

Utilization of Rambutan Peel and Kelulut Honey in Herbal Lip Balm Production to Empower PKK Mothers

Puput Iswandyah Raysharie¹, Septaria Yolan Kalalinggi^{2*}, John Budiman Bancin³, Rasidah², Dicky Perwira Ompusunggu¹, and Zahrotun Nafisah²

¹Development Economics, Faculty of Economics and Business,
Universitas Palangka Raya, Palangka Raya, Indonesia

²Chemistry Department, Faculty of Mathematics and Natural Sciences,
Universitas Palangka Raya, Palangka Raya, Indonesia

³Management Department, Faculty of Economics and Business,
Universitas Palangka Raya, Palangka Raya, Indonesia

*septariayolankl@mipa.upr.ac.id

Article Info	Abstract
Article history: Received: September 3, 2025 Accepted: November 19, 2025 Published: December 23, 2025 Keywords: Community empowerment Entrepreneurship Herbal lip balm Kelulut honey This article is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License © 2025 Bubungan Tinggi: Jurnal Pengabdian Masyarakat	This community service program aimed to enhance the entrepreneurial skills and economic independence of the Bahu Palawa Village community by training members of the Family Welfare Movement (PKK) to produce herbal lip balm using rambutan peel waste and kelulut honey. The program adopted a Participatory Action Research (PAR) approach, actively involving participants in each stage: basic entrepreneurship training, dissemination of information on the benefits of local ingredients, hands-on lip balm production, digital marketing, and packaging design. The training combined expository instruction, demonstrations, and practical activities to ensure comprehension and application. Evaluation was conducted using pretest-posttest instruments and Wilcoxon signed-rank statistical analysis. Results showed a significant increase in participants' understanding of rambutan peel benefits (from 12 to 28 participants) and of kelulut honey (from 22 to 29 participants), as well as improved trust in the safety of herbal cosmetics (from 31 to 32 participants). Satisfaction surveys indicated high approval of the training materials and mentoring. The program successfully increased knowledge, skills, and awareness of local resource potential. Its impact includes fostering interest in transforming organic waste into economically valuable products, although continued mentoring is needed to support sustainable independent production. To cite this article: Raysharie, P. I., Kalalinggi, S. Y., Bancin, J. B., Rasidah., Ompusunggu, D. P & Nafisah, J. (2025). Utilization of Rambutan Peel and Kelulut Honey in Herbal Lip Balm Production to Empower PKK Mothers. <i>Bubungan Tinggi Jurnal Pengabdian Masyarakat</i>, 7(4), 993-1002.

INTRODUCTION

The herbal cosmetics industry continues to experience rapid growth globally. Herbal cosmetic products are increasingly in demand by consumers as they offer eco-friendly, high-quality, and natural-based solutions. This trend is driven by growing public awareness of the importance of using safe products and by the influence of social media,

which has made herbal cosmetics part of modern lifestyles. In addition, herbal cosmetics play a significant role in enhancing users' confidence and quality of life, as highlighted by ([Adjeng et al., 2022](#); [Agustin et al., 2024](#); [Ambarwati et al., 2024](#); [Suwarno et al., 2024](#)).

In Indonesia, the development of the herbal cosmetics industry presents great economic potential. The country possesses abundant natural resources that can be used as raw materials for herbal cosmetics, such as rambutan peel and kelulut honey. These ingredients are rich in benefits—rambutan peels are high in antioxidants. At the same time, kelulut honey has natural moisturizing properties that can help address lip problems such as dryness, chapping, and sensitivity. The increasing market demand also drives innovation among local businesses to develop products based on local wisdom ([Fatmawati et al., 2024](#); [Kashuri, 2024](#); [Palupiningtyas et al., 2025](#)).

However, waste management—particularly of rambutan peels—remains challenging, as these materials are often discarded, leading to environmental problems. Therefore, innovations that transform rambutan peel waste into economically valuable products, such as herbal lip balms, represent a strategic step. Such innovations not only reduce environmental impact but also foster a sustainable economic cycle. Research has shown that rambutan peel waste can be processed into high-value cosmetic raw materials ([Sunaryo, 2020](#); [Zuhri et al., 2022](#)).

