
Utilizing Ginger Root to Boost Immunity: A Case Study of Kedungkembar Village, Sidoarjo, Indonesia

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Abstrak. The body's immunity plays a crucial role in maintaining health and protecting against infections. One well-known method to enhance the immune system is by consuming herbal remedies, particularly ginger rhizomes. The components gingerol and curcumin found in ginger rhizomes function as antioxidants and anti-inflammatory agents, aiding in combating free radicals. Processing ginger rhizomes into herbal drinks is one form of utilization. The community in Kedungkembar Village hopes that training and processing herbal drinks from ginger rhizomes will help them understand the benefits of these herbal plants and how to process them into herbal drinks. This community service activity consists of three stages. The first stage involves field observations, the second stage includes counseling and lectures on the benefits of ginger and techniques for processing it into herbal drinks. The third stage is a demonstration of training in making herbal drinks from ginger rhizomes. This community service activity has been enthusiastically welcomed by the villagers. Its implementation proceeded smoothly and successfully enhanced the community's skills in processing ginger rhizomes into herbal drinks.

Keywords: immunity, herbal drinks, ginger rhizomes, Kedungkembar village

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INTRODUCTION

Immunity, also known as the body's defense system, is a natural defense mechanism designed to detect and combat foreign entities such as bacteria or viruses that enter the human body. The primary function of the immune system is to maintain body health and protect it from various infections. Several factors that can cause a decrease in immunity include frequent flu viruses during the rainy season, unhealthy eating patterns, stress levels, lack of sleep, and seasonal changes (Adrian, 2021).

There are various methods used to enhance the body's immune system, one of which is by consuming herbal plants. One herbal plant proven to be beneficial in boosting the immune system is ginger rhizome (*Zingiber officinale*). The presence of gingerol and curcumin in ginger rhizomes acts as antioxidants and anti-inflammatory agents (Ware, 2017). The bioactive component gingerol has benefits that include inhibiting cholesterol oxidation and enhancing the immune system (Kurniawati, 2010). Ginger rhizomes can be used singly or combined with other herbal ingredients to strengthen their active ingredient effects (Santoso, 2008).

Based on this description, the community service activity conducted by the Pharmacy Undergraduate Program of Anwar Medika University is about processing herbal drinks from ginger rhizomes to maintain body immunity in Kedungkembar Village, Prambon District, Sidoarjo Regency. Kedungkembar Village is one of the areas in Prambon District, Sidoarjo Regency, East Java Province, with a population of approximately 1,827,064 people. This village consists of 3 hamlets, namely Glonggong, Sigit, and Kembar, with an area of approximately 724.04 km². Most of the residents of Kedungkembar Village work as farmers or factory workers. Ginger rhizome is one of the plants commonly found in Kedungkembar Village. However, locals have traditionally only used ginger rhizome as a kitchen spice, with few processing it into herbal drinks that can be easily consumed and beneficial for immune system health. Through community service activities on processing herbal drinks from ginger rhizomes, it is hoped to provide an understanding of the importance of maintaining the body's immune system through herbal drink consumption.

PROBLEM

Based on observations conducted by the community service team, several issues are identified in Kedungkembar Village, Prambon District, Sidoarjo Regency. Firstly, there is

suboptimal processing of ginger rhizomes into health drinks. Secondly, there is a lack of community knowledge regarding the benefits of ginger rhizomes as herbal plants.

METHOD

The implementation method of this community service activity involves two main approaches: counseling or lectures and direct practice. Counseling or lectures are delivered using PowerPoint presentations and brochure distribution to the community. The material presented includes the benefits of ginger plants and techniques for processing ginger plants into herbal products.

