

GENETIC DIVERSITY AND INTROGRESSION BY AFLP ANALYSIS IN *PHASEOLUS VULGARIS* L.

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Phaseolus vulgaris L. is an economically important species whose origin is in the America continent where domestication took place and diverged in Mesoamerican and Andean gene pools. After Columbus's voyage common bean was introduced into the Iberian Peninsula from which this species spread into the European countries and around the world. In this study investigate the extent of diversity of European germplasm compared to the American germplasm and to define the level of introgression between the European Mesoamerican and Andean gene pools are investigated. 68 accessions representative of Mesoamerican and Andean American gene pools and 241 accessions from 24 different countries belonging to an European bean core collection were analysed for three morphologic quantitative (length, height and width) and 4 qualitative (shape, lighter colour, darker colour and coat pattern of seed) seed characters and for 4 AFLP primer combinations: E-AGT/M-GAC, E-AGT/M-GTA, E-ACC/M-AGA and E-ACC/M-ATG. A total of 138 polymorphic bands were scored among the 309 accessions analysed.

The European and the Mesoamerican gene pools had a number of common and very common AFLP polymorphic bands higher than the American and the Andean gene pools. The European accessions moreover were used for Structure and cpSSR analysis to identify pure and introgressed lines. These groups were compared for morphological traits and AFLP profiles. Results showed significant differences among diverse groups for morphological traits and for AFLP band frequencies, even though the diversity index were the same ($H_e = 0.23$).

Hypothesis of introgression among American and European, Mesoamerican and Andean gene pools are discussed.