



ANTIOXIDANT ACTIVITY AND FLAVONOID CONTENT OF *Clusia grandiflora* (Clusiaceae).

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Purpose of study: Evaluate total antioxidant activity (TAA) and total flavonoids content expressed as flavones and flavonols of the ethanolic crude extracts of stamined flowers, leaves, stems and adventitious roots of *Clusia grandiflora*.

Methods: The TAA was determined through the scavenging of the stable free radical DPPH (2,2-diphenyl-1-picrylhydrazyl), according to the methodology proposed by Silva & Paiva (2011)[1]. Total flavonoids content was determined by the colorimetric method involving reaction with aluminum chloride, as described by Chang et al. (2002)[2], with modifications. The results of both experiments were expressed as mean \pm standard deviation of three independent tests, and the comparison among the means was made using the software ANOVA (one-way analysis of variance).

Results: Total antioxidant activity (TAA) of the extracts, when compared to the positive controls Rutin (0,579 \pm 0,035g Rutin/g DPPH) and BHT (0,748 \pm 0,125g BHT/g DPPH), presented greater EC₅₀ once they are constituted of various substances. However, the obtained results were promising. Crude ethanolic extract of the roots showed the lowest EC₅₀ value (1,792 \pm 0,362g extract/g DPPH) and crude ethanolic extract of stems exhibited the greater EC₅₀ value (3,462 \pm 0,301g extract/g DPPH). From the point of view of reaction kinetics, the extracts showed fast reaction in almost all analyzed concentrations, since the percentage of the remaining DPPH not suffered huge variations within the 30 minutes of reaction. The percentages of remaining DPPH in the extracts were considered low at the greater concentrations, resembling to the positive controls. The flavonoid content showed low values and non-correlation with the results of the antioxidant activity. Crude ethanolic extract of the flowers showed the greatest percentage of flavones and flavonols (1,566 \pm 0,001%).

Conclusions: The antioxidant activity demonstrated good potential in the production of substances with free radical scavenging activity. However the assay of flavonoids content suggested that the antioxidant activity not seemed to be related to the presence of these substances or that these are not the only ones responsible for the activity

References: [1] Da Silva, M.C.A.; Paiva, S.R. 2012. Antioxidant activity and flavonoid content of *Clusia fluminensis* Planch. & Triana. Annals of the Brazilian Academy of Sciences, 84:609-616.

[2] Chang, C.C.; Yang, M.H.; Wen, H.M.; Chern J.C. 2002. Estimation of total flavonoid content in propolis by two complementary colorimetric methods. Journal of Food and Drug Analysis, 10(3): 178-182.