

KNOWLEDGE OF COMMON BEAN (*PHASEOLUS VULGARIS* L.) LANDRACE RESOURCES MAINTAINED IN SITU AND EX SITU IN BASILICATA REGION

MARZARIO S.*, SICA R.*, LATORRACA A.*, MORANTE V.*, BEVILACQUA V.*, GALANTE M. A.*, PIERGIOVANNI A. R.***, PAPA R.***, NUZZACI M.*, GIOIA T.*, LOGOZZO G.*

*) School of Agricultural, Forestry, Food and Environmental Sciences, University of Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy

**) Italian National Council of Research (CNR), Institute of Biosciences and Bioresources (IBBR), Via Giovanni Amendola 165/A, 70126 Bari, Italy

***) Department of Agricultural, Food and Environmental Sciences, University Politecnica delle Marche, Via Brecce Bianche 2-8, 60121 Ancona, Italy

common bean, genetic resources, landraces, agro-morphological traits, genotype x environment

Modern agriculture has adapted the varieties to partially different environments thanks to the use of fertilizers, pesticides and irrigation that have made the cultivated fields more homogeneous with each other. In this way, the same variety can be grown on increasingly large areas and the seed trade companies can significantly increase their profits at the expense of local populations who are at risk of extinction. The implementation of a monitoring of the genetic resources still conserved on farm and ex situ allows the identification of cultivated ecotypes stable in particular environments through phenotypic selection by participatory (researchers and farmers) breeding. Furthermore, the monitoring of genetic variation within heterogeneous landraces will help to assess how stable the landraces of economic interest will be in order to guarantee and "genetically" certify the origin of the final products. Germplasm collection programs conducted in the past years have made it possible to save many landraces from certain extinction and this germplasm is a precious resource to promote the enhancement of typical productions within the framework of sustainable rural development. Common bean (*Phaseolus vulgaris* L., $2n=2x=22$) is a typical edible food legume of Basilicata Region

(Southern Italy) which are consumed as dry seeds or as whole legumes. During centuries of cultivation beans evolved, adapting to the different environments, in numerous local landraces, diversified by grown habit, flowering time, colour, size and shape of seeds and pods. Some of them are protected by the European Union with the PGI (Protected Geographical Indication) or the PDO (Protected Designation of Origin) mark.

In the present study 276 common bean genotypes (determinate and indeterminate grown habit) collected and cultivated in the National Park of the Agri Valley in Basilicata were evaluated, using agro-morphological IPGRI and UPOV traits, according to descriptors for common bean, in three Lucanian diversified environments from 2018 to 2020. The results presented here are discussed on the grounds of the need of adequate actions aimed toward the on farm conservation and use of Lucanian bean precious genetic resources for breeding programs and in low-input and organic agricultural systems. The phenotypic data acquired for the genetic materials under threat of genetic erosion could be used to start the administrative procedure for the registration to the National Variety List (NVL) and Plant Breeders' Rights as "conservation variety".

Research funded by PSR Basilicata Region 2014/2020 – mis. 10.2 "Conservation and sustainable use of genetic resources in agriculture" - Project PHAS.G.RE.EN.