KITA KREATIF
PUSAT RISET KOMUNIKASI PEMASARAN, PARIWISATA DAN EKONOMI KREATIF UNIVERSITAS SYIAH KUALA

Jurnal Pengabdian Bakti Akademisi

PUSAT RISET KOMUNIKASI PEMASARAN, PARIWISATA DAN EKONOMI KREATIF
UNIVERSITAS SYIAH KUALA

Citation:

Sulastri., *et al.* (2025). Moringa Biscuits: PMT Innovation for Stunting Prevention Alternatives. *Jurnal Pengabdian Bakti Akademisi, 2*(3). 180-189

Moringa Biscuits: PMT Innovation for Stunting Prevention Alternatives

Sulastri[1*], Rifqi Akmal[2], Ariq Murfid[3], Muzainah[4]

[1,2] Faculty of Teacher Training and Education, University Syiah Kuala, Aceh, Indonesia
[3] Master's Program in Biomedical Sciences, Faculty of Medicine, Universitas Syiah Kuala, Indonesia
[4] Master of Chemistry Education Program, Universitas Negeri Malang, Indonesia

[*)] Corresponding Author: sulastri@usk.ac.id

ARTICLE INFO

Received: 12-08-2025
Revised: 21-08-2025
Accepted: 30-08-2025
Available online: 31-08-2025

ISSN: 3047-8820
DOI: https://doi.org/10.24815/pba.v2i3.48678

Keyword:
Moringa biscuits, UMKM, stunting prevention, supplementary food, community service

ABSTRACT

This community service program aimed to enhance the capacity of Micro, Small, and Medium Enterprises (UMKM) in producing moringa-based biscuits as an alternative Supplementary Food (PMT) to prevent stunting in Aceh. The program involved 20 UMKM participants from Gampong Peurada and Gampong Ceurih, Ulee Kareng, Banda Aceh. The activities were conducted in several stages: preliminary survey and needs assessment, training on moringa flour preparation and biscuit/cracker production, packaging and marketing strategies, and continuous mentoring at each production unit. The training was supported by the provision of equipment to enable participants to produce biscuits independently. Evaluation data were collected using questionnaires and analyzed descriptively. The results showed high participant satisfaction, with 90% stating the training materials met their needs and 85% finding them easy to apply. Competency improvements were recorded in food safety knowledge (80%), moringa flour processing skills (85%), biscuit production capability (90%), and packaging and marketing skills (75%). Furthermore, 75% of participants expressed interest in commercial production, and 80% planned to collaborate with local posyandu in PMT distribution. This program successfully strengthened UMKM skills in producing nutritious, locally-based products while contributing to stunting prevention efforts and promoting local economic empowerment

1. Introduction

Stunting is one of the chronic nutritional problems that remains a global challenge for human resource development. According to UNICEF, WHO, and the World Bank (2021), an estimated 149 million children under five worldwide are stunted, contributing to higher morbidity rates and reduced future productivity. The global target set in the Sustainable Development Goals (SDGs) is to eliminate

all forms of malnutrition by 2030 (SDG 2.2), including reducing stunting prevalence, and to reduce preventable child mortality (SDG 3.2). Indonesia is committed to achieving these targets through national programs, yet stunting prevalence remains at an alarming level.

Data from the Indonesian Ministry of Health (2023) show that the national prevalence of stunting is 21.6%. The situation in Aceh Province is even more concerning, at 31.7%, far above the national average and exceeding the WHO threshold of <10% (Mahdalena et al., 2024; Zahara et al., 2023). These figures indicate that current intervention efforts need to be strengthened with more innovative, sustainable, and locally based strategies. The main target group is children aged 6–59 months who are most vulnerable to growth impairment, particularly in areas with limited access to supplementary feeding (PMT). Service points such as *posyandu* (integrated health posts), early childhood education centers, and community health centers (*puskesmas*) are critical for distribution, but the availability and quality of PMT that meet nutritional standards remain uneven. Baseline indicators such as suboptimal *posyandu* coverage, irregular growth monitoring, household food consumption patterns, and the local supply of Moringa leaves highlight both challenges and opportunities for intervention.

