

## **Development Of Hand Sanitizer and Introduction of Herbal Function as Inunodulator for Muhammadiyah/Aisyiyah Citizen in Sukabumi Regency**

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### **ABSTRACT**

During the Covid-19 pandemic, people are required to comply with health protocols, including frequently washing hands with running water or using hand sanitizers to minimize contamination of the Covid-19 virus. To increase the body's resistance or immunity against the Covid-19 virus, people are also required to consume nutritious food. In this community service, training will be conducted for Muhammadiyah and Aisyiyah residents of Sukabumi Regency so that they can make their own hand sanitizer that is environmentally friendly and inexpensive. Muhammadiyah and Aisyiyah residents were also given knowledge about herbs or medicinal plants to increase body immunity against Covid-19. This community service was carried out for 4 months with partners from the Muhammadiyah City and Sukabumi Regency associations, and the Muhammadiyah women's autonomous organization, namely the Aisyiyah Regional Executive, Sukabumi Regency. Community service activities carried out by making WHO standard hand sanitizers and seminars on herbal plants that function as immunomodulators

**Keywords:** Covid-19, Sukabumi, hand sanitizer.

### **INTRODUCTION**

Corona virus is also known as Covid-19. The virus can attack the respiratory system causing mild disturbances to death. The virus can attack anyone from infants, teenagers, adults and the elderly and spreads quickly enough that it is called a pandemic. The Corona virus originally came from Wuhan, China, in 2019 it spread to almost all countries including Indonesia. To avoid the virus, the government recommends that people obey health protocols, namely not crowding, wearing masks, frequently washing hands with running water or using hand sanitizers. But when people travel, they find it difficult to get running water, so they prefer to use hand sanitizer, but the cost of hand sanitizer is very high. In the community service that will be carried out, training on the manufacture of environmentally friendly hand sanitizers will be carried out so that the community is assisted in procuring hands for the spread of Covid 19. The Covid-19 virus can also easily attack humans who have low immunity. In this community service, socialization of herbal plants that are efficacious in increasing the body's immunity is also carried out.

These community service partners are Muhammadiyah Association and Aisyiyah Autonomous Organization of Muhammadiyah. Muhammadiyah is the largest Islamic organization and spreads to various regions in Indonesia. It is hoped that Aisyiyah and Muhammadiyah can become facilitators in their environment and broadcast Muhammadiyah/Aisyiyah through this activity.

The hand sanitizer that will be made is based on WHO (World Health Organization) standards, which are 70% alcohol-based formulations. Muhammadiyah allows the use of alcohol as an antiseptic for washing hands to prevent transmission of the corona virus (Budi, 2020). To increase the body's immunity, education is given to the use of medicinal plants in the surrounding environment and how to make them.

## **METHOD**

The implementation methods that will be delivered in this community service are:

- a. Education in the form of training in making environmentally friendly hand sanitizers for Muhammadiyah and Aisyiyah residents, Sukabumi Regency.
- b. Socialization of herbal plants to increase body immunity against Covid-19.
- c. Making herbal drink ingredients from standard spices of the Indonesian Health Service.

The community members of Muhammadiyah and Aisyiyah were given techniques on how to make hand sanitizers with compositions in accordance with WHO recommendations, namely using ethanol, H<sub>2</sub>O<sub>2</sub>, glycerin and water. Convey the function and use of the mixed materials. Herbal socialization was delivered to increase body immunity such as herbs such as the function of turmeric, ginger, garlic and bitter. Aisyiyah and Muhammadiyah residents were also told how to make herbs for Covid-19 according to the standards of the Health Service.

The activities that will be carried out are:

1. Organizing an event in the hall of the Muhammadiyah University of Sukabumi, gathering members of the Muhammadiyah and Aisyiyah associations from branches and branches in the City and Regency of Sukabumi. Small groups were created for coaching and training to prepare hand sanitizers made from chemicals that have been proven to kill bacteria and viruses. According to WHO standards it contains Glycerin, H<sub>2</sub>O<sub>2</sub> and Aquades.
2. Provide an explanation of the uses and advantages of WHO standard hand sanitizer preparations.
3. Explain how to use inexpensive and simple tools to make hand sanitizer preparations.
4. Explaining plants that have the potential as herbs and can increase the body's immunity in warding off Covid-19.
5. Making standard herbal concoctions from the Health Service of the Republic of Indonesia.

