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Antioxidant Phenolic Compounds of Ethanolic and Aqueous Extracts from Pink Cedar (*Acrocarpus fraxinifolius* Whight & Arn.) Bark at Two Tree Ages

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Abstract

In Central Mexico, commercial plantations of pink cedar (*Acrocarpus fraxinifolius* Whight & Arn.) from 7 to 15 years old are ready for harvesting to obtain wood products without current bark use. Therefore, the aim of this work was to study ethanolic and hot water extracts from *A. fraxinifolius* bark of 7-year-old (young) and 13-year-old (mature) trees. Yields, total phenolic, flavonoid, and proanthocyanidin contents, as well radical scavenging activity by 1,1-diphenyl-2-picrylhydrazyl (DPPH) and 2,2-azinobis-(3-ethylbenzothiazoline-6-sulfonate) (ABTS) radicals, as well by ferric-reducing antioxidant power (FRAP) and low-density lipoprotein inhibition assays were estimated. Extracts of young tree barks showed higher phenolic content and better scavenging activity than extracts from mature tree barks; ethanolic extracts were superior to the aqueous ones. Positive correlations between polyphenol content and scavenging activity were observed. Results suggest that *A. fraxinifolius* bark loses phenolic content and antiradical activity as it ages. Bioactive phenolics such as gallic acid, catechin, epicatechin, and catechin gallate were identified by HPLC-DAD.

KEYWORDS: *Acrocarpus fraxinifolius*, bark, extraction solvent, free radicals scavenging, phenols, pink cedar, tree age

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