

## INTISARI

Sifat fisik dan stabilitas fisik emulgel minyak cengkeh dapat dipengaruhi oleh suhu pencampuran dan lama pencampuran. Penelitian ini bertujuan untuk mengetahui perbedaan sifat fisik dan stabilitas fisik yang berfokus pada daya sebar, viskositas, dan pergeseran viskositas dengan variasi suhu pencampuran dan lama pencampuran.

Penelitian ini merupakan eksperimental murni dengan rancangan dua variabel yaitu suhu pencampuran dan lama pencampuran yang dibuat dalam 4 formula. Uji T tidak berpasangan digunakan untuk data yang memenuhi kriteria parametrik dan uji Wilcoxon digunakan untuk data non parametrik dengan menggunakan *software* R 2.14.1.

Hasil penelitian menunjukkan bahwa lama pencampuran 5 menit dengan suhu pencampuran 30°C dan lama pencampuran 5 menit dengan suhu pencampuran 70°C berbeda pada daya sebar dan pergeseran viskositas, sedangkan pada viskositas tidak berbeda. Lama pencampuran 15 menit dengan suhu pencampuran 30°C dan lama pencampuran 15 menit dengan suhu pencampuran 70°C berbeda pada daya sebar, sedangkan pada viskositas dan pergeseran viskositas tidak berbeda. Hasil ini menunjukkan bahwa suhu pencampuran dan lama pencampuran mempengaruhi sifat fisik dan stabilitas fisik emulgel. Berdasarkan evaluasi sifat fisik dan stabilitas fisik, formula yang paling optimal adalah formula 2.

Kata kunci: emulgel, minyak cengkeh, suhu pencampuran, lama pencampuran

## ABSTRACT

Physical properties and physical stability of clove oil emulgel can be influenced by mixing temperature and mixing duration. The aim of the research was to determine the difference of physical properties and physical stability focused on spreadability, viscosity, and viscosity shift with variation of mixing temperature and mixing duration.

This research was pure experimental with design of two variables, i.e. mixing temperature and mixing duration which were designed into four formulas. Unpaired T-test was applied for data fulfilling parametric criteria and Wilcoxon test was applied for non parametric data by using the R 2.14.1 software.

The results showed that 5 minutes mixing duration with 30°C mixing temperature and 5 minutes mixing duration with 70°C mixing temperature were different for spreadability and viscosity shift, while for viscosity were not different. Fifteen minutes mixing duration with 30°C mixing temperature and 15 minutes mixing duration with 70°C mixing temperature were different for spreadability, while for viscosity and viscosity shift were not different. These results indicated that mixing temperature and mixing duration affect the physical properties and physical stability of emulgel. Based on the physical properties and physical stability, the most optimal formula was formula 2.

Keywords: emulgel, clove oil, mixing temperature, mixing duration