

## **Changes in 3-MCPD esters, glycidyl esters, bioactive compounds and oxidation indexes during kenaf seed oil refining**

### **ABSTRACT**

An optimized refining process for kenaf seed oil was conducted. The 3-monochloro-1,2-propanediol (3-MCPD) contents, triacylglycerol composition, fatty acids composition, bioactive compounds, phosphorus contents, and oxidation indexes of the kenaf seed oil during each stage of the refining process were determined. The results showed that there was no detected 3-MCPD ester in kenaf seed oil throughout the refining process. Deodorization had slightly increased the 2-MCPD ester (9.0 lg/kg) and glycidyl ester (54.8 lg/kg). Oleic (36.53%) and linoleic acids (36.52%) were presented in the largest amount in the refined kenaf seed oil, and triacylglycerols contributed to 99.96% in the oil. There was a removal of 31.6% of phytosterol content and 17.1% of tocopherol and tocotrienol contents in kenaf seed oil after refining. The refining process was totally removed the hydroperoxides, 93% of free fatty acids and 98.8% of phosphorus content in kenaf seed oil.

**Keyword:** Kenaf seed oil; 3-Monochloro-1,2-; Propanediol; Triacylglycerol; Phytosterol; Tocopherol and tocotrienol