



Enhancing Honey Production and Packaging in Jujun Village: A Strategic Approach to Kickstart Marketing Initiatives

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ABSTRACT

Honey is a valuable non-timber forest product widely consumed by communities, with those living near forests sourcing it both from the wild and cultivation. Jujun Village, supported by the Faculty of Agriculture at Jambi University, received assistance in honeybee farming through the Wira Desa program from the Department of Forestry in 2021. As a new venture, continued support was needed to strengthen its potential as an alternative economic source. This study aims to address the challenges of honey farming in Jujun through three main activities: (1) evaluating and strengthening beehive positioning based on natural forage availability to ensure consistent production; (2) improving group members' skills in honey production and harvesting; and (3) enhancing packaging to facilitate market access. The program, conducted from March to August 2022, followed three phases: socialization, demonstration, and mentoring. Results showed significant improvements in participants' understanding of honey production, harvesting safety, product quality, and packaging. These advancements are expected to ensure the sustainability of honey farming, providing a stable livelihood for the community, especially honey farmers in Jujun Village.

Keywords: Beekeeping; Honey Production; Packaging; Rural Economy; Sustainable Agriculture

INTRODUCTION

Jujun Village, situated in the Keliling Danau Sub-district, stands as the largest village in terms of land area among the 32 villages in the district. As of 2019, the village's population reached 789, with 361 males and 428 females (Novita et al., 2021). The majority of Jujun's residents rely on agriculture for their livelihoods, and the region is home to a variety of fruit crops, including durian, oranges, mangosteen, avocados, bananas, mangoes, rambutan, belimbing, and duku (Janakiraman et al., 2023). Oranges and mangosteen are the most prevalent, covering an estimated 1,178-1,910 hectares (Gaafary et al., 2023; Zamarudin et al., 2023). Additionally, the sub-district has strong potential for plantation crops such as

cinnamon, robusta coffee, rubber, cloves, coconut, and candlenut (BPS, 2020). The region's diverse topography and landscape offer substantial opportunities for developing businesses tailored to the local environment (Enzenbacher, 2019; Lowe & Vinodrai, 2020).

Based on these advantages, the authors have selected Jujun as a focal point for developing rural enterprises. In 2021, as part of the Wira Desa community empowerment program, a beekeeping initiative was launched, leading to the formation of the Kelompok Tani Lebah Madu Sudut Parit. The goal of this initiative is to enhance the local economy, with honey production identified as a key contributor. Previous studies indicate that well-managed beekeeping ventures can contribute

significantly to rural economic growth (Jeil et al., 2020; Ibrahim et al., 2021; Buchori et al., 2022; Chami et al., 2022; Kehi et al., 2022; Kolawole et al., 2023). Rahmayani et al. (2018) estimating that honey farming could account for 20-40% of the local economy. Several studies have explored honey production in Jambi Province, West Sumatera, including both wild and cultivated honey production (Tamin et al., 2020; Andika, 2021; Sembiring, 2021; Harianja et al., 2023).

Despite the abundant forage resources in Jujun, challenges persist in scaling up honey production, particularly due to inadequate harvesting equipment. Furthermore, the marketing of honey products has been largely overlooked, limiting the potential for these goods to contribute to the local economy (Andreo-Martínez, 2020; Khalifa et al., 2021; Gajardo-Rojas et al., 2022; Landaverde et al., 2023). This gap in production efficiency and marketing strategies has hindered the Kelompok Tani Lebah Madu Sudut Parit from achieving its full economic potential and benefiting the newly established Village-Owned Enterprise (BUMDES), which was founded in 2021.

While previous research has highlighted the economic potential of honey production (Mancuso et al., 2020; Tadesse et al., 2021; Kallas et al., 2021; Pimentel et al., 2021), there is a lack of focus on the practical challenges faced by emerging honey farming groups, especially regarding the integration of efficient production and marketing strategies. This study's novelty lies in addressing these gaps, specifically by supporting the Kelompok Tani Lebah Madu Sudut Parit with solutions aimed at improving both production methods and honey packaging for market entry. The primary objective of this research is to enhance honey farming practices in Jujun Village, contributing to the sustainable growth of local businesses and increasing the economic value of honey production within the broader village economy.

METHODS

The community service project, organized by the Forestry Department at the Faculty of Agriculture, took place in Jujun Village, located in the Keliling Danau Sub-district. The project was conducted over six months, from March to August 2022, including preparatory activities.

