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THE SPANISH EXPERIENCE (GESLIVE-IRTA) ON THE ENFORCEMENT OF PLANT VARIETY RIGHTS: DNA-FINGERPRINTING

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THE SPANISH EXPERIENCE (GESLIVE-IRTA) ON THE ENFORCEMENT OF PLANT VARIETY RIGHTS: DNA-FINGERPRINTING

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Microsatellite markers have provided a simple, highly efficient and robust DNA-based test for variety fingerprinting in clonally reproduced species that can be used in a variety of plant tissues including, but not limited to, leaf and fruit. Using a relatively low number of selected microsatellite markers, typically from 10-20, it is possible to identify all genotypes (varieties) of a given set, provided that they come from different events of sexual reproduction. The coincidence of the DNA-fingerprint of a sample problem with that of a variety allows concluding that the sample corresponds to this variety with an extremely high level of probability. This probability can be estimated based on the knowledge of the variation of such markers in a broad range of variability of the species under study. GESLIVE and IRTA signed an agreement in 2003 where IRTA would develop a database that will contain the DNA-fingerprints of all varieties from the vegetatively reproduced species of GESLIVE's associates. This database is now active for peach and nectarine, apricot, Japanese plum, cherry, strawberry, almond, carnation, citrus, grapevine, wheat, olive and rose. Samples of suspect plants sent by GESLIVE are analyzed by IRTA and compared with the database. If the sample fingerprint coincides with that of one of the varieties in the database, a possible infringement of the plant breeder's rights may have been detected. From 2003 until 2008, thousands of samples of different species have been analysed and some of them have provided crucial information used in court trials.

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