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Integrated Control of Noxious Animals and Plants**
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Intégrée contre les Animaux et les Plant Nuisibles**
Section Régional Ouest Paléarctique



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Brazilian ground pearl *Eurhizococcus brasiliensis*: bioecology and management in vineyards

Marcos Botton, Aline Nondillo, Odair Bueno e Vania Sganzerla

Embrapa Grape and Wine. Livramento St 515. P.O. Box 130. 95700-000. Bento Gonçalves, RS, Brazil. Centro de Estudos de Insetos Sociais, Instituto de Biociências, São Paulo State University (UNESP), Rio Claro, São Paulo, Brazil

Abstract: Brazilian ground pearl (BGP) *Eurhizococcus brasiliensis* (Wille, 1922) (Hemiptera: Margarodidae) is one of the major grape pests occurring in the country. BGP is a soil scale native to southern Brazil and its immature stage feeds on the roots of more than 80 species of plants. Scale reproduction is mainly by parthenogenesis with one generation per year, producing crawlers from November to March. Infested plants show a gradual decline in vigor that becomes more severe with time. Plant decline and death are the result of scale sap suction in the roots. Shoots become shorter and thinner, with smaller leaves, followed by death of the cordons, finally the entire vine dies. The duration of this process varies but vines can be killed within four years. Great economic hardship occurs in the vineyards where growers must abandon grape cultivation and move to new areas free of the pest. Scale spread occurs mainly associated with the roots of host plants and machinery used in infested fields. After contamination in the field, pest dispersion usually starts in patches that gradually become larger because of the migration of nymphs in the soil. This movement is assisted by *Linepithema micans* (Forel, 1908) (Hymenoptera: Formicidae) which tend nymphs, helping the pest to colonize new roots. Measures to reduce BGP damage are difficult to implement because of scale polyphagy, subterranean development, an apodous feeding nymphal instar called a cyst and the defensive strategy of constructing a separate protective layer around their body from their own liquid excreta. Current pest management techniques are based mainly on cover crop management inside vineyards to reduce pest dispersal and application of neonicotinoids (imidacloprid and thiamethoxan) insecticides. Rootstock resistance like VR 43-43 and VR 39-16 (*V. rotundifolia* x *V. vinifera*) are showing promising results in some areas however, they are susceptible to some soil fungi like *Cylindrocarpon*, reducing the potential of success of this strategy. New crossings and trials using *V. rotundifolia* as the source of resistance are being conducted.

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