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Nutritional and chemical study of the fruits of *Rubus fruticosus* L. var. 'Triple Crown' as a food source with high antioxidant capacity

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Blackberries are fruits of great interest in the food, agricultural, and pharmaceutical industries due to their high content of bioactive compounds, which greatly vary according to the species. Therefore, to determine the benefits that each fruit species can bring to the consumer, its nutritional, chemical, and bioactive characterization becomes essential.¹ *Rubus fruticosus* L., specifically the 'Triple Crown' cultivar (**Figure 1**), is original from and grown primarily in Central and North America.² The fruit has a balanced taste between sweet and sour, which makes it well accepted by the consuming public, in addition to the high content of vitamins, minerals, and anthocyanins, as well as other phenolic compounds, carotenoids, glutathione, and endogenous metabolites, which contribute to its high antioxidant capacity.³ In this study, *R. fruticosus* fruits were evaluated for their nutritional value (AOAC methods), free sugars (HPLC-RI), organic acids (UFLC-PDA), and fatty acids (GC-FID) composition, as well as for their anthocyanin content (HPLC-DAD-ESI/MS) and antioxidant properties (TBARS and OxHLIA).

The blackberry fruit revealed a balanced nutritional profile, presenting carbohydrates as the main macronutrients. Regarding the chemical composition, three free sugars were found, being glucose the one present in the highest concentration; six organic acids, with malic acid and quinic acid as the most abundant ones; and seventeen fatty acids, with a prevalence of polyunsaturated fatty acids. In addition, three anthocyanins were identified, all cyanidin derivatives (mostly cyanidin-3-O-glucoside).

The fruits also revealed a high antioxidant capacity, showing potential to be used in the development of new products in the food industry, such as natural dyes, juices, jams, and jellies, among others.



Figure 1: Fruits of *Rubus fruticosus* L., cultivar 'Triple Crown'.

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