ABSTRACT

IRMA RITA. Emulsification Process and Cost Analysis of Beverage Emulsion Production of Red Palm Oil. Under Supervision of SUGIYONO, TIEN R. MUCHTADI and SUPRIHATIN.

Beverage emulsion of red palm oil is one of the diversification of food products which has the advantage of high pro-vitamin A content. This beverage emulsion is an alternative product in preventing vitamin A deficiency that suffers many children. Beverage emulsion formulations had been studied previously by several researchers. This study was aimed to obtain a proper emulsification process condition and production cost analysis of red palm oil emulsion. In the emulsification process, the variable treatments were rotating speed of homogenizer of 6000 rpm, 8000 rpm, 10000 rpm and homogenization time of 1 minute, 3 minutes and 4 minutes. In the process of pasteurization, the variable treatments were temperature of 70°C, 80°C during 10 minutes and 15 minutes. The parameters observed were the emulsion stability, diameter of emulsion droplet (μm), microstructure and color. The results showed that the homogenizer rotation speed and the homogenization time affected the stability and emulsion droplet size. At rotating speed of homogenizer of 10000 rpm and homogenization time of 3 minutes the emulsion stability was the highest (98,59%) and the emulsion droplet size was the smallest (2,04 μm). Eligibility criteria for investments were the NPV Rp. 1.111.711.032, IRR 38%, the net B/C 1,18. The BEP was 29075 units (bottles) or Rp. 319.819.738.

Keyword: beverage emulsion, cost analysis, droplet size, red palm oil.