

INTISARI

Kebutuhan sumber energi di Indonesia semakin meningkat seiring dengan pesatnya pertumbuhan populasi, pertumbuhan ekonomi dan konsumsi energi. Penggunaan sumber energi fosil semakin menipis sedangkan jumlah penduduk di dunia selalu bertambah, untuk kebutuhan energi alternatif yang dapat digunakan sebagai energi terbarukan salah satunya adalah minyak nabati.

Minyak nabati dapat dimanfaatkan sebagai bahan bakar alternatif yang dapat diperbaharui dan ramah lingkungan dibandingkan bahan bakar fosil. Namun minyak nabati memiliki kekurangan diantaranya viskositas yang tinggi dan nilai kalor yang rendah. Untuk itu perlu upaya untuk memperbaiki sifat karakteristiknya, salah satunya adalah dengan melakukan pencampuran minyak nabati disertai pemanasan. Bahan baku minyak nabati yang berpotensi sebagai bahan bakar diantaranya minyak sawit dan minyak jagung. Penelitian campuran minyak sawit dan minyak jagung dilakukan dengan variasi komposisi pencampuran. Perbandingan komposisi variasi campuran yang dilakukan adalah 100:0, 90:10, 80:20, 70:30, 60:40, 50:50, 40:60, 30:70, 20:80, 10:90 dan 0:100 (%), lama pemanasan pencampuran temperatur 80°C.

Berdasarkan hasil pengujian campuran minyak sawit dan minyak jagung, semakin banyak komposisi campuran minyak jagung terhadap minyak sawit dapat mempengaruhi sifat fisisnya. Semakin banyak variasi komposisi campuran minyak jagung pada minyak sawit maka nilai densitas meningkat, sedangkan nilai viskositas, *flash point*, dan kalornya menurun.

Kata kunci: Minyak Jagung, Minyak Sawit, Energi Alternatif.

ABSTRACT

The need of energy source in Indonesia is increasing as the population, economy and energy consumption rapidly grow. The fossil energy source is running out while the number of people in the world is always increasing. For the need, one of the alternative energies that can be used as renewable energy is vegetable oil.

Vegetable oil can be used as alternative fuel that can be renewed and is environmentally friendly compared to fossil fuel. However, vegetable oil has some weaknesses, such as having high viscosity and low calorific value. So, it needs an effort to improve the characteristics. One of them is by oil mixing with heating. The raw materials of vegetable oil that are potential as fuel are among others palm and corn oil. The research on the mixing of palm and corn oil was conducted by mixing composition variation. The composition ratios of mixing variation done are 100:0, 90:10, 80:20, 70:30, 60:40, 50:50, 40:60, 30:70, 20:80, 10:90, and 0:100 (%) with the duration of 80° Celsius mixing temperature.

Based on the test result of palm and corn oil mixing, more corn oil mixing composition on palm oil can influence the physical characteristic. The more the composition variation of corn oil mix on palm oil, the higher the density value is. Meanwhile, the viscosity, flash point, and calorific value were decreasing.

Keywords: *Corn Oil, Palm Oil, Alternative Energy*