



# Genetic and functional characterization of the peach - *Myzus persicae* interaction: towards breeding for durable resistance within integrated orchard management

Marie-Hélène Sauge, Thierry Pascal, Jocelyne Kervella, Jean Philippe Lacroze, Marie Noëlle Corre, Frédéric Pfeiffer, Isabelle Grechi, Francoise F. Lescourret, Annick Moing, Christel Renaud, et al.

## ► To cite this version:

Marie-Hélène Sauge, Thierry Pascal, Jocelyne Kervella, Jean Philippe Lacroze, Marie Noëlle Corre, et al.. Genetic and functional characterization of the peach - *Myzus persicae* interaction: towards breeding for durable resistance within integrated orchard management. Organisation Internationale de Lutte Biologique (OILB)- Section Régionale Ouest paléarctique - Groupe de travail protection intégrée en vergers, Sep 2006, Balandran, France. 1 p. hal-02822415

HAL Id: hal-02822415

<https://hal.inrae.fr/hal-02822415>

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.

# **Genetic and functional characterization of the peach-*Myzus persicae* interaction: towards breeding for durable resistance within integrated orchard management**

**Marie-Hélène Sauge<sup>1</sup>, Thierry Pascal<sup>2</sup>, Jocelyne Kervella<sup>2</sup>, Jean-Philippe Lacroze<sup>1</sup>, Marie-Noëlle Corre<sup>2</sup>, Frédéric Pfeiffer<sup>1</sup>, Isabelle Grechi<sup>1</sup>, Françoise Lescourret<sup>1</sup>, Annick Moing<sup>3</sup>, Christel Renaud<sup>3</sup>, Monique Gaudillère<sup>3</sup>, Jean-Luc Poëssel<sup>2</sup>**

<sup>1</sup>*Plantes et Systèmes de culture Horticoles and* <sup>2</sup>*Génétique et Amélioration des Fruits et Légumes, INRA, Domaine Saint Paul, Site Agroparc, F-84914 Avignon cedex 9, France,* <sup>3</sup>*UMR Physiologie et Biotechnologie Végétales, INRA/Universités Bordeaux 1 et 2, BP 81, F-33883 Villenave d'Ornon cedex, France*

**Abstract:** Integrated production of fruit and vegetable species is one major field of research at Avignon INRA centre. Breeding for durable resistance to the green peach aphid, *Myzus persicae* (Sulzer) and other enemies of peach crop (*Prunus persica* L. Batsch) has been initiated fifteen years ago. Several sources of resistance are available among wild and domesticated peaches. Because all resistance genitors used in these programmes are of poor agronomic value, improvement of fruit quality is a long-lasting process. In order to avoid the erosion of the level of plant resistance during this process, the detailed analysis of the underlying mechanisms was undertaken. Here, we present some aspects of the work carried out on the genetic and physiological mechanisms of peach resistance to *M. persicae*. In addition to the analysis of the plant-aphid interaction under the influence of plant genetic factors, the effects of technical operations, such as winter pruning or nitrogen fertilization, on the aphid population dynamics are being investigated. Varietal resistance combined to cultural practices can be considered as an ultimate strategy to increase the efficacy of aphid control in orchards.

**Key words:** green peach aphid, peach leaf curl, powdery mildew, sharka disease, host plant resistance, major gene, QTL, cultural practices, nitrogen fertilization

Sauge M.H., Pascal T., Kervella J., Lacroze J.P., Corre M.N., Pfeiffer F., Grechi I., Lescourret F., Moing A., Renaud C., Gaudillère M., Poëssel J.L., 2006. Genetic and functional characterization of the peach-*Myzus persicae* interaction : towards breeding for durable resistance within integrated orchard management. OILB, Organisation Internationale de Lutte Biologique, Section Régionale Ouest Paléarctique, Groupe de travail Protection intégrée en vergers, Workshop on Integrated plant protection in stone-fruit orchards, Ballandran (FRA), 2006/09/02-04 (Communication orale)