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MOLECULAR CHARACTERIZATION OF *OLEA EUROPAEA* L. CV. "ARBEQUINA" CULTIVATED IN CORDOBA PROVINCE (ARGENTINA) USING AFLP MARKERS

M. TORRES*, P. LABOMBARDA**, M.E. CACERES**, D. MAESTRI*, G. FONTANAZZA**

*) Instituto Multidisciplinario de Biología Vegetal (IMBIV), Consejo Nacional de Investigaciones Científicas y Técnicas-Universidad Nacional de Córdoba (CONICET-UNC), Cátedra de Química Orgánica, Facultad de Ciencias Exactas, Físicas y Naturales, UNC (Córdoba), Argentina
**) Istituto per i Sistemi Agricoli e Forestali del Mediterraneo Sezione Olivicoltura di Perugia, CNR (Perugia), Italia - plabombarda@yahoo.com

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The area of olive growing in Argentina is limited to Western and Centre regions of the country. In the later years, there has been a general trend of increased olive plantation in Argentina, and, at present, more than 40.000 ha of new olive trees are projected to be planted, most of which are being established away from the traditional olive production area.

Olive production of the Córdoba province is localized principally in the Cruz del Eje Department and the Traslasierra Valley. The predominant variety is "Arbequina", representing 70 % of the Córdoba patrimony. This variety has been intensively propagated in Córdoba province in the past since it is well adapted to climate conditions.

Argentinean cultivars have been maintained and propagated mainly vegetatively by cuttings using the plant material locally available. To face the present olive oil demands Argentinean olive orchards need to be renewed and restructured. The renewal of Argentinean olive orchards should be performed using certified olive trees of the selected Argentinean olive cultivars.Therefore, the analysis of genetic diversity is essential for the correct acquisition, maintenance and use of genetic resources.

The main objective of this study was to investigate and analyse genetic intra-cultivar diversity of 38 accessions of variety "Arbequina" by AFLP markers. The accessions were collected from Traslasierra Valley and Cruz del Eje location, Córdoba province, Argentina. Moreover, three "Arbequina" cultivars ("Arbequina - Argentina", "Arbequina – International" and "Arbequina – Spain") were included in the screeningand use as control. This material was provided by the collection of the Olive Research Institute, CNR, Perugia (Italy).

Only clearly polymorphic and reproducible bands were scored as markers: present = 1 or absent = 0. Genetic similarity was calculated using the Dice' index (1945). A dendrogram was constructed from the Dice' similarity data with NTSYS-PC software by unweighted pair-group means cluster analysis (UPGMA).

A reasonable number of scoreable bands per gel were obtained with the EcoRI/MseI primer combinations. The 19 primer combinations used to perform the AFLP analysis have produced a total 95 unambiguous bands.

The dendrogram shows a rather high variability within the cultivar examined and it is composed by six main clusters. The range of intravarietal similarity is from 0.88 to 0.95 among accessions studied.

The majority of accessions is included in the same cluster independently to the growing area. The “Arbequina - Argentina” and “Arbequina – International” cultivars were included in this last group while “Arbequina – Spain” cultivar was grouped in an other cluster together with the remainder accessions. Probably, this pattern suggests that the accessions of variety “Arbequina” may have developed genetically distinct clones over fifty years of cultivation. These clones would not necessarily show phenotypic differences and the molecular variability could be present within of them.

However, the results of the present study do suggest that there is some diversity among accessions, which can be used for selection of potentially superior clones for future olive improvement in the Córdoba province.