



# Training on Diversification and Labeling of Honey Products in the Taman Kelulut Ayoh Ku Bee Farming Community

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## Abstract

Taman Kelulut Ayoh Ku Bee Farming Community in Pengkalan Gelap, Kuala Setiu, Terengganu, Malaysia, is a group of *Trigona* sp. honey beekeepers which faces challenges related to the availability of packaging facilities for kelulut honey. This community service activity is important to provide education and training to improve packaging facilities through diversification and labeling on honey product. The activity was carried out offline on August 8-9th, 2023. The results of the activity showed that the training on diversifying honey product packaging increased the knowledge and skills of 92.5% of participants, while the training on labeling honey product packaging increased the knowledge and skills of 80% of participants. The solutions presented can increase the knowledge and skills of community members, motivate the enthusiasm of farmers, and increase the selling value of honey products produced by the Taman Kelulut Ayoh Ku Bee Farming Community.

**Keywords:** Beekeeping community, kelulut honey, labeling, packaging facilities.

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## 1. Introduction

In Pengkalan Gelap, Kuala Setiu, Terengganu, Malaysia, the Ayoh Ku Bee Farming Community, comprised of *Trigona* sp. honeybee farmers, has been established to drive local economic growth. Originally recognized as a fishing community reliant on fishery-related income, a segment of the local populace shifted towards cultivating stingless bees in response to income volatility in the fishing industry. This collective, consisting of 60 members managing 180 locally developed stingless bee hives (BuletinTV, 2023), endeavors to diversify livelihoods.

In an effort to enhance stingless bee productivity, this community has collaborated with Universiti Malaysia Terengganu (UMT), implementing smartHive technology in beekeeping practices. Serving as a research center, this community aims to explore and harness the multifaceted advantages of stingless bees. Honey farming activities not only yield raw honey but also secondary derivatives like soap, shampoo, and lotion. However, a notable challenge lies in the deficiency of packaging facilities for the primary product, stingless bee honey.

Community-driven initiatives focus on improving packaging infrastructure, specifically emphasizing diversification and labeling strategies for stingless bee honey products. Educational seminars and training sessions on packaging diversification serve as solutions to the inadequacies in current packaging, which predominantly utilizes uniform-sized glass bottles. The augmentation of product market value is anticipated through diversification in packaging size and visual appeal (Srikalimah et al., 2018). The proposer has prior research experience in bee characteristics (Fajriningsih & Suwartiningsih, 2022) and expertise in product diversification for increased market value (Putri et al., 2018).

Educational initiatives encompassing label application represent remedies to the prevailing inadequacies in the packaging of stingless bee honey products, retailed without labels. Beyond conveying product information, packaging labels serve as promotional tools with aesthetically pleasing designs. Therefore, it becomes imperative to equip partners with skills in label design and printing. Drawing upon prior experience in promotional strategies and packaging design (Suroño et al., 2021), the collaborative engagement of partners in these initiatives is envisaged to reignite the enthusiasm of the beekeepers.

## 2. Methodology

The community engagement initiative was conducted by employing educational outreach and training methodologies aimed at enhancing packaging facilities through diversification and labeling strategies for product packaging. This engagement program was held on the 8th and 9th of August 2023, structured into multiple sessions, each spanning 200 minutes. The program structure encompassed various segments, including pre-tests, content delivery, interactive discussions, Q&A sessions, and post-tests. Both pre-tests and post-tests were administered to gauge the enhancement of knowledge and skills among the participating partners.

