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# Roots of plum rootstocks are relevant matrices for early plum pox virus detection

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Sharka disease is caused by plum pox virus (PPV) which can induce latent infections lasting several months during which the virus is undetectable in the aerial parts of prunus plants. Early detection of PPV has been shown to be feasible in the roots of latently infected peach seedlings and rootstocks. The present work aimed to study early PPV detection in prunus roots of newly inoculated plum rootstocks using an optimized real-time RT-PCR test.

Two years old (*Prunus salicina* Lindl. x *P. cerasifera* Ehrh.) x *P. spinosa* L. 'Jaspi® Ferley' and *Prunus cerasifera* Ehrh. 'Myrobalan B' plants were graft-inoculated with one isolate of PPV-D (2x20 plants/rootstock, in independent experiments) and grown in a containment facility mimicking seasonal conditions. PPV detection analyses were performed: (i) 3 weeks post-inoculation (wpi) before winter, on leaves by real-time RT-PCR; (ii) in the late-winter phase before bud break (17 to 18 wpi), on roots using the optimized real-time RT-PCR test ; (iii) in the spring phase (22 to 26 wpi), on leaves by ELISA. For Myrobalan B plants, buds were also sampled at the same time as the roots and tested by real-time RT-PCR.

Analyses performed in phases (ii) and (iii), either on roots and/or leaves of living inoculated plants (n=78), evidenced a 100% efficiency in the inoculation procedure. While all living plants tested negative before winter, PPV was detected in the roots of 97.5 % (39/40) of the Jaspi® Ferley and 87% (33/38) of the Myrobalan B plants. At the same time, only 8 % (3/38) of the buds sampled tested positive for PPV. These results demonstrate that roots rather than buds of recently infected plants could be used for early PPV detection, especially in nurseries.

Keywords: PPV, roots, early-detection, graft-inoculation

Poster presentation