# Cultivation of Processed Ginger Immunity (IJO) Program as Herbal Medicine for Residents in Probolinggo

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# Cultivation of Processed Ginger Immunity (IJO) Program as Herbal Medicine for Residents in Probolinggo

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## Abstract

Incentive use of family medicinal plants can increase body immunity and accumulate harmful residues in the environment. Family medicinal plants are natural alternatives in maintaining immunity, one of which is the use of ginger plants. This study aims to characterize and determine the local biological potential (ginger) as an immune enhancer. The processed ginger plants are the right solution for people in Probolinggo. Through the procurement of the IJO (Processed Ginger Immunity) program in Probolinggo, it is hoped that the community will be aware of the importance of environmentally herbal medicines.

***Keyword: immunity, herbal medicine, ginger***

## INTRODUCTION

Pakistaji Village is one of the villages located in Probolinggo City, East Java Province with an area of 56.67 km2. The majority of Pakistaji people work as farmers because Pakistaji has a lot of vacant land and has fertile land where people can use it by farming. In addition, the people of Pakistaji use the vacant land around the house to plant plants as well.

Plants grown in the yard of the house used by the family are called TOGA (Family Medicinal Plants) or living pharmacy (Savitri, 2016). The yard planted with TOGA can also be called a live stall and a living barn. These kinds of plants are ginger, turmeric, galangal, bitter, temulawak, and others (Rahmawati, et al., 2019). TOGA plants that are used properly can produce various products that can be sold thereby increasing household income (Nurdiwaty et al., 2017).

Indonesian people believe that traditional medicine has more advantages than synthetic medicine. The advantages are that it does not contain side effects, the price is relatively cheap and is available locally (Builder, 2020). TOGA plants can be medicinal alternative experience for Pakistaji society as well as minimize expenditure for buy medicine chemistry. Therefore, society of Pakistaji made program Immunity Ginger Processed or known as "IJO PAKISTAJI". This program aim for develop TOGA plants in the form of ginger. Ginger have many efficacy like resolve problem digestion, protect from cancer, and could help guard system immune body. agrees with opinion of Pratap (2017) that activity pharmacology ginger protect heart, antioxidant, antiproliferative, protect nerves and avoided from inflammation heart. Consuming ginger is also effective in reducing pain where this efficacy is the same as the analgesic drugs mefenamic acid and ibuprofen (Rahayu, 2018).

Ginger is a spice and medicinal plant that has high economic value (Sebayang , et al ., 2020). Ginger is the second largest raw material after temulawak where the raw materials and basic ingredients of ginger each year experience a significant increase (Mussafi, Nugraheni, & Malahayati, 2017). Even according to Trie (2021), the price of ginger soared at the beginning of the Covid-19 outbreak in Indonesia. In addition, according to Retnowati (2019), the opportunity for ginger plants to be developed in Indonesia is very large because the cultivation of this plant is very suitable for the climate, soil conditions and geographical location of this country. Ginger plants grow both in the highlands and lowlands (Widiya, et al., 2019).

Ginger comes from the Asia Pacific region which spreads from India to China and belongs to the gathering tribe (Zingiberaceae) which is a family with other findings such as temulawak (Curcuma Xanthorrizha), black turmeric (Curcuma aeruginosa), turmeric (Curcuma Domestica) , kencur (Kaemferia Galanga and galangal (Languas Galanga). There are three varieties or cultivars of ginger, namely elephant ginger (rhinoceros ginger), sunti ginger (emprit ginger), and red ginger (Maimunah, 2018).

Ginger is an annual herbal plant that has high economic value. This plant is generally harvested in the age range of 8-12 months, depending on needs. For fresh consumption, for example for cooking spices, ginger is harvested at the age of 8 months, while for seeds it is harvested at 10 months or more (Fauzan S, Diani F. R, Linda s. D, Qurrota A, 2020).

Elephant/white ginger (Zingiber Officinale Rosc) has the characteristics of a large and fat rhizome, a yellowish-white cross section, slightly fibrous, and soft. This plant in addition to being a herbal medicine can also be used as a cooking spice (Widiyantono et al., 2022). The spicy taste produced by ginger is very distinctive and its ability to provide warmth to the body is able to make ginger as one of the trendy commodities of all time (Edy & Ajo, 2020)

In Pakistaji Village, the IJO program is still being maintained even today. Almost in every house or residence of the residents there is a family medicinal plant in the form of ginger. This program activity aims to provide skills in making the latest innovations and increasing the competitiveness of the value of the ginger plant.

