

Processing Effect on Polyphenol Content, Anthocyanins and Antioxidant Capacity of Black Beans (*Phaseolus vulgaris*)

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Plant foods are rich sources of bioactive compounds which daily intake has been related to risk reduction of non-communicable diseases. Black beans, a typical Brazilian food, are known to contain large amounts of phenolic compounds and anthocyanins, and are present in well known traditional dishes, such as *feijoada*. In this way, the objective of this work was to evaluate soluble and hydrolysable polyphenol contents, anthocyanins and antioxidant capacity, by two methods, of black beans in different stages of processing, from raw beans until the typical *feijoada* dish. In all stages analyzed, hydrolysable polyphenol content was higher than soluble polyphenol, with values varying from 2,98 to 6,13 and 0,34 to 2,41 mg GAE/ g DW, respectively. Being a legume, black beans contain high amounts of dietary fiber, which links to phenolic compounds, needing hydrolysis for better extraction yield. Raw beans showed the highest soluble polyphenol content, as soaked beans had the lowest values, probably due to losses of these compounds to the soaking water, high in soluble polyphenols. Antioxidant capacity, measured by DPPH method, showed a positive relation with soluble and hydrolysable polyphenol contents. The peroxide hydrogen scavenging capacity, however, didn't show the same relation with neither extracts. Results indicate that black beans have high polyphenol contents and, although soaking and cooking can reduce soluble polyphenols, thermic processing can contribute to the extraction of hydrolysable forms from food matrix, making black beans an important and traditional food source of bioactive compounds for the Brazilian population.

Key-words: Black beans / polyphenols / anthocyanin / antioxidant capacity

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