## 3. Results and Discussion

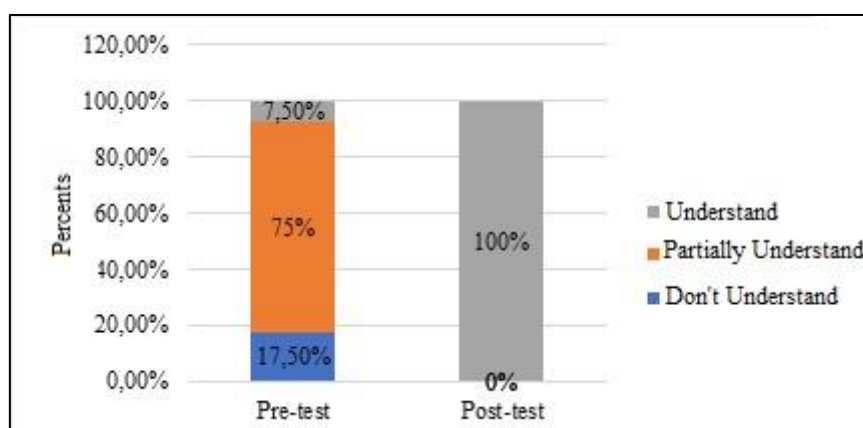
### 3.1. Outreach, Training, and Support for Enhancing Packaging Facilities through Honeybee Product Packaging Diversification

The session, depicted as Figure 1, focusing on the Enhancement of Packaging Infrastructure through Honeybee Product Packaging Diversification, was conducted on the 9th of August 2023. Nurul Suwartiningsih, S.Pd., M.Sc., served as the facilitator for this initiative. The primary aim of this engagement was to augment the members' knowledge base and skill set pertaining to the establishment and advancement of facilities conducive to diversifying honeybee product packaging.



**Figure 1:** The Outreach and Training Activity for Improving Packaging Facilities through Honeybee Product Packaging Diversification

The participants underwent an initial assessment in the form of a pre-test before the activity commenced, aimed at gauging their baseline knowledge regarding honeybee product packaging diversification. The results of the pre-test indicated that 7.50% of participants possessed prior knowledge regarding honeybee product packaging diversification (Figure 2). This suggests that a portion of the participants already had preliminary knowledge regarding honeybee product packaging diversification, potentially influenced by an understanding of marketing strategies among some participants.



**Figure 2:** The Results of Pre-test and Post-test from the Outreach and Training Activity on Enhancing Packaging Facilities through Honeybee Product Packaging Diversification

The Outreach and Training Activity for Enhancing Packaging Facilities through Honeybee Product Packaging Diversification was conducted in response to the lack of primary packaging resources for kelulut honey products. In the Ayoh Ku Bee Farming Community, honey products had been consistently packaged solely in glass bottles and in a single size. Thus, instructional materials were provided to cover the concept of packaging diversification, elucidating its definition and functions. These materials aimed to augment participants' comprehension that packaging not only serves as a protective container safeguarding products from external factors (security function) but also contributes to market enhancement through appealing design (promotional function). Additionally, packaging serves as an informative vessel concerning various product-related aspects (informational function) (Samuddin et al., 2018; Swasty et al., 2019).

Through this initiative, both the size and appearance of the packaging were diversified. Formerly available in a singular 250 mL packaging, the honey product packaging was expanded to include a variety of options such as an 8 mL roll-on, stick, 100 mL mini bottle, 250 mL medium bottle, and gift set packaging (Figure 3). Diversification in sizes offered consumers the flexibility to choose honey sizes according to their preferences, potentially increasing the product's market value (Srikalimah et al., 2018). Apart from adding value, product diversification serves as a marketing strategy (Putri et al., 2018). Following this activity, the percentage of participants knowledgeable about honey product packaging diversification rose to 100% (Figure 2).



**Figure 3:** The Outcomes of the Outreach and Training Initiative for Enhancing Packaging Facilities through Honeybee Product Packaging Diversification: a. 8 mL roll-on packaging, b. Stick packaging, c. 100 mL mini bottle packaging, d. 250 mL medium bottle packaging, e. Gift set packaging

