ABSTRACT

THE INFLUENCE OF HYDROGEN PEROXIDE CONCENTRATION TO METHYL ESTER SULPHONATE CHARACTERISTICS FROM USED COOKING OIL

By

TRIA ANDRIZA

Methyl Ester Sulphonate (MES) is anionic surfactant made through sulfonation process. The types of oil can be made for MES raw material is vegetable oil. Used cooking oil is one of potential vegetable oils and is not yet used for MES raw material. The MES production in common consists of stages of sulfonation, bleaching, and neutralization. The sulfonation product is dark color, and it needs bleaching or purification process. MES should have good aestethical characteristics to be a competitive surfactant. MES should have white color with less odor. H_2O_2 bleaching becomes standard technique in reducing dark color of MES, so that it would be acceptable for MES users as surfactant in consumer good applications.

The objective of this research is to find out best H_2O_2 concentration to MES characteristics from used cooking oil. Factors to investigate in this research are H_2O_2 concentration (v/v) in 11% (K1), 13% (K2), 15% (K3), 17% (K4), and 19% (K5). Treatments were ordered in non factorial and completely randomized group design with three repetitions. Data homogenity was tested using Bartlett test and

data additivity was tested using Tuckey test. Analysis of variance to find out the differences amongst treatments was conducted to the result of observation data of MES characteristics from used cooking oil. Data were furthered processed with least significant difference in 0.05 significant level.

The result showed that the best H_2O_2 concentration to MES characteristics from used cooking oil was 11% H_2O_2 (v/v). The best produced MES characteristics indicated the average values of surface tension 34.57 dyne/cm, emulsion stability 56.37%, specific gravity 1.39 g/mL, and average values of color scoring test 4,22 with almost white color.