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CHEMICAL COMPOSITION, ANTIOXIDANT ACTIVITY OF TWO HALOPHYTIC PLANT EXTRACTS: EFFECT ON SOYBEAN OIL STABILITY

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In this study the chemical composition of methanolic extracts of *Cyperus rotundus* and *Salicornia herbacea,* two halophytic medicinal plants from south of Tunisia was investigated. The phenol contents of *C. rotundus* and *S. herbacea* determined by the Folin–Ciocalteu method were respectively 83.60±5.42 and 53.80±2.60 mg EGA/g. Their flavonoid contents assayed by $AlCl_3$ method were 32.65±3.50 and 13.90±1.40 mg EQ/g respectively. The phenolic composition determined by HPLC-DAD allowed the identification of seventeen compounds for *C. rotundus* extract and sixteen for *S. herbacea*. The antioxidant activities of the two extracts were evaluated using DPPH and ABTS radicals scavenging assays and β-carotene bleaching test. The EC_{50} values for *C. rotundus* and *S. herbacea* were 5.76±0.83 and 55.30±2.70 µg/mL for the DPPH test, 18.8±0.6 and 26.2±0.8 µg/mL for the ABTS assay respectively. The antioxidant activity coefficients (AAC) for β-carotene bleaching test were 670.8±4.2 and 529.0±7.5 respectively for *C. rotundus* and *S. herbacea*.The extracts were employed for the protection of soybean oil from oxidation. The analysis of peroxide index, acidity, acid index and color parameters showed that the two plant extracts were able to preserve soybean oil quality during storage and *C. rotundus* extract was better than the synthetic antioxidant BHT.

Keywords: Halophytes, methanol extract, phenolic composition, antioxidant activity, soybean oil oxidation

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