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Section:

EVALUATION OF TOTAL PHENOL CONTENT AND ANTIOXIDANT ACTIVITY BY THE FRAP METHOD OF BIDENS SPP. LEAVES

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The species *Bidens* spp., belonging to the family Asteraceae, is a plant typical of the Central-West, Southeast, and South regions of Brazil, popularly known as carrapicho-de-pontas, coambi, erva-picão, fura-capa, goambu, picão, picão-do-campo, and picão-preto. *Bidens* spp. is used in folk medicine as an ocular antiseptic and for treating canker sores and sore throats. Several plants used in traditional medicine are being evaluated for their biological activities. In this context, the objective of this study was to determine the content of total phenolic compounds and evaluate the antioxidant activity by ferric reducing antioxidant power (FRAP) of the extract and fractions of the leaves of *Bidens* spp. The extract (EE) was prepared from the leaves by turboextraction with 70% ethanol and subsequently partitioned with dichloromethane and ethyl acetate, obtaining the dichloromethane (DCM), ethyl acetate (EA) and hydroethanol (HE) fractions. The quantification of the total phenolic compound content was performed using the Folin-Ciocalteu reagent[1] and the antioxidant activity was determined by the FRAP assay[2]. EE, and DCM, EA and HE fractions presented total phenolic compound contents of 62.83 µg GAE (gallic acid equivalents)/mg, 166.00 µg GAE/mg, 268.97 µg GAE/mg and 31.67 µg GAE/mg, respectively. All samples showed antioxidant activity by the FRAP method. The DCM and EA fractions were the most active, with EC_{50} values of 2.11 and 0.85 µg/mL, respectively, with activity similar to that of BHT (methyl-2,6-di-t-butyl-phenol), which showed EC_{50} of 0.57 µg/mL. A positive correlation was observed between the total phenolic compound content and antioxidant activity, suggesting that phenolic compounds contribute significantly to the antioxidant capacity. The data obtained encourage the performance of other tests to confirm the observed results and also to evaluate other biological activities of the leaves of *Bidens* spp.

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[2]*Food Research International*, *156*, 111145, 2022. https://doi.org/10.1016/j.foodres.2022.111145