

Chemical synthesis and characterization of palm oil-based difatty acyl thiourea

ABSTRACT

Difatty acyl thiourea (DFAT), which has biological activities as antibiotics and antifungal, has been synthesized from palm oil and thiourea using sodium ethoxide as catalyst. Ethyl fatty ester (EFE) and glycerol were produced as by-products. The synthesis was carried out by reflux palm oil with thiourea in ethanol. In this process, palm oil converted to about 81% pure DFAT after 11 hour and molar ratio of thiourea to palm oil was 6.0: 1 at 78 degrees C. Elemental analysis, Fourier transform infrared (FTIR) spectroscopy and ^1H nuclear magnetic resonance (NMR) technique were used to characterize both DFAT and EFE.

Keyword: Palm oil; Thiourea; Ethyl fatty esters; Sodium ethoxide