Through a community service program, the women of Bahu Palawa Village PKK are supported in utilizing rambutan peels and kelulut honey to make herbal lip balms. This program aims to enhance the skills, knowledge, and business opportunities of local women. The mentoring focuses not only on developing entrepreneurial capabilities but also on raising awareness about the importance of personal hygiene and skin health. With this approach, it is expected that PKK women will be empowered to create innovative products that are competitive in both local and international markets, thereby contributing to sustainable regional economic growth.

METHODS

This community service activity was conducted in Bahu Palawa Village, Central Kalimantan, from July to October 2024. The program targeted members of the PKK (Family Welfare Movement) to enhance economic independence and entrepreneurial skills through training in the production of lip balm made from rambutan peel waste and kelulut honey. The program adopted a PAR approach, which actively involved participants in identifying local potentials, engaging in collaborative learning, and applying practical skills throughout the intervention. The program consisted of several stages, including basic entrepreneurship training, dissemination of information on the benefits of rambutan peel, lip balm production, digital marketing, and packaging design. The training employed a combination of expository instruction, demonstrations, and hands-on practice to ensure that participants comprehended and could apply the materials provided ([Trisnaputri et al., 2023](#)).

Evaluation was carried out through pretests, posttests, and questionnaires. Descriptive analysis was used to illustrate changes in participants' understanding, while the Wilcoxon signed-rank test measured statistically significant differences before and after the training. The analysis revealed a notable improvement in participants' understanding of the benefits of rambutan peel and kelulut honey, as well as their ability to produce and market herbal lip balm products ([Afrahamiryo et al., 2024](#); [Noor et al., 2016](#)).

RESULTS AND DISCUSSION

The program commences with a discussion with the teachers regarding the service activities carried out by the service team, including training for PKK Bahu Palawa women (Figure 1). It is divided into several stages, namely:



Figure 1 Entrepreneurship assistance for pkk mothers of bahu palawa village through the production of herbal cosmetics (lip balm) from the combination of rambutan skin waste and kelulut honey

A. Preparation Stage

Preparations were made, including coordinating with the village government, providing training facilities and infrastructure, distributing materials, and organizing the service team's task assignments.

B. Implementation

1.1. Exposure related to Entrepreneurship

The training began with an introduction to entrepreneurship, including how to identify business opportunities from local resources such as rambutan skin and kelulut honey. Participants were also given an understanding of the importance of profit and loss calculations in ensuring business sustainability ([Husnalia et al., 2025](#)). This material aims to build a creative and analytical mindset in running a business based on local materials ([Setiawati et al., 2023](#)).

1.2. Socialization of Health Benefits of Rambutan Skin

This session focused on extracting bioactive compounds from rambutan peels, including antioxidants that serve as natural colorants. Participants were given insights into how rambutan peel waste can be utilized in high-value herbal cosmetic products, such as lip balm. The antioxidant content of rambutan peel has potential health and beauty benefits, making it a superior ingredient in cosmetic product innovation ([Noor et al., 2016](#)).

1.3. Training on Making Lip Balm from Rambutan Peel

Participants were trained in the technical process of making lip balm, from preparing ingredients such as rambutan peel powder to final product formulation. The training covers the steps of mixing ingredients, processing them into lip balm, and packaging. The objective of this training is to ensure that participants understand the technical steps of hygienic and high-quality production ([Afrahmiryano et al., 2024](#)).

The results of this service activity went well. Effective coordination and communication were carried out to explore the potential of utilizing rambutan skin waste

and kelulut honey as the basic ingredients for making herbal lip balms. During the implementation, participants showed high enthusiasm for the material presented, especially in the lip balm-making practice session.

The implementation of the activities was evaluated through pretests, posttests, and participant satisfaction surveys to measure the success of the program (Figure 5). The pretest and posttest data showed a significant increase in participants' knowledge and skills regarding the benefits of rambutan peel, kelulut honey, and the lipbalm production process. The survey results also showed that most participants were satisfied with the training methods and materials presented (Afrahmiryano et al., 2024).

