Share

Subscribe ...

Free alerts RSS



About the cover for August 2017

ISSN: 0191-2917 e-ISSN: 1943-7692

**SEARCH** 

Enter Keywords

MPMT

Phytobiomes

Phytopathology Plant Disease

search Advanced Search

Resources

Subscribe

About Plant Disease

First Look

Most Downloaded Articles

Journals Impact

Submit a Manuscript

**Customer Care** 

About My Password

Rights and

Plagiarism and Ethics

Advertise

e-Xtra

Open Access

ORCID Registry

## plant disease

Editor-in-Chief: Alison E. Robertson Published by The American Phytopathological Society

Home > Plant Disease > Table of Contents > Full Text HTML Previous Article | Next Article

August 2017, Volume 101, Number 8 Page 1557

https://doi.org/10.1094/PDIS-01-17-0074-PDN

**DISEASE NOTES** 

## First Report of *Little cherry virus 1* affecting European Plum (Prunus domestica) in Belgium

R. Tahzima, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Plant Sciences Unit, Merelbeke, Belgium and Université de Liège (ULg) Gembloux Agro-Bio Tech, Department of Plant Pathology, Gembloux, Belgium; Y. Foucart, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Plant Sciences Unit, Merelbeke, Belgium; G. Peusens, T. Beliën, Proefcentrum Fruitteelt (pcfruit), Department of Zoology, Sint-Truiden, Belgium; S. Massart, Université de Liège (ULg) Gembloux Agro-Bio Tech, Department of Plant Pathology, Gembloux, Belgium; and K. De Jonghe, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Plant Sciences Unit, Merelbeke, Belgium.

Citation

Open Access.

Little cherry disease (LChD), one of the major viral diseases of cherry worldwide, can be caused by two viruses (Little cherry virus 1 and 2), both Closteroviridae members. LChD has an important impact on both yield and fruit quality in commercial sweet and sour cherry (Prunus avium L. and P. cerasus L.) (Ruiz-Garcia et al. 2016). LChV-1 (genus Velarivirus) is known to be graft-transmissible and is spread via infected propagated plant material, but no vector has been identified. For LChV-2 (genus Ampelovirus), at least two species of mealybugs (Hemiptera, Pseudococcidae) are known to transmit the virus, namely the apple mealybug (Phenacoccus aceris Signoret) and grape mealybug (Pseudococcus maritimus Ehrhorn). During two growing seasons (2013-15), intensive surveys were conducted in Belgium to monitor the incidence of LChD in sweet and sour cherries and in ornamental Prunus spp., revealing widespread occurrence of both LChV-1 and 2 (De Jonghe et al. 2016). In the close vicinity of a sweet cherry (P. avium cv. Coralise) orchard with an infection rate of 30% with LChV-1, plum (P. domestica L. cv. Opal) trees growing at the edge of a plum orchard and showing sporadic undetermined leaf symptoms such as premature leaf reddening and chlorosis were observed and sampled. RNA of leaves and roots collected from 50 plum trees was extracted using the Spectrum Total Plant RNA kit (Sigma-Aldrich, Machelen, Belgium) and tested using RT-PCR with LChV-1 specific primers as follows: LCUW7090 (5'-GGTTGTCCTCGGTTGATTAC-3')/LCUWc7389 (5'-GGCTTGGTTCCATACATCTC-3')

**Quick Links** 

Add to favorites

E-mail to a colleague

Alert me when new articles cite this article

Download to citation manager

Related articles found in APS Journals



See more details





**Article History** 

Issue Date: 13 Jul 2017 Published: 15 May 2017 First Look: 11 Apr 2017 Accepted: 5 Apr 2017



**FOCUS ISSUE** 

Epidemiolog

Past, Present, and



REGISTRATION IS

ORCID is an open, non-profit, community driven organization

Your ORCID iD ensures you get credit for your work throughout your career.



(Bajet et al. 2008), amplifying a 300-bp fragment spanning the ORF1b encoding the RNA dependent RNA-polymerase (RdRp) gene and 1LC\_12776F (5'-TCAAGAAAAGTTCTGGTGTGC-3')/1LC\_13223R (5'-CGAGCTAGACGTATCAGTATC-3') (Nagyova et al. 2015), targeting a 456bp fragment of the coat protein (CP) gene. The presence of LChV-1 was confirmed in 12% of the samples. Bidirectional sequencing (Macrogen, Amsterdam) was done for each LChV-1 amplicon. BLAST searches of the assembled sequences revealed a distinct variability between the Belgian plum and cherry isolates (8% and 6% divergence in the amplified RdRp and CP sequences, respectively) from the respective adjacent orchards, suggesting separate introduction events. RdRp gene sequences of the Belgian plum isolates (GenBank accession nos. KY173002 and KY173004) shared 99% identity with the Greek cherry (HG792418) and peach isolates (HG792399), while the Belgian cherry isolate (KY173001) showed 99% homology with the deposited RdRp gene sequences of the Greek cherry (HG792420, HG792398). Partial CP gene sequence of the Belgian plum isolates (KY173006, KY173008) were the closest to Italian ITMAR (EU715989) and German V2356 (JX669615) cherry isolates, sharing 96% and 94% identity, respectively. Further investigation is in progress to assess the importance of LChV natural host shift among Prunus spp., its epidemiology in propagation material, and its association with potential vectors. To our knowledge, this description of LChV-1 associated with P. domestica constitutes the first report in Belgium.

1	Understanding Disease Dynamics and Improving Plant Disease Management  Phytopathology
	WHITE PAPER Foundational and Translational Research Opportunities to

Improve Plant Health

Molecular Plant-Microbe Interactions

Read Article Comments

## References:

**Bajet, N.B.**, et al. 2008. Plant Dis. 92:234. https://doi.org/10.1094/PDIS-92-2-0234. **De Jonghe, K.**, et al. 2016. Occurrence and variability of *Little cherry virus* in Belgium. Poster, International Plant Virology Epidemiology Symposium, Avignon, France.

Section:

Choose

**Nagyova, A.**, et al. 2015. Page 48 in: Hot Topics in Microbiology. Czechoslovak Society for Microbiology, Štrbské Pleso, Slovakia.

**Ruiz-Garcia, A. B.**, et al. 2016. Plant Dis. 100:2340. https://doi.org/10.1094/PDIS-05-16-0620-PDN. [Abstract] [ISI]

## Citation

Journals Home | Books Home | APS Home | IS-MPMI Home | Contact Us | Permissions | Privacy | Copyright The American Phytopathological Society