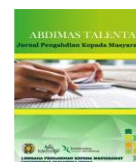




ABDIMAS TALENTA Jurnal Pengabdian Kepada Masyarakat

Journal homepage: <https://talenta.usu.ac.id/abdimas>



Management and Production of Banana Stem Chips as an Alternative Business and Local Product Innovation in Merjosari

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ARTICLE INFO

Article history:

Received : 29 October 2025

Revised : 30 January 2026

Accepted : 12 February 2026

Available online: 17 July 2026

E-ISSN: 2549-418X

P-ISSN: 2549-4341

How to cite:

Hastuti, S.C., and Purnomo, W.W. (2026). Management and Production of Banana Stem Chips as an Alternative Business and Local Product Innovation in Merjosari. ABDIMAS TALENTA: Jurnal Pengabdian Kepada Masyarakat, 11(1), 34-39.

ABSTRACT

Merjosari Village, Malang City, boasts abundant natural resources in the form of banana plantations. After the fruit is harvested, banana stems ("gedebok") are often considered waste and underutilized, even though they have the potential to be processed into value-added products. This Community Service (PKM) activity aims to transform this organic waste into an innovative, high-value food product: banana stem chips. The activity method consists of practical training and mentoring focused on housewives in RW 08 RT 09, Joyo Asri, Merjosari. This training not only reduces organic waste but also aims to open new business opportunities and encourage local product innovation. The expected results are increased family income, increased productive activities of residents, and collectively strengthening the community economy through the development of Micro, Small, and Medium Enterprises (MSMEs) based on local potential. This activity will be implemented in May 2025.

Keyword: Banana Stem, Organic Waste, Banana Stem Chips



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<http://doi.org/10.32734/abdimastralenta.v11i1.23333>

1. Introduction

Malang is known as a city of education and a city of flowers, and boasts abundant natural resources. One such area is Merjosari Village, which boasts relatively green areas and numerous banana trees. After the banana fruit is harvested—which is used for fresh bananas, chips, or sale. Banana stems (known as "gedebok") are often considered waste and have not been optimally utilized. In fact, banana stems have great potential to be processed into value-added products, such as animal feed, compost, handicrafts, and even natural hand sanitizer. One innovation in food products with high economic value is banana stem chips [1][2].

This innovation in processing banana stem chips has two main positive impacts: reducing organic waste and creating new business opportunities for the local community, especially the residents of Merjosari [3]. Through the right processing process, banana stem chips can be transformed into a healthy, crunchy snack that attracts consumers. This PKM activity focuses on mentoring and training in banana stem chip processing involving housewives in the surrounding area [4]. It is hoped that this productive activity can increase family income, increase the activities of residents who were previously less productive, and collectively improve the economy in the Merjosari area [5][6].

This Community Service Activity aims to:

1. Increasing Waste Utilization: Converting organic waste from banana stems into food products that have high sales value [7].
2. Opening up Business Opportunities: Providing new business alternatives for local residents, especially for housewives [8].
3. Encouraging Local Product Innovation: Encouraging the birth of innovative local snacks or food products based on natural and environmentally friendly ingredients.
4. Improving the Economy: Strengthening the community economy through the development of Micro, Small and Medium Enterprises (MSMEs) that utilize local potential [9].

2. Method

2.1. Place and Time of Implementation

This Community Service (PKM) activity method involves training and mentoring, conducted in Merjosari Village, specifically in RW 08 RT 09, Joyo Asri, Malang City. Outreach will include an explanation of the benefits of processing banana stems (stems) and practical training on making chips. The activity will be implemented in May 2025.

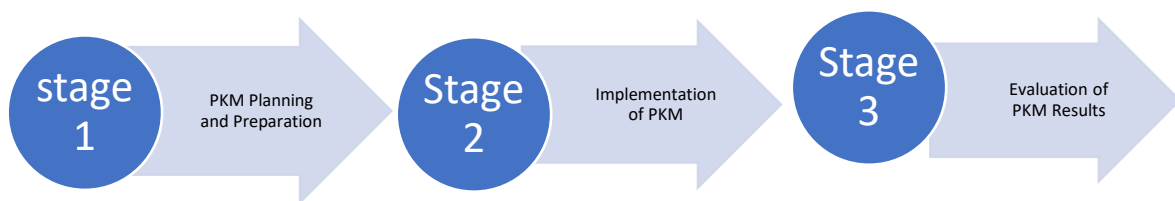


Figure 1. V planning images for community service

2.2. Implementation Stages

The implementation of activities is carried out through the following stages:

A. Preparation

- Team Formation: Form a PKM Team from the campus and collaborate with trainers from residents who have previously received training from the Extension Center.
- Material Preparation: Determining the materials for mentoring and training, including counselling on the benefits of banana stems and the use of tools and materials that are easily obtained in the surrounding environment.
- Target Mapping: Conducting an even mapping of socialization and training participants and determining appropriate places and locations for PKM activities.



