Idham Khalid Nasution. 0711023002. **Performance Test of Clove Leaf Oil Purification Based on Chitosan-Cellulose Membrane**
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SUMMARY

Generally the distillation from UKM still have a blackish color and eugenol levels are still below 80% due to the process of refining and storage of clove oil still uses material from steel / iron. The main content of clove oil, eugenol, will react with the steel / iron to form Fe-eugenolat. Compound that gives black color on clove oil, which is high in water content also affect the essential oil content of the essential oil eugenol addition, the purification process used by farmers are also still far from feasible to use. Actually purification technology has many essential oils, but most of the purification technology is done by chemical purification process that is still not efficiently used by farmers to produce essential oils. Therefore, based on the above, it is necessary to study the process of refining iron content and water content on volatile oil by using essential oil to purification using a membrane filtration system.

The purpose of this study was to determine the physical and mechanical characteristics of composite membranes cellulose and to determine the quality of essential oils that have been passed purifier using membranes as filters in terms of the content of iron (Fe) and water content on volatile oil.

The research was conducted in two phases. The first stage is the creation of research and calculate membrane flux values to determine the characteristics of the membrane and the second phase of testing tools clove leaf essential oil refiner lowers the concentration of iron (Fe) and water content in the permeate contained essential oils of clove leaf with 5 variations of pressure. Then testing the eugenol content of the permeate. This is done with experimental methods, namely by direct observation to obtain data through experimentation causation in order to obtain empirical data

Analysis carried out in the first stage is observed by counting the value of the characteristic membrane flux. In the second stage analysis of the metal content of iron (Fe), water content and the content of eugenol clove leaf essential oil that has passed through the membrane (permeate) and then analyzed the influence of iron content and moisture permeate permeate permeate the eugenol content.

The largest flux values resulting from this testing occurs at a pressure of 1.5 bar is 0.239 L/m2.sec and the smallest flux values at the testing occurs at a pressure of 2.5 bar is 0.155 L/m2.sec. The use of chitosan-cellulose membrane purifier essential oil showed an increase in the value of the flux does not always occur with increases in the applied pressure. Eugenol highest levels occurred at a pressure of 0.5 bar is 58.21% and the lowest levels of eugenol at a pressure of 2.5 bar is 21.98%. Increased iron content (Fe) and water content in the permeate eugenol content causes a decrease in the permeate.

Key word : Purification, Clove Leaf Oil, Chitosan-cellulose membrane, Eugenol