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Production of Hand Sanitizer Based on Natural Ingredients

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Abstract: One way to maintain health is by washing your hands. Hand sanitizer is a health product that can instantly kill germs without using water, and can be used anytime and anywhere. The aim of this community service activity is training in making hand sanitizer based on natural ingredients from betel leaves, lime and aloe vera as an effort to implement a clean and healthy lifestyle. The hand sanitizer produced uses ingredients that are actually already available in households, namely lime, betel leaves and aloe vera. However, some still use chemicals such as glycerin and hydrogen peroxide. There are two formulas permitted by WHO, namely using glycerol (glycerin) and ethanol. Glycerol is used as a humectant (maintains moisture) for the skin. Then mixed with hydrogen peroxide which can overcome contaminated bacteria. Apart from glycerol, WHO also recommends the use of ethanol. However, ethanol can cause skin irritation and dryness. On this basis, we have made hand sanitizer preparations that do not use ethanol as an antibacterial or antiseptic, but use herbal plant ingredients, such as lime, betel leaves and aloe vera.

Keywords: *Hand sanitizer; natural ingredients; lime; aloe vera*

A. Introduction

Sidomulyo is one of the villages in the Sibiru-biru sub-district, Deli Serdang Regency, North Sumatra province, Indonesia. Sidomulyo has a bustling population, its location is strategic, located in a densely populated settlement and on the edge of the highway so it is easily accessible and traversed by public transportation. Hand hygiene is very important to maintain to ward off infection and keep us healthy (1). Especially when our endurance or immunity is decreasing, for example when we are experiencing flu, fever, or cough (2). Washing hands is the key to preventing infection from entering the body, as well as preventing the spread of germs from one person to another. If bacteria or germs enter the body, for example when we eat with unclean hands, these germs can cause illness, one of which we often hear about is food poisoning (3).

Various types of microorganisms such as viruses, bacteria and fungi stick to the hands every day through physical contact with the environment, and some of them can cause various diseases. For that, these microorganisms need to be destroyed or prevented from spreading, one of the easiest and most appropriate ways is by washing hands with soap and clean water (4). If clean water is not available, you can use a hand cleaning preparation that contains antibacterial (antiseptic) without needing to use water, known as "hand sanitizer" (5). Several hand sanitizer preparations can be found on the market and are quite simple and quick to use, namely by dropping it on the palm of the hand, then spreading it evenly by rubbing it slowly on the surface of the hand (6). However, usually the preparations on the market contain a lot of alcohol and antiseptics in the form of synthetic chemicals which are relatively expensive and often cause skin health problems, for example, dry skin. Therefore, it is necessary to look for antiseptics from natural ingredients which are relatively cheaper, safer, more effective and easier to obtain (7). Some natural ingredients have a distinctive

aroma and have antiseptic activity such as lemongrass, betel, torch ginger, orange leaves, orange peel, basil (8). Among them, they have been traditionally used to treat various infectious diseases, such as treating wounds, preventing bad breath. Therefore, it is possible that lemon peel can be formulated into a hand sanitizer preparation (9). Based on this, we can make our own hand sanitizer (hand cleaning fluid) because there are many natural ingredients available around our homes that can be processed and the manufacturing process is very easy and simple, producing a formula that can be adjusted with various natural aromas.

B. Methods

The implementation method for this program is the method of transferring knowledge and training from the Lecturer Team at the Faculty of Pharmacy, Al-Washliyah Muslim Nusantara University, assisted by students to the community in Sidomulyo. It is hoped that they will be able to apply the knowledge conveyed to their respective families regarding clean and healthy lifestyles. and the use of herbal plants in making hand sanitizer. The output of this program is assistance in the formation of productive community groups, who have knowledge and improve skills in processing medicinal plants, especially lime, betel leaf and aloe vera in the form of hand sanitizer preparations.

C. Result and Discussion

The results obtained from Community Service activities in the community around Sidomulyo Village, using the partnership method and systems approach. Implementation The implementation of community service activities starts from the initial stage of surveying partner locations by observing and interviewing several men/women around Sidomulyo Village. This was done to obtain important information regarding the implementation of community service activities, especially in Sidomulyo Village. In the meeting that was agreed upon between the service team and Sidomulyo Village regarding the implementation schedule and technical implementation of community service activities. By carrying out community service to the community around Sidomulyo Village, it is hoped that it can provide understanding and knowledge about the benefits of lime and the importance of utilizing natural materials and plants in the surrounding environment. Using plants to make hand sanitizers is an alternative to improve PHBS efforts to avoid disease and hand sanitizers are a business opportunity to increase people's income. The description of science and technology that is expected from this community service is the creation of public awareness of health, especially by using natural materials found around the house as an effort to wash hands using hand sanitizer to avoid disease and can make hand sanitizer for family needs and can be applied in entrepreneurship. This PkM activity has been carried out successfully and received good appreciation from the village and the community who took part. Documentation of PkM activities can be seen in Figure 1.



Figure 1. Photo of the Lecturer Team and the Community

D. Conclusion

Counseling and education related to making hand sanitizer in Sidomulyo Village is very effective and efficient. The community responded quite enthusiastically and improved family health based on local wisdom, thereby avoiding disease and becoming a business opportunity to improve the economy and the community around Sidomulyo Village to adopt a clean and healthy lifestyle.

E. Acknowledgment

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