



Response to powdery and downy mildew of varieties with disease resistance genes (PIWI)

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Erysiphe necator and *Plasmopara viticola* are the causal agents of powdery and downy mildew on grapevines, leading to significant economic losses. Numerous chemical treatments are applied to control these diseases, leading to environmental problems and the appearance of resistance to these products. Therefore, the study of new strategies to achieve the objectives of sustainable development is a priority. In this sense, the use of new varieties resistant to these diseases may be an option of interest. The objective of this work was to analyze the degree of resistance of 9 varieties with downy mildew resistance genes (*Rpv3* and/or *Rpv12*), four of which also carry a powdery mildew resistance gene (*Ren 1*) by in vitro inoculation assays. Young leaves previously sterilized were inoculated with a vacuum tower. Fungal development was evaluated on a scale from 1 to 5, seven and 14 days after inoculation. At 7 days, mycelium growth, without development of conidiophores, was observed in all varieties, with Eidos having the highest incidence. At 14 days, none of the varieties reached a scale of 4, except Mazuelo (used as standard). The highest incidence was recorded in the Volos variety. Preliminary trials on downy mildew also showed differences in resistance to attack by *P. viticola*, with Kretos having the highest incidence of the disease, but further trials will be conducted to validate these data. These results reveal that these varieties may be an alternative in order to reduce the number of spray applications to control the fungus.

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