The basic ingredients for hand sanitizer are 96% alcohol, 98% glycerol, 3% H<sub>2</sub>O<sub>2</sub> and Aquades. How to make a hand sanitizer with a volume of 1 liter is by preparing 1000 milliliters of alcohol and adding 50 milliliters of peroxide acid, 17.8 milliliters of glycerol and 132.2 milliliters of distilled water. All ingredients are mixed homogeneously and let stand for 1 day before they can be used (WHO, 2005).

## **RESULTS**

Activities that have been carried out are Workshops on Making WHO Standard Handsanitizers. This activity has been carried out on Day/Date: Saturday. October 16, 2021, 08.00-11.00 WIB, at the Chemistry laboratory, Universitas Muhammadiyah Sukabumi. The participants of this activity were 25 people representing Muhammadiyah residents such as Aisyiah, IPM, students, MDMC and the general public. The stages of the activity are: First, what is carried out in this activity is the process of re-registering participants, namely participants must fill in attendance. Participants who have filled in the attendance are then given PPE Laboratory equipment in the form of a simple laboratory coat to protect the body from chemical splashes and must wear a mask. After all participants entered and used PPE, the event was opened by the head of aisyiyah Sukabumi Regency, followed by the main resource person presenting material on how to make hand sanitizers, the functions and benefits of chemicals used, calculating hand sanitizer business opportunities and packaging and labeling methods. After the main resource person delivered the material, the practice of making hand sanitizers was guided by a team of assistants to the Chemistry Laboratory of the University of Muhammadiyah Sukabumi. Participants are guided to make solutions and dilutions of hand sanitizers, use tools and chemicals, and how to mix ingredients to make up hand sanitizers. Participants have the opportunity to make their own practice independently accompanied by an assistant and the results of the hand sanitizer made are labeled and can be taken home. Participants who have finished practicing are welcome to leave the laboratory room and take off their PPE and wash their hands. The committee provides snacks and pure milk to neutralize if there are participants who can't stand the smell of chemical substances or toxic compounds.

The next activity is a seminar on herbal plants that have the potential as immunomodulators to increase body resistance, one of which is against Covid-19. Herbs that are around us such as ginger, turmeric, kencur, bitter etc. Indonesia has a variety of herbal plants including spices in ancient times that have been used as traditional drinks to treat diseases and have been inherited until now (Mulyani, et al. 2016). Spices are plants that have high antioxidants that can increase immunity (Helmalia). , et al. 2019).

### **DISCUSSION**

From the results of the activities carried out, the workshop participants were able to understand and master how to make WHO-standard hand sanitizers to be used in the family environment or the surrounding community. Understanding of the potential of plants against immunomodulators increases, indicators of increasing knowledge are measured through questionnaires before and after the workshop which are relatively good in increasing their knowledge of workshop discussion materials.

### **CONCLUSIONS AND RECOMMENDATIONS**

Maintaining hand hygiene is very important, because human hands are often contaminated by microorganisms, so hands can act as an intermediary for microorganisms to enter the human body. Hand hygiene is also important in the field of microbiology and in nursing homes or where microorganisms are easily transmitted through the medium of our hands. Hand sanitizer is a health product that instantly kills bacteria without water, can be used anytime and anywhere, such as after processing money, before eating, after going to the toilet, and after throwing out the trash. Hand sanitizer can be in liquid or gel form. Spices are plants that have high antioxidants that can boost immunity. Immune-boosting herbs can be a natural and economical source of defense against the corona virus.

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APPENDIX



Figure 1. Hand sanitizer workshop activities



Figure 2. seminar on herbal plants that have the potential as immunomodulators