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The Grand Est region is the leading French region for the production of damson (*Prunus domestica* subsp. *insititia*) and mirabelle (*Prunus domestica* subsp. *syriaca*) plums. Damson production is threatened by sharka, caused by the plum pox virus (PPV) spreading in this region, and control measures based on visual inspection and removal of symptomatic trees are implemented in orchards. In contrast, only very few symptoms have been reported on mirabelle leaves and fruits. Therefore, sharka is generally not surveyed on this species, despite the lack of scientific evidence on the susceptibility of mirabelle to the main PPV strains (M, D and Rec) and on its potential role in sharka epidemics occurring in the Grand Est region.

We combined orchard surveys with experimental assays under controlled conditions to (i) estimate PPV prevalence in mirabelle orchards and (ii) evaluate the susceptibility of two mirabelle cultivars (P1725 and P1510) to PPV-M, PPV-D and PPV-Rec isolates after graft- and aphid-inoculation in comparison with a susceptible damson cultivar (P3066).

PPV presence was assessed by DAS-ELISA in 7102 leaf samples collected from 4481 trees in 53 mirabelle orchards. PPV was detected in 15% of the orchards, but the overall prevalence was very low (1.7%). The virus was detected mainly in rootstock suckers (2.6%) and occasionally in asymptomatic mirabelle leaves (0.25%).

Experiments showed that both of the tested mirabelle cultivars were susceptible to the three main PPV strains regardless of the inoculation method, with typical PPV symptoms on leaves. Key parameters of the infection cycle (transmission rate to test plants, incubation period, viral load, and retransmission rates by aphids from PPV-infected plants) showed that the susceptibility of the mirabelle cultivars is lower than that of the damson cultivar and depends on the PPV strain. Apparent discrepancies between survey and experimental results are discussed.

Key words: mirabelle plum, prevalence, disease control