

## ***SCAPHOIDEUS TITANUS* FEEDING BEHAVIOR ON GRAPEVINE CULTIVARS WITH DIFFERENT SUSCEPTIBILITY TO FLAVESCENCE DORÉE**

RIPAMONTI M.\*\*\*, MARON F.\*, CORNARA D.\*\*\*, FERERES A.\*\*\*\*, BOSCO D.\*

\*) University of Turin, Department of Agriculture, Forest and Food Sciences, Grugliasco (Italy)

\*\*) Institute for Sustainable Plant Protection, National Research Council of Italy, Torino (Italy)

\*\*\*) CIHEAM, Istituto Agronomico Mediterraneo di Bari, Italy; 4 Instituto de Ciencias Agrarias, Consejo Superior de Investigaciones Científicas, Madrid (Spain)

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Flavescence dorée (FD) is a quarantine pest of grapevine spread in most European viticultural countries. The aetiological agent is a phytoplasma (FDp) belonging to group 16Sr–V. Even if FDp is indigenous of the Palearctic region, it was not epidemic in Europe until the fortuitous introduction of the leafhopper *Scaphoideus titanus* from North America, that transmit the pathogen from vine to vine. Since its introduction, *S. titanus* has become the most efficient vector to cultivated grapevines, due to its monophagy on *Vitis*. To control FDp-vector, insecticide applications are largely used, and there is the need of developing more sustainable approaches. A promising tool to contain FDp spread is the use of resistant or tolerant grapevine varieties, whose resistance can be either due to plant response to phytoplasmas or to the vector. With the aim of identifying grapevine tolerance to the vector, feeding behavior of *S. titanus* on vine cultivars characterized by different susceptibility to FD was evaluated using electropenetrography (EPG). Remarkably different feeding behaviors were identified with this technique among the different cultivars. In particular, no differences were found in non-probing time, nor in total probing time among varieties, while total time spent in phloem resulted significantly higher in the susceptible cultivar. These results suggest that grapevine cultivars sustaining long phloem feeding of *S. titanus* are the most susceptible to FDp, which is a phloem-limited pathogen. Interestingly, phloem interruptions (salivation-related) periods were consistently more frequent in the tolerant cultivar, suggesting a disturbed phloem-phase. The results indicate a lower phloem-acceptability in the tolerant varieties, suggesting the presence of repellent compounds in the phloem. The identification of these compounds may open the way to introduce resistance by breeding or cisgenesis, thus contributing to a sustainable viticulture.