
Processing of Red Ginger Powder Drink to Improve the Immune System During the Covid-19 Pandemic

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ARTICLE INFO

Received: 21 July 2021

Accepted: 13 October 2021

Volume: 1

Issue: 3

Doi: 10.56338/jphp.v1i3.3722

KEYWORDS

Ginger Powder; Antioxidant;
Preference Level

ABSTRACT

Introduction: Covid-19 is a disease that must be watched out for because of its relatively fast transmission and has a mortality rate that cannot be ignored and there is no definitive therapy. The body's immune system is important for maintained in this covid-19 era, in addition to consuming adequate nutrition, regular rest, supplements that contain lots of vitamin C and good sources of antioxidants for consumption. The purpose of this research is to make red ginger powder drink to improve the immune system.

Methods: Experimental Research conducted at the Traditional Medicine Laboratory, Pharmacy Study Program, Undergraduate Program, Aufa Royhan University.

Results: Based on the water content test that the water content in ginger powder is 1.30%. As well as the Organoleptic Test Conducted, Panelists Liked Red Ginger Powder Drink.

Conclusion: Antioxidants in Red Ginger Can Boost the Immune System

INTRODUCTION

Covid-19 is a disease which became a pandemic, and must be careful because the transmission relatively fast, has a high mortality rate which cannot be ignored, and yet the existence of definitive therapy. The main symptoms that appear are: fever, cough, may be accompanied by sore throat, nasal congestion, malaise, headache, and muscle aches (1). In addition, in some cases, not accompanied by fever and symptoms relatively light.

The body's immune system is important for maintained in the current era of covid-19, in addition to consuming adequate nutrition regular rest a good supplement contains lots of vitamin C as good source of antioxidants consumption (2). One of the natural resources cheap and contains quite high antioxidants are ginger rhizome, this ginger rhizome is widely available meet in traditional markets and farmers in In addition, the ginger rhizome contains a lot of active compounds healthy for the body, in the middle limited supply of vitamin C production and difficult to reach for the community medium to low this ginger rhizome very helpful for middle class down in upgrading the system immunity by consuming it (1) In research conducted conveyed that ginger extract can multiply natural vascular cells natural killer and destroy the cell wall of the virus that has infected the host, in the human body.

Processing red ginger powder (*Zingiber officinale*) is a spice or medicinal plant from pseudo-trunked clumps that are rich in benefits. The benefits of ginger in this study are as a source of antioxidants to boost the immune system which is important in the era of covid-19 (7).

METHODOLOGY

The research was conducted at the Traditional Medicine Laboratory, Undergraduate Pharmacy Study Program, Aufa Royhan University Health Faculty in Padangsidempuan City.

The materials and tools used are: Ingredients in the form of 500 grams of red ginger, 1000 grams of white sugar (1kg), 125 grams of palm sugar, and 2 grams of salt, water as needed, and the tools used: knife, container, Stove, Frying Pan, Sieve, Sodem, Blender, Scales, Plastic Clip, Blender, Basin, and Sieve.

Implementation of the research: Preparation of materials carried out includes as much as 500 grams of Red Ginger, peeled until clean, separated from the skin and removes adhering dirt. The red ginger is washed so that no dirt will stick to it. The washing should be carried out in running water so that the dirt is immediately carried away by the water. The red ginger is cut into small pieces to expand the surface of the ginger so that it is effective to use time to dry the ginger and make it easier to grind. Red ginger is dried in the sun to dry using sunlight to reduce the content of red ginger. Squeeze the ground red ginger / blender and boil it, until it produces ginger juice. Ginger juice produced 1 liter. Red Ginger juice as much as 1 liter poured into the pan. Added 1 kg of granulated sugar. Added 125 grams of palm sugar. Added 2 grams of salt. Then stirred continuously slowly to avoid scorching. Cooked for 45 minutes until thickened over medium heat. After the batter thickens the pan and is moved and stirred continuously until the dough becomes a powder. The powder that has been produced is sifted using a coconut milk filter of about 80 mesh so that the fine and large granules can be separated, the ginger powder that has been left for about 1 hour, then packed in the plastic clips that have been provided.

The test procedure is the water content. The water content analysis method uses the gravimetric method, namely by drying using an oven at a temperature of 105°C for 4-5 hours (W₀), weighed and dried to obtain a constant mass evaporated divided by the weight of the wet sample (3).

RESULTS

Based on the standards set by SNI, the water content of traditional powder drinks is a maximum of 3%. The results showed that the water content in ginger powder was 1.30% (4).

Organoleptic test is carried out to determine the level of consumer preference for products that have been circulating in the market. The test carried out is the Hedonic Test. This red ginger powder drink is consumed by students at the Afa Royhan University and then the preference test is carried out. To find out the level of preference that is determined based on numbers (scoring). The greater the number, the greater the level of preference of the panelists (10 students). With a hedonic scale of 1-5.

- 1: really don't like it
- 2: somewhat dislike
- 3: normal
- 4: like
- 5: really like

Panel	Flavor	Color	Texture	Whole
1	4	4	4	4
2	4	4	4	4
3	3	3	4	3
4	4	4	4	4
5	3	3	3	3
6	4	4	4	4
7	4	4	4	4
8	4	4	4	4
9	3	3	3	3
10	4	4	4	4

Red Ginger Powder is yellowish white. Taste is the most important factor in determining the product produced (5). Taste determines whether or not a food product tastes good. The texture of the powder was assessed before the ginger powder was dissolved in water. Organoleptic test conducted that 7 out of 10 panelists liked red ginger powder drink.

DISCUSSION

The water content test carried out yielded 1.30% results. This result proves that the red ginger powder drink is still below the standard set by SNI, perhaps if the red ginger powder is added with plant extracts, the water content is likely to increase. (2) Heating performed on red ginger will reduce the antioxidants present in the sample. Therefore, at the time of heating do not be too long. The time it takes is 45 -50 minutes. The organoleptic test carried out is hedonic, which is a preference test carried out to determine the level of preference that is determined based on numbers. The larger the number, the higher the level of preference of the panelists. Color has a meaning and an important role in food commodities (6). Color has an important role that can affect consumer acceptance of the product, besides that color is the first element that consumers assess before the elements of taste, texture, aroma, and some other physical elements.

CONCLUSION

Based on hedonic organoleptic test that red ginger powder drink is preferred. And antioxidants in Red Ginger Powder Drink can improve the Immune System.

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