The first thousand days of life (1,000 HPK) are a critical window that strongly determines future health outcomes (Bappenas, 2022; WHO, 2020). Meeting nutritional needs during this period—including protein, vitamins, and essential minerals—is key to preventing stunting. One proven strategy is the provision of supplementary feeding (PMT) that is nutrient-dense, affordable, and accessible (Komalasari et al., 2021; Meilasari & Adisasmito, 2024). However, in many regions, including Aceh, the availability of standardized, high-quality PMT remains limited due to constraints in raw material supply, production sustainability, and distribution networks (Mulyani et al., 2022).

Aceh has strong potential to leverage local foods to support nutritional security, particularly Moringa (*Moringa oleifera*). This plant grows abundantly in Aceh and is widely known as the "miracle tree" due to its exceptional nutrient profile. Moringa leaves are rich in complete protein, vitamin A, vitamin C, calcium, iron, and antioxidants (Gopalakrishnan et al., 2016). Studies have shown that fortification with Moringa leaves can improve children's nutritional status, prevent anemia, and support growth (Haruni et al., 2025; Kunusa et al., 2025; Manggul et al., 2024; Rasdianah & Makkulawu, 2024).

Nevertheless, the use of Moringa in food products often faces challenges due to its strong aroma and distinctive taste, which reduce acceptability, particularly among children. Processing innovations are therefore needed to preserve nutritional value while improving acceptability. Biscuits represent a promising product form: they are practical, appealing to children, have a long shelf life, and can be fortified with nutritious ingredients (Mukarramah & Amdadi, 2022; Yammar et al., 2024). Previous studies show that adding Moringa powder or extract to biscuits increases protein, iron, and energy content (Sutraningsih et al., 2021; Yasin et al., 2021), and that with appropriate formulation, their organoleptic qualities can be well accepted.

Beyond nutrition, the development of Moringa biscuits also presents opportunities for economic empowerment. Micro, Small, and Medium Enterprises (MSMEs) in Aceh can serve as a sustainable production engine, while also creating jobs and strengthening the local economy. However, most MSMEs still face limitations in technical skills, knowledge of processing Moringa into value-added products, and understanding of food safety standards (National Food Agency, 2022). Without targeted interventions, this potential will be difficult to realize.

Previous studies on Moringa-based products have largely focused on technical aspects of formulation, nutrient composition, and child growth outcomes (Rustamaji & Ismawati, 2021;

Setyaningsih & Mushlishoha, 2021; Yanti, 2020; Augustyn et al., 2017; Maulidianisa, 2025; Pitaloka et al., 2024). However, very few have explored integrated implementation models involving MSMEs as PMT producers, compliance with food safety standards, and sustainable distribution through *posyandu* or community-based platforms. This highlights a gap across three critical dimensions: product (child-friendly formulations that meet minimum per-portion thresholds for protein and iron), process (standardized SOPs and HACCP/CPPOB compliance feasible for MSMEs at targeted batch sizes and costs), and delivery (reliable distribution mechanisms through *posyandu* ensuring household adherence and acceptability).

The proposed innovative approach is to develop Moringa biscuits as supplementary feeding, with MSMEs serving as the main actors in production and distribution. The program aims to: (1) develop and validate child-acceptable Moringa biscuit formulations that meet PMT nutrient criteria; (2) build MSME production capacity with basic food safety standards; (3) operationalize distribution through *posyandu*; and (4) assess acceptance, adherence, and early nutrition outcomes among children aged 6–59 months.

The contributions of this program are twofold. Scientifically, the article offers an end-to-end, locally replicable implementation model integrating product innovation, MSME quality systems, and community health distribution. Practically, the program contributes to achieving SDG 2.2 by improving child nutrient intake, SDG 3.2 through potential downstream health effects, and SDG 8.3 by empowering MSMEs and creating local employment.

2. Methods

This community service program was conducted at the Food Science Laboratory, Faculty of Teacher Training and Education, Syiah Kuala University, involving 20 MSME participants from two partner villages, Peurada and Ceurih in Ulee Kareng District, Banda Aceh City. Participants were recruited in coordination with village officials and *posyandu* cadres, prioritizing MSME actors and community members already engaged in food processing and child nutrition activities.

