

## ENHANCING COMMUNITY INCOME THROUGH GINGER CANDY PRODUCTION FROM RED GINGER IN DALIG RAYA VILLAGE

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### Abstract

Dalig Raya Village in Simalungun Regency has great potential in red ginger plants. This plant has various health values and benefits. However, the processing of this plant is still lacking, thus hampering its maximum utilization. By optimizing this potential, Dalig Raya Village can become a center for red ginger processing production that contributes to the local economy and improves community welfare, as well as introducing the health benefits of red ginger to the wider community. Therefore, the community service team conducted community service through the International Community Service Scheme in collaboration with UiTM Penang to carry out activities. The methods used to carry out community service include initial discussions with the community, conducting the production process, and training business management. The results of this community service created a red ginger candy product that acts as an anti-cancer, lowers blood sugar and cholesterol, strengthens the immune system, and helps ward off bacterial and viral infections while reducing arthritis symptoms. The PKM team also provided training on how to make ginger candy products. This activity not only provides knowledge but also has the potential to improve public health through the use of herbal plants.

***Keywords: Ginger Candy, Red Ginger, Herbal Plants, Herbal Candy, Dalig Raya Village***

### INTRODUCTION

Indonesia ideally should be a country that excels in the agricultural sector, leveraging its wealth of natural resources to support national economic growth through agribusiness. In this context, agribusiness development should be a primary focus, given the sector's enormous potential. Strong support for agribusiness is expected to strengthen agriculture's role as a vital pillar of the national economy (Utami et al., 2022). The agricultural sector's employment accounts for 35.43% of the total workforce, demonstrating its importance as the foundation of the national economy. Therefore, the government should encourage agricultural sector development by focusing on a superior commodity approach (Novita et al., 2023). In this context, ginger has been identified as a leading biopharmaceutical commodity in Sumatra Province (Bangun, 2019). Currently, many people are interested in functional foods that benefit the body and contribute to a healthy lifestyle. Red ginger (*Zingiber Officinale* Var *Rubrum Rhizoma*) is a variety of ginger (*Zingiber officinale*) – with its characteristic red rhizome – and is a typical medicinal plant that thrives in Indonesia. The development of red ginger as a superior commodity is expected to increase productivity and economic value, as well as positively impact farmer welfare. By utilizing ginger production based on Regency/City in North Sumatra Province, it is hoped that the agricultural sector can contribute more significantly to increasing community income and sustainable economic growth.

**Table 1. Biopharmaceutical Plant Production**

Kabupaten/Kota	Produksi Jahe (kilogram) (Kg)	Produksi Kunyit (kilogram) (Kg)	Produksi Laos/Lengkuas (kilogram) (Kg)	Produksi Temulawak (kilogram) (Kg)	Produksi Serai (kilogram) (Kg)
Nias	2,364	3,736	614		3,405
Mandailing Natal	105,974	2,145	1,284	1,858	30
Tapanuli Selatan	306,676	42,524	19,542	815	66,955
Tapanuli Tengah					
Tapanuli Utara	1,001,746	542,171	610,938		708,998
Toba Samosir	4,129,382	1,195,559	3,572		482,400
Labuhan Batu					
Asahan	27,179	20,797	17,300	3,988	27,255
<b>Simalungun</b>	<b>3,538,027</b>	<b>2,541,875</b>	<b>59,744</b>	<b>22</b>	<b>692,977</b>
Dairi	518,308	17,031	6,954		
Karo	500,000				
Deli Serdang	48,340	22,686	60,824	435	93,440
Langkat	1,323	545	365		25
Nias Selatan	500	508	67	459	2,128
Humbang	345,438	63,780	109,980		1,660,113
Hasundutan					
Pakpak Bharat	171,288	22,792	15,926	50	56,090
Samosir	368,625	12,660	42,700		14,270
Serdang Bedagai	19,550	19,400	82,000		
Batu Bara	585	229	9,754	31	20,225
Padang Lawas Utara	31,110	4,104	1,553		26,634
Padang Lawas					
Labuhan Batu	3,100	200	100		150
Selatan					
Labuhan Batu Utara					
Nias Utara	25,907	19,566	3,360		2,688
Nias Barat	1,027	1,108			600
Kota Sibolga					
Kota Tanjung Balai	1,800	1,665	2,306	900	10,657
Kota Pematang	415	1,410	1,580		17,650
Siantar					
Kota Tebing Tinggi	2,670	911	2,121	1,439	14,743
Kota Medan	3,960	3,240	3,835		9,600
Kota Binjai	354	236	199	170	334
Kota	10,270	9,945	11,619	4,480	16,280
Padangsidempuan					
Kota Gunungsitoli	1,340	1,078	435	75	2,000
Sumatera Utara	11,167,258	4,551,901	1,068,672	14,722	3,929,647

