



QUALITY TRAIT ANALYSIS OF A PORTUGUESE COLLECTION OF COMMON BEAN (*Phaseolus vulgaris* L.) germplasm

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Lack of knowledge on crop adaptability and access to improved varieties, are generating difficulties to crop diversification and legume inclusion in value chains. To overcome these barriers, it is important to assess trait and molecular diversity for selection and production of high-quality seed. The main aim of this study was to analyze different quality traits of a Portuguese collection of common bean (*Phaseolus vulgaris* L.).

A collection of 236 accessions, collected from different regions of the country and conserved at the Portuguese genebank (BPGV) was analyzed for their mineral, protein, starch, phenolics, saponins, antioxidants, tannins and canavanine content. All data was statistically analyzed by principal component analysis (PCA), to determine possible correlations between quality traits and the region of origin of the accessions.

Within this collection, 65% of the accessions are from the North of Portugal, and interestingly, these were the accessions with higher intraspecific diversity and high-quality outstanding lines when compared to seeds originated from other regions of the country.

The nutritional variability observed in the seeds of this common bean collection allowed to identify cultivars with higher nutritional value, data which can be important to farmers and seed companies. These are also of great interest to the food industry sector, as these can be used to produce specific and new food products, high on plant-protein, fiber and with low glycemic index.

Keywords: legumes, minerals, nutritional factors, seed phenotype