



## **Incidence of five viruses in grapevines for wine cultivated in the Brazilian Semi-arid region**

**Hugo Leonardo Coelho Ribeiro<sup>1</sup>, Alícia Lie de Melo<sup>2</sup>, Nataniel Franklin de Melo<sup>3</sup>**

<sup>1</sup>*Programa de Pós-Graduação em Recursos Genéticos Vegetais, Universidade Estadual de Feira de Santana, Av. Transnordestina, s/n - Novo Horizonte, 44036-900, Feira de Santana, BA, Brazil*

<sup>2</sup>*Curso de Engenharia Agrônômica, Universidade Federal do Vale do São Francisco, Avenida José de Sá Maniçoba, 56304-917, Petrolina, PE, Brazil*

<sup>4</sup>*Embrapa Semiárido, BR-428, km 152, Caixa Postal 23, 56302970, Petrolina, PE, Brazil*

*E-mail: nataniel.melo@embrapa.br*

The objective of this study was to examine the incidence of five viruses in grapevines for wine in the sub-medium São Francisco river valley, the main tropical wine producing region in Brazil. A total of 94 samples were collected in municipalities of Bahia and Pernambuco states for cultivars Alicante Bouschet, Cabernet Sauvignon, Merlot, Moscato Canneli, Syrah and Seibel. The analysis was carried out using a double-antibody sandwich enzyme-linked immunosorbent assay (DAS-ELISA) with polyclonal antisera against *Grapevine leafroll-associated virus-3* (GLRaV-3), *Grapevine virus A* (GVA), *Grapevine fleck virus* (GFkV), *Grapevine leafroll-associated virus 1* (GLRaV-1), and *Grapevine fanleaf virus* (GFLV). GLRaV-3 detection was also carried out using reverse transcription polymerase chain reaction (RT-PCR). Viral infections were detected in 88.3% of the examined samples. It was found that 25% of the Alicante Bouschet grapevines, 96.2% of Cabernet Sauvignon, 84.4% of Syrah and 100% of Moscato Canneli, Merlot and Seibel were positive for one or more of the tested antisera. Among the samples examined, 56 showed infection with GLRaV-3, 27 samples were infected with GLRaV-3 and GLRaV-1 or GLRaV-3 and GFkV, and 11 samples were not infected with any of the tested virus. All the infected wine grapevines were infected with GLRaV-3, with a mixed infection with GLRaV-1 or GFkV for the cultivars Alicante Bouschet and Syrah, and Cabernet Sauvignon and Moscato Canneli, respectively. The high percentage of positive samples detected in these areas suggested that the dissemination of these pathogens probably occurred because of infected propagative material, which is a very efficient dissemination mechanism for grapevine viruses. Until now, there is no occurrence of vectors for virus dissemination in this region.

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