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Warta Pengabdian Andalas

Jurnal Ilmiah Pengembangan dan Penerapan Ipteks

ISSN (Print) 0854-655X | ISSN (Online) 2797-1600

The introduction of aluminium packaging for instant ginger powder in home-based enterprises in Batu Banyak village

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Submitted: May 3, 2026 Accepted: September 27, 2026 Published: September 30, 2026

ABSTRACT

The community service activity in Batu Banyak village began in 2021 with a training session on making herbal drinks from red ginger. The herbal drink used red ginger and sugar to create a powder from the red ginger, which can be consumed by pouring hot water over the red ginger powder. This instant drink, produced by one of the participants, was introduced in 2021 and remains available today. The aimed of this community service was to increase packaging process and material from transparent plastic to aluminium. The method of this activity was by doing a training to one of the owner's of red-ginger product how to package red-ginger product with aluminium material. The packaging process utilized aluminium material and a hand sealer machine for the homemade industry will help for distribution permit process. Aluminium packaging can increase the visibility of a product during the marketing and distribution process.

Keywords: distribution permit, herbal drink, homemade industry, red ginger, hand sealer-machine

INTRODUCTION

Ginger is a medicinal plant recognized globally for its numerous health benefits (Anh et al., 2020; Ayustaningwarno et al., 2024; Shaukat et al., 2023). It is also used for spices, culinary, flavouring agents, and herbal medicines. Ginger plays a crucial role in Asian cuisine, adding a spicy and warm flavour to food and beverages. Ginger has several applications in traditional medicine, including the treatment of cough, fever, nausea, indigestion, motion sickness, and many other conditions. The clinical attention to ginger is quite attractive, as the clinical effects of ginger have been well-documented. The evidence on the clinical effect of ginger has been measured and meets the requirement of around 39.4% for nausea, vomiting, and anti-inflamation. In clinical cases, ginger is used to treat vomiting in patients with various conditions. For example, it is used for the improvement of nausea in pregnant patients, patients after chemotherapy, metabolic syndrome, digestive function, inflammation, and cancers.

The potential of ginger as a food and beverage has been utilised in both traditional and modern life (Shaukat et al., 2023). Ginger can be used as an antioxidant, a preservative, a source of nutraceutical values, in bakery and dairy products. In Indonesia, people can easily find traditional drinks with ginger as an ingredient. Several traditional Indonesian drinks featuring ginger are bandrek, wedang uwuh, bajigur, bir kotjok, bir pletok, sekoteng,

DOI: https://doi.org/10.25077/jwa.33.3.461-468.2026

wedang ronde, and wedang secang. These drinks can warm people, especially when consumed in warm water. People believe that the compounds in ginger can affect its health benefits.

Products of ginger have been produced by the community, based on their training in the previous year, in several places, including Batu Banyak village (Syafni et al., 2023, 2024). The training on the use of red ginger in Batu Banyak village was held in June 2021. It was participated in by members of a farmer group in the village called Kelompok Tani Bersatu, especially women. One of the participants in Batu Banyak training continued practising the ginger products and also sells them using several approaches. The ginger product was introduced during her visit to several villages face to face, where she promoted the product to colleagues in the village office and to people in the village.

Several reports have been released about the community service activities with micro, small, and medium enterprises (MSMEs) for improving their packaging products (Mulyani, et al, 2023; Nurnilasari, 2025; Maulana, et al, 2026). In South Tangerang, the MSMEs have been introduced and trained about using packaging their products (Mulyani, et al, 2023). Packaging knowledge needs to be improved for the owner of MSMEs in order to strengthening the product appearance in the market. By having proper packaging, the MSMEs products will get customer attention since the red-ginger products are quite available in many MSMEs in West Sumatra.

The packaging can protect the product during distribution and at the point of sale (Alamri et al., 2021). The ginger product in Batu Banyak that belongs to our community-partner was initially wrapped in plastic and sealed traditionally using a candle flame. The packaging of the product also uses primary and secondary packaging if the customer will bring the product out of the village. The packaging material commonly used in Indonesia is plastic because it is readily available, accessible at any time, and the price is affordable for the home industry. However, application of aluminium is also well-known in the market. In this community service activity, the continuation event focused on improving packaging and managing the preparation of the distribution permit for the homemade product. The improvement of the packaging will help the owner to use a simple way of sealing products and improve the appearance and visibility of the product in the market.

