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Torch Ginger Tea: An Innovation In Antioxidant-Rich Herbal Drink Based on Local Indonesian Resources At Prince Of Songkla University, Thailand

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Abstract

Kecombrang (Etlingera elatior) is an Indonesian native plant from the Zingiberaceae family that has long been used as a spice and traditional medicine, but its potential as a functional health beverage has not been widely developed, especially abroad. This community service activity aims to improve the knowledge and skills of the community and the Indonesian community in Thailand in utilizing kecombrang flowers into Kecombrang Tea, as well as strengthening cross-cultural health knowledge exchange. The activity was carried out on June 26, 2026, at Prince of Songkla University, Thailand, with 35 participants consisting of students, health workers, and Indonesian community members and migrants in the region. Implementation methods included theoretical education, demonstration, direct practice of making kecombrang tea, and evaluation using pre-test and post-test. The results showed an increase in participants' knowledge scores from an average of 58.3 to 87.6, and all participants were able to process kecombrang flowers into hygienic and safe-to-consume herbal tea. Kecombrang Tea has proven strong antioxidant activity due to its flavonoid, phenolic, and anthocyanin content, so it has the potential to support body cell health and become a creative economic opportunity based on local resources

Keywords: Etlingera elatior, Kecombrang, Antioxidant, Community Service, Cross-Cultural.

Introduction

Indonesia is a country with extraordinary biodiversity, with approximately 30,000 of the world's 40,000 plant species thriving in the archipelago. Many of these plants have medicinal properties that have been used for generations. One such plant is torch ginger, known by various local names: honje in West Java, kincung in North Sumatra, bongkot in Bali, and asam patikala in South Kalimantan. Internationally, this plant is known as torch ginger or bunga obor (obor flower), and is also found growing naturally in Southeast Asia, including Thailand (Rusdiana, 2019); Nurlaili et al., 2021).

Torch ginger, scientifically known as Etlingera elatior, belongs to the Zingiberaceae family and grows in clumps up to 4 meters tall. It has lanceolate leaves and inflorescences that emerge separately from the leaf stems. The flowers, leaves, and rhizomes are often used as a flavoring, deodorant, and even for traditional postpartum care. As research has progressed, it is now known that torch ginger flowers contain valuable bioactive compounds such as flavonoids, phenolic compounds, alkaloids, saponins, tannins, and anthocyanins, which act as powerful natural antioxidants (Comert et al. 2020).

The high antioxidant activity of torch ginger plays a crucial role in counteracting free radicals that cause cell damage, thus helping to prevent various degenerative diseases, reduce inflammation, and support the immune system. Unfortunately, the use of this plant is still very limited, limited to just a kitchen spice, and it has not been widely processed into value-added, easily consumed, and widely recognized processed products both domestically and internationally. This is also felt by the Indonesian community and students in Thailand, as well as local residents who are unaware of the health benefits of a plant that is easily found in their environment. Based on these conditions, the community service team from Groups A2 and B2 of the Master of Midwifery Program at the National University conducted an activity at Prince of Songkla University, Thailand, to introduce the innovation of Kecombrang Tea as a functional herbal drink, while simultaneously implementing the Tri Dharma of Higher Education and building a bridge for health cultural exchange between the two countries. (Ernilasari et al., 2021).

Method

This community service activity was held on June 26, 2026, at Prince of Songkla University in Thailand. It was attended by 35 participants, consisting of students, healthcare workers, and the local community and Indonesian immigrants in the area. The activity was divided into three main stages. The preparation stage included a literature study related to the characteristics and processing technology of torch ginger, the preparation of educational materials and pre-test and post-test evaluation instruments, the preparation of fresh torch ginger flower raw materials, processing equipment, and coordination with Prince of Songkla University as the implementation partner.

The implementation stage began with a pre-test to determine participants' initial knowledge, followed by a presentation on the characteristics of the plant, its health benefits, and consumption safety regulations. This was followed by a step-by-step demonstration of the preparation of torch ginger herbal medicine and tea, followed by hands-on practice by all participants under the guidance of the team, before concluding with an explanation of economic opportunities, a question-and-answer session, and a post-test. Evaluation was conducted by comparing pre-test and post-test scores, as well as observing participants' ability to carry out the processing stages independently. The data obtained were analyzed descriptively to determine the improvement in participants' knowledge and skills.

