

# DIVERSIFICATION OF HERBAL PRODUCTS BASED ON LOCAL WISDOM AS AN EFFORT TO PREVENT STUNTING FOR THE COMMUNITY OF OLAK KEMANG VILLAGE

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## ABSTRACT

Stunting, or chronic malnutrition, remains a significant public health challenge in Indonesia, impacting the cognitive and physical development of children. This community service project aimed to address this issue through a culturally sensitive and sustainable approach in the community of Olak Kemang Village, Jambi. The program focused on diversifying local wisdom-based herbal products to improve nutritional intake among pregnant women, lactating mothers, and children under five. The method involved a three-stage process: (1) socialization and nutritional education about stunting, (2) training on the hygienic processing of local plants rich in micronutrients, such as Moringa (*Moringa oleifera*) and Katuk leaves (*Sauropus androgynus*), and (3) a hands-on workshop on creating diversified, child-friendly products like herbal powders, fortified cookies, and puddings. Pre- and post-activity questionnaires demonstrated a significant increase in participants' knowledge and awareness of stunting prevention, from 67,4% to 90,58%. Participants also successfully produced several innovative herbal food products. This initiative highlights that empowering communities by integrating local knowledge with scientific principles is a promising and effective strategy for stunting prevention.

**Keywords:** Stunting, community service, herbal product, nutrition, local wisdom.

## ABSTRAK

Stunting, atau malnutrisi kronis, masih menjadi tantangan kesehatan masyarakat yang signifikan di Indonesia, yang berdampak pada perkembangan kognitif dan fisik anak-anak. Proyek pengabdian masyarakat ini bertujuan untuk mengatasi masalah ini melalui pendekatan yang berkelanjutan dan berwawasan budaya di Desa Olak Kemang, Jambi. Program ini berfokus pada diversifikasi produk herbal berbasis kearifan lokal untuk meningkatkan asupan gizi ibu hamil, ibu menyusui, dan balita. Metode ini melibatkan tiga tahap: (1) sosialisasi dan edukasi gizi tentang stunting, (2) pelatihan pengolahan higienis tanaman lokal yang kaya mikronutrien, seperti Kelor (*Moringa oleifera*) dan daun Katuk (*Sauropus androgynus*), dan (3) lokakarya langsung tentang pembuatan produk diversifikasi yang ramah anak seperti bubuk herbal, kue kering, dan puding yang diperkaya. Kuesioner sebelum dan sesudah kegiatan menunjukkan peningkatan signifikan dalam pengetahuan dan kesadaran peserta tentang pencegahan stunting, dari 67,4% menjadi 90,58%. Peserta juga berhasil menghasilkan beberapa produk makanan herbal inovatif. Inisiatif ini menyoroti bahwa pemberdayaan masyarakat dengan mengintegrasikan pengetahuan lokal dengan prinsip-prinsip ilmiah merupakan strategi yang menjanjikan dan efektif.

**Kata Kunci:** Stunting, pengabdian pada masyarakat, produk herbal, nutrisi, kearifan lokal.

## INTRODUCTION

Stunting is a critical nutritional problem, defined by the World Health Organization (WHO), as impaired growth and development that children experience due to poor nutrition, repeated infections, and inadequate psychosocial stimulation<sup>1-3</sup>. In Indonesia, the prevalence of stunting continues to be a national concern, with long-term consequences including diminished learning capacity, lower productivity in adulthood, and an increased risk of chronic diseases. The province of Jambi is no exception to this challenge, where localized interventions are crucial for effective prevention. The long-term adverse effects of stunting are severe, ranging from impaired physical development to reduced work performance in adulthood<sup>4-8</sup>.

The large number of families and the low level of education among the people living in Olak Kemang, with most having completed high school, underscores the need to provide knowledge about stunting prevention and product formats. Early childhood growth and development not only occur during infancy but also begin in the earliest stages of life. The first 1,000 days of a child's life significantly influence their future. This knowledge is expected to help mothers provide nutritious food during breastfeeding and when the child begins to eat complementary foods (MP-ASI). Mothers who understand the types and portions of nutrients are essential<sup>9-15</sup>.



Product diversification for stunting prevention should include a range of essential nutrients, such as protein, iron, zinc, vitamins, and fiber. To increase children's interest in consuming nutritious foods, mothers need to play a role in diversifying food formats. This community service activity will offer a variety of nutritious products made from natural ingredients, including moringa leaves, as well as fish and chicken. Herbal medicine products also help strengthen children's immune systems. Many plants have the potential to act as immunomodulators, making them a valuable resource for meeting children's nutritional needs in the future<sup>9,10,16</sup>.

A site visit revealed that the health situation in the area remains 66% lacking in knowledge about stunting. Therefore, there is a need to provide guidance on the dangers of stunting and conduct workshops on developing products to prevent stunting.

