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## Socialization and Education on the Use of Temulawak (*Curcuma xanthorrhiza*) in Increasing Immunity in Palembang

Rachmat Hidayat<sup>1\*</sup>, Patricia Wulandari<sup>2</sup>

<sup>1</sup>Department of Biology, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

<sup>2</sup>Cattleya Mental Health Center, Palembang, Indonesia

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#### \*Corresponding author:

Rachmat Hidayat

#### E-mail address:

[dr.rachmat.hidayat@gmail.com](mailto:dr.rachmat.hidayat@gmail.com)

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### ABSTRACT

The Palembang community are still unfamiliar with and do not know the use of medicinal plants, one of which is curcuma in improving the quality of health, in this case, increasing immunity. This study aimed to describe community service in the form of socialization and education regarding the use of temulawak to increase body immunity in the Palembang community. This community socialization and education activity was held through online meetings using Google Meet every week during May 2020. The meetings were held 4 times, with each meeting duration of 2 hours. The material for the meeting included the introduction of herbal plants, which have the effect of increasing immunity, the introduction of the ginger plant and its properties, and the processing of temulawak into a healthy drink. This activity was attended by 154 participants consisting of the general public and health workers in the working area of the Campus Health Center, South Sumatra. In conclusion, socialization and educational activities on the use of medicinal plants, especially by academicians, are very much needed by the community. Activities like this are very important to improve the health status and resilience of natural-based communities around us.

### 1. Introduction

*Curcuma xanthorrhiza*, also known as Javanese turmeric, is a plant species that belongs to the ginger family (*Zingiberaceae*).<sup>1,2</sup> It is native to Indonesia, particularly the island of Java, and is also found in other Southeast Asian countries such as Malaysia and the Philippines. The plant has a rhizomatous root system and can grow up to 1.5 meters in height. The leaves are lance-shaped and can grow up to 1 meter long. The flowers are yellow and arranged in a spike-like inflorescence. The rhizomes of *Curcuma xanthorrhiza* have been used in traditional medicine for centuries to treat a variety of ailments, including digestive disorders, fever, and inflammation.<sup>3-5</sup>

*Curcuma xanthorrhiza* contains several bioactive compounds, including curcuminoids and xanthorrhizol, which have been shown to have anti-inflammatory, antioxidant, and antimicrobial properties.<sup>4-8</sup> These compounds are believed to be responsible for the plant's medicinal properties. *Curcuma xanthorrhiza* is also used in cooking, particularly in Indonesian cuisine, where it is used as a spice to add flavor and color to dishes such as curries and stews. It is sometimes referred to as "Java turmeric" or "temulawak" in Indonesian.<sup>9,10</sup>

Sumatra is one of the islands in the Indonesian archipelago and is one of the largest islands in Indonesia. Sumatra is the second most populous

island in Indonesia after Java. However, the culture and habit of using medicinal plants on the island of Sumatra is still very rare and has not become a habit culture. The Palembang community are still very unfamiliar with and do not know the use of medicinal plants, one of which is curcuma in improving the quality of health, in this case, increasing endurance. This study aimed to describe community service in the form of socialization and education about the use of Temulawak to increase body immunity in the Palembang community.

## 2. Methods

This community socialization and education activity is held through an online meeting using Google Meet (Google Inc., California, USA) every week during May 2020. The meeting was held 4 times, with each meeting duration of 2 hours. The meeting material was in the form of the introduction of herbal plants that are efficacious in increasing immunity, the introduction of temulawak plants and their properties, and the processing of temulawak into health drinks. This activity was attended by 154 participants consisting of the general public and health workers in the work area of the Campus Health Center, South Sumatra.

## 3. Results and Discussion

Socialization and education activities on the use of temulawak to increase endurance received pretty good enthusiasm from the community, where as many as 154 Google Meet accounts participated in this socialization, where each account was attended by several participant family members. If 4 people participated in each account, it could be assumed that the participants in the activity reached up to 616 people. Enthusiasm was not only proven by a large number of community participants but also by enthusiasm for questions and answers that were followed by the socialization participants. In every session, there are always lots of questions and comments from the socialization participants.

These socialization and educational activities were also able to provide good enough knowledge for the socialization participants. Participants get good enough knowledge about the use of natural ingredients, especially temulawak, to be processed and processed into healthy drinks to increase endurance. There was an increase in the knowledge score of the participants in the socialization before attending the socialization and after attending the socialization. With the increase in knowledge, it is hoped that the attitude and the emergence of the behavior of using medicinal plants to be used as health drinks independently are expected to be able to maintain public health naturally.<sup>11-15</sup>

Furthermore, *Curcuma xanthorrhiza* extract has been found to have potential benefits for immune function.<sup>16</sup> Curcumin, a natural compound found in temulawak, has been studied extensively for its anti-inflammatory and antioxidant properties, which can help support immune function. Some studies have suggested that curcumin can enhance the activity of immune cells, such as T cells, B cells, and natural killer cells, which play a critical role in fighting infections and diseases.<sup>17-19</sup> Curcumin may also help regulate immune system responses by modulating the production of cytokines, which are signaling molecules that regulate the immune response. Additionally, curcumin has been found to have antibacterial, antiviral, and antifungal properties, which can help protect against infections that can weaken the immune system.<sup>19,20</sup> The use of temulawak as a traditional herbal will help improve the welfare and health of the public in general.

## 4. Conclusion

Socialization and education activities on the use of medicinal plants, especially by academicians, are very much needed by the community. Activities like this are very important to improve the health status and resilience of natural-based communities around us.

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