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## The Journal of Plant Pathology Editors' Choice August 2020

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# UNIVERSITÀ DEGLI STUDI DI TORINO

***This is an author version of the contribution:***

*Questa è la versione dell'autore dell'opera:*

*[Garbelotto M. et al. 2020, Journal of Plant Pathology, 102:641–642]*

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## The Journal of Plant Pathology Editors' Choice August 2020

We are pleased to introduce seven papers selected for the Editors' Choice section of the current issue of the Journal of Plant Pathology. The topics covered by these papers are impressive in range and diversity. A review of viral agents serves as a prelude to discuss the pros and cons and operational shortcomings of grapevine disease management options; a simple but effective PCR assay allows to identify co-infection by two viruses in citrus; a worldwide germplasm depository proves an invaluable resource for a common garden study providing useful results to olive growers; imported fruits are identified as an international pathway of introduction of citrus canker; a novel mechanism of fungicide resistance in plants is described; an entire proteome is studied providing insights on mechanisms of plant pathogen interactions, and, finally, a paper suggests dodder may provide a novel approach for the control of invasive plants. The studies selected were conducted in six countries from different continents, emphasizing the importance of international research for the advancement of Plant Pathology. Here are the Editors' Choice selections in detail.

The timely review titled "Grapevine viruses: A multitude of diverse species with simple but overall poorly adopted management solutions in the vineyard" by Marc Fuchs (USA) not only represents a must-read resource regarding the 86 viruses known to affect grapevines worldwide, but additionally provides insights on the promises and pitfalls of management options to control these viral agents. While several well-crafted reports of new hosts for well-known viruses are included in this issue, we chose "Simultaneous detection of citrus concave gum-associated virus (CCGaV) and citrus virus A (CiVA) by multiplex RT-PCR" authored by Maria Minutolo and others (Italy) as an additional Editors' Choice contribution in Plant Virology. Paraphrasing the authors, the assay described in this short communication revealed infection by CCGaV and CiVA in 17.7% and 18.4% of 300 tested trees, respectively, with mixed infection recorded in 5.0% of the samples. The novel mRT-PCR method saves time and costs, has the potential to be used for large-scale surveys and certification program, and will help further our understanding of the role that CiVA may have in disease of citrus.

"Field evaluation of olive (*Olea europaea*) genotypes for resistance to *Pseudomonas savastanoi* pv. *savastanoi*" by Mazen Salman et al. (State of Palestine, USA) represents one of the most thorough evaluations of susceptibility of worldwide olive tree cultivars to olive knot disease published to date. Olive knot disease incidence was evaluated on 506 trees representing 144 unique accessions consisting of 104 named cultivars originating from the Mediterranean Basin, South America, and California, including several hybrids and related subspecies. Eighty-six genotypes exhibited less than 10% disease severity with 17 genotypes of this group showing zero olive knot incidence over the two years observation period. This is an important report to guide growers in the selection of appropriate cultivars where olive knot disease is a serious problem.

"Isolation from and characterization of the citrus canker pathogen *Xanthomonas citri* subsp. *citri* pathotype A, occurring in imported tangerine (*Citrus reticulata*

Blanco) fruits” by Masha Izadiyan and Sayed Mohsen Taghavi (Islamic Republic of Iran) represents an important contribution to the field of Plant Pathology for more than one reason. First, it provides one of the first convincing pieces of evidence regarding the presence of the pathotype A of this bacterium in Iran; second, it shows that at least four citrus species may be potential hosts for this pathogen in Iran, and; third, it identifies a clear pathway of introduction for this bacterial pathogen through the international trade of infected fruits.

One of the most harmful side-effects of systemic fungicides is the development of resistance in the pathogen populations against active ingredients. In “Quinone outside inhibitor-resistant *Colletotrichum nymphaeae* isolates from strawberry lack mutations in *cytb* gene” by Amanda Chechi et al. (USA), by using a comprehensive approach combining field samplings, traditional laboratories assays testing the efficacy of fungicides and sequencing of target genes, the authors were able not only to detect resistance against azoxystrobin in populations of *Colletotrichum nymphaeae* attacking strawberry, but also to exclude that resistance is associated with the well-known mechanism of mutation of the *cytb* gene.

Host-pathogen interactions are often very complex. In “Identification of differential expressed proteins and establishing a defense proteome of sugarcane in response to *Colletotrichum falcatum* infection”, V. Ganesh Kumar et al. (India) investigated for the first time the defense proteome of sugarcane in response to red rot caused by the fungus *Colletotrichum falcatum*. This was accomplished by analyzing the differentially expressed proteins of resistant and susceptible cultivars through two dimensional gel electrophoresis (2-DE) and mass spectrometry. The results provide an important point of reference for further studies on host=pathogen interactions in this pathosystem.

Plant diseases caused by parasitic plants clearly stand within the field of plant pathology. In the short communication titled “First record of field dodder (*Cuscuta campestris*) parasitizing invasive buffalobur (*Solanum rostratum*)”, Wei-Bin Wang et al. (China) provide a first report of an invasive *Solanum* plant species in China being parasitized by a dodder. The authors were able to identify the dodder species and to determine the structural connection between the host and the parasite through microscopy. This report may trigger further studies focusing on the potentially extremely interesting use of dodder to contain invasive plants.

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