The tools and materials used were tailored to the specific activities conducted. For evaluating the placement of honeybee hives, necessary tools included colony hives, saws, hammers, nails, 4-meter wooden boards, oil, and hoes. In activities involving group participation and hive inspection as well as honey harvesting, essential protective gear such as bee-proof clothing, rubber gloves, smokers, burlap sacks, rubber boots, scrapers, knives, and honey extractors were used. Additionally, for improving honey packaging, materials like sticker paper, art paper ink, Epson L210 printers, metal rulers, cutters, and bottles (100ml, 200ml, and 250ml) were required. The activities focused on addressing the challenges faced by the beekeeping group to optimize honey production for marketability. Based on field surveys, the activities were organized into three primary stages.

1. Stage One: Evaluation of Hive Placement

This phase involved evaluating the placement of the hives to ensure consistent honey production based on available forage. The beekeepers were instructed to periodically check the hive contents after each harvest. The goal was to establish a consistent harvesting cycle, ensuring continuous production. Regular checks also enabled early detection of any production-related issues. By the end of this stage, it was expected that all group members would actively participate and understand the rationale behind hive placement.

2. Stage Two: Provision of Protective Gear

To mitigate the concerns of bee stings during hive inspections and honey harvesting, standardized protective gear was provided. This aimed at alleviating any fear or hesitation, encouraging the group members to be more

active in the activities. Success was measured by the increased involvement of all members in hive inspections and honey harvesting, as well as regular maintenance of the area under the hives to prevent pest intrusion.

3. Stage Three: Honey Packaging and Marketing

The third stage focused on improving the packaging of honey for market readiness. Beekeepers were guided in selecting suitable packaging materials and designing labels for honey bottles. They were also shown examples of successfully marketed honey products at both national and international levels. The goal was for 1-2 members of the 11-member beekeeping group to finalize a label design, which would be collectively agreed upon during group discussions.

Data collection was conducted through direct observations, field surveys, and feedback during the different stages of training and demonstrations. The collected data were analyzed qualitatively to evaluate the effectiveness of each stage in terms of knowledge transfer, production improvements, harvesting practices, and packaging. The results were reviewed with the community members, and necessary adjustments were made to ensure that the activities addressed their challenges effectively.

The project employed a combination of extension services, demonstrations, and mentoring to support the beekeepers:

1. Extension: Extension sessions aimed to educate the community on sustainable honey production, safety measures during hive inspections and harvesting, and the significance of quality packaging. Three extension sessions were conducted, where presentations and informal discussions encouraged active participation and fostered a better understanding of the project's benefits.
2. Demonstration: Demonstrations were carried out to showcase proper techniques for hive placement, honey harvesting with protective gear, and packaging methods.

These practical sessions were held three times to reinforce key concepts and provide hands-on learning experiences for the participants.

3. Mentoring: Mentoring sessions were provided to reinforce the lessons from the extension and demonstration phases. Two students from the Faculty of Agriculture worked alongside the community members, offering on-site and remote assistance through phone calls and WhatsApp. The mentoring process helped identify ongoing challenges, which were addressed in collaboration with the community service team to ensure effective implementation and sustainable practices.

RESULTS AND DISCUSSIONS

The results of the community service project (PPM) under the departmental assignment scheme in Jujun Village consist of several key activities aimed at enhancing honey production, increasing participation among the Farmers Group, and improving the honey packaging process. These activities were integrated with the Merdeka Belajar Kampus Merdeka (MBKM) program, involving four students from the Forestry Study Program, who earned 23 academic credits from various relevant courses.

The 2022 PPM activities were a continuation of the work initiated in 2021. The program commenced with an initial meeting involving the Village Head of Jujun, the Sudut Parit Farmers Group, and BUMDES Muda Berkarya, where discussions took place on the progress of the previous year's efforts and the integration of the MBKM program in 2022.



Figure 1. Submission of Development of Activities in 2021 and Activities to be Implemented in 2022 by the Head of Jujun Village

Figure 1 illustrates the Village Head delivering a speech on the project’s progress, followed by an inspection of the honeybee hives provided in 2021. The inspection revealed that the hives were still productive, as shown in Figure 2, and that honey production could continue with adequate forage, as evidenced by the condition of the hives in Figure 3.



Figure 2. Honey Stup Checking by Community Service Team Members



Figure 3. Condition of Honeycomb That Is Still Producing

Following the initial inspection, a series of extension activities were conducted. The first extension session, focused on the sustainability of honey harvesting in relation to the availability of bee forage, was presented by Mr. Ahmad Dinar from the Indonesian Honeybee Inspirator Association (ILMI). This was complemented by discussions on the importance of safety during hive inspections and honey harvesting, led by the project team members, Ir. Riana Anggraini, S.Hut., M.Si, and Maria Ulfa, S.Hut., M.Si. The importance of packaging for marketing purposes was also emphasized.