METHOD

In continuation of our community service activity which started in 2022 and based on the progress of the selling activity and several feedback from the consumers, then this community service followed several steps.

Instruments and materials

This activity used hand sealer machine for packaging, scale for home industry for weighing the product. Aluminium packaging was used for wrapping the product and ginger powder from the owner.

Participant of the community services

The home industry partner was named as “sipadeh”. This activity was attended by five people as representatives from the community who work as home-based entrepreneurs (sipadeh) two bachelor students, and 12 lecturers from the Faculty of Pharmacy.

Training of using hand sealer and aluminium packaging

On Tuesday, 31 July 2025, a community service activity took place in Batu Banyak, Lembang Jaya, Solok District, West Sumatra, Indonesia. The introduction of aluminium packaging was attended by at the beginning, the owner of herbal drinks from red ginger showed us how she packed the product with transparent plastic. Afterwards, the activity continued with an explanation of the aluminium packaging using the hand sealer. The owner of the ginger product practised using the hand sealer machine with their product, which had aluminium packaging. The last activity of that day was visiting the production facility of the ginger product to prepare for the distribution permit.

Evaluation of the activity

Four months after the event, the owner was interviewed about the feedback on the packaging and the use of the hand sealer machine. The answer is then described in the report without using technical analysis. The question pertained to knowledge about packaging, skills in using the hand sealer machine, products, outcomes, and the possibility of implementing a sustainability program in the following year.

RESULTS AND DISCUSSION

The application of using hand sealer machine and changing the material of packaging from plastic to aluminium had given several improvements for “sipadeh” home industry. First question regarding to knowledge of packaging, the owner had an option of using hand sealer machine with aluminium packaging instead of using candle flame with palstic. Second evaluation about the product, the owner mentioned that the aluminium packaging looks more elegant compare to transparent plastics. The third question regarding the outcome of the changing the packaging was self-confidence of the owner to promote their product to customers. Then the last question regarding the implementation of this year in following year was accepted by the owner since the distribution permits may take time for the “sipedeh” owner to get the licences. Collaboration for further home industry development is important, especially in marketing of the red-ginger product (Wiradi, et al, 2024).

The application of training on making herbal drinks from red ginger has been demonstrated by a product created by one of the participants in the 2021 training in Batu Banyak village. The production activity has been followed by obtaining a halal certificate for the products. This certificate is mandatory for every product in Indonesia, as stipulated in Article 101 of Law Number 18 of 2012 of the Republic of Indonesia concerning food. The regulation mentions that “Every person who states on the label that the food ingredients being traded are halal in accordance with the requirements is responsible for the truth of this” (Undang-Undang Republik Indonesia Tentang Pangan, 2012). The halal certificate can help the owner to sell their product in the market. However, this is not the only regulation that the owner of a home industry should have. The district health office must release the distribution permit for the home industry. With this permit, the product can be sold in shops and supermarkets without fear of market inspection.

Packaging is one of the important parts of selling a product. The material of the packaging can vary depending on the product. Several packaging materials are made of plastics, glass, ceramic, cellulose, metals, papers, material combinations, and others (Piergiovanni & Libo, 2016). The regulation regarding these packaging products has been regulated in law for consumer safety. The National Agency for Food and Drugs has the book as a guideline for selecting types of food packaging based on several laws and regulations

in Indonesia (BPOM, 2014). Packaging serves dual purposes: it protects the product and attracts the consumer when products are sold in shops, minimarkets, or supermarkets.

The option of using plastic packaging is relatively common in our society. The cost is cheap and available in the market. Plastic packaging is transparent and easily visible to customers. The owner of the ginger powder product followed the packaging material during the training. Pictures 1 and 2 show the packaging of the ginger powder that was used. The packaging features a label that displays the product's name, a picture, and ingredients (Rizki, 2024). The production and marketing of ginger powder were still an irregular process. Figures 1 and 2 have labels with different names since they were used for specific occasions. For example, if the village government were to hold an exhibition in another town or province, it would need products from the people in the village, especially those from household entrepreneurs. This owner produces a product on a small scale and labels it with a different name. This case also involves the owner of the ginger powder product, which is still in development, and is exploring a possible way to obtain a distribution permit from the district government.



