Comparative study of crude and refined kenaf (Hibiscus cannabinus L.) seed oil during accelerated storage

ABSTRACT

This study assessed the changes of antioxidant activity and bioactive compounds of crude and refined kenaf seed oil during accelerated storage at 65°C for 24 days. 2,2-Diphenyl-1-picrylhydrazyl and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) radical scavenging assays were used to determine their antioxidant activity. The changes of phenolic, tocopherol, and phytosterol contents during the storage were also studied. The phenolic content and antioxidant activity of refined oil were significantly lower than those of crude oil after the accelerated storage. There was a decrease of 72.5% tocopherol content and 31.1% phytosterol content in the crude oil and a decrease of 67% tocopherol content and 12.1% phytosterol content in the refined oil during the accelerated storage. There was no significant difference in tocopherol and phytosterol contents for crude and refined oils after the storage. The rate of degradation of tocopherol and phytosterol contents in refined oil was slower than that in crude oil during the storage.

Keyword: 2,2-diphenyl-1-picrylhydrazyl radical scavenging assay; 2,2'-azino-bis(3 ethylbenzothiazoline-6-sulfonic acid) radical scavenging assay; Phenolic contents; Tocopherol; Phytosterol