

Proses Degumming Dengan Asam Fosfat (H_3PO_4) dan Basa Heterogen CaO Dari Cangkang Bekicot Pada Minyak Biji Bintaro Sebagai Bahan Baku Biodiesel
(*Degumming Process With Phosphoric Acid (H_3PO_4) and Heterogeneous Base CaO From Snail Shells in Bintaro Seed Oil as Biodiesel Raw Material*)
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ABSTRACT

Biodiesel is a monoalkyl ester of long chain fatty acids as an alternative fuel to substitute diesel. One alternative raw material for biodiesel is Bintaro seed oil, which is still not widely used. Degumming is the process of removing sap or gum contained in crude oil vegetable oil. The catalyst used in the process degumming generally phosphoric acid (H_3PO_4) and NaOH. This research aims to determine the effect of differences in concentrations of phosphoric acid and heterogeneous base CaO from snail shells on the yield and characteristics of oil degumming results. This research uses the Taguchi method with 2 factors and 3 levels, the factors studied are phosphoric acid concentration of 1%, 2%, 3% of (v/v) oil and heterogeneous base mass concentration of CaO 1%, 2%, 3% of (b/b) oil. Based on the Taguchi and Anova analysis, the best treatment for oil yield was obtained in the A2B1 treatment, with a yield of 75.26%. The best treatment for the amount of gum precipitate produced was obtained in the A3B3 treatment, with precipitate results gum of 1.96 grams, FFA content of 1.4%, density value of 886.3 Kg/m³, Viscosity of 3.89 cSt, and pH value of 6. The best treatment for the FFA value of the resulting oil degumming obtained in the A2B3 treatment, with FFA content is 1.33%, density value is 886 Kg/m³, Viscosity is 4.05 cSt, and pH value is 6.1.

Keywords: *Biodiesel, Degumming, Phosphoric Acid, Heterogeneous Base CaO, Snail Shells*