

## **Synthesis and characterization of N,N'-carbonyl difatty amides from palm oil**

### **ABSTRACT**

N,N'-Carbonyl difatty amides (CDFAs) have been synthesized from palm oil using sodium ethoxide as catalyst. Ethyl fatty esters (EFEs) were produced as a by-product as well as glycerol. The synthesis was carried out by reflux palm oil and urea in presence of ethanol. In this process, palm oil gave 79% pure CDFAs after 8 hours and molar ratio of urea to palm oil was 6.2: 1 at 78°C. Both CDFAs and EFEs have been characterized using elemental analysis, Fourier transform infrared (FTIR) spectroscopy and <sup>1</sup>H nuclear magnetic resonance (NMR) technique.

**Keyword:** Palm oil; Urea; Difatty amides; Ethyl fatty esters; Sodium ethoxide