

## Research Article

# Antioxidant activity of extracts from six different Sudanese plant materials

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Methanolic extracts obtained by manual solvent extraction (MSE) and accelerated solvent extraction (ASE) of different Sudanese plant materials (*Sclerocarya birrea* leaves, *Salvadora persica* bark and leaves, *Combretum hartmannianum* leaves, *Guiera senegalensis* leaves and roots) were investigated for their antioxidant activity. There was no significant difference between the two extraction methods ( $p < 0.01$ ) regarding the total amount of phenolic compounds expressed as gallic acid equivalents (GAE) (52.6–166.7 mg GAE/g total extractable compounds for MSE and 53.1–169.3 mg GAE/g for ASE). In comparison to a control without extract, the extracts were remarkably effective in the  $\beta$ -carotene bleaching method, whereas the effectiveness was half or less in comparison to Trolox as standard antioxidant. Also using the 1,1-diphenyl-2-picrylhydrazyl (DPPH) method antioxidant activity could be shown in comparison to a control, however, the extracts were less effective than Trolox. No significant difference was found between the two extraction methods. The increase of the peroxide value of sunflower oil during storage at 70°C was markedly lower after addition of the extracts in comparison to the control, but in the Rancimat test (120°C) the extracts showed only a small stabilization factor ( $F_{1/2}$  0.9–1.4) especially in comparison to Trolox ( $F_{1/2}$  5.8).

Keywords: Antioxidant activity /  $\beta$ -Carotene bleaching method / DPPH method / Extraction methods / Phenolic compounds / Plant material

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