The program began with a needs assessment through field observations in both villages to map the availability of Moringa leaves, record the number of toddlers attending *posyandu*, and assess the potential acceptance and marketing prospects of Moringa biscuits as supplementary feeding (PMT). Participants then attended training at Syiah Kuala University, which covered the nutritional benefits of Moringa leaves and processing techniques (selection of healthy leaves, blanching, drying, grinding, and storage), followed by practical sessions on producing Moringa biscuits and crackers. The practice included formulation, mixing, dough shaping, baking, cooling, packaging, and simple marketing strategies for MSMEs. Refined sugar was excluded and replaced with natural fruit-based sweeteners such as apples, pears, and dates, suitable for toddlers.

After the training, participants continued production at village units under direct supervision to ensure compliance with food safety standards. Each group was equipped with production tools (oven, drying rack, grinder, digital scales, trays, sealer, and food-grade packaging) to enable immediate application of skills. The biscuits produced were then distributed as PMT through *posyandu* in both villages, while the service team provided continuous monitoring and mentoring to safeguard product quality and program sustainability.

Program evaluation was conducted using structured questionnaires administered at the end of the training, covering the relevance and applicability of materials, trainer performance, facilities, and business development plans. Quantitative data were analyzed descriptively by calculating frequency distributions and percentages for each response category. Product acceptance was analyzed by assessing mean hedonic scores and general acceptance trends. Qualitative data from field observations

during mentoring were analyzed narratively by categorizing findings into successes, challenges, and sustainability opportunities.

3. Result and Discussion

The implementation of the community service program begins with the preparation stage of selecting moringa leaves as raw materials. The leaves used must meet the criteria of being healthy, originating from the 5th to 10th leaf stalks, and picked in the morning between 8:30 and 10:30 a.m. This harvest time is chosen to preserve the nutritional content and secondary metabolites in the leaves before the photosynthesis process takes place. The processing of the leaves begins with cleaning the stems, washing to remove dirt, followed by blanching, drying, and grinding until they become moringa powder ready for use as a raw material for biscuits. The process of converting moringa leaves into powder can be seen in Figure 1.

(a) (b) (c)

Figure 1. Moringa Leaf Processing; (a) Fresh moringa leaves; (b) Blanched moringa leaves; (c) Moringa flour

After the moringa flour raw materials were prepared, the research team conducted limited production trials to produce high-quality biscuits and crackers that would be acceptable to consumers. In this process, the nutritional needs of toddlers were a top priority. In making moringa biscuits, granulated sugar was not used as a sweetener; instead, fruits that are safe for infants and toddlers, such as apples, pears, and dates, were used in adjusted amounts. The results of the biscuit production using moringa leaf raw materials can be seen in Figure 2.

(a) (b)

Figure 2. Moringa biscuit products; (a) Biscuit products before baking; (b) Baked moringa biscuit products

The series of moringa biscuit production training activities concluded with the distribution of equipment to all participants. This equipment distribution aims to enable participants to immediately apply the knowledge gained by producing biscuits independently at their respective SME units. The outreach team continues to monitor the production activities of the participants to ensure the quality of the products remains optimal. The moringa biscuits produced are then utilized as Supplementary Feeding (PMT) at the health posts in Peurada Village and Ceurih Village, Banda Aceh City.

To evaluate the success of this program, the community service team collected data through questionnaires distributed to all participants. The questionnaires covered various aspects of assessment, including the quality of training materials, resource persons, room facilities and consumption, as well as development plans to be carried out by participants after completing the training. The results of this evaluation will serve as important considerations for the improvement of similar programs in the future.

1. Participants' Responses to Training Materials

   Respondents' assessments of this activity were categorized as follows:

   a. The activity materials were relevant to the participants' needs.
   b. The activity materials were easy to understand and apply.
   c. The activity materials were presented in a clear and systematic manner.
   d. The activity was well prepared.

   The results of participants' responses to these categories can be seen in Figure 3.