Meanwhile, the direct practice method is carried out by involving the community of Kedungkembar Village in the process of making herbal drinks from ginger rhizomes. The stages of this community service activity can be outlined as follows:

First, conducting a survey regarding the potential and shortcomings of Kedungkembar Village in the first week of August 2023. Second, preparation for community service activities. This preparation includes purchasing the necessary ingredients for processing herbal drinks, preparing materials, and creating flyers/brochures informing about the benefits of ginger rhizomes and techniques for processing ginger rhizome herbal drinks. This preparation is carried out in the second week of August 2023. Third, counseling or lectures on the benefits of ginger rhizomes and techniques for processing ginger rhizomes into herbal drinks. After the counseling or lecture session, direct practice is conducted in processing ginger rhizome herbal drinks. This activity is carried out in the third week of August 2023 at the Kedungkembar Village Hall.

In this practical activity, the necessary equipment includes 250 mL bottles, pots, strainers, spoons, and glasses. As for the required ingredients, they include ginger, cinnamon, granulated sugar, and honey. The process of processing herbal drinks from ginger rhizomes involves the following steps:

First, carefully clean each ingredient such as ginger and cinnamon, then drain them. Next, ginger rhizomes can be finely sliced or crushed. Then, heat the water until it reaches boiling point, then turn off the stove. All ingredients are put into the pot containing the boiling water and stir until all the sugar dissolves and the aroma spreads. After that, strain the mixture and pour the filtrate into 250 mL bottles.

RESULT AND DISCUSSION

Community service activities are conducted at the Kedungkembar Village Hall with the main objective of providing information to the community about the benefits of ginger rhizomes and how to process them into herbal drink products. Additionally, this activity aims to provide training on processing ginger herbal drinks. The hope is that the Kedungkembar Village community can learn how to process ginger rhizomes properly and develop herbal drink products as the village's flagship products. Consequently, these herbal drink products can serve as the basis for the development of independent businesses that have the potential to enhance the local economy.

Before conducting practical demonstrations of processing herbal drinks from ginger rhizomes, the initial step taken is to provide lectures or talks (see Fig 1). These talks are divided into two topics. First, the benefits of ginger rhizomes; second, methods for processing herbal drinks from ginger rhizomes. The outreach team provides basic knowledge about ginger rhizomes, especially regarding the beneficial compounds found in the plant. This knowledge is considered essential as it forms the basis for the process of turning ginger rhizomes into herbal drinks. Ginger rhizomes can be used alone or combined with other herbal ingredients that complement and strengthen each other's functions (Santoso, 2008).



Fig 1. Education on the Benefits and Processing of Ginger Rhizomes

After the counseling or lecture session concludes, the next step is to conduct a practical demonstration of processing herbal drinks as depicted in Fig 2. These herbal drinks can be produced as products of household industries. Herbal drinks are made from plant parts beneficial for maintaining body health, and they are consumed by steeping them in boiling water (Tasia & Widyaningsih, 2014).



Fig 2. Practical demonstration of processing ginger rhizome herbal drink

The community service team not only provides training on processing herbal drinks from ginger rhizomes to the residents but also distributes 100 bottles of herbal drinks to the residents of Kedungkembar Village who participated in this event free of charge (see Fig 3). The ginger herbal drink is packaged in 250 mL bottles for easy consumption by the community. The response to this distribution activity is highly positive, evident from the enthusiastic reception by the community when receiving these health drinks.



Fig 3. Distribution of ginger rhizome herbal drinks to the community

The outcome of this community service activity is to impart knowledge and information to the residents of Kedungkembar Village about the benefits of ginger rhizome plants in their vicinity, which can be processed into herbal drinks to enhance health, particularly in strengthening immunity. This activity was attended by approximately 36 PKK mothers. The main objective of this community service activity is to disseminate knowledge and skills related to making herbal drinks from ginger rhizomes as an effort to boost immunity and maintain health.

CONCLUSION

The community service activity aims to spread understanding regarding the benefits of the herbal plant ginger rhizome as an immune system enhancer to the residents of Kedungkembar Village. In addition to providing information about its efficacy, the community service team also conducted training on how to process ginger rhizomes into herbal drinks. Positive responses were received from the community, especially from the 36 PKK mothers who participated in this activity. With the opportunities provided, it is hoped that knowledge about the benefits of ginger and skills in processing it will continue to spread widely among the community, supporting their efforts in maintaining health and improving their quality of daily life.

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