

UTILIZATION OF RED ONION (*Allium Cepa. L*) WASTE AS GEL HAND SANITIZER

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ABSTRACT

Background: The increased health problems caused by microorganisms at the hands, hand sanitizer gel as the way out to maintained health and hand hygiene because it is more practical and easy to carry. **Objective:** The purpose of this study was to make formulations of gel with physically stable and had inhibitory activity against the *Staphylococcus aureus* bacteria. **Method:** In this study, three formulations were made with a ratio of Hydroxyethylcellulose 0.5% (F1), 1% (F2) and 2% (F3) then physical stability testing included organoleptic, homogeneity, pH and dispersion before and after accelerated storage, then antimicrobial activity by sump method. **Result:** Organoleptic test showed there is no color, smell and texture changes. The results of the homogeneity test, formula with a concentration of Hydroxyethylcellulose 1% and 2% is homogeneous. The pH test results showed that the gel preparation did not change pH. Dispersing test showed concentration hydroxyethyl cellulose 1% has the highest dispersion value. but statistical paired T-test results showed that the dispersion before and after storage was accelerated significantly different 0.043 ($p < 0.05$), but still in accordance with the range of dispersion specifications for a good semisolid preparation. The MIC test results showed Formulation F1, F2 and F3 ethanol extract red onion skin gel is a strong inhibitory effect, ethanol extract of red onion skin gel F1 inhibitory zone is 16mm, F2 and F3 had the same inhibitory zone is 14.33. **Conclusion:** It can be concluded F2 has the best physical stability, but F1 is the most effective to inhibit *Staphylococcus aureus*.

Keywords: *red onion skin, a variation of Hydroxyethylcellulose, physical stability, Staphylococcus aureus, gel*