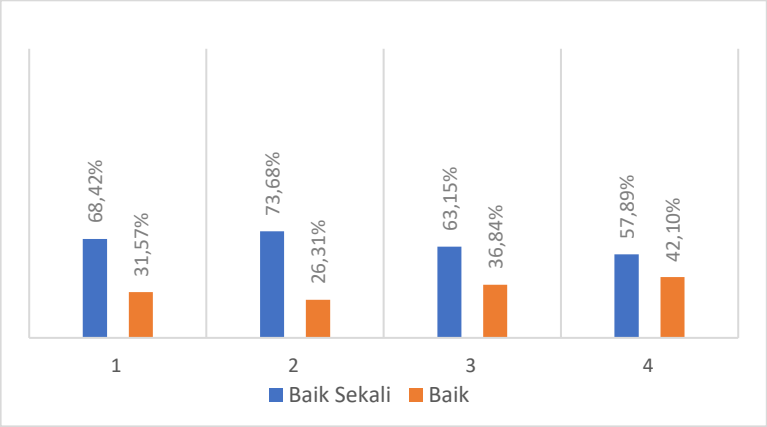

Figure 3. Participants' Responses to the Material

Based on the results of a questionnaire distributed to 20 training participants, a high level of satisfaction was found with the material presented. 90% of participants stated that the material was aligned with their needs in developing PMT products. This indicates that the training team successfully identified and addressed the learning needs of SMEs in developing moringa-based products. The ease of understanding and applying the material received positive feedback from 85% of participants, indicating that the material was designed with consideration for the participants' background and capabilities. The systematic presentation of the material was rated very good by 95% of participants, reflecting the team's success in designing a logical and easy-to-follow learning sequence. The preparation of the activity was appreciated by 88% of participants, indicating the team's thorough planning in preparing all aspects of the training.

Based on the four categories of assessment of the training material, it can be seen that the suitability of the material to the needs of the participants is an important factor in the success of the program. The material, which was specifically designed for moringa biscuit processing, helped participants understand not only the production process, but also the nutritional value and economic

potential of moringa. The ease of implementing the material indicates that the service team successfully simplified complex processes into steps that can be followed by SMEs. The structured presentation system allows participants to understand the production flow from start to finish, from raw material selection to final product packaging. The thorough preparation by the service team is reflected in the availability of modules, teaching aids, and adequate practical materials.

2. Participants' Responses to Speakers

The categories used to evaluate speakers are as follows:

a. Speakers have a good command of the material presented

b. Speakers provide opportunities for questions and answers

c. Speakers present the material clearly and in a logical order

d. Speakers are interactive

e. Speakers are patient and supportive

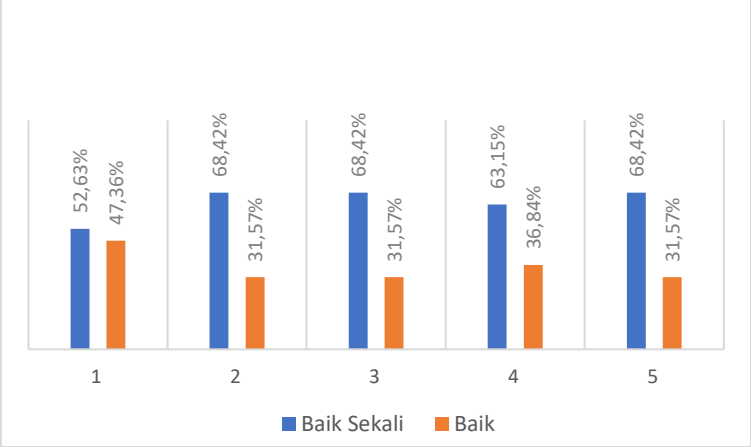

Figure 4. Participants' responses to speakers

The evaluation of the resource persons showed very satisfactory results. The resource persons' mastery of the material received positive ratings from 92% of participants, reflecting their high level of competence in the field of moringa-based food processing. The most notable aspect was the question and answer session, where 100% of participants felt they were given sufficient opportunity to discuss and clarify their understanding. The clarity and systematic presentation of the material were rated as good by 88% of participants, while 95% of participants appreciated the interactive nature of the speaker, who was able to create a dynamic learning environment. The speaker's patience in guiding the learning process received positive feedback from 98% of participants, indicating an appropriate approach in guiding participants with varying levels of understanding.

These results highlight the importance of competence and a personal approach in knowledge transfer. The presenter's mastery of the material builds participants' trust in the program. The question-and-answer session provided creates effective two-way learning, allowing participants to clarify things they do not understand. The clear and sequential presentation of the material makes it easier for participants to follow each stage of the training. The interactive nature of the presenter makes the training atmosphere more lively and engaging, while the patience in mentoring provides participants with a sense of comfort to try and practice without fear of making mistakes.

