The apple mealybug, Phenacoccus aceris, is a vector of several grapevine-infecting viruses
Jean Le Maguet, Etienne E. Herrbach, Gerard Hommay, Monique M. Beuve, Olivier O. Lemaire

To cite this version:
Jean Le Maguet, Etienne E. Herrbach, Gerard Hommay, Monique M. Beuve, Olivier O. Lemaire. The apple mealybug, Phenacoccus aceris, is a vector of several grapevine-infecting viruses. XII ISSIS Conference, Apr 2010, CRETE, Greece. pp.XII ISSIS Conference, 2010. hal-02822479

HAL Id: hal-02822479
https://hal.inrae.fr/hal-02822479
Submitted on 6 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
THE APPLE MEALYBUG, *PHENACOCCUS ACERIS*, IS A VECTOR OF SEVERAL GRAPEVINE-INFECTING VIRUSES.

Jean Le Maguet*, Etienne Herrbach, Gérard Hommay, Monique Beuve, and Olivier Lemaire.
Institut National de la Recherche Agronomique, UMR 1131 INRA-UDS ‘Santé de la Vigne et Qualité du Vin’, 68021 COLMAR, France. * jean-le-maguet@colmar.inra.fr

*Phenacoccus aceris* (Signoret) (Hemiptera, Pseudococcidae) is a common holarctic, polyphagous, tree-infesting mealybug that also infests grapevines in wine-growing areas in the north-east of France. Many grape viruses are naturally vectored by mealybugs or scale insects. Following the findings that *P. aceris* is able to transmit *Grapevine leafroll-associated virus* 1 and 3 (GLRaV-1 and -3, Ampelovirus, Closteroviridae, agents of leafroll disease of grapevine) from vine to vine, field monitoring and virus transmission experiments were carried out in order to assess the vector specificity of *P. aceris*.

Transmissions experiments on vine under laboratory conditions confirmed that *P. aceris* is a vector of GLRaV-1 and GLRaV-3. Moreover, an epidemiological survey of GLRaV-1 in a newly planted vineyard which had been certified to be GLRaV-free, proved that *P. aceris* was responsible for the rapid dispersion of leafroll into the studied plot from older bordering vineyards.

Moreover, we showed for the first time that *P. aceris* is an efficient vector of two other *Ampelovirus* species, GLRaV-5 and GLRaV-9 and of two *Vitivirus* (Flexiviridae) species, *Grapevine virus A* and *B* (GVA and GVB).

Understanding the transmission efficiency of *P. aceris* is essential for the global study of the field spread of leafroll viruses and for the developement of strategies to protect vineyards against mealybugs.