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Claude Eric Parveaud, Johanna Brenner, Sophie-Joy Ondet, Christelle Gomez, Gilles Libourel, François Warlop, Laurent Brun, Vincent Mercier, Guy Clauzel, Jean Marc Audergon

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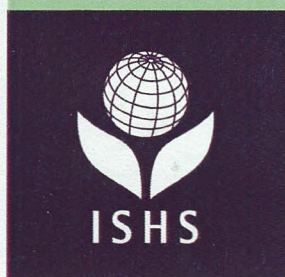
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ASSESSMENT OF DISEASES SUSCEPTIBILITY OF PEACH CULTIVARS IN EXPERIMENTAL PLOTS AND ON-FARM FOR ORGANIC AND LOW-INPUT SYSTEMS. BASELINE OF FRENCH CASE STUDIES

Claude-Eric Parveaud [1], Johanna Brenner [1], Sophie-Joy Ondet [1], Christelle Gomez [1], Gilles Libourel [1], François Warlop [1], Laurent Brun [2], Vincent Mercier [2], Guy Clauzel [2], Jean-Marc Audergon [3].

[1] GRAB, 84 911 Avignon Cedex 9, France ; [2] INRA UERI Gotheron, F-26320 St-Marcel-Lès-Valence; France ; [3] INRA GAFL Avignon, 84143 Montfavet Cedex, France

The choice of the cultivar is one of the keystones to reduce pesticide input in peach orchards. Breeders have selected peach cultivars that have mainly been assessed on yield and fruit quality in conventional farming systems. The disease susceptibility was not considered as a key criterion. Despite a great turn-over of new peach cultivars, their suitability for organic and low-input systems remains unknown for most of them.

A first program has been carried out from 2001 to 2008 in order to assess peach leaf curl, powdery mildew and aphid susceptibilities of 28 cultivars in a farm network and experimental stations. A high variability of leaf curl and powdery mildew susceptibilities was observed among the cultivars. In 2009, the two most promising cultivars have been included in a second assessment program among 10 other cultivars. A randomized experimental plot design took into account the spatial distribution of the disease pressure. The variability of peach leaf curl susceptibility between cultivars was strongly influenced by the disease pressure. Since 2011, susceptibility to peach leaf curl, aphids, blossom and Coryneum blight of 10 established peach cultivars has been assessed in a network of commercial organically farmed plots. Methodological considerations include the interaction between disease epidemiology, design and management of the orchard and the observed cultivar responses to specific pathogens. The potential and limits of farmers' implication in cultivar assessment is discussed.

Keywords: cultivar susceptibility, fruit quality, *Taphrina deformans, Monilia sp., Sphaerotheca pannosa var. persicae*, organic farming.