The results of this activity show that the training on making lip balm from rambutan skin and kelulut honey has a positive impact on participants' knowledge, skills, and awareness of the potential of local materials that were previously underutilized. This program not only supports local economic empowerment but also encourages sustainable organic waste management (Zuhri et al., 2022). The pre-test and post-test data analysis is shown in Figure 2.

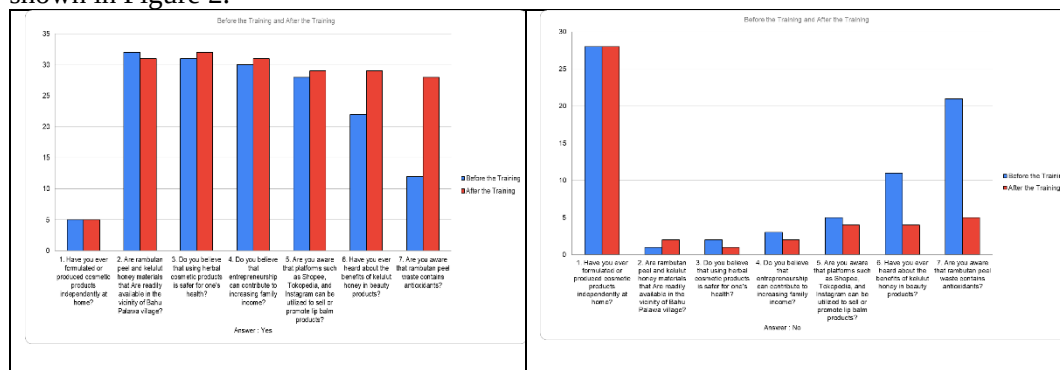


Figure 2 Analysis of pre-test and post-test data

The analysis of pre-test and post-test data revealed significant changes in several key areas. The entrepreneurship training on herbal lip balm production in Bahu Palawa Village led to notable improvements in participants' knowledge and awareness, particularly in the community's understanding of cosmetic production.

1. Independent Cosmetic Production

There was no change in this indicator, as five respondents answered “Yes” both before and after the training. This suggests the training did not immediately affect participants' experience of producing cosmetics independently.

2. Availability of Rambutan Peel and Kelulut Honey

Before the training, 32 respondents stated that these materials were available in the village, while one said they were not. After the training, the numbers shifted slightly to 31 “Yes” and 2 “No,” indicating a minor change in perceptions regarding the availability of local ingredients.

3. Belief in the Safety of Herbal Cosmetics

The number of respondents who believed herbal cosmetics are safer increased from 31 to 32, reflecting a growing awareness of the health benefits associated with natural products.

4. Entrepreneurship as a Source of Family Income

The number of respondents who believed that entrepreneurship could increase family income rose from 30 to 31, indicating a slight but positive change in perception.

5. Benefits of Kelulut Honey for Beauty

Awareness of the cosmetic benefits of kelulut honey increased significantly, from 22 to 29 respondents, demonstrating the training's effectiveness in enhancing community knowledge about local ingredients.

6. Knowledge of Antioxidants in Rambutan Peel

Understanding of the antioxidant content in rambutan peel rose sharply from 12 to 28 participants. This indicates that the training significantly improved participants' knowledge of the potential of local ingredients in cosmetic applications.

The results of the pre-test and post-test data analysis, supported by the Wilcoxon test (Table 1), confirm that the training significantly increased participants' awareness.

Table 1 Wilcoxon (non-parametric) test results

Method	df	Value	Probability
Wilcoxon/Mann-Whitney		2.930390	0.0034
Wilcoxon/Mann-Whitney (tie-adj.)		3.078265	0.0021
Med. Chi-square	1	4.693759	0.0303
Adj. Med. Chi-square	1	3.448476	0.0633
Kruskal-Wallis	1	8.624810	0.0033
Kruskal-Wallis (tie-adj.)	1	9.517230	0.0020
van der Waerden	1	8.160745	0.0043

The Wilcoxon test value of 0.0034 ($p < .05$) indicates a statistically significant difference between the pre-training and post-training variables. This suggests that the intervention had a measurable impact, resulting in a meaningful change in responses before and after the training.