Figure 1. Plastic packaging of ginger powder for healthy instant drinks



Figure 2. Plastic packaging of ginger powder for healthy instant drinks with a different name

The journey of the homemade industry of red ginger powder is still underway to obtain the distribution permit. The packaging process still needs improvement. On this occasion, the packaging material option was aluminium (Figure 3). Aluminium is preferred for its widespread use in food packaging (Lamberti & Escher, 2007). The sealer is used with a hand sealer machine for the aluminium material. Having this packaging process will help the owner acquire a new skill of using a simple machine for new packaging material. However, this hand sealer machine also suits the transparent machine for previous material packaging.



Figure 3. Aluminium packaging of ginger powder for healthy instant drinks

The aluminium material has some benefits as primary packaging. Especially for ginger powder, it has an aroma that should be kept for a long time. Aluminium can act as a barrier to the migration of volatile aromas, oxygen, or other gases, as well as moisture (Lamberti & Escher, 2007; Piergiovanni & Libo, 2016). The aim of using aluminium packaging material is to maintain the durability and long-lastingness of the product. The durability of the product can help expand the market to additional places if the distribution permit is in place. Although this packaging process requires specialised equipment, such as the hand sealer machine, it is still accessible to the home industry.

Aluminium as a material for packaging was introduced in the United States in 1913 and had developed by that time (Deshwal et al., 2020). This material consists of light material, aluminium foil. The function of packaging with proper materials includes protecting the product from contamination, maintaining its quality, ensuring compliance with specific code numbers, producing consistency, and protecting the reputation of the manufacturer (Food and Agriculture Organisation of the United Nations). The packaging can also preserve the product, as the red-ginger powder already contains added sugar during production, and can be used as a preservation process for the product (Syafni et al., 2023, 2024).

The feedback on the activity on the introduction of aluminium material packaging has been obtained by asking several questions. The owner is aware of the packaging requirements for red-ginger products, including plastic and aluminium (Food and Agriculture Organisation of the United Nations). The owner had a new skill in using the simple hand sealer machine for packaging the product (Figure 4). Afterwards, the owner notices that the packaging appearance has improved, making the product look neater and airtight based on visualization. The study on aluminium packaging showed that the effectiveness at maintaining the stability of moisture and extended the product's shelf life

(Rina, et al. 2026). The option of using alumunium as material packaging could enhance quality and safety of products. This packaging, along with the hand sealer machine, increases the motivation to improve the p ackaging and marketing of the product for the store. However, the distribution permit presents an obstacle due to the building requirements for the production facility. This hindrance will persist with other potential sources of funding that can be utilized to construct a basic production facility.



Figure 4. The owner was practising using the hand sealer machine

CONCLUSION

Continuation of community service training on making red ginger instant powder for healthy drinks in Batu Banyak has been conducted. The introduction of packaging materials for better preservation during marketing and until customers use them helps the homemade industry increase its confidence in the business. Aluminium is one material that has attracted the attention of the owner, who aims to continue the business and obtain distribution permits in the future, using the hand sealer machine for packaging. The changing packaging process and material will help the owner for further steps on marketing the product and its permits process.

ACKNOWLEDGEMENTS

We thank the Faculty of Pharmacy, Universitas Andalas, with contract number 31/UN16.10.D/PJ.01/2025 for funding this community services activity. We appreciate the lecturers of the Faculty of Pharmacy for all their contributions during the community services activity, including Armenia, Deni Noviza, Erizal Zaini, Marlina, Purnawan Pontana Putra, Rahmi Yosmar, Rini Agustin, Rustini, Uswatul Hasanah, and Yori Yuliandra.

REFERENCES

Alamri, M. S., Qasem, A. A. A., Mohamed, A. A., Hussain, S., Ibraheem, M. A., Shamlan, G., Alqah, H. A., & Qasha, A. S. (2021). Saudi Journal of Biological Sciences, Food packaging materials : A food safety perspective. Saudi Journal of Biological Sciences, 28, 4490–4499. https://doi.org/10.1016/j.sjbs.2021.04.047

Anh, N. H., Kim, S. J., Long, N. P., Min, J. E., Yoon, Y. C., Lee, E. G., Kim, M., Kim, T. J., Yang, Y. Y., Son, E. Y., Yoon, S. J., Diem, N. C., Kim, H. M., & Kwon, S. W. (2020). Ginger on Human Health : A Comprehensive Controlled Trials. Nutrients, 12(157), 1–28. doi: 10.3390/nu12010157

Ayustaningwarno, F., Anjani, G., Ayu, A. M., & Fogliano, V. (2024). A critical review of Ginger's (Zingiber officinale) antioxidant and immunomodulatory activities. Frontiers in Nutrition, 11, 1364836. https://doi.org/10.3389/fnut.2024.1364836

BPOM. (2014). Pedoman pemilihan jenis kemasan pangan. https://doi.org/978-979-1269-35-3

Deshwal, G. K., Narender, D., & Panjagari, R. (2020). Review on metal packaging: materials, forms, food applications, safety and recyclability. In Journal of Food Science and Technology (Vol. 57, Issue 7). Springer India. https://doi.org/10.1007/s13197-019-04172-z

Food and Agriculture Organisation of the United Nations, S.-R. O. for the P. I. (2012). Manual on Food Packaging for small and medium size entreprises in Samoa.

