

## Training on Making Herbal Drink to Increase Immunity in Pagelaran Village, Ciomas, Bogor

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**Abstract:** Health is a very valuable factor in life. One way to improve health or immunity is by consuming herbal drinks. Herbal drinks are believed to have beneficial properties for healing disease. Livelihoods in Pagelaran Village are dominated by laborers, farmers, traders and domestic workers, with educational levels dominated by junior high and high school levels. The problems found in Pagelaran Village are public health problems, so it is necessary to improve welfare, one of which is by consuming healthy drinks made from herbal plants. Red ginger is widely used to treat various diseases such as colds, digestive disorders, antipyretic, anti-inflammatory and also analgesic. Compounds of lemongrass that have a good prospects for increasing immune system activity are usually flavonoids, curcumin, limonoids, vitamin C, vitamin E (tocopherol) and catechins. Lemons also contain quercetin which can increase the body's immunity. This PKM activity was carried out in Agroeduwisata Lembah Watu, Pagelaran Village, Bogor Regency, took the form of training in making herbal drinks to increase body's immunity for women of PKK (Pembinaan Kesejahteraan Keluarga) and KWT (Kelompok Wanita Tani). The implementation of this PKM activity can increase the knowledge of utilizing, processing and packaging herbal plants into herbal drink products. This PKM activity, it is hoped that people will be able to make and consume health drinks which can be used to increase the body's immunity so that the quality of life can improves too.

**Keywords:** immunity; training; herbal drink

### 1. INTRODUCTION

Pagelaran Village is one of the villages in Ciomas District, Bogor Regency. Geographically, Pagelaran Village consists of 15 community units and 67 neighborhood units, the boundaries of Pagelaran Village are to the north bordering Laladon Village, to the south bordering Pasir Eurih Village, to the east bordering Parakan Village, and next to West coincides with Sukamakmur Village. Livelihoods in Pagelaran Village are dominated by laborers, farmers, traders and domestic workers, with educational levels dominated by junior high and high school levels. The problems found in Pagelaran Village are public health problems.

Health is a very valuable factor in life. A healthy body is able to make it easier to carry out various kinds of work and activities without obstacles. Paying attention to health is very important for everyone. Unfortunately, many people underestimate the importance of paying attention to physical health. They do various activities, but don't care about whatever is best for themselves. Even though our bodies currently look good and fit, that is not a reason to ignore and not pay attention to our body's health.

One way to improve health or immunity is by consuming herbal drinks. Herbal drinks are drinks that come from natural ingredients that are beneficial for the body. Herbal drinks are usually made from spices or parts of plants, such as roots, stems, leaves, flowers or tubers. Herbal drinks are believed to have beneficial properties for healing disease. These benefits come from the active ingredients contained in the plant. One of the innovative natural ingredients that can be used as an active ingredient in making herbal drinks is red ginger, red lemongrass and lemon.

Red ginger is a medicinal plant in the form of a pseudo-stemmed clumping plant, belonging to the Zingiberaceae family. Red ginger is widely used to treat various diseases such as colds, digestive disorders, antipyretic, anti-inflammatory and also analgesic (Herawati et al, 2019). Chemical analysis of Red Ginger showed over 400 different compounds, gingerols and shogaol were found in higher amounts in the other two types of gingerol (23-25%) and shogaol (18-25%) (Prasad S. and Tyagi, K. A., 2015). Ginger contains the unique compound gingerol, which is an active compound that has anti-inflammatory properties (Yücel et al, 2022), antihyperglycemic (Almatroodi, 2021), antioxidant (Indiarto & Subroto, 2021; Alhaarbi et al, 2022), anti cancer (Zhao et al, 2020) and anti bacteri (Dame dkk, 2020).

Citronella or lemongrass is a plants that easily found in Indonesia. This is a functional plants because all parts of the plant can be used. These types of plants is usually used as vegetables and cooking spices for consumption, without being used for other products. Several research results show that Moringa, citronella and turmeric contain active antibacterial and viral substances which can be used as antiseptics (Djoru, Ratih. 2022). The compounds that have good prospects for increasing immune system activity are usually flavonoids, curcumin, limonoids, vitamin C, vitamin E (tocopherol) and catechins (Suhirman, Chistina. 2019). The main ingredients of citronella oil are citronellal, geraniol, and citronellol which gives a

distinctive citrus smell and is useful as an antioxidant, antibacterial, antifungal, air freshener, herbicide, massage oil, etc. (Wijayanti, 2023). Lemongrass contains anti-inflammatory compounds, namely chlorogenic acid, which acts as an antioxidant compound (helps reduce free radicals in the body which can cause disease) and anti cancer (Pan et al, 2021).

