

ORIGIN AND STRUCTURE OF THE EUROPEAN COMMON BEAN (*PHASEOLUS VULGARIS* L.) LANDRACES

ANGIOI S.A.*, RAU D.*, NANNI L.**, BELLUCCI E.**, LOGOZZO G.***,
SPAGNOLETTI ZEULI P.L.***, NEGRI V.****, ATTENE G. *, PAPA R.**

*) Dipartimento di Scienze Agronomiche e Genetica Vegetale Agraria, Università degli Studi di Sassari, Via de Nicola, 07100 Sassari (Italy)

**) Dipartimento di Scienze Ambientali e delle Produzioni Vegetali, Università Politecnica delle Marche, Via Brecce Bianche, 60131 Ancona (Italy)

***) Dipartimento di Biologia Difesa e Biotecnologie Agro-forestali, Università degli Studi della Basilicata, Campus Macchia Romana, 85100 Potenza (Italy)

****) Dipartimento di Biologia Vegetale e Biotecnologie Agro-ambientali e Zootecniche, Università degli Studi di Perugia, Borgo XX Giugno 74, 06121 Perugia (Italy)

chloroplast microsatellites, genetic diversity, gene pool, bottleneck

Domestication of *Phaseolus vulgaris* L. occurred independently in Mesoamerica and the Andes, giving rise to two highly differentiated gene pools. The pathways of dissemination of beans into Europe were very complex, with several introductions from the New World combined with direct exchanges between European and other Mediterranean countries. In the present study, we have used seven chloroplast microsatellite markers (cpSSRs), and two unlinked nuclear loci: phaseolin and *Pv-SHATTERPROOF1*. The molecular data were used to assess the genetic structure and the level of diversity of a large collection of European landraces of *P. vulgaris* (307) in comparison with 94 American genotypes representing the Andean and Mesoamerican gene pools. We then compared the diversity of common bean landraces from Europe (as numbers of alleles, haplotypes, gene diversity and genetic differentiation) with that from the American centres of origin. Our results show that most of the European common bean landraces are of Andean origin and that the bottleneck due to the introduction into the Old World was not as strong as has been previously suggested. Finally our data indicate that in Europe, a significant portion of the bean germplasm has derived from hybridization between the Andean and Mesoamerican gene pools.