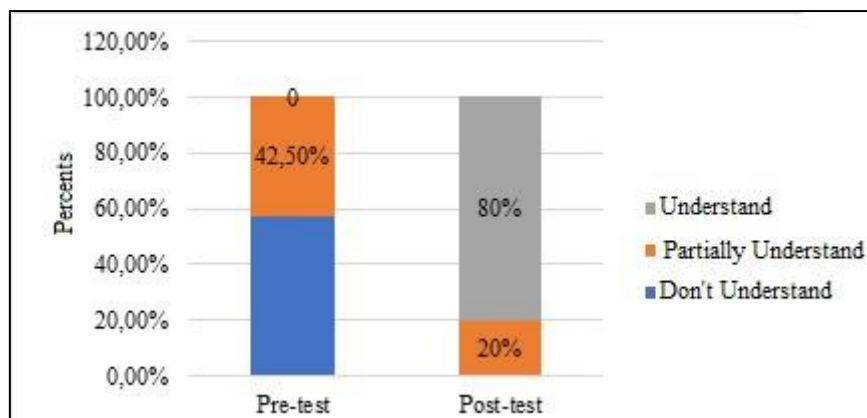
### 3.2. Outreach, Training, and Assistance in Applying Labels to Honeybee Product Packaging

The Outreach and Training Session for Applying Labels to Honeybee Product Packaging (Figure 4) was held on August 9, 2023. This event was attended by 20 participants from the Ayoh Ku Bee Farming Community. The primary objective of this activity was to enhance the knowledge and skills of the members in applying labels to honeybee product packaging.



#### Figure 4: Improving Packaging Facilities through Honeybee Product Labeling

Participants were subjected to an initial pre-test before the commencement of the activity to assess their prior knowledge regarding honeybee product labeling. The outcomes of this pre-test revealed that none of the participants had prior knowledge concerning honeybee product labeling (Figure 5). This underscores the critical necessity for conducting training and outreach sessions focused on honeybee product labeling.



**Figure 5:** The Results of Pre-test and Post-test in the Outreach and Training Initiative for Improving Packaging Facilities through Honeybee Product Labeling

In the Ayoh Ku Bee Farming Community, kelulut honey product packaging has been retailed without including labels. Therefore, instructional materials covering label application were provided, encompassing the definition of labels, their functions, and the label creation procedure using the Canva application.

Packaging labels hold paramount importance as they contain various product-related information (Insan et al., 2021) and serve as a promotional aspect (Hadi et al., 2021), necessitating proficient design (Artaya & Kamisutara, 2023). During this session, individual labels were created for roll-on, straw, mini bottle, and medium bottle packaging, featuring brand, logo, production details, volume, and expiration date (Figure 6). Effective promotion inevitably impacts sales, leading to increased income for kelulut honey farmers (Surono et al., 2021). Following this activity, the percentage of participants knowledgeable about honey product labeling increased to 80% (Figure 5).



**Figure 6:** Example Packaging Label from the Outreach and Training Activity for Improving Packaging Facilities through Honeybee Product Labeling Training

The diversification and packaging efforts are anticipated to yield a broader market reach by presenting a more heterogeneous product range, enhancing durability, attractiveness, and informativeness. This is poised to escalate honey sales and uplift beekeepers. Furthermore, through diversification and labeling outreach and training, beekeepers will be more adept at market analysis, identifying the most sought-after products and elements requiring supplementation and enhancement in their labels. For instance, augmenting labels with halal certification and distribution permits to fortify product reliability and trustworthiness.

The conducted activities progressed seamlessly and in alignment with the planned objectives, encountering no significant impediments throughout their execution. Participants exhibited substantial enthusiasm for the activities, albeit not all community members could attend the sessions concurrently.

The pivotal factors fostering the smooth progression of these activities encompassed the positive reception from collaborators and the high enthusiasm observed during both participation and follow-up. The heightened enthusiasm was evident through the active engagement of participants, marked by numerous inquiries, responses, and discussions regarding the delivered content. This heightened enthusiasm was fueled by the relevance of the material to the participants' needs.

#### 4. Conclusion

The conclusions drawn from the activities are as follows:

1. The outreach and training on Improving Packaging Facilities through Honeybee Product Packaging Diversification substantially increased participants' knowledge from 7.50% to 100%.
2. The training and outreach sessions on Applying Labels to Honeybee Product Packaging significantly augmented participants' knowledge from 0% to 80%.
3. Subsequent activities could involve extending practical sessions and further follow-up sessions to educate on digital marketing strategies.

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