

Cosmos caudatus as a potential source of polyphenolic compounds : optimisation of oven drying conditions and characterisation of its functional properties.

ABSTRACT

The aim of the study was to analyze the influence of oven thermal processing of *Cosmos caudatus* on the total polyphenolic content (TPC) and antioxidant capacity (DPPH) of two different solvent extracts (80% methanol, and 80% ethanol). Sonication was used to extract bioactive compounds from this herb. The results showed that the optimised conditions for the oven drying method for 80% methanol and 80% ethanol were 44.5 °C for 4 h with an IC₅₀ of 0.045 mg/mL and 43.12 °C for 4.05 h with an IC₅₀ of 0.055 mg/mL, respectively. The predicted values for TPC under the optimised conditions for 80% methanol and 80% ethanol were 16.5 and 15.8 mg GAE/100 g DW, respectively. The results obtained from this study demonstrate that *Cosmos caudatus* can be used as a potential source of antioxidants for food and medicinal applications.

Keyword: *Cosmos caudatus*; Antioxidant capacity; RSM; Optimization; Polyphenolic compounds; Oven drying.