Figure 4. Counseling on Sustainable Honeybee Harvesting and Safety During Harvesting by Mr. Ahmad Dinar Accompanied by the Head of Jujun Village and the Head of the Parit Sudut Honey Farmers Group

Figure 4 shows Mr. Ahmad Dinar conducting the extension on sustainable honey harvesting and safety measures, alongside the Village Head and the group’s leader.

After the extension sessions, various tools and materials were provided to facilitate the honey production activities. These included additional honeybee hives, harvesting safety equipment, and packaging materials, which were formally handed over to the Village Head, the Farmers Group, and BUMDES, as depicted in Figure 5.



Figure 5. Handover of Tools and Materials by PPM Team

The next step involved placing new hives under mangosteen trees and inspecting the previously installed hives. This process was carried out in collaboration with Mr. Ahmad Dinar and involved treating the hive posts with used oil to prevent ant infestations. The hives were checked for the presence of a queen bee and their honey production capacity, as shown in Figure 6.



Figure 6. Placing honeycombs under mangosteen stands

One of the key elements of the project was training the MBKM students to design packaging labels for the honey bottles using the Canva platform. Once the students completed their designs, they worked with the village authorities and the Farmers Group to finalize the packaging and labeling process. The final sticker design, which was approved by the Farmers Group and BUMDES, is shown in Figure 7.



Figure 7. Sticker designs approved by farmer groups and BUMDES

The success of this project can be evaluated by several outcomes. The extension activities were particularly effective in increasing the knowledge of group members about bee forage, leading to the relocation of the hives to areas with better forage availability. The safety training was also successful, as it helped alleviate the group members' concerns about bee stings, thereby increasing their willingness to engage in honey harvesting. The provision of protective gear contributed significantly to boosting the group's confidence in carrying out these activities.

In terms of packaging and marketing, the students' efforts to design the packaging labels led to a product that was not only functional but also attractive for potential buyers. The involvement of the Farmers Group and BUMDES in this process ensured that the marketing strategy was aligned with the local community's needs. The ability to design appealing labels represents a critical step towards establishing a strong brand identity for the honey produced in Jujun Village, potentially increasing its marketability both locally and regionally.

The ongoing support and mentorship provided by the community service team, combined with the assistance of MBKM students, have been crucial in motivating the Farmers Group to continue their beekeeping enterprise. The consistent monitoring and mentoring helped ensure that the group was able to harvest honey, as shown in Figure 8, after just one

month. This success highlights the potential for beekeeping to become a sustainable livelihood in Jujun Village.



Figure 8. New Look for Honey Production and Packaging

This community service initiative highlights the importance of practical support and capacity building in rural areas, particularly when introducing new agricultural activities such as beekeeping. The activities implemented throughout the project not only addressed the immediate needs of the Farmers Group but also contributed to the longer-term sustainability of honey production. The group's ability to adapt and integrate new knowledge, such as hive relocation for better forage availability, is a testament to the success of the extension sessions (Zocchi et al., 2020).

The success of the safety training is another critical outcome. The provision of protective gear reduced the fear associated with honey harvesting, which can often be a significant barrier to participation in beekeeping activities. By increasing the group's confidence, the project empowered them to take ownership of the production process, contributing to the project's overall success (Grass et al., 2020; Khan et al., 2020; Ahmad et al., 2022).

Furthermore, the involvement of MBKM students in the packaging design process was not only beneficial for their academic development but also ensured that the packaging of the honey was of high quality. This aspect of the project is essential for making the honey more competitive in the market.

Packaging plays a pivotal role in product marketing, as it is often the first point of contact between consumers and the product (Alhamdi, 2019; Cochoy, 2020; Coelho et al., 2020; Wandosell et al., 2021). By teaching the group how to design effective labels, the project set the foundation for future marketing efforts that could expand the reach of Jujun's honey.

The consistent monitoring and mentoring provided by the project team have ensured that the Farmers Group remains motivated and capable of scaling their beekeeping activities. The quick return on investment, with the group harvesting honey within a month of the project's conclusion, indicates that the beekeeping initiative is viable and could serve as a sustainable source of income for the community. This project demonstrates the potential of community-based agricultural initiatives to improve local economies, particularly in rural areas where access to resources and expertise may be limited.

CONCLUSION

The results indicate that the Sudut Parit Honeybee Farmers Group significantly improved their knowledge and skills in beekeeping through a series of extension activities, demonstrations, and continuous support, which enabled them to enhance honey production and operational management. However, the study also faced limitations, such as the short duration of the intervention and the geographic specificity of the program, which may not be easily applicable to other regions with different conditions. Future studies could explore the long-term sustainability of these practices, assess the broader economic impacts on the community, and investigate the scalability of the program to other regions with varying socio-economic contexts. Additionally, a more in-depth analysis of market access and the role of local government and academic partnerships in fostering sustainable beekeeping could provide valuable insights for future community-driven initiatives.

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