

## **Antioxidant activities of extracts from *Combretum hartmannianum* and *Guiera senegalensis* on the oxidative stability of sunflower oil**

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**Abstract:** This study was carried out to investigate the total phenolic compounds beside the potential antioxidant activity of *Guiera senegalensis* and *Combretum hartmannianum* extracts. The content of total phenolics in the extracts was determined spectrometrically according to the Folin-Ciocalteu procedure and calculated as gallic acid equivalents (GAE). The antioxidative activities by beta-carotene linoleic acid and DPPH methods of extracts from *Guiera senegalensis* leaves, (GSL), *Guiera senegalensis* roots (GSR) and *Combretum hartmannianum* leaves (CHL), were evaluated in sunflower oil in the dark at 70°C. Total phenolic compounds were 240.1, 275.6 and 253.4 mg/g respectively. The methanolic extracts of (GSL), (GSR) and (CHL), were markedly effective in inhibiting the oxidation of linoleic acid and subsequent bleaching of  $\beta$ -carotene in comparison with the control. Plants extracts (500 mg) effectively inhibited the formation of peroxides in sunflower oil and showed the highest antioxidative activity compared with 20 mg BHA. The GSL extract is the most effective followed by the GSR and CHL extract. The antioxidant activity of the extracts measured by DPPH free radical showed high reduction of 50% DPPH in CHL extract followed by GSR and GSL. Clear differences were found between the control and sunflower oil containing *C. Hartmannianum* and *G. senegalensis* extracts or BHA, which decreased and slowed the rate of peroxide formation resulting in lower PVs after 96 h of storage at 70 °C.

**Keywords:** Antioxidant activity,  $\beta$ -carotene/linolenic acid, *Combretum hartmannianum*, 1,1- diphenyl-2 picrylhydrazyl (DPPH), *Guiera senegalensis*, phenolic compounds.