ABSTRACT

Quality Evaluation of Oil from Seeds of Wild Plant Tylosema fassoglensis in Kenya

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Tylosema fassoglensis is a plant species that is native to Sub-Saharan Africa. The aim of this study was to evaluate the physicochemical properties of oil from T. fassoglensis in Kenya. Seeds of T. fassoglensis were collected from Mombasa, Taita Taveta, Homa Bay, and Siaya regions. Counts of T. fassoglensis in each region were recorded during the entire survey period. The highest distribution was recorded in Homa Bay followed by Siaya region. Distribution was the least in Taita Taveta and Mombasa regions. The analysis of the physicochemical characteristics of the oil was performed according to the official methods of analysis and the recommended practices of the American Oil Chemists Society. Oil content of 36.4% was obtained. The oil had refractive index 1.47 at 40°C, peroxide value 6.34 meq O2/kg, iodine value 94.06 g of I2/100 g, saponification value 145.93 mg KOH/g of oil, acid value 2.49 ± 0.56 mg KOH/g of oil, and unsaponifiable matter 5.87 g/kg. The oil had Lovibond color index of 2.0Y+28.0R. Oil content of T. fassoglensis is comparable with those of most oil crop under commercial production. The physicochemical properties of oil from T. fassoglensis are within the range recommended by FAO/WHO and hence suitable for human consumption.

KEY WORDS: Quality evaluation, Oil quality, Tylosema fassoglensis. Wild plant seeds, Seed oil, Kenya, Nutritional analysis, Fatty acid composition, Antioxidant properties, Health benefits