Based on Table 1, ginger production in Simalungun Regency in 2024 reached a total of 3,538,027 kilograms, making it one of the leading producers in North Sumatra Province. In the same year, Simalungun Regency also exported approximately 30 tons of fresh ginger to Dubai. Ginger productivity in this region reached 1,275 tons from a harvested area of 418,230 square meters, resulting in a yield of approximately 3.05 kilograms per square meter as of April 2024. The regency also produces various other biopharmaceutical crops, such as turmeric and lemongrass, albeit in smaller quantities. This significant ginger production reflects the significant potential for further development, especially with the increasingly open market for herbal and spice products. Ginger (*Zingiber officinale*) is a spice with high productivity and significant additional value compared to other commodities (Mardial et al., 2020). Ginger rhizomes are at the top of the list due to their health benefits, refreshing properties, and use as a flavoring agent. One type of ginger with a pungent taste and spicy aroma due to its high essential oil content is red

ginger (*Zingiber officinale* var. *Rubrum*). Red ginger contains gingerols, shogaols, and zingerones, active phenolic compounds that benefit the human immune system. Red ginger also has antioxidant and anticancer effects (Devinarahma et al., 2024). Red ginger (*Zingiber officinale* var. *rubrum*) is a spice readily found in Indonesia and boasts numerous benefits. One benefit of ginger often found in herbal medicine or traditional medicine is boosting immunity (Ningrum et al., 2023). Compared to other types of ginger, red ginger has a spicier and more bitter taste. Red ginger has slightly brown flesh with pink skin. Red ginger is commonly used as a cooking spice (Dewi et al., 2024). Red ginger rhizomes contain compounds with broad biological activity. Ginger has anti-inflammatory and anti-oxidant properties that can help control the aging process. Another benefit of ginger is that this herbal plant also has antimicrobial potential that can help treat infectious diseases. Ginger is even said to prevent various cancers (Gurning, 2024).

According to Rahayu (2023), ginger can be processed into wine, dried sweets, soft drinks, cooking spices, candies, and medicines. Based on experience, ginger is also used as part of various herbal concoctions. Red ginger contains substances the body needs, including 2.58-2.72% essential oil, which creates its distinctive flavor. Furthermore, red ginger contains active chemical compounds such as zingiberin, gingerol, shogaol, gingerin, and zingerone (Dewi et al., 2024). The importance of growing and developing ginger medicinal plants within the context of sustainable development lies in its potential to improve community welfare, particularly in areas like Dalig Raya Village. One promising opportunity is the production of red ginger candy, which can not only add value to the product but also introduce ginger's health benefits to a wider market. According to Prerana et al. (2024), ginger candy is also considered an herbal candy. Herbal candy is made from natural ingredients from medicinal herbs and plants, known for their soothing and restorative qualities, unlike regular candy. Red ginger candy contains gingerol and shangol, which contribute to the warming sensation. Furthermore, the schilootinase in red ginger has the ability to inhibit prostaglandins, which cause pain during the physiological pain stage. According to research (Putri et al., 2020), administering red ginger candy to elderly people with abnormal uric acid levels can affect uric acid levels. 61.3% of people experienced normal uric acid levels after consuming red ginger candy. However, despite the high production of ginger, challenges remain in product utilization and processing. Lack of knowledge regarding processing and marketing techniques, particularly in the manufacture of innovative products like ginger candy, can hinder the optimization of this potential. Furthermore, unequal understanding of business models and marketing through social media among the community can hinder the development of a ginger-based industry in Simalungun Regency. Therefore, efforts to improve community knowledge and skills are crucial to maximizing existing production output.

