

THE INFLUENCE OF THE CONCENTRATION OF VCO AND CORN OIL ON THE PHYSICOCHEMICAL CHARACTERISTIC OF THE LIQUID SOAP EXTRACTED FROM THE *Euphorbia Hirta* L.

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ABSTRACT

Euphorbia hirta have the activity to inhibit the growth of bacteria in the hands. The benefits of the *euphorbia hirta* are formulated in the form of hand washing liquid soap to make it easier to apply. The making of the liquid soap using VCO and corn oil, as sources of fatty acid and surfactant, is expected to produce the good physicochemical characteristic of such hand washing liquid soap. This research aims to determine the physicochemical characteristic of the *euphorbia-hirta*-extracted hand washing liquid soap supply with VCO and corn oil, and to also determine the variation of VCO and corn oil that have met the requirements of the SNI (Indonesian National Standard) 2588: 2017. The method used here was the laboratory experimental method with the descriptive analysis. The comparisons of the concentration influence used in this research were between the VCO and the corn oil in a 200-milliliter liquid soap: VCO : corn oil = 1 : 0; VCO : corn oil = 3 : 1; VCO : corn oil = 1 : 3; and VCO : corn oil = 0 : 1. The observed parameters included the characteristics of physical, chemical, and contamination test (ALT) of the liquid soap supply product. Based on physical test results of weight type, stability, and viscosity, there was an influence from the increase of the VCO concentration to the hand washing liquid shop. The hand washing liquid soap which had good physicochemical characteristics were the comparison between VCO (3) and corn oil (1), with 0.67% free fatty acid, pH 7.67, 24.4% of the total of active materials, 0.30% ethanol-not-dissolved materials, 1.032 g/ml mass type; 82.85% foam height stability, and no colony on the total plate number test. The result of the concentration variation showed that all formulations had met the requirement quality standard of the SNI 2588:2017. It could be concluded that the concentration variation of VCO and corn oil had an influence on the physicochemical characteristic of the *euphorbia-hirta*-extracted hand washing liquid soap.

Keywords : *Euphorbia hirta*, VCO, Corn Oil, Liquid Soap