## METHODS

The community service was conducted over a period of two months, from July to August 2025 in RT.02, Olak Kemang Village. The target participants were mothers of children under five, pregnant women, and local community health volunteers (*kader*). The program was implemented in three main stages:

1. **Stage 1: Participatory Counseling and Education** An initial session was conducted to educate the community about stunting its causes, long-term effects, and prevention strategies. We used interactive methods, including visual aids and focus group discussions, to ensure the information was easily understood. A pre-test questionnaire was administered to gauge the baseline knowledge of the participants.
2. **Stage 2: Training on Hygienic Processing of Herbal Ingredients.** This stage focused on practical skills. Participants were trained on the proper selection, washing, drying, and processing of local herbs to preserve their nutritional content and ensure food safety. This included techniques for creating fine powders from dried Moringa and Katuk leaves, which can serve as a base for various food products.
3. **Stage 3: Workshop on Herbal Product Diversification** A hands-on workshop was the core of the program. The team from the University of Jambi demonstrated how to create a variety of appealing and nutrient-rich products using the prepared herbal powders. The products developed included: **Coco Mori:** chocolate mixed with moringa powder<sup>17-19</sup> and **Moringa Pudding:** A nutritious dessert rich in vitamins and fiber<sup>1,20,21</sup>.

Participants were actively involved in the preparation process, allowing them to gain direct experience. A post-test questionnaire and a feedback session were conducted at the end to evaluate the program's effectiveness

## RESULTS AND DISCUSSION

The community service program conducted in Olak Kemang Village yielded significant and positive outcomes in both knowledge enhancement and practical skill acquisition. The primary quantitative result was observed through the pre- and post-activity questionnaires, which were designed to measure participants' understanding of stunting. Initially, the baseline data confirmed the preliminary findings, showing a significant knowledge gap. Following the educational sessions, the post-test scores revealed a remarkable increase in awareness. For instance, the average participant score rose from approximately 67,4% (indicating minimal knowledge) to over 90,58% (indicating good knowledge). This demonstrates that the counseling and interactive educational approach was highly effective in conveying the critical dangers of stunting and the importance of nutrition during the first 1,000 days of a child's life.

This activity was attended by 24 community members from RT 02, Olak Kemang Village, on August 12, 2025. The event began with an opening ceremony with remarks from the head of the committee and the head of the integrated health post (Posyandu). This was followed by a prayer. This was followed by an explanation session on stunting and its dangers, the use of herbal products, and a demonstration of making herbal products that have the potential to prevent stunting due to their high nutritional value.





**Figure 1.** Documentation of Community Service Activities in Olak Kemang Village

A key factor contributing to the program's success was its foundation in using local wisdom and readily available resources. By focusing on ingredients like *Moringa oleifera* (moringa leaves), cinnamon leaves, fish, and chicken, the intervention was perceived as both culturally relevant and economically sustainable. Unlike programs that might introduce unfamiliar or expensive supplements, this approach empowers the community to leverage what is already present in their environment. This fosters a sense of ownership and increases the likelihood that these new nutritional practices will be maintained long after the program's conclusion, ensuring a lasting impact on community health<sup>22,23</sup>.

From a nutritional standpoint, the discussion of these results centers on the strategic value of food diversification. The developed products serve as excellent vehicles for delivering essential micronutrients critical for stunting prevention, such as iron, zinc, protein, and vitamins. Transforming *Moringa* leaves, which can have a strong taste, into palatable forms like nuggets and brownies is an innovative strategy to ensure child consumption. Moreover, the integration of training on processing herbs like cinnamon and dragon's tail leaves addresses the multifaceted nature of malnutrition by also targeting anemia, a condition often linked to stunting through its effect on hemoglobin levels<sup>22,24,25</sup>.

Beyond the immediate health benefits, the program successfully fostered a sense of community empowerment. Participants were not merely passive recipients of information but were actively engaged as partners in developing solutions for their own community. This transfer of knowledge and skills has the potential to generate a ripple effect, where trained mothers can share their learning with neighbors and relatives. There is also a nascent potential for economic empowerment, as the skills to create unique and healthy food products could be leveraged into small-scale home industries, providing supplementary income for families while simultaneously improving local nutritional availability.

## CONCLUSION

In conclusion, the results of this service activity suggest that a community-based, integrated approach combining education with practical training is a highly effective model for preventing stunting. The significant improvement in knowledge, coupled with the successful adoption of new food preparation skills, confirms the program's efficacy in Olak Kemang. This model aligns perfectly with the national agenda to reduce stunting prevalence, demonstrating that empowering local communities with scientifically grounded yet culturally sensitive knowledge is fundamental to creating sustainable change and achieving long-term public health goals.

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