Phenolic compounds and antioxidant activit of common bean (Phaseolus vulgaris L.) genotypes using two extraction methods

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The diet has been implicated in the prevention or development of certain diseases such as cancer. Common bean (*Phaseolus vulgaris* L.) is a traditional food in human diet, low in fat and rich in proteins, vitamins, complex carbohydrates and minerals. Consumption of dry beans has been linked to reduced risk of diabetes, obesity, heart disease and colon cancer. The objective of this work was to compare two phenolic extraction methods (method 1: used for rice and method 2: used for fruits) to determine total phenolic content and total antioxidant activity on different beans genotypes. Seven common bean genotypes were grown at Embrapa Clima Temperado - Estação Experimental Terras Baixas. Seeds were collected and taken to the Laboratory of Food Science and Technology to be analyzed. Total phenolic compounds and antioxidant activity were determined using Folin-Ciocalteau end DPPH, respectively. Comparing the two extraction methods, method 1 extracted more phenolic compounds than the method 2, regardless the genotype analyzed. The same trend was observed for total antioxidant activity. Regardless the extraction method, the TB 02-24 and Irai genotypes showed the highest content of phenolic compounds and antioxidant activity. Good correlation between total phenolic content and total antioxidant activity was observed regardless the extraction method (method 2 R2=0,8033, method 1 R2=0,8297). In conclusion, the method optimized to extract phenolic compounds from rice is more suitable to extract phenolic compounds from beans than the method used to extract phenolic compounds from fruits, probably due to the chemical characteristic of these compounds.