3. Participants' responses to room facilities and food

a. The categories used to assess room facilities and food are as follows:

b. The training room is comfortable for participants

c. The food provided is satisfactory for participants

d. Practical tools are sufficient for the needs

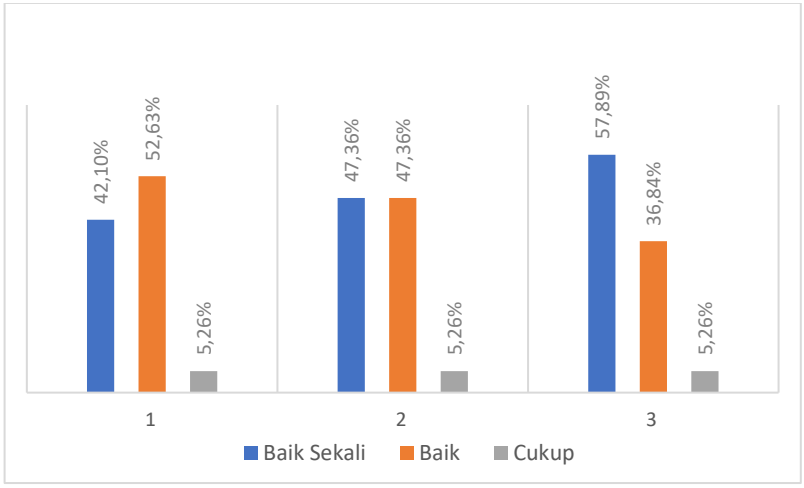

Figure 5. Participant Responses to Space and Consumption Facilities

The facilities received fairly good ratings from participants, although there were some areas that needed improvement. The comfort of the training room was rated positively by 85% of participants, indicating that the choice of location and room layout took into account the comfort of the learning environment. The provision of refreshments was appreciated by 90% of participants, reflecting the team's attention to the well-being of participants during the training. However, in terms of the availability of practical tools, only 82% of participants felt that the equipment was sufficient.

Facilities play an important role in supporting the smooth running of training programs. The comfort of the training room contributes to the concentration and absorption of participants in the material. The provision of satisfactory consumption shows attention to the welfare of participants during training. The adequacy of practical tools according to needs allows each participant to gain direct experience in the production process, which is very important for building practical skills.

4. Participants' responses to post-training development plans

A survey on post-training development plans shows promising prospects for the sustainability of the program. As many as 75% of participants expressed interest in commercially producing moringa biscuits, indicating the positive economic impact potential of this program. The application of techniques learned in their respective business units is planned by 85% of participants, demonstrating the effectiveness of the knowledge transfer that has been carried out. 70% of participants expressed interest in developing new product variants, indicating growing creativity and innovation among SMEs. Interestingly, 80% of participants are interested in establishing partnerships with health posts in the PMT program.

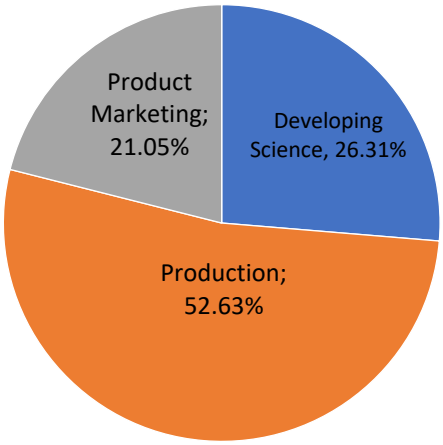

Figure 5. Post-Training Development Plan

The post-training development plan reflects the sustainability of the program. Participants motivated to develop moringa biscuit businesses demonstrate the program's success in raising awareness of the economic potential of this product. The development plan also indicates that participants see promising market opportunities for moringa biscuits, particularly in the context of the PMT program for stunting prevention. This aligns with the program's objective to create nutritional solutions while empowering community economies.

