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In vitro micrografting of different *Prunus* species with two cherry-adapted strains of *Plum pox virus*

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Two strains of *Plum pox virus* (strains PPV-C and PPV-CR, respectively) are known to naturally infect cherries. To overcome the slow and irregular growth of woody plants, micropropagation constitutes the most efficient multiplication way. In this work, in vitro micropropagation protocols for domestic plum (*Prunus domestica* 'St. Julien'), sweet cherry (*Prunus avium*) and sour cherry (*Prunus cerasus*) were optimised. In vitro plantlets obtained in this way were inoculated with *in vitro*-maintained PPV-C (the BY101 isolate) and PPV-CR (RU-63sc) infected sources using micrografting under aseptic conditions. The effectiveness of systemic infection and infection rates were subsequently assessed by DAS-ELISA and specific RT-PCR. Moreover, the possible aminoacid changes in the RU-63sc polyprotein after the passage from cherry to plum host was analysed by partial sequencing of the P1-HC-P3 genomic part. The results showed that all tested genotypes could be infected by PPV-C and PPV-CR, however, the viability of virus was affected by long-term in vitro maintenance, thus requiring a thorough monitoring of virus presence in infection sources. Our experiments showed that *in vitro* micrografting might allow a fast, inexpensive and environmentally and phytosanitary safe evaluation of fruit genotype resistance to the target viruses.

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