Pre-Test and Post-Test Results

Overall, the entrepreneurship training on lip balm production using rambutan peel and kelulut honey had a substantial impact on enhancing participants' knowledge and awareness. The sharp increase in understanding of the benefits of kelulut honey (from 22 to 29 participants) and the antioxidant content in rambutan peel (from 12 to 28 participants) highlights the effectiveness of the training materials. Additionally, there was a modest improvement in trust toward herbal cosmetics and in understanding digital marketing strategies. However, the training was insufficient to motivate participants to independently produce cosmetics, indicating the need for further support and guidance. Given these outcomes, the program can be considered successful in increasing knowledge and awareness. Still, it would benefit from a more intensive, hands-on approach to ensure broader and more sustainable impact.

Program Effectiveness

The training program on lip balm production using rambutan peel and kelulut honey in Bahu Palawa Village proved effective in enhancing participants' knowledge. This is evident from the significant increases in awareness of the benefits of kelulut honey (from 22 to 29 participants) and in the antioxidant content of rambutan peel (from 12 to 28 participants). Improvements were also observed in participants' trust in herbal cosmetics (from 31 to 32 participants) and their understanding of digital marketing platforms (from 28 to 29 participants). These results suggest that the training successfully strengthened participants' awareness of the potential of local ingredients and the importance of modern marketing techniques. However, the training did not increase the number of participants attempting to produce cosmetics independently, which remained unchanged at 5. This indicates the need for enhanced practical sessions and continuous mentorship.

Overall, the program effectively introduced participants to the potential of local resources and entrepreneurial opportunities. Nevertheless, the training should be optimized by strengthening practical components and digital marketing sessions to ensure participants not only understand the material but are also capable of applying their knowledge in real-world business settings. While the program had a positive impact on knowledge and skills, further efforts are needed to foster sustainable entrepreneurial practices.

Based on the training outcomes, analyzing respondent satisfaction is a crucial step in evaluating the program's overall success. This evaluation focuses on two key areas: understanding of the lip balm production process and satisfaction with the mentoring activities. This analysis provides valuable insight into the effectiveness of content delivery and identifies the program's strengths and areas for improvement. The findings can be used to strategize future enhancements and guide the development of similar training initiatives. Each satisfaction aspect will be further discussed to assess how well the program met participants' needs and expectations.

Respondent Satisfaction Analysis

Based on respondents' satisfaction data related to the training, the following is an analysis of the three measured aspects of satisfaction:

1. Understanding of the Production Process

This aspect evaluates how well participants understood the process of making lip balm using rambutan peel and kelulut honey, which was the core focus of the training (Table 2).

Respondent Satisfaction Item 1: How familiar are you with the process of making lip balm from a combination of rambutan peel and kelulut honey?

Table 2 Respondent satisfaction item I

Very Poorly Understood	1 respondent
Not Understood	0 respondents
Understood	23 respondents
Very Well Understood	9 respondents

The majority of respondents (23 people) reported understanding the lip balm production process, and 9 participants indicated they understood it very well (Figure 3). Only 1 respondent felt that they had a poor understanding, while none selected "Not Understood."

