GENETIC VARIABILITY AND BIODIVERSITY CONSERVATION OF AN
INDIGENOUS GRAPEVINE GERMPLASM COLLECTION: PERSPECTIVE
FROM NUCLEAR AND CHLOROPLASTIC SSR VARIATION

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We start a germplasm safeguard program of 19 grapevine varieties considered to be indigenous of North-Eastern Italy. To better estimate how genetic structure of local grapevine germplasm can be used to obtain a conservation perspective, genetic variability at 20 nuclear and three chloroplastic polymorphic microsatellite loci was examined in the autochthonous varieties and in seven European cultivars included as reference. The genetic profiles of all the cultivars were searched for possible parentage relationships and several cases of suspected synonyms were investigated.

A number of synonymous and homonymous varieties were found and three cases of parent/offspring relationships were singled out. The analysis of both nuclear and chloroplastic SSR polymorphisms showed that indigenous varieties present rare alleles and haplotypes absent in the international ones.

Chloroplastic specific haplotypes were pointed out for the first time in this indigenous germplasm and should be considered typical of North-Eastern Italy. The presence of many specific haplotype for the local varieties due to past contribution of wild grapevine to the gene pool of cultivated grapevine can be hypothesized. Moreover, most of local cultivars were demonstrated constituting an independent source of genetic variation, and therefore a valuable source of genetic traits for grapevine breeding. Our results can be helpful for the efficient selection of parents in grapevine breeding programs and identification of duplicates and core populations of the local gene pool for the effective conservation and management of the germplasm.