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## Community Empowerment through Moringa Leaf Product Innovation for Stunting Prevention in Payaroba Village

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### ABSTRACT

*Moringa oleifera is the plant that has been widely known by Indonesians which is called kelor. This is called as a "Miracle tree" because having to carry a lot of good nutrition for the body and useful plant that widely used as medicinal plants and the ingredients can be managed to a edible products. Kelor also can developed cell structures required for babies and toddlers sprouting up because it contains essential amino acids that can be used in preventing stunting. The target of the implementation of the work program is the Pengajian group in Payaroba. This service program is carried out in stages of activities, counseling on the benefits of Moringa, and demonstration of processing Moringa into a commercial product and sharing the result of products for the pengajian group in Payaroba. The result of the work program are products in the form of Moringa chips, croquette, and pudding which have high nutrition for the body that can improve human health in Payaroba Village.*

**Keywords:** Kelor, moringa chips, children's nutrition, stunting.

### 1. INTRODUCTION

According to data on the risk of stunting in the 2021 family data collection (PK) for the city of Binjai, there were 66,750 families in the five districts of Binjai in 2021, while the number of children reached 13,763, with a risk of stunting reaching 20.6%. As for the details in West Binjai, there were 11,906 families and 2,259 toddlers, with a stunting risk of 21.2%.

According to the Expert Staff of the Mayor of Binjai, Dr. Heri Hendrti, during the opening of the audit on stunting cases in phase II of 2022, the issue of reducing stunting is still a concern for the Binjai City government, because stunting is a threat to the quality of human resources, which is still one of the priorities.

Stunting can be defined as a child's nutritional status where their height or body length is below average compared to children of the same age. Stunting can be caused by various factors, such as insufficient nutritional intake while the child is still in the womb

and during the first 1,000 days of life (the first 1,000 days of life), mothers' lack of knowledge about nutrition and maternal health before, during, and after pregnancy, insufficient consumption of nutritious food due to low socioeconomic status, resulting in limited access to nutritious food because it is too expensive for the family, limited access to Ante Natal Care (ANC) and Post Natal Care (Postnatal Care), and lack of knowledge about the importance of exclusive breastfeeding.

Preventing stunting should be a priority because it can have adverse effects on growth and development, especially on children's unbalanced growth and development. Short-term adverse effects include metabolic disorders, physical growth disorders, and intelligence disorders due to impaired brain development in children. The long-term adverse effects that can be caused by stunting are a decrease in immunity, which causes children to be prone to illness, an increased risk of diabetes, and a decrease in cognitive abilities in children. This can reduce the quality of human resources, competitiveness, and the productivity of the nation.

Given the high risk of stunting, the University of North Sumatra's Thematic Community Service Program is considered to maximize stunting prevention in the Payaroba neighborhood through Socialization and Product Innovation from Moringa (*Moringa Oleifera*) in Efforts to Prevent Stunting Towards a Healthy Payaroba.

## **2. METHODS**

The implementation of the Thematic Field Study Program (KKNT) in Payaroba Village aims to prevent stunting by conducting socialization and product innovation from moringa leaves towards a healthy Payaroba through this work program.

The methods for implementing this activity are as follows:

- a. Contacting and conducting preliminary surveys and approaching the head of the recitation group, Mrs. Asti, to discuss the objectives, technicalities, and methods to be used, as well as the topics to be discussed during the activity.
- b. Finding data on the number of people and groups in Payaroba Village as potential participants in the activity.
- c. Preparing the materials to be presented in the KKNT work program.
- d. Processing moringa leaves into processed products in the form of moringa leaf crackers.
- e. Establishing good communication with the community and groups that will participate in the KKNT work program.
- f. Conducting lectures through communication, information, and education about the Socialization and Innovation of Moringa Oleifera Leaf Products in Efforts to Prevent Stunting Toward a Healthy Payaroba
- g. Discussion and Q&A about how to prevent stunting and how to process moringa leaves into nutritious food products for the body.

## **3. RESULT AND DISCUSSION**

Socialization and innovation activities for moringa (*Moringa oleifera*) products were carried out by students of the Extended Thematic Real Work Lecture (KKNTD-09) at the University of North Sumatra for mothers attending Yasin recitation classes (wirid yasin), younger siblings attending the learning center at the orphanage "Ummi Muliani," and the surrounding community in Neighborhood II of Payaroba Village, West Binjai. Students from the Extended Thematic Community Service Program (KKNTD-09) at the International Journal of Community Service and Sustainability (IJoCSS)

University of North Sumatra organized this program, named KELUPAS (Moringa for Healthy Payaroba). The activity was carried out using the 4M approach, which involves educating, planting, processing, and distributing moringa seeds and innovative products made from moringa leaves to the community.



**Figure 1. Implementation of the KELUPAS program (Moringa for Healthy Payaroba).**

Based on the image above, the implementation of socialization and product innovation of moringa leaves (*Moringa oleifera*), which has been named the KELUPAS program (Moringa for Healthy Payaroba), was carried out for women participating in Yasin recitation (*wirid yasin*) in neighborhood II, Payaroba Village, West Binjai West. The KELUPAS program was implemented using the lecture method, which involved explaining what moringa leaves are, their health benefits, their nutritional content, the processed products that can be innovated from moringa leaves, and how to plant moringa trees.

This program was carried out with the aim of enabling the surrounding community to gain knowledge about the benefits of moringa leaves, which include boosting immunity, facilitating breast milk production in nursing mothers, and preventing stunting in children. The activity also employed a question-and-answer session between the students and the mothers attending the religious study group. The Q&A session covered various processed products that can be innovated using moringa leaves.



**Figure 2. Distribution of processed moringa leaf innovation, namely moringa leaf crackers, to women attending Yasin recitation.**

Based on the picture above, after conducting a socialization program on moringa leaves, KKNTD-09 students distributed processed moringa leaf crackers that they had made earlier. The students explained the method and ingredients used to make them.



**Figure 3. The process of making moringa leaf crackers.**

The production of this product is the same as regular crackers, but what sets it apart is the topping or additional ingredients. Regular crackers are usually topped with peanuts or mung beans, but these crackers are innovative in that they are topped with moringa leaves.



**Figure 4. The result of moringa leaf processing innovation in the form of moringa leaf crackers.**



**Figure 5. Distribution of moringa seedlings.**

Based on the picture above, KKNTD-09 students distributed moringa seedlings to the women attending the Yasin recitation with the aim that each woman would have a moringa tree in her home. The students explained to the women that planting and caring for moringa trees is very easy.

Moringa leaf products are not only in the form of moringa leaf crackers. The students of KKNTD-09 innovated moringa leaves into pudding and moringa leaf croquettes. These products were distributed to the younger students at the learning center in the orphan study group "Ummi Muliani".



**Figure 6. The result of moringa leaf processing innovation in the form of moringa leaf pudding.**



**Figure 7. The result of moringa leaf processing innovation in the form of moringa leaf croquettes.**

#### **4. CONCLUSION**

It can be concluded that the activities of KKNTD-09 students in the village of Payaroba, West Binjai, are very beneficial for the community in preventing stunting through the dissemination of information and innovation of moringa leaf products. With this dissemination of information, the community can understand and increase their knowledge about the many benefits of moringa leaves for our health. Not only that, the community also learned that moringa leaves can be innovated into various food products according to individual preferences.

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