation and Implementation Stage

The implementation of this activity begins with the preparation stage, namely studying references related to data collection by conducting field surveys and questions and answers about the use of Moringa leaves in Kesemen Village. This activity was held in Kesemen Village, Ngoro District, Mojokerto Regency, and was attended by the Head of the Kesemen Village LPM and the community of RT.05RW.02.

Table 1. Rundown of KKM Activities in Kesemen Village

Date	Time	Activity
June 16, 2023	09:00	Preparation: Field survey, looking for information/descriptions and noting things about the Kesemen Village community.
July 26, 2023		<ol style="list-style-type: none"> 1. Counseling on the benefits of moringa leaves, a Q&A discussion, and the collection of moringa leaves for processing. 2. Assistance in making moringa leaf stick snacks.

The program's implementation has received a very positive and enthusiastic response, opening the door for the Kesemen Village community and individuals to the use of moringa leaves as a healthy snack and, if properly developed, boosting the economy. With this apparent enthusiasm and participation, it is hoped that the community will utilize and create new creations and innovations in utilizing moringa leaves.

2.2 Completion Stage

This stage involves evaluating and writing a report on the community mentoring activities, which takes four weeks [12]. This stage is the most crucial stage in the implementation of the community service and also the final stage of the activity. However, mentoring continues for the Kesemen Village community. The evaluation is conducted to ensure the activities continue and provide benefits, particularly to the

Kesemen Village community and the wider community. The purpose of writing this report is to contribute to the scientific and community service program, and to readers in general [13].

2.3 Implementation of Socialization Regarding the Nutritional Content and Benefits of Moringa Leaves

Conducting outreach regarding the nutritional content and benefits of the Moringa plant for health and fulfilling family nutrition [14]. Outreach activities regarding the nutritional content and benefits of Moringa leaves were carried out by explaining to the local community so that they are aware of the content and nutrients contained in the Moringa plant. Moringa leaves are a high source of protein, vitamins, and minerals [15]. Moringa leaves contain vitamin A, vitamin B1 (thiamine), vitamin B2 (riboflavin), vitamin B3 (niacin), vitamin B6, and vitamin C. Moringa leaves also contain other important ingredients such as calcium, potassium, iron, magnesium, phosphorus, zinc, and are low in calories. All of these compounds are essential for body health.

2.4 Implementation of Moringa Leaf Utilization Training

The Moringa leaf utilization training aims to teach the community how to make healthy snack sticks from moringa leaves [16]. The training provides guidance and practical training on how to make healthy moringa leaf sticks using readily available ingredients. Previously, housewives didn't know how to process moringa into other dishes, as they had only used it as a side dish with rice. The extension worker also explained the advantages of processing moringa into other foods, as well as its potential as an alternative business opportunity for future development [17]. The goal is to increase awareness and interest in the use of processed moringa to increase knowledge about making moringa leaf stick snacks, and knowledge about entrepreneurship.

3. Result and Discussion

In Kesemen Village, a significant number of communal land plots are planted with moringa. However, our assessment indicates that the potential of moringa leaves has not been fully realized. To date, utilization has largely been limited to household vegetable dishes and has not extended to the production of value-added foods, such as healthy moringa leaf stick snacks [18]. Given that moringa cultivation is relatively simple, training on product diversification is highly beneficial and can be developed into home-based enterprises for local residents. The Community Service Program implemented in Kesemen Village, Ngoro District, Mojokerto Regency, found low awareness of the variety of moringa-based processed products despite the plant's abundance. This finding motivated the KKM team to conduct counseling and hands-on training on moringa processing techniques [19].

To ensure smooth implementation and sustainable outcomes, several steps were agreed upon by residents of RT 05 RW 02 during their monthly "Ngumpul Bareng" (Gathering Together) evaluation forum. First, a structured briefing was delivered on the nutritional and economic benefits of moringa leaves to raise community awareness beyond their traditional use as a simple vegetable side dish. The session generated strong enthusiasm and helped residents readily understand the information, encouraging them to think creatively and innovate new moringa-based products. Second, post-training mentoring was established as an ongoing support mechanism. The proponents committed to monitoring community activities to maintain productivity and troubleshoot challenges, while the ample supply of locally grown moringa trees was identified as a foundation for program continuity.

As a pilot product, the community developed “Moringa Leaf Stick Snacks,” representing a new innovation that moves beyond conventional preparations. The processing method is straightforward and suitable for home production. Fresh moringa leaves are separated from their slender stems, briefly blanched in boiling water until tender, and thoroughly drained. A spice base is prepared by grinding garlic with ground pepper and salt; beaten eggs are incorporated into this mixture, followed by softened butter (or margarine) and the drained moringa leaves, which are mixed until evenly combined. Wheat flour is then added gradually and kneaded into a smooth, cohesive dough. The dough is shaped—either rolled and cut into thin sticks or extruded—then fried in moderately hot oil until golden brown. The resulting moringa sticks are crisp, savory, and ready to serve. This product not only diversifies household consumption but also offers a feasible micro-enterprise opportunity, adding economic value to an underutilized local resource.

