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**Poster Abstract – G.05**

# THE USE OF MICROSATELLITE MARKERS FOR THE CHARACTERIZATION OF ITALIAN OLIVE GERMPLASM

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*DNA, molecular markers, Olea europaea L., SSR, genetic diversity*

Olive (*Olea europaea* L.) is a species of great economic importance in the Mediterranean basin, where 95% of world production is concentrated. Among Mediterranean countries, Italy occupies a very important place in the olive industry. Italy is the main exported of olive oil in the world. The genetic patrimony of this country is very rich and is characterised by the abundance of varieties, most of them landraces vegetatively propagated at the farm level since ancient times. The existence of many varieties maintained by vegetative propagation reinforces the need of a reliable identification of varieties, for nurserymen and growers benefit as plant cost represents the major investment in the new orchards. At the same time, it is important to improve the *ex-situ* plant germplasm collection and adequately to characterise all accessions and to develop future breeding programs.

The Italian olive germplasm is estimated to include over 650 varieties and over 1300 synonyms, most of which are landraces vegetatively propagated at the farm level since ancient times. For years, the Consiglio per la Ricerca e Sperimentazione in Agricoltura - Istituto Sperimentale per l'Olivicoltura (C.R.A.-I.S.Ol.) of Rende in Cosenza, Italy, has made significant efforts in the individuation and collection of olive germplasms, generally within Italy. For each species, cuttings have been collected with the aid of local experts for successive propagation. During the second year following grafting, the plants were numbered using a unique code and placed in the varietal collection area localizated at Mirto-Crosia (CS). To date, over 450 Italian accessions have been collected.

In this work 125 olive tree of CRA-Experimental Institute for Olive Growing germplasm, were analysed by molecular markers, corresponding to the widespread olive germplasm of Italy. The olive trees were genotyped using nine nuclear SSR loci: GAPU59, GAPU71A, GAPU71B, GAPU103A, UDO01, UDO03, UDO12, UDO28 and UDO39. The nine SSR primers produced polymorphic amplification products in the cultivars studied. Dice's coefficient was used and the accessions were grouped by cluster analysis using the UPGMA method. A few cases of homonymy and presumable synonyms were identified.

This study allowed us to construct a molecular data-base for the reference collection and to analyse genetic diversity for further prospecting and for olive germplasm collection management.

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