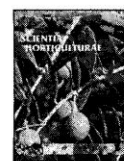




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Scientia Horticulturae

journal homepage: www.elsevier.com/locate/scihorti



Assessing genetic variability in germplasm of *Phaseolus vulgaris* L. collected in Northern Portugal

Rita C. Coelho^a, Miguel A. Faria^{b,*}, Joana Rocha^a, Aida Reis^c, Maria Beatriz P.P. Oliveira^b, Eugénia Nunes^a

^a CIBIO – Centro de Investigação em Biodiversidade e Recursos Genéticos, Faculdade de Ciências, Universidade do Porto, Campus Agrário de Vairão, Rua Padre Armando Quintas, Vairão, 4485-661 Vila do Conde, Portugal

^b REQUIMTE - Serviço de Bromatologia, Faculdade de Farmácia, Universidade do Porto, Rua Aníbal Cunha, 164, 4099-030 Porto, Portugal

^c BPGV – Banco Português de Germoplasma Vegetal, DRAP-N, Quinta de S. José, S. Pedro de Merelim, 4710-859 Braga, Portugal

ARTICLE INFO

Article history:

Received 19 January 2009

Received in revised form 12 March 2009

Accepted 15 May 2009

Keywords:

Common bean

Protein content

SSR

Genetic variability

Portugal

ABSTRACT

The common bean (*Phaseolus vulgaris* L.) is the most consumed legume in the world. In Portugal, the geographic isolation of the region surrounded by the mountainous barrier of Peneda-Gerês, Barroso and Marão is thought to have the safeguard of a large number of adapted bean populations. In order to assess the value of this germplasm to breeding programs, a study of 20 Portuguese landraces collected in this Northern region were evaluated for agronomical (days to flowering, plant height, days to harvest, weight of seeds per plant and 100 seeds weight), chemical (crude protein) and genetic diversity (microsatellite DNA).

The 6 microsatellite *loci* used for molecular characterization contributed to differentiate most of the accessions that were grouped in terms of genetic proximity in two main clusters and two out-groups. There were significant differences in agronomical traits among accessions being early maturity, short plant type, and lower productivity per plant responsible for the genetic variability found. The late maturity landrace 7434 presented the most promising values for breeding based on plant productivity (31.5 g/plant) and protein content (27.9%).

The studied collection of common beans presented genetic variability potentially useful in plant breeding programs to select protein content and plant maturity.

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* Corresponding author. Tel.: +351 222 078 910; fax: +351 222 003 977.
E-mail address: mfaria@ff.up.pt (M.A. Faria).