Referring to the information that has been presented, it is necessary to innovate in the manufacture of processed ginger as an effort to maximize the existing potential, namely by doing community service through Real Work Lecture Activities (KKN) organized by Panca Marga University Probolinggo. The service activity in the form of ginger plant cultivation was carried out in Pakistaji Village, Probolinggo City.

## METHOD

This community service program is in the form of ginger plant cultivation. This program is implemented in Pakistaji Village, Probolinggo City. The implementation of this community activity was organized by KKN students at Panca Marga University Probolinggo. This implementation will take place during the month of August 2022.

The materials used in the cultivation of ginger plants are ginger tubers/elephant ginger, husks, soil, inorganic fertilizers, and polybags. The tools used in the planting process include sickles, shovels, gembors, and grass shears.

This community service program uses the ginger plant cultivation management method in the form of the tabulampot method. Tabulampot is a plant cultivation technology by utilizing limited space to grow productive plants in pots (Hutasuhut et al., 2022). This plant cultivation activity is carried out to continue the Pakistaji Processed Ginger Immunity program (IJO) which is managed by Pakistaji Village. This plant cultivation method is carried out directly on the land provided by the village. In this cultivation activity, KKN students document every step of planting ginger. The documentation was uploaded to the KKN Pakistaji YouTube channel as evidence of the implementation of the activity.

The sustainable plan of this community service program is useful for adding insight to the community about how to cultivate ginger plants as the main raw material for Processed Ginger Immunity (IJO) which is engaged in the production and marketing of ginger products by utilizing the potential in Pakistaji Village, namely in the form of ginger plants.

## DISCUSSION

### Survey Introduction

Service activities by students of the 2022 Panca Marga University Community Service Program began with the initial survey stage to the Pakistaji Village. The initial survey was carried out by coming to the location and interviewing the Pakistaji Village Head. From the results of the initial survey, conclusions were drawn to plant ginger cultivation and analyze the problems that exist in the field. After that, the KKN students carried out the initial preparation stage in the form of collecting data on the tools and materials used in planting ginger cultivation.

### Ginger Cultivation Process

In the cultivation of ginger plants is done directly in the field. The condition and area of land that has been provided by the Pakistaji Village is very possible for cultivation of planting using the tabulampot method. The land used is vacant land located in Pakistaji Village. Ginger planting has a low level of difficulty because ginger plants are not too difficult to care for.

In the process of planting ginger there are several steps of planting as follows: The first step in planting ginger in polybags is to cut the ginger obliquely so that the ginger plant growth is stable.

Figure 1: Cutting Ginger

The next step is to prepare planting media in the form of 30X30 polybags, the next step is to put a mixture of compost, husks, and soil into polybags. A mixture of compost, husks, and soil aims to fertilize ginger plants so that they grow well and get enough nutrients.

Figure 2: Addition Of Husks And Fetilizer Into Polybags

The next step is to put pieces of ginger tubers that have been cut obliquely into polybags that already contain compost, soil, and husks.

Figure 3: Planting Ginger Into Polybags

In the next step, after planting the ginger tubers into polybags containing a mixture of compost, soil and husks, then watering and placing them in sufficient light for good and well-maintained ginger growth. Ginger requires open space and full sunlight according to Yualiana, et al (2015).

Figure 4: Watering on Ginger Plants

The Processed Ginger Immunity Program is expected to be an alternative ingredient or medicine and development as a preparation that has good health benefits. In cultivating the development of the "IJO" program as a form of empowerment carried out by KKN 2022 students, as information and insight in practicing the learning outcomes received at the lecture bench.

**CONCLUSION**

One of the efforts in developing the toga plant in the form of ginger in Pakistaji Village is by carrying out a program called "IJO" or Pakistaji Processed Ginger Immunity. This program focuses on ginger plants that have properties that are good for health and maintain body immunity.

The innovation of this program intends to develop ginger plants so that they can increase the use value of these plants. In addition, the implementation of this cultivation activity program can have a positive impact on the community and in this activity also gets a positive response from the surrounding community because it can take advantage of vacant land.

The existence of this activity is expected to be able to continue the "IJO" program activities on an ongoing basis and be able to market the products produced more broadly.

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