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ANTIOXIDANT POTENTIAL OF FLOWERS AND LEAVES EXTRACTS OF PLANTS WITH MEDICINAL INDICATIVE

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Abstract: The aim of the present study was to evaluate the in vitro antioxidant potential of the hydroalcoholic extracts of flowers of *Hibiscus cannabinus* and *Hibiscus diversifolius* and leaves of *Flemingia macrophylla* and *Moringa oleifera*. Samples were supplied by Epagri (Itajaí, Santa Catarina, Brazil), were dried in an oven at 40-45 °C and were ground in a Willye TE-650 mill. Extracts were prepared with 2 g of sample and 25 mL of ethanol:water (80:20, v:v), were heated in a water bath at 70 °C for 30 minutes and filtered. In vitro antioxidant activity was determined using four assays: total phenolic content by the Folin-Ciocalteau method (FC) [1], ferric reducing antioxidant power (FRAP) [2] and the ABTS [3] and DPPH [4] free radical scavenging methods. Extracts were obtained in triplicate and analyzes were developed in duplicate. Data were analyzed by ANOVA using the Statistica 8.0 software. Mean separation was performed using the Tukey's test at the 95% confidence interval (Table 1). As can be seen in Table 1, all of the samples presented significant difference by the FC method and the highest total phenolic content was obtained for the flowers of *H. diversifolius*. Moreover, this extract showed better results in the other antioxidant assays when compared to the other samples. On the other hand, the lower total phenolic content was observed for the leaves of *M. oleifera*. Despite this, this sample has similar antioxidant activity to the leaves of *F. macrophylla* by the FRAP, ABTS and DPPH assays and to the flowers of *H. cannabinus* by the ABTS method. On the whole, it is interesting to note that all plants are a valuable source of natural bioactive molecules and has properties that suggest studies about their phytochemical constituents.

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Table 1: Antioxidant activity determined by FC, FRAP, ABTS and DPPH methods.

	FC (mg gallic acid/g sample)	FRAP (mmol Fe^{2+}/g sample)	ABTS (mmol Trolox/g sample)	DPPH (mmol Trolox/g sample)
H. cannabinus	$50.9^{b} \pm 0.005$	$1.26^{a} \pm 0.21$	$0.61^{b} \pm 0.09$	$0.31^{a} \pm 0.05$
H. diversifolius	$68.3^{a} \pm 0.007$	$1.49^{a} \pm 0.23$	$0.97^{a} \pm 0.08$	$0.38^{a} \pm 0.08$
F. macrophylla	$43.0^{c} \pm 0.003$	$0.48^{b} \pm 0.03$	$0.61^{b} \pm 0.04$	$0.11^{b} \pm 0.04$
M. oleifera	$30.3^{d} \pm 0.002$	$0.49^{b} \pm 0.09$	$0.60^{b} \pm 0.06$	$0.15^{b} \pm 0.01$

Data are expressed as mean ± standard deviation (n = 6). Mean values with different superscript letters, in the same column, are significantly different by the Tukey's test ($p \leq 0.05$).