5. Conclusion

This community service program demonstrably built MSME capacity to produce child-oriented Moringa biscuits suitable for use as supplementary feeding (PMT) in Aceh. Based on the participant evaluation (n=20), 90% judged the materials aligned with their needs and 85% found the procedures easy to implement, with competency gains evident in food-safety understanding (80%), Moringa flour processing (85%), biscuit production (90%), and packaging/marketing (75%). Trial production was followed by initial utilization through health posts in Peurada and Ceurih, and intent signals for scale were strong, with 75% planning commercial production and 80% seeking partnerships with health posts.

These outputs align with the program's objectives and provide a feasible, locally anchored pathway that advances SDG 2.2 and 3.2 via improved access to nutrient-dense PMT and SDG 8.3 through MSME empowerment. The practical implication is a replicable MSME–posyandu model that couples standardized processing and basic quality assurance with last-mile distribution. Future cycles should complement satisfaction and competency data with simple product-quality metrics (e.g., moisture/weight conformity), coverage and adherence indicators at posyandu, cost-per-serving analysis, and where feasible early child acceptance or nutrition outcomes to substantiate impact claims while informing sustainable scale-up.

Acknowledgment

The authors would like to thank the Institute for Research and Community Service (LPPM) of Universitas Syiah Kuala for funding this community service program through the 2023 Community Service Grant (Contract No. 522/UN11.2.1/PN 01.01/PNBP/2023). Appreciation is also extended

to the local governments of Gampong Peurada and Gampong Ceurih, as well as the participating, for their cooperation and active participation throughout the program.

References

Augustyn, G. H., Tuhumury, H. C. D., & Dahoklory, M. (2017). Pengaruh penambahan tepung daun kelor (Moringa oleifera) terhadap karakteristik organoleptik dan kimia biskuit mocaf (modified cassava flour). *AGRITEKNO: Jurnal Teknologi Pertanian*, *6*(2), 52–58.

Badan Perencanaan Pembangunan Nasional. (2022). *Rencana aksi nasional percepatan penurunan stunting Indonesia*. Jakarta: Bappenas

Gopalakrishnan, L., Doriya, K., & Kumar, D. S. (2016). Moringa oleifera: A review on nutritive importance and its medicinal application. *Food Science and Human Wellness*, *5*(2), 49–56.

Haruni, D. S., Nuhriawangsa, A. M. P., & Febrinasari, R. P. (2025). Pemberian Nugget Ikan Tenggiri Yang Difortifikasi Tepung Daun Kelor Terhadap Nilai Z-Score Tb/U Dan Bb/U Pada Anak Balita Stunting. *Media Penelitian Dan Pengembangan Kesehatan*, *35*(2), 625–636.

Kementerian Kesehatan Republik Indonesia. (2023). *Laporan hasil studi status gizi Indonesia*. Jakarta: Kementerian Kesehatan RI

Komalasari, K., Fara, Y. D., Utami, I. T., Mayasari, A. T., Komalasari, V., & Al Tadom, N. (2021). Efektivitas Pemberian Makanan Tambahan Pemulihan (PMT-P) Terhadap Kenaikan Berat Badan Balita Stunting. *Journal of Current Health Sciences*, *1*(1), 17–20.

Kunusa, W. R., Tangio, J. S., & Thayban, T. (2025). Pengembangan Potensi UMK Desa Dutohe Barat Berbasis Bahan Lokal Pemanfaatan Daun Kelor (Moringa Oleifera) dalam Meningkatkan Kesehatan Masyarakat"(Biskuit Kelor). *Damhil: Jurnal Pengabdian Kepada Masyarakat*, *4*(1), 137–146.

Mahdalena, M., Amelia, K. R., & Zuhkrina, Y. (2024). Faktor-Faktor yang Berhubungan dengan Perilaku Ibu Balita Dalam Pencegahan Stunting di Wilayah Kerja UPTD Puskesmas Ulee Kareng Kota Banda Aceh. *Jurnal Teknologi Dan Sains Modern*, *1*(4), 149–157.

Manggul, M. S., Trisnawati, R. E., Janggu, J. P., Hamat, V., & Kurniati, K. (2024). Pelatihan Pembuatan Biskuit Tepung Daun Kelor untuk Mengatasi Masalah Anemia pada Ibu Hamil di Puskesmas Ponggeok. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, *7*(8), 3540–3551.

