

Abstrak

Produk MDF di Pertamina Tanjung Gerem yang saat ini masih disupply dan dibeli dari Kilang Unit Pengolahan Pertamina, menyebabkan *cost* yang tinggi. Potensi peningkatan sales penjualan produk MDF di Pertamina Tanjung Gerem juga berdampak pada tingkat ketahanan energi nasional di Indonesia yang menjadi semakin rendah. Untuk itu dilakukan inovasi untuk melakukan produksi MDF mandiri di Pertamina Tanjung Gerem dengan melakukan pencampuran produk MFO dan HSD serta memanfaatkan bahan *renewable energy* berupa FAME menggunakan metode *In Line Blending* menjadi produk BioMDF. Berdasarkan penelitian dan pengembangan produk (R&D), dilakukan tiga kali trial variasi pencampuran untuk mengetahui komposisi yang sesuai dan ongkos produksi yang paling efisien untuk pembuatan BioMDF. Masing – masing pencampurannya yakni Pencampuran-01 (10% FAME, 10% MFO, 80% HSD), Pencampuran-02 (20% FAME, 10% MFO, 70% HSD), dan Pencampuran-03 (30% FAME, 10% MFO, dan 60% FAME). Kemduian didapatkan bahwa ketiga variasi pencampuran tersebut dapat memenuhi spesifikasi persyaratan dari Dirjen Migas. Selanjutnya dipilih Pencampuran-01 (10% FAME, 10% MFO, 80% HSD) dengan pertimbangan harga ongkos produksi yang paling efisien sebesar Rp. 6.919,-/Liter lebih murah dari harga beli perekonomian produk MDF di Kilang Unit Pengolahan Pertamina rata – rata sebesar Rp. 7.950,-/Liter. Selisih harga yang didapatkan dari harga beli perekonomian produk MDF dari Unit Kilang Pengolahan Pertamina yakni sebesar Rp. 1.031,-/Liter. Setelah dilakukan evaluasi menggunakan metode Uji-T sampel tak bebas, diketahui bahwa efektifitas pencampuran ketiga produk tersebut dalam pembuatan BioMDF menggunakan metode fasilitas *In Line Blending* sama dengan pembuatan produk BioMDF skala Laboratorium di Pertamina Tanjung Gerem.

Kata kunci : *Renewable Energy*, Pencampuran, Komposisi, *In Line Blending*, Penelitian dan Pengembangan, Ongkos Produksi, Uji-t sampel tak bebas

Abstract

MDF products from Pertamina Tanjung Gerem which supplied and purchased from Pertamina Processing Units, causing high production price. Potential increase in sales of MDF products also has an impact on the level of National Energy Security in Indonesia which is becoming increasingly low. For this reason, innovations were made to produce MDF independently at Pertamina Tanjung Gerem by mixing MFO and HSD products and utilizing renewable energy in the form of FAME using the In Line Blending method to produce BioMDF products. Based on product Research and Development (R & D), three variations of mixing trials were conducted to determine the appropriate composition and the most efficient production costs for producing BioMDF. Each mixing is Mixing-01 (10% FAME, 10% MFO, 80% HSD), Mixing-02 (20% FAME, 10% MFO, 70% HSD), and Mixing-03 (30% FAME, 10% MFO, and 60% FAME). It was found that the three variations of mixing can meet the requirements specifications of the Director General of Oil and Gas. Then, mixing-01 (10% FAME, 10% MFO, 80% HSD) was chosen with consideration of the most efficient production cost of Rp. 6,919, - / Liter cheaper than the economic purchase price of MDF products in the Pertamina Processing Unit Refinery averaging Rp. 7,950, - / Liter. The difference in price obtained from the economic purchase price of MDF products from the Pertamina Refinery Unit is Rp. 1,031, - / Liter. After an evaluation using the Dependent T-Test method, it was known that the effectiveness of mixing these three products in making BioMDF using the In Line Blending facility method was the same as the production of a BioMDF laboratory scale product at Pertamina Tanjung Gerem.

Keywords: Renewable Energy, Mixing, Composition, In Line Blending, Research and Development, Production Costs, Dependent t-test Method