Figure 2. Tools and materials

3. Result and Discussion

Education and Training: Providing education about the benefits of banana stems and stems, as well as how to process them into various products with sales value, especially banana stem chips.

Definition and Content of Banana Stems:

- Banana stems (gedebok) are the cylindrical, layered parts of a banana tree that are typically cut down after the fruit is harvested. These stems often become organic waste because each banana tree only bears fruit once.
- The main content is water (about 90%), natural crude fibre, carbohydrates, a little protein, and minerals.

Potential Processed Products: Banana stems can be processed into chips, animal feed, compost, handicrafts, and even natural hand sanitizer.

Impact of Processing: This management provides environmental benefits (reducing organic waste), economic benefits (creating businesses and increasing community income), and innovation benefits (growing creative products based on local potential).

Banana Stem Chips Making Training:

- **Training Time:** Conducted for one week in May, covering material selection, processing, and product packaging.
- **Basic Recipe (Gedebok Banana Chips):**
 - **Ingredients:** Inner part of banana stem (white), salt, various seasonings (balado, BBQ, cheese), cooking oil.
 - **Tools:** Knife/slicer, soaking container, frying pan, stove, packaging tools (plastic and labels).
- **Making Steps:**
 1. Choose gedebok from freshly cut bananas (maximum 1 day).
 2. Peel off the outer layer, take out the soft inside.
 3. Slice thinly and soak in lime water for ± 12 hours to remove the sap.
 4. Wash clean, then soak in marinade.
 5. Sprinkle with the prepared seasoned flour.
 6. Drain, then fry until crispy.
 7. Sprinkle with seasonings, then package with an attractive label.



Figure 3. Banana stem soaking process



Figure 4. Training support team for making banana stem chips

3.1. Evaluation and Reporting

The training and mentoring for banana stem chips (gedebok) processing in Merjosari, RW 08 RT 09, Joyo Asri, went smoothly and according to schedule. The participation of housewives, the primary target group, demonstrated high enthusiasm.

The main challenge faced was the initial processing, which involved removing the sap from the banana stems. The team's solution involved emphasizing the duration and concentration of the soaking solution (lime/salt water) for approximately 12 hours to ensure the chips were crispy and not bitter.

This discussion is based on evaluation and observation data during and after the implementation of activities to measure the extent to which PKM objectives have been achieved.

Transforming organic waste from banana stems into food products with high sales value has been effectively achieved. Before PKM, banana stems in Merjosari were predominantly waste that was left to rot. Through training, participants can now identify the potential inside of banana stems (natural crude fiber) and process it [9]. Impact : The change in the status of banana stems from waste with no value to raw material for chips demonstrates the successful utilization of abundant natural resources.



Figure 5. Processed banana stem chips

The goal of providing new business alternatives for local residents, especially for housewives, has succeeded in providing practical skills that can be directly applied to small business units. The active involvement of housewives during the training proves that they have sufficient social and technical capital to start independent production, which has an impact: Several housewife participants have formed small groups after the training and started home-scale production. This shows that PKM has succeeded in growing the seeds of entrepreneurship (skills and mentality) and opening up alternative sources of income (independent businesses) for groups that were previously less productive.

The aim is to encourage the birth of innovation in local snacks or food products based on natural and environmentally friendly ingredients with the innovation of processing banana stem waste into crispy chips as a creative response to the availability of local ingredients. The use of variant seasonings (balado, BBQ, cheese) also shows the flexibility of the product to be accepted by the modern market. So that the Impact of Banana Stem Chips Products (often called Krisbog or Kripi Gebog) has succeeded in creating a new product identity based on Merjosari local wisdom. This innovation is in line with the concept of green economy because it carries the principle of being environmentally friendly (waste reduction) and natural ingredients (fiber and banana stem minerals).



Figure 6. Display the results at the exhibition

Strengthening the community economy through the development of Micro, Small, and Medium Enterprises (MSMEs) that leverage local potential. Economic growth is measured by the potential for additional family income from chip sales. With low raw material costs (banana stems are free/very cheap) and a simple processing process, the profit margin for this product is relatively high.

4. Conclusion

Overall, the Banana Stem Chips Processing Community Service Program (PKM) in Merjosari has successfully achieved all of its stated objectives. This program not only succeeded in transferring knowledge and technology for waste processing, but also succeeded in empowering housewives to become productive entrepreneurs, while strengthening the foundation of MSMEs based on local and sustainable product innovation in the Merjosari area.

This PKM proposal was developed as an effort to utilize local potential through innovative banana stem-based products. This activity is expected to increase the economic value of organic waste, create new jobs , and support the sustainability of MSMEs in Merjosari Village.

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