Lamberti, M., & Escher, F. (2007). Aluminium Foil as a Food Packaging Material in Comparison with Other Materials. Food Reviews International, 23(4), 407–433. https://doi.org/https://doi.org/10.1080/87559120701593830

Martinez-Ruiz, M. P., Ruiz-Palomino, P., Martinez-canas, R., & Blazques-Resino, J. J. (2014). Consumer satisfaction and loyalty in private-label food stores. British Food Journal, 116(5), 849–850. https://doi.org/10.1108/BFJ-09-2012-0216

Maulana, Y. I., Anugrah, N. F., San, D. A., Rosliana, Sari, F., & Ekawati, M. (2026). Pelatihan pengemasan produk sebagai upaya peningkatan daya saing UMKM Kelurahan Bontoraya. Jurnal Pengabdian Masyarakat Bhinneka, 5(1), 183-192. https://doi.org/10.58266/jpmb.v5i1.1655

Mulyani, N., Agustinus, E., & Santoso, B. T. (2023). Peranan kemasan (packaging) dalam meningkatkan pemasaran dan pengembangan produk bagi usaha mikro kecil menengah (UMKM) di Kota Tangerang Selatan. Dedikasi PKM, 4(1), 44-48. https://doi.org/10.32493/dedikasipkm.v4i1.27460

Nurnilasari, N. (2025). Peran kemasan terhadap kinerja penjualan. Jurnal Manajemen Terapan dan Keuangan, 14(3), 1318-1326. https://doi.org/10.22437/jmk.v14i03.48221

Piergiovanni, L., & Libo, S. (2016). Food Packaging Materials. https://doi.org/10.1007/978-3-319-24732-8

Rina, O., Sundari, D. A., Nurmawati, E., Subandi. (2026). Efektivitas bahan kemasan aluminium foil dan polypropylene sebagai kemasan primer pada produk abon ayam d'lita yang dianalisis secara metode accelerated shelf life testing (ASLT). Journal of Innovation Research and Knowledge, 6(5), 2523-2534. https://doi.org/10.53625/jirk.v6i5.13304

Rizki, V. L. (2024). Optimalisasi Industri Rumah Tangga Dapur Mindul Melalui Inovasi Kemasan dan Label. The Eductaion Research of TEKIBA, 4(1), 14–22. https://doi.org/10.36526/tekiba.v.4i1.2.3650

Shaukat, M. N., Nazir, A., & Fallico, B. (2023). Ginger Bioactives : A Comprehensive Review of Health Benefits and Potential Food Applications. Antioxidants, 12, 1–26. https://doi.org/10.3390/antiox12112015

Syafni, N., Hanifah, W., Kurniawan, R. F., Fitriani, L., & Suryati. (2023). Pelatihan pembuatan jamu jahe merah instan di Pasie Jambak Kota Padang. Jurnal Hilirisasi IPTEKS, 6(3), 182–190. https://doi.org/10.25077/jhi.v6i3.675

Syafni, N., Naufal, A., Fitriani, L., & Putra, D. P. (2024). Training on the Use of Red Ginger in Nagari Guwo, Kuranji, Padang City, as Medicinal Plants for Healthful Drinks. Journal of Healthcare and Community Development, 1(1), 1–7.

Undang-Undang Republik Indonesia tentang Pangan, Pub. L. No. 18 (2012).

Wiradi, S., Sari, K., Ramadhani, H. F., Jesika, R., Nugroho, T. M. J. T., Al-Gifari, M. L., Wafa, Y. A., Ismail, M., Alifa, N. N., Kartika, L. (2024). Pengembangan UMKM dengan inovasi pengemasan dan kemitraan di Desa Tamansari, Bogor. Jurnal Pusat Inovasi Masyarakat, 6, 151-160. https://doi.org/10/29244/jpim.6.Khusus.151-160

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