



COMPARATIVE AGRONOMICAL, PHENOLOGICAL AND MOLECULAR ANALYSES BETWEEN THE GRAPE VARIETY 'MOSCATO BRANCO' AND ACCESSIONS OF BRAZILIAN AND FRENCH GRAPE GERMPLASM BANKS

Alexandre Magalhães Martins¹; Liamar Maria dos Anjos¹; Paula Longhi²; João Dimas Garcia Maia²; Jean-Michel Boursiquot³; Delphine Legrand⁴; Mauro Celso Zanusi²; Jorge Tonietto²; Márcio Elias Ferreira¹; Patricia Ritschel^{2*}

¹Embrapa Genetic Resources and Biotechnology, Brasília, DF; ²Embrapa Grape and Wine, Bento Gonçalves, RS; ³Montpellier SupAgro, UMR AGAP, Montpellier, France; ⁴UMT Geno-Vigne, IFV Montpellier, France.

*E-mail: patricia.ritschel@embrapa.br

Key words: microsatellite markers – Next Generation Sequencing – muscat – *Vitis vinifera*

The Brazilian Grape Germplasm Bank (BAG-Uva) maintains a representative collection of grape varieties, including accessions of muscat grapes. 'Moscato Branco' is one of the most planted muscat varieties in Brazil, especially in the municipality of Farroupilha, State of Rio Grande do Sul, which concentrates more than 50% of the muscat production in the country. Also known as 'Moscato Italiano', the origin of 'Moscato Branco' is not known, although it has been described in Brazil in the 1930's. Preliminary ampelographic data suggested that 'Moscato Branco' would be a variety with expressive commercial cultivation restricted Brazil since no accession with similar traits has so far been identified in a collection of Italian grapes. The purpose of this study was to compare the agronomic and phenological features of 'Moscato Branco' with other muscato grapes maintained in the BAG-Uva (Embrapa). Also, multiplex panels of microsatellite markers were used to test the genetic identity of 'Moscato Branco' with 636 accessions of BAG-Uva and with 4.370 accessions of the French grape germplasm collection, making it possible to establish genetic relations between tested accessions. The results indicated that 'Moscato Branco' presents a unique genetic profile, different from 'Muscat Blanc', 'Moscato Giallo', 'Moscato de Hamburgo' and 'Moscato de Alexandria'. Its DNA fingerprinting is also different from accessions of the 'Malvasia' group, as well as 'Italia' and its sports. Further analysis indicated that accessions 'Moscato de Alexandria' and 'Almafra' had probably taken part in the 'Moscato Branco' pedigree. 'Moscato Branco' is a variety with a great commercial importance in Brazil but not described in Germplasm Banks of traditional grape producing countries. 'Moscato Branco', therefore, can be considered a symbol of the Brazilian viticulture. The sequencing of the 'Moscato Branco' genome using NGS (Next Generation Sequencing) technology was initiated with the purpose of increasing the knowledge about its genome and aiming the development of molecular tools to support research on grape breeding and genetics.

Acknowledgement: Ministry of Agriculture, Livestock and Food Supply.