

## Bioaccessibility of Polyphenols from the Seeds of *Triplaris gardneriana* Wedd (POLYGONACEAE)

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**INTRODUCTION:** *Triplaris gardneriana* Wedd (Polygonaceae), popularly called as “pajeú”, is a tree species found in the Northeastern region of Brazil and with several uses in the traditional medicine. Recently, our team has reported that *T. gardneriana* seed ethanolic extract is rich in polyphenols and possesses a high antioxidant capacity. However, the total content of polyphenols present in foods does not necessarily reflect the bioactive amount absorbed and metabolized by the body. **OBJECTIVES:** This study aimed to identify some polyphenols present in *T. gardneriana* and investigate their bioaccessibility during a simulated gastrointestinal digestion. **MATERIAL AND METHODS:** The following procedures were performed: preparation of an ethanol extract of *T. gardneriana* seeds (EETg); identification of polyphenols present in EETg by high-performance liquid chromatography coupled with mass spectrometry (HPLC-MS) and estimation of EETg *in vitro* bioaccessibility through simulated gastrointestinal digestion, followed by quantification of total polyphenols and evaluation of antioxidant activity (DPPH assay [Diphenyl-picrylhydrazyl]). **RESULTS AND DISCUSSION:** Eleven distinct polyphenols were identified via HPLC-MS, among them: 1,6-digalloyl- $\beta$ -glucopiranoside, ellagic and gallic acids, quercetin-3-O- $\beta$ -D-glucopiranoside and vanicoside C, classified respectively as tannin, phenolic acids, flavonoid and phenylpropanoid. The concentration of polyphenols, percentage of inhibition of DPPH radical and bioaccessibility of polyphenols increased, respectively, from 267.38  $\mu$ g of gallic acid/mg of extract, 24.75% and 50.26% in the gastric phase to 389.57  $\mu$ g of gallic acid /mg of extract, 61.06% and 73.22% after the intestinal phase. The increase in these values was probably caused by the stabilization of polyphenols in the reaction medium and their release from the matrix (plant extract, in this case). **CONCLUSION:** This study showed that the extract of *T. gardneriana* seeds provides a significant source of bioaccessible polyphenols, potentially able to exert their antioxidant effects in biological systems.

Keywords: antioxidant activity, HPLC-MS, *Triplaris gardneriana*, *in vitro* digestion  
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