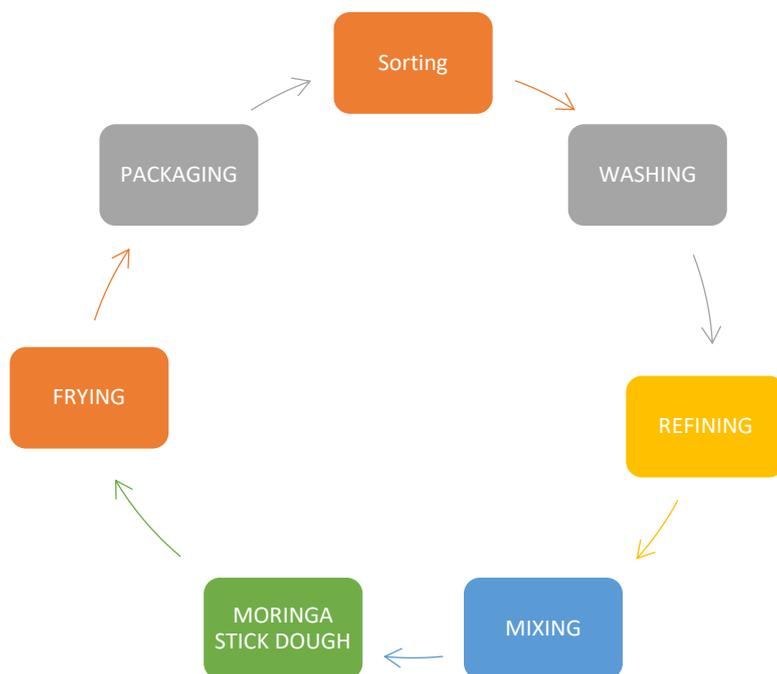


Figure 1. Flowchart for making moringa stick snacks

Table 2. Budget planning for making moringa sticks

No	Material	Quantity	Unit price	Total Price
Initial capital				
1.	Moringa leaves	1 bunch	Rp. 5,000	Rp. 5,000
2.	Wheat flour	1kg	Rp. 8,000	Rp. 8,000
3.	Tapioca flour	1oz	Rp. 3,000	Rp. 3,000
4.	Butter	250 grams	Rp. 12,000	Rp. 12,000
5.	Eggs	¼ kg	Rp. 6,000	Rp. 6,000
6.	Salt	1 tbsp	Rp. 1,000	Rp. 1,000
7.	Plastic stand	Pcs	Rp. 17,500	Rp. 17,500
8.	Ground pepper	1bks	Rp. 1,000	Rp. 1,000
Products sold				
1	Moringa Leaf Sticks	20	Rp. 12,000	Rp. 240,000
Total Income				
1	Moringa Leaf Sticks	20	Rp. 12,000	Rp. 240,000

In Kesemen village, we often encounter moringa leaves, which are rarely used by local residents. This led us to create a snack product using moringa leaves. Our research also helps the economy by increasing the selling price [20]. When we first presented our

findings, many residents were skeptical that moringa could be processed into snacks, as most people use it as a vegetable, for bathing corpses, etc. Eventually, we held a community outreach event to educate residents on how to process moringa leaves. The Kesemen villagers were very enthusiastic because they could make everyday snacks using the moringa leaves found in their own yards. This way, the community will be more innovative or even establish a home industry that utilizes moringa leaves to create healthy, beneficial snacks [21].

4. Conclusion

Following a month-long study employing the Asset-Based Community Development (ABCD) approach, and through collaborative facilitation with the Kesemen Village community, several conclusions were reached. First, community service activities have stimulated a creative and productive orientation toward the processing of local natural resources—particularly moringa leaves—thereby strengthening prospects for household income and the village economy. Second, targeted technical training has repositioned moringa leaves from their traditional role as a simple side dish into a higher-value product in the form of moringa leaf stick snacks; this revalorization is supported by appropriate packaging practices and the strategic communication of health benefits. Third, complementary education on basic business analysis and marketing equips residents with the practical skills needed to plan costs, set prices, assess feasibility, and promote their products within and beyond the local market.

In light of these outcomes, several recommendations are proposed for facilitators and students of the STITNU ALHIKMAH Mojokerto Community Service (KKM) program, especially those supporting Kesemen Village, Ngoro District. During implementation, mentors should intensify guidance and follow-up to ensure that residents can sustain and scale activities independently. Moreover, facilitation should be undertaken with sincerity, patience, and persistence, prioritizing community capacity-building rather than immediate rewards, as consistent accompaniment is critical to long-term success. Looking ahead, the community is encouraged to diversify innovations by exploring the use of moringa leaves and other locally available resources—such as coconut fiber—for additional value-added products, thereby expanding economic opportunities while reinforcing the ABCD principle of leveraging existing assets.

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6. Declaration

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