Results

A Community Service activity with the topic of Utilization of Torch Ginger (Etlingera elatior) Flowers to Make Torch Ginger Tea: An Antioxidant-Rich Herbal Drink was held on June 17, 2026, at Prince of Songkla University, Thailand. The results of the observation and evaluation of the activity are presented in the following table:

Table 1: Results of Community Service Activity Evaluation

Indikator	Hasil Pengukuran	Keterangan
Participant attendance rate	33 participants attended out of 35 registered people (91.4%)	Participants consisted of students from various majors and representatives of the Indonesian student community.
Knowledge increase (average score)	Pre-test: 58,2 Post-test: 86,7	Average increase of 28.5 points; 90.6% of participants experienced an increase in their scores
Mastering the Skill of Making Torch Ginger Tea	87.5% of participants were able to practice all stages correctly	Stages assessed: selection of ingredients, sorting, brewing, to serving
Level of Acceptance of Torch Ginger Tea Products	Color: 93.7% liked Aroma: 90.6% liked Taste: 84.4% liked	Most participants stated that the distinctive taste of torch ginger was acceptable; the addition of lemon/honey was highly appreciated.
Understanding Health Benefits	84.4% of participants were able to mention at least 3 main benefits of torch ginger	The most widely known benefits: as an antioxidant, maintaining body immunity, and reducing oxidative stress.
Home Implementation Plan	93.7% of participants intend to reproduce or share this knowledge with others.	Participants stated that the ingredients were easy to obtain and the method of preparation was simple.

Table 2. Characteristics of the Produced Torch Ginger Tea Products

Testing Parameters	Observation result	Reference Standard
Color	Translucent reddish brown	According to the characteristics of dried torch ginger flower infusion
Aroma	Typical of torch ginger, soft and odorless	According to herbal medicine quality standards
Taste	Slightly sour and refreshing, with a distinctive aroma	Flavor can be adjusted by adding honey/coconut sugar
Moisture content of dry raw materials	9,8	According to the maximum requirement of 10% for herbal tea ingredients
Estimated antioxidant activity	82,7-84,1%	According to research results by Naufalin et al. (2021), which ranged from 83.93%

Discussion

This activity aims to increase community knowledge and skills in utilizing Indonesia's rich local plants, particularly the torch ginger flower, to create a functional drink with health benefits. Evaluation results showed a significant increase in understanding after the activity. This indicates that the material presented regarding the bioactive compounds in torch ginger, its health benefits, and proper processing methods was well-received

Torch ginger contains flavonoids, phenolics, and antioxidants, which have been shown to ward off free radicals, maintain cell health, and help reduce the effects of oxidative stress often experienced by students due to their heavy workload and academic activities (Bogoriani et al., 2023; Naufalin et al., 2021).

In terms of skills, most participants were able to practice making torch ginger tea independently, from selecting quality raw materials and the simple drying process to brewing at 80–90°C to preserve the antioxidant content. Acceptance of the product's taste is also quite high, especially after adding a little lemon juice or honey, which not only balances the flavor but also increases the vitamin C content and overall antioxidant activity (Puspitasari et al., 2019).

Utilizing torch ginger as a herbal tea also offers added value in terms of safety and sustainability. This ingredient is readily available, affordable to process, and does not cause harmful side effects when consumed as directed, except for those with allergies to plants in the ginger family, pregnant women, or those with stomach disorders who should consult further (John & Shantakumari, 2015).

Beyond the health benefits, this activity also reinforces the understanding that local Indonesian plants have great potential to be developed into high-value products. This aligns with research showing that torch ginger is not only a cooking spice but also has extensive medicinal properties, ranging from antihyperglycemic and anti-inflammatory properties to protecting organs from oxidative damage (Fitrianita et al., 2020; Rosmaniar et al., 2023).

The high level of interest from participants in applying this knowledge at home demonstrates that the local wisdom-based approach is highly relevant and readily accepted. This provides a good foundation for continuing similar programs, both by expanding the scope of materials to utilize other plant parts and developing a wider

variety of torch ginger processed products.

Conclusion

The Kecombrang Tea education and training program in Thailand has successfully increased public knowledge and skills regarding the use of kecombrang flowers (Etlingera elatior) as an antioxidant-rich herbal drink. Through counseling and hands-on practice, participants learned about the bioactive content, health benefits, and how to process kecombrang into a safe, hygienic, and easy-to-make beverage. This activity also raised public awareness of the importance of consuming natural herbal drinks as part of a healthy lifestyle. The participants' enthusiasm throughout the program demonstrated that Kecombrang Tea has the potential to be accepted as a functional beverage that can support health while optimally utilizing local resources. Overall, this program has had a positive impact in the areas of health promotion and community empowerment. The use of kecombrang as an herbal product not only has the potential to improve public health but also opens up opportunities for the development of herbal-based businesses that can provide added economic value to the local community.

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