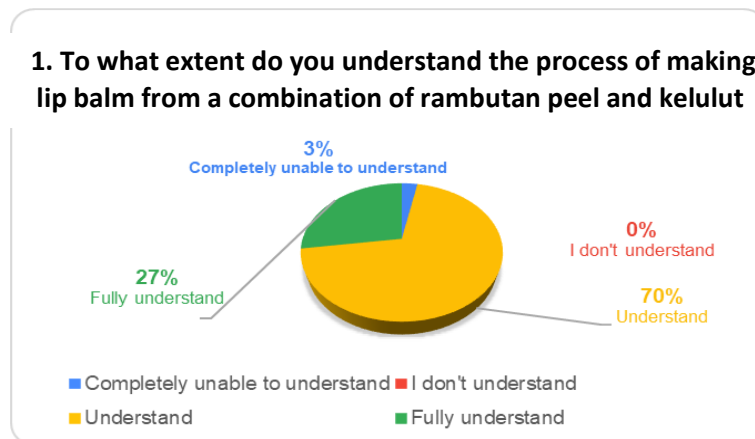


Figure 3 Presentation of participants' understanding of lip balm making

This data demonstrates the success of the training in providing most participants with a solid understanding of the production techniques. It also reflects the effectiveness of the training materials and instructional methods in clearly conveying the information.

2. Satisfaction with Mentoring Activities

This section measures participants' level of satisfaction with the entrepreneurship mentoring program, specifically in the context of lip balm production (Table 3).

Table 3 Respondent satisfaction item II

Respondent Satisfaction Item 2:	
Are you satisfied with the entrepreneurship mentoring activities through lip balm production?	
Very Dissatisfied	2 respondents
Dissatisfied	0 respondents
Satisfied	22 respondents
Very Satisfied	9 respondents

The majority of respondents (22 participants) expressed satisfaction with the mentoring activities, while 9 reported being very satisfied. Only 2 respondents indicated that they were very dissatisfied, and none selected "Dissatisfied" (Figure 4).

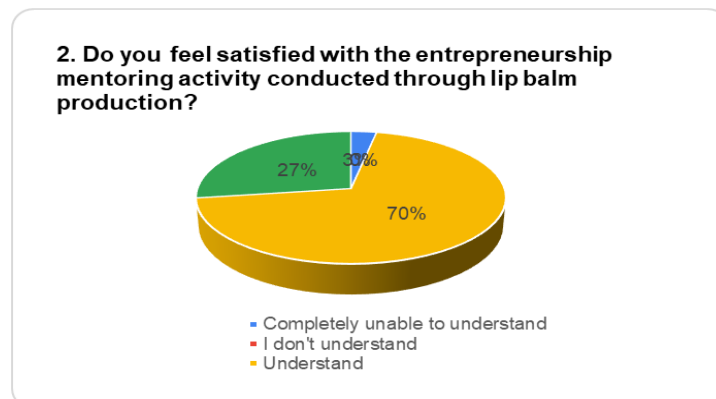


Figure 4 Presentation of entrepreneurship assistance through lip balm making

These results suggest that the mentoring component successfully provided a positive learning experience for most participants, contributing to their overall satisfaction with the program. The high level of satisfaction also reflects that the mentoring content, delivery methods, and practical approach were generally effective and aligned with participants' needs. However, the presence of two dissatisfied participants suggests there is still room for minor improvements.

CONCLUSION

The training effectively increased participants' knowledge of entrepreneurship and digital product marketing, although certain areas could be refined to meet the needs of all participants better. This outcome aligns with the primary objective of the community service program, which was to empower PKK members in Bahu Palawa Village through entrepreneurial capacity building based on local resources. Overall, the analysis demonstrates that the entrepreneurship training program, centered on lip balm production from local ingredients (rambutan peel and kelulut honey), was successful in improving

community awareness, knowledge, and satisfaction in Bahu Palawa Village. The key findings are as follows:

Community Awareness

The training successfully raised awareness of the potential of local ingredients in cosmetic products. This was reflected in the increased confidence in the safety of herbal cosmetics and participants' understanding of the benefits of kelulut honey and rambutan peel. These improvements are statistically supported by the Wilcoxon test, which showed a significant difference in awareness levels before and after the training.

Respondent Satisfaction

Participants reported high levels of satisfaction with both the training materials and the mentoring activities. Most were satisfied or very satisfied with the sessions on lip balm production and digital marketing. A few participants expressed dissatisfaction with the digital marketing component, indicating a need for improvements, particularly in how the content is presented and its relevance to the local business environment.

