

Evaluation and characterisation of *Citrullus colocynthis* (L.) Schrad seed oil: comparison with *Helianthus annuus* (sunflower) seed oil.

ABSTRACT

The physicochemical properties, fatty acid, tocopherol, thermal properties, ¹H NMR, FTIR and profiles of non-conventional oil extracted from *Citrullus colocynthis* (L.) Schrad seeds were evaluated and compared with conventional sunflower seed oil. In addition, the antioxidant properties of *C. colocynthis* seed oil were also evaluated. The oil content of the *C. colocynthis* seeds was 23.16%. The main fatty acids in the oil were linoleic acid (66.73%) followed by oleic acid (14.78%), palmitic acid (9.74%), and stearic acid (7.37%). The tocopherol content was 121.85 mg/100 g with γ -tocopherol as the major one (95.49%). The thermogravimetric analysis showed that the oil was thermally stable up to 286.57 °C, and then began to decompose in four stages namely at 377.4 °C, 408.4 °C, 434.9 °C and 559.2 °C. The present study showed that this non-conventional *C. colocynthis* seed oil can be used for food and non-food applications to supplement or replace some of the conventional oils.

Keyword: *Citrullus colocynthis*; *Helianthus annuus*; Seed oil; Tocopherols; Fatty acids; Food & cosmetic applications.