A type of orange also known as citron. The fruit is oval in shape, there is a bulge at the end, the skin color of the ripe fruit is bright yellow, the taste is sour, astringent, slightly sweet. The smell is very aromatic. The typical compound content of lemons is vitamin C or ascorbic acid which is useful as an antioxidant, where antioxidants play a role in the production of collagen and carnitine which can work to increase and maintain the body's immunity (Mulyati, 2020). Apart from that, lemons also contain quercetin which can increase the body's immunity. Lemons contain flavonoid compounds which act as an antidote to free radicals and are antibacterial (Alam et al, 2022), and antioxidant (Wang et al, 2020). The three types of plants above are plants that are known to have many benefits, as increasing the body's endurance. With this PKM activity, it is hoped that people will be able to make and consume health drinks which can be used to increase the body's immunity so that the quality of life can improve too.

## **2. METHOD**

This PKM activity was carried out in Agroeduwisata Lembah Watu, Pagelaran Village, Bogor Regency, took the form of training in making herbal drinks to increase body's immunity for women of PKK and KWT.

The methods used include:

1. Field survey at this stage the procurement team will consolidate with the Pagelaran village.
2. Open discussion with participants. A discussion was held between the Pharmacy lecturer team and the participants, with open questions regarding the insights of the PKK and KWT women regarding the use of herbal plants that had been carried out in Pagelaran village so far.
3. Training on making herbal drinks. At the training stage the team will invite and accompany participants to participate in the process of making herbal drinks which can be used to increase the body's immunity

and also it is hoped that woman of PKK and KWT in Pagelaran village can make their own at their own homes for their own use or for sale to improve the community's economy.

Partners in this program will contribute in facilitating activities at the Agroeduwisata and also preparing tools that will be used. The formation of the MBKM (Merdeka Belajar Kampus Merdeka) curriculum which involves partners, lecturers and students will be a solution to the problem of sustainability with an orientation towards community service activities. This program it is hoped that it can be a way to produce a graduate who are in line with advances in science and technology, the demands of world of work, and the dynamics of society.

### **3. RESULT AND DISCUSSION**

The implementation of this PKM activity can increase the knowledge of Pagelaran women in terms of utilizing, processing and packaging herbal plants into herbal drink products. Increase insight can be seen based on the results of discussion and direct question with all participant regarding the use and utilization of herbal plants wick were previously only used as cooking spices and now, can be made into herbal drink products. This PKM activity was accompanied by a demonstration of making a herbal drink containing ginger, lemongrass and lemon. This type of herbal drink containing these three plants was chosen because of its ability to increase the body's endurance so it is very good for consumption in extreme weather like today. The aim is to make it easier for people to obtain and consume herbal products and to provide opportunities for home businesses to produce economical types of drinks using herbal ingredients. Making herbal drinks was guided by representatives of the lecture team using red ginger, lemongrass and lemon juice. These materials can be found easily in the market or are widely used in everyday life.

Herbal drinks are made by boiling red ginger that has been sliced thinly, and adding coarsely grown lemongrass stalks to boiling water, then heating until the aroma and taste of the two herbs begin to emerge, turn off the heat. Once it is cold enough, add enough lemon juice, you can also add palm sugar to add a sweet taste to the herbal drink. When the solution is cold, it can be put into a 100 ml bottle and closed

tightly, then given a label to beautify the appearance of the packaging, then it can be served directly or cooled first according to individual taste.



**Figure 1.** The process of making herbal drinks with PKK and KWT women's and pharmacy lecturers of Pakuan University

The training was also continued with discussions and questions and answers by speakers and participants. Preparation of raw materials to packaging was also explained to the participants so that people could participate in making this herbal drink in their own homes. The results of this training can also be used as a household business in the community because of the large health benefits and economical production costs, so that it can improve the economy, especially for the community in the Pagelaran Village.



**Figure 2.** Herbal drink product with ginger, lemongrass and lemon

#### 4. CONCLUSION

Based on the results obtained from this PKM, it can be concluded that this PKM activity can improve the skills of PKK and KWT women in Pagelaran Village on how to produce herbal drinks that are useful

and have sales value. Public understanding of the use of herbal plants can be increasing, increase insight can be seen based on the results of discussion and direct question with all participant regarding the use and utilization of herbal plants wich were previously only used as cooking spices and now, can be made into herbal drink products.. The resulting products can also be marketed with a higher selling value so that they can improve the family's economy. The author's suggestion regarding the results of this PKM is that this activity can be continued with product marketing assistance so that it can help increase the income of the people of Pagelaran Village.

## **ACKNOWLEDGMENT**

We thanks to Faculty of Mathematics and Sciences, Pakuan University for financing to this study also for providing the necessary facilities for carrying out this study

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