Maulidianisa, H. C. (2025). Formulasi Snack Bar Berbasis Tepung Ampas Kelapadengan Penambahan Konsentrat Daun Kelor (Moringa Oleifera L) Terhadap Aktivitas Antioksidan Dan Kadar Fenolik. *Media Gizi Khatulistiwa*, *2*(2), 13–23.

Meilasari, N., & Adisasmito, W. (2024). Upaya percepatan penurunan stunting melalui pemberian makanan tambahan (PMT) pangan lokal: Systematic review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, *7*(3), 630–636.

Mukarramah, S., & Amdadi, Z. (2022). Pemberdayaan Perempuan Dan Alumni Kebidanan Dalam Merintis Usaha Baru Berbasis Riset Dengan Home Produksi Biskuit Kelor (Moringa Oleifera) Di Kelurahan Mannuruki Kota Makassar. *J-ABDI: Jurnal Pengabdian Kepada Masyarakat*, *1*(12), 3217–3222.

Mulyani, N. S., Fitriyaningsih, E., Al Rahmad, A. H., & Hadi, A. (2022). Peningkatan pengetahuan dan sikap ibu untuk pencegahan stunting di Kabupaten Aceh Besar. *Jurnal PADE: Pengabdian & Edukasi*, *4*(1), 28–33.

Pitaloka, I. M., Ma'rifah, B., & Muhlishoh, A. (2024). Analisis Kandungan Gizi Dan Organoleptik Mie Kering Substitusi Tepung Kacang Hijau Dan Tepung Daun Kelor Untuk Remaja Gizi Kurang. *Journal of Nutrition College*, *13*(2), 105–114.

Rasdianah, N., & Makkulawu, A. (2024). Pelatihan Pengolahan Biskuit Daun Kelor Sebagai Makanan Pendamping Pencegahan Stunting Di Desa Mananggu, Kabupaten Boalemo, Gorontalo. *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, *7*(1), 198.

Rustamaji, G. A. S., & Ismawati, R. (2021). Daya terima dan kandungan gizi biskuit daun kelor sebagai alternatif makanan selingan balita stunting. *GIZI UNESA*, *1*(1), 31–37.

Setyaningsih, A., & Mushlishoha, A. (2021). Studi subtitusi tepung daun kelor (Moringa oleifera) dan tepung sukun (Artocarpus altilis) pada pembuatan biskuit pmt ibu hamil. *Jurnal Teknologi Pangan Dan Gizi (Journal of Food Technology and Nutrition)*, *20*(2), 102–110.

Sutraningsih, W., Marlindawani, J., & Silitonga, E. (2021). Implementasi strategi pelaksanaan pencegahan stunting di Kabupaten Aceh Singkil tahun 2019. *Journal of Healthcare Technology and Medicine*, *7*(1), 49–67.

World Health Organization. (2020). *WHO nutritional guidelines and prevention of stunting*. Geneva: WHO Press.

Yammar, Y., Barangkau, B., Arafah, E. H., Wardanengsih, E., Ikdafila, I., Ruslang, R., Agustin, A. P., Monicha, A., Sulung, A. Z. R., & Fitrianti, F. (2024). Pelatihan Pembuatan Cemilan Sehat "Biskuit Kelor" Untuk Pemeliharaan Kesehatan Dan Menumbuhkan Ekonomi Kreatif Masyarakat Di Desa Tadampalie. *Journal Of Human And Education (JAHE)*, *4*(2), 80–85.

Yanti, S. (2020). Pengaruh penambahan tepung daun kelor (moringa oleifera) terhadap karakteristik organoleptik produk donat. *Food and Agro-Industry Journal*, *1*(1), 1–9.

Yasin, Z., Kurniyati, E. M., & Suprayitno, E. (2021). Pemberdayaan Wanita Di Desa Banjar Timur Gapura Sumenep Melalui Pelatihan Pembuatan Biskuit Ekstrak Daun Kelor Untuk Meminimalisir Resiko Balita Gizi Buruk. *Jurnal Empathy Pengabdian Kepada Masyarakat*, 141–145.

Zahara, A., Aruni, F., & Chyntia, E. (2023). Peran Pemerintah Dalam Mencegah Dan Menangani Penurunan Kasus Stunting Di Kabupaten Aceh Utara. *ASIA-PACIFIC JOURNAL OF PUBLIC POLICY*, *9*(2), 222–230.