

Halal Non-Alcohol Hand Sanitizer from Snail Shell Chitosan: a Review

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Abstract. The Since the outbreak of the Corona Virus Disease 2019 (COVID-19) in Indonesia starting in March 2020, the government has urged the public to be more aware of maintaining cleanliness and health in an effort to break the chain of transmission and spread of the disease. One of the clean living patterns that later became a habit for the community is to maintain hand hygiene. It is recommended to wash the hands diligently. However, if it is difficult to wash hands, then a hand sanitizer could be an option. The widely available hand sanitizer is an alcohol-based hand sanitizer. Ethanol, an alcohol compound, in a certain concentration is known as an effective antibacterial and antiviral. The use of alcohol (ethanol) in hand sanitizer is considered less safe for health because alcohol can irritate the skin. Alcohol is also a flammable compound. In addition, for the Indonesian people, who are predominantly Muslim, the presence of alcohol (ethanol) in the hand sanitizer makes people doubt the halal status of the hand sanitizer. One of compounds that has potential to replace the use of alcohol in hand sanitizer is chitosan. Chitosan can be used as an antibacterial agent because of the positive charge that can interact with the negatively charged of the bacterial cell surface. The existence of these interactions can interfere with the growth of bacterial colonies. Chitosan can naturally be found in the shells of mollusca. One type of mollusca shell with a high content of chitosan is the snail. The application of chitosan from snail shell waste to produce hand sanitizers provides a solution in overcoming environmental problems from the negative impact of snail shells if disposed carelessly and is a solution in producing halal and safe hand sanitizers for the skin.

Keyword: antibacterial, antiviral, chitosan, halal hand sanitizer, snail shell