## **METHOD**

The implementation method for this international community service activity is designed to follow clear and structured steps. First, the activity will be implemented based on the priority problems faced by the partners, taking into account the expertise of the Proposing/Implementing Team. The agreement with both partners stipulates a six-month implementation period. The solution-oriented approach will encompass several key aspects: (1) providing skills in making ginger candy, (2) understanding the business model canvas, (3) knowledge regarding the health and food safety of red ginger candy, (4) understanding product marketing through social media, (5) training in red ginger packaging, and (6) establishing a red ginger candy center as a first step in economic development. It is hoped that upon completion of the community service activity, partners will be able to run their businesses independently and effectively.

## **RESULTS AND DISCUSSION**

The community service activity, themed "Enhancing Community Income through Ginger Candy Production from Red Ginger in Dalig Raya Village," was held on August 4, 2025, chaired by Dr. Yasmin Chairunisa Muchtar, SP., MBA, with Dr. Muhammad Anggia Muchtar ST., MMIT., Jane Melita Keliat, S.Si., M.Si., and Wina Nurfitriani, S.A.B., M.M. as members. The community service also involved students from the Faculty of Vocational Studies, University of North Sumatra, from the Diploma 3 (D3) in Finance, namely Wahida, Nadya Annora, and Dimas Ricardo, as well as students from the Diploma 3 (D3) in Pharmaceutical and Food Analyst, namely Cindy Aura Perti and Ega Ananda Febrianti. The activity took place in Dalig Raya Village, Simalungun Regency, North Sumatra Province. This activity was attended by 25 local residents. The activity was opened by Mr. Jupri Sukamta Banurea, S.Pt. as the Head of Dalig Raya Village and Mrs. Yasmin Chairunisa Muchtar and. The community service team conducted training with materials delivered by the community service team which aimed to provide knowledge to village residents about Dalig Raya Community Empowerment through plantation crops in Dalig Raya, namely Red Ginger and combined with Lemon and Lemongrass.

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Figure 1. Socialization of the benefits of Ginger Candy from Red Ginger

This activity involved transferring knowledge about the benefits of herbal Red Ginger Candy to women in Denai sarang Burung Village. A team from UiTM Pulau Pinang, represented by Dr. Rafidah Aida binti Ramli, shared knowledge about how to make the candy at home. Red Ginger Candy is a processed product made from ginger, lemongrass, and lemon, with the addition of Chrystal candy.





Figure 3. Group Photo with Partners

Benefits of Red Ginger Candy: 1. Anti-cancer antimicrobial substances that can help overcome dangerous health problems such as cancer. 2. Lowering blood sugar and cholesterol Consuming this spice also lowers bad cholesterol and triglyceride levels while increasing good cholesterol in the body. 3. Strengthening the immune system Strengthening the immune system occurs thanks to the content of vitamin C and magnesium 4. Warding off Bacterial and Viral Infections Helps the body ward off certain bacterial and viral infections, thanks to the gingerol content that works by inhibiting bacterial infections, such as shigella, E. coli, and others. 5. Improving arthritis symptoms Arthritis is a disorder that appears with symptoms in the form of swelling in the joint area. In fact, various good ingredients in ginger herbs work effectively to reduce the intensity of swelling.

## CONCLUSION

This activity aims to increase public knowledge about empowerment through plantation crops, especially Red Ginger combined with lemon and lemongrass. The training carried out included the transfer of knowledge about the herbal benefits of Red Ginger Candy products to mothers in Denai Sarang Burung Village, with an explanation of the procedures for producing candy at home by Dr. Rafidah Aida binti Ramli from UiTM Pulau Pinang. Red Ginger Candy products, made from ginger, lemongrass, and lemon, offer various health benefits, such as acting as an anti-cancer, lowering blood sugar and cholesterol, strengthening the immune system, and helping ward off bacterial and viral infections while reducing arthritis symptoms. Therefore, this activity not only provides knowledge, but also has the potential to improve public health through the use of herbal plants.

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