

GENETIC DIVERSITY IN COWPEA (*VIGNA UNGUICULATA*) USING ISOZYME ELECTROPHORESIS

ETUDE DE LA DIVERSITE GENETIQUE CHEZ LA DOLIQUE (*VIGNA UNGUICULATA*) PAR ELECTROPHORESE ISOZYMATIQUE

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Cowpea [*Vigna unguiculata* (L)Walp] is an important crop in many countries of tropical Africa, Asia and South America. In Portugal it is a non-fertilized and a non-irrigated crop normally used as a cover crop for summer fallow ground. Crop vegetation and non-harvested pods are an important protein supplement for sheep grazing, which are in delivery phase at this time.

Twenty accessions of cultivated cowpea (*V. unguiculata* ssp. *unguiculata* cv. gr. *unguiculata*, cv. gr. *sesquipedalis* and cv. gr. *biflora*) from different countries were evaluated for isozyme variability. The zymograms were obtained by polyacrilamide gel electrophoresis (PAGE) using PhastSystem™.

Eight enzyme systems were studied. Leaf tissue was used when assaying for acid phosphatase (ACP), alcohol dehydrogenase (ADH), glucose 6 phosphate dehydrogenase (G6PDH), malate dehydrogenase (MDH), malic enzyme (ME), peroxidase (PRX) and superoxide dismutase (SOD). Seed tissue, imbibed in water until radicle emergence, was used for esterase (EST) and G6PDH.

Cowpea. accessions were characterised by very low genetic diversity. Accessions were monomorphic for almost all loci except for esterase enzyme system where some polymorphic loci were found. The comparative analysis of esterase zymograms made it possible to identify some of the accessions studied. However, cultivated groups *biflora* (the catjang) and *sesquipedalis* (the yard-long bean) could not be distinguished from cv. gr. *unguiculata* (cowpea).

Keywords : cowpea, *Vigna unguiculata*, cultivar groups, polymorphic loci, esterase