The program's impact includes increased community confidence in utilizing organic waste for economic purposes, strengthened entrepreneurial motivation, and the emergence of local innovation potential. These outcomes suggest that the training not only met its intended goals but also laid the groundwork for sustainable, community-driven entrepreneurship.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

All authors (PIS, SYK, JBB, R, DPO, and ZN) contributed to producing the final version of this article according to their respective expertise and roles.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to LPPM UPR for providing the opportunity to carry out this community service initiative and to the entire PKK Desa Bahu Palawa for invaluable assistance and participation during the program.

REFERENCES

- Adjeng, A. N., Koedoes, Y. A., Muhammad, N. F., Ali, Palogan, A. N. A., & Damayanti, E. (2022). Edukasi bahan dan penggunaan kosmetik yang aman di desa suka banjar gedong tataan kabupaten pesawaran. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 6, 89–102.
- Afrahamiryano, A., Yora, M., Nelvi, Y., D, I., Renfiyeni, R., Mahmud, R., & Hendry, J. (2024). Edukasi pengendalian hama dan penyakit buah naga di Nagari Tanjung Alai. *Community Development Journal: Jurnal Pengabdian Masyarakat*, 5(3)(3), 5676–5680.
- Agustin, E. W., Tumangger, M. H., Nugroho, A. S., Rinjani, F. K. A., Aulia, M. J., Styowati, A., Yosheaningtyas, D. F., Rachma, D. F., & Hiadayat, K. A. A. Z. P. (2024). Kosmetik herbal bahan alami yang berfungsi sebagai pelembab kulit berdasarkan kajian pustaka. *Jurnal Ventilator*, 2(4), 235–245. <https://doi.org/10.59680/ventilator.v2i4.1568>
- Ambarwati, N. S. S., Armandani, M. O., Hidayah, N., & Josua, D. P. (2024). Peningkatan kompetensi profesional kecantikan pada pekerja indonesia di singapura melalui

- pembuatan lulur tradisional pengantin. *Journal UNJ*, 2024, 27–36.
- Fatmawati, A., Suprapti, S., Puspitasari, A., Solikah, W. Y., & Gunawan, A. (2024). Penyuluhan kosmetika herbal untuk wajah dan pembuatan masker bubuk organik di krapyak wetan. *Masyarakat: Jurnal Pengabdian*, 1(2), 225–232. <https://doi.org/10.58740/m-jp.v1i2.310>
- Husnalia, S., Susyanti, J., & Anwar, B. (2025). Pelatihan manajemen keuangan bagi pelaku umkm. *Jurnal SOLMA*, 14(1), 1260–1268. <https://doi.org/10.56127/jammu.v2i1.857>
- Kashuri, M. (2024). *Kosmetik berbahan alam asli indonesia* (W. Febriani (ed.)). Penerbit Mitra Cendekia Media.
- Noor, M. I., Yufita, E., & Zulfalina. (2016). Identifikasi kandungan ekstrak kulit buah naga merah menggunakan fourier transform infrared (ftir) dan fitokimia. *Journal of Aceh Physics Society (JAcPS)*, 5(1), 14–16.
- Palupiningtyas, D., Nugraheni, K. S., Erawati, A. D., Zelda, Y. C., & Puspitasari, A. (2025). Pemberdayaan ibu-ibu pkk melalui inovasi produk kosmetik alami berbasis toga di perumahan green semesta semarang. *Jurnal Pengabdian Masyarakat Wsradin*, 5(1), 244–251. www.ine.es
- Setiawati, E., Salamah, & Sukadari. (2023). Pelatihan kewirausahaan berbasis pemanfaatan bahan pangan lokal bagi anggota pkk di ngestiharjo kabupaten bantul. *Jurnal Pengabdian UNDIKMA : Jurnal Hasil Pengabdian & Pemberdayaan Kepada Masyarakat*, 4(3), 555–562. <https://doi.org/10.33394/jpu.v4i3.8373>
- Sunaryo, D. (2020). Optimalisasi limbah kulit rambutan menjadi produk minuman kemasan dalam meningkatkan perekonomian masyarakat desa sukaratu kabupaten serang. *Kaibon Abhinaya : Jurnal Pengabdian Masyarakat*, 3(1), 1–7. <https://doi.org/10.30656/ka.v3i1.2350>
- Suwarno, K. N., Pratiwi, V. H., Guseynova, S., Safitri, A. N., Hanifah, I. N., Arafat, A., Supianti, N., Mentari, I. A., & Kustiawan, P. M. (2024). Edukasi pemanfaatan bahan alam untuk kosmetik guna membangun kesadaran masyarakat. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, 5(3), 2014–2022. <https://doi.org/10.31949/jb.v5i3.9256>
- Trisnaputri, D. R., Ifaya, M., Andriani, R., Nasir, N. H., & Abdurrahman, S. (2023). Pelatihan pembuatan masker wajah kaya manfaat dari daun kelor di desa puasana kecamatan moramo utara kabupaten konawe selatan. *Jurnal Mandala Pengabdian Masyarakat*, 4(2), 470–474. <https://doi.org/10.35311/jmpm.v4i2.296>
- Zuhri, M. S., Rusdiyana, E., Arintonang, E. V. A., Rahmawati, E. T., Imansyah, H. A., Carristia, K. Q., & Aunillah, N. F. (2022). Workshop pengelolaan limbah kulit rambutan dan biji rambutan oleh knk kebangsaan uns di desa mawar mekar, kapuas, kalimantan tengah. *Komunita: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, 1(2), 81–86.

