"ACTUALITES ŒNOLOGIQUES 2003"
VII^{ème} Symposium International d'Œnologie
Bordeaux 19-21 Juin 2003

GENETIC PROFILING OF MOLDAVIAN, CRIMEAN AND RUSSIAN CULTIVARS OF *VITIS VINIFERA* L. WITH NUCLEAR MICROSATELLITE MARKERS

François LEFORT[1], Marianna MASSA[1], Svetlana GORISLAVETS[2], Valentina RISOVANNAYA[2] & Leonid TROSHIN[3]

[1]Laboratory of Biotechnology and Applied Genetics, Ecole d'ingénieurs de Lullier, Haute Ecole Spécialisée de Suisse Occidentale, 150, route de Presinge, 1254 Jussy, Switzerland.
[2]Institut of Vine and Wine Magarach, 31 Kirov St. 98600 Yalta, Crimea, Ukraine.
[3]Viticulture Department, Kuban State University of Agriculture, 350044 Krasnodar, Kuban, Russia
E-mail : francois.lefort@etat.ge.ch

Microsatellite markers have been proved to be a useful tool for assessing genetic identities and genetic relationships between grapevine gene pools. Characterization of Moldavian, Russian and Crimean genetic resources of grapevine sources with the use of nuclear microsatellite nuclear markers is reported here for the first time.
The 52 Crimean and 27 Moldavian cultivars, included in this study, are conserved in the ampelographic collection of the Institute of Wine and Vines Magarach in Yalta, Crimea, Ukraine and represent a major part of the grapevine genetic resources from these provenances. Crimean cultivars are cultivars from the region of Crimea and not from other regions of Ukraine. The 24 Russian cultivars, are conserved in the new ampelographic collection of Russia, located at the University of Agriculture of the Kuban state in Krasnodar. Cultivars were selected as being potentially the most ancient cultivars cultivated in these regions, without prejudice of their native or foreign origin, since it could be likely for historical reasons that some Greek, Turkish or Caucasian cultivars would have been transmitted to these regions.
Genetic profiling of these cultivars was carried out with 9 nuclear microsatellite loci previously characterized: VVS2, ssrVrZAG21, ssrVrZAG47, ssrVrZAG62, ssrVrZAG 64, ssrVrZAG79, ssrVrZAG83, ssrVvUCH11 and ssrVvUCH29.
Heterozygosity was high and ranged between 0.71 and 0.93, though the estimated frequency of null alleles was surprisingly close to 0.05 at 2 loci VVS2 and ssrVrZAG79, which resulted from a slight excess of homozygous cultivars at these loci. The average heterozygosity was high at 0.80 and expressed an overall high genetic diversity, which was also expressed by a low average genetic similarity of about 37% as calculated from the distance matrix. Microsatellite profiling at 9 loci was powerful enough to discriminate 103 cultivars in 102 single identity profiles and only one pair of synonyms was found.
Allele sizing carried out in our laboratory was standardized with profiling results obtained at the same loci by other teams. This allowed to compare these Crimean, Moldavian and Russian grapevine cultivars with Western European and Greek genetic resources already characterized at the same loci. No synonyms were found between cultivars from these 3 provenances and 305 other cultivars from France, Greece, Switzerland and Albania when comparison were made at 8 loci out of nine.