3128 - Plant Genetic Resources

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GENETIC ANALYSIS OF ´MOSCATO BRANCO´AND OTHER MUSCAT GRAPES HELD BY THE GRAPE GERMPLASM BANK IN BRAZIL

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ObjectivesAmong muscat grapes grown in Brazil, stands out the cultivar ?Moscato Branco', also called ?Moscato Italiano'. The origin of this grape is not known. Preliminary ampelographic studies indicate that there is no definition of its identity with any of the aromatic grape varieties described in Italian viticulture.The objective of this study was to estimate the genetic diversity of muscat grape accessions maintained by Brazilian Grape Germplasm Bank (GGB) with the use of microsatellite markers, focusing on the differentiation of ?Moscato Branco' from the other muscat grapes.MethodologyA sample of 44 muscat grapes was selected for this study, including cultivars for fresh consumption and processing worldwide, in addition to ?Moscato Branco'.Seventeen polymorphic SSR markers were selected for DNA polymorphism analysis. DNA fragments were amplified by PCR, separated and visualized by silver stained polyacrylamide gel electrophoresis. Genetic parameters such as allelic variation, heterozygosity (Ho) and Polymorphic Information Content (PIC) were estimated, as well as the probability of Genetic Identity (PID) between samples presenting the same genetic profile in this group of muscat grapes.Pairwise genetic similarity was estimated by the ?band' coefficient. Cluster analysis (UPGMA) resulted in a dendrogram, which allowed the observation of the genetic relationships among accessions.ResultsThe markers selected have high levels of PIC and Ho, with a few exceptions. The average Ho of the 44 muscat grapevine was 0.57.The accessions 'Italia', 'Ruby' and 'Ruby Okuyama' presented the same genetic profile and could not be distinguished from each other with the set the molecular markers selected for analysis (PID=1.31 x10-14). The accession 'Ruby' is a known somatic mutation of 'Italy', differing from it by the color of the berry, while 'Ruby' and 'Ruby Okuyama' are duplicates of the same accession with different common name.Most interestingly, ?Moscato Branco' presented an unique genetic profile, and could be differentiated from all muscat accession tested, including cultivars such as 'Italy' and its mutations, 'Moscato Branco R2', 'Moscato Giallo', 'Moscato de Hamburgo', 'Moscato de Alexandria' and the 'Malvasia' accessions.ConclusionsDNA polymorphism analysis at microsatellite loci allowed the identification of duplicates in the grape collection and indicated that ?Moscato Branco' can be readily differentiated from the other muscat grapes conserved by GGB.