AUTHOR PROFILES



Puput Iswandyah Raysharie, S.E., M.E.

Lecturer in the Management Department, Faculty of Economics and Business, Universitas Palangka Raya. Research Interest: Rural and MSME Economics, Regional Economics, and Banking, with a focus on strengthening local economies. Email: raysharie@feb.upr.ac.id, Google Scholar: o809vwUAAAJ, Sinta ID: 6842284, and ORCID: 0009-0009-2819-6053.



Septaria Yolanda Kalalinggi, M.Si.

Lecturer in the Chemistry Department, Faculty of Mathematics and Natural Sciences, Universitas Palangka Raya. Research interest: natural products, organic chemistry, and bioactivity of local plant. Email: septariayolankl@mipa.upr.ac.id, Google Scholar: evieJE4AAAAJ, Sinta ID: 6833250, 0009 0009 0104 9715, and Scopus ID: 57291125700.



John Budiman Bascin, S.Pd., M.M.

Lecturer in the Management Department, Faculty of Economics and Business, Universitas Palangka Raya. Research Interest: marketing and business. Email: johnbudimanbascin@feb.upr.ac.id, Google Scholar: EGO6uAQAAAAJ, Sinta ID: 6721158, and ORCID: 0009-0005-1655-3990



Rasidah, S.Pd., M.Sc.

Lecturer in the Chemistry Department, Faculty of Mathematics and Natural Sciences, Universitas Palangka Raya. Research interest: environmental chemistry, wastewater treatments, and natural products. Email: rasidah@mipa.upr.ac.id, Google Scholar: W7Ue_xIAAAAJ, Sinta ID: 6718022, ORCID: 0000-0001-6555-8986, and Scopus ID: 57222347509.



Dicky Perwira Ompusunggu, S.E., M.Si.

Lecturer in the Management Department, Faculty of Economics and Business, Universitas Palangka Raya. Research Interest: Fiscal and Monetary Economics. Email: dickyperwira@feb.upr.ac.id, Google Scholar: Y1WasGYAAAAJ, Sinta ID: 6834542, and ORCID: 0009-0004-8491-1422.



Zahrotun Nafisah, M.Si.

Lecturer in the Chemistry Department, Faculty of Mathematics and Natural Sciences, Universitas Palangka Raya. Research interest: biotechnology, molecular biology, and biochemistry. Email: nafisah@chem.upr.ac.id, Google Scholar: yIRpAAUAAAAJ, Sinta ID: 6848951, ORCID: 0009-0003-3283-5176, and Scopus ID: 59075469400.