

ORIGINAL PAPER

Fatty Acids, Tocopherols and Sterols of *Cephalocroton cordofanus* in Comparison with Sesame, Cotton, and Groundnut Oils

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Abstract *Cephalocroton cordofanus*, a perennial muchbranched shrub, is dominant in the eastern and western states of Sudan. The seeds of *C. cordofanus* sesame, groundnut, and cotton were compared for their oil and protein content as well as for fatty acids, tocopherols, and sterols. Fatty acids and sterols were analyzed by GC while tocopherols were analyzed by HPLC. The oil of *C. cordofanus* showed low levels of saturated fatty acids in comparison with the other three oils. The other reported fatty acids of *C. cordofanus* were 8.60 % oleic, 17.2% linoleic, 64.2% vernolic, and 2.0% coronaric acids. Neutral lipids, glycolipids, and phospholipids of *C. cordofanus* oil accounted for 77.5, 14.4, and 8.1% of the total lipid fraction, respectively. The oil of *C. cordofanus* showed higher levels of tocopherols (113.53 mg/100 g) in comparison to sesame, groundnut, and cottonseed oils, with 64.74, 27.96, and 77.83 mg/100 g, respectively. The primary tocopherol of *C. cordofanus* was *c*-tocopherol (106.21 mg/100 g), which amounted to 93.8% of the total tocopherols. *b*- and *d*-tocopherol were present at levels below 5.0 mg/100 g. In comparison to sesame, groundnut, and cottonseed oils, *C. cordofanus* oil contains more (304.4 mg/100 g) total sterols than ground nut (294.0 mg/100 g), but less than sesame (774.9 mg/100 g) and cotton seed (492.4) oils. Due to its high level of epoxy fatty acids, *C. cordofanus* oil is used for industrial rather than edible applications.

Keywords *Cephalocroton cordofanus* _ Cottonseed _ Epoxy acids _ Groundnut _ Phytosterols _ Sesame _ Tocopherols