About the cover for August 2016

ISSN: 0191-2917

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 2016, Volume 100, Number 8
Page 1778
http://dx.doi.org/10.1094/PDIS-11-15-1357-PDN

DISEASE NOTES

First Report of *Neofusicoccum nonquaesitum* Causing Branch Canker and Dieback of Avocado in California

J. D. Carrillo and **A. Eskalen**, Department of Plant Pathology and Microbiology, University of California, Riverside 92521; **S. Rooney-Latham**, California Department of Food and Agriculture, Sacramento 93852; and **H. J. Scheck**, Santa Barbara Co. Department of Agriculture, Santa Barbara, CA 93110.

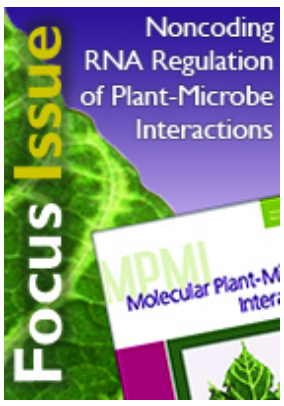
Citation

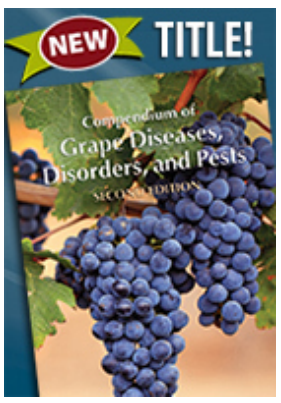
ABSTRACT

California, with approximately 90% of the production, is the leading producer of avocado (*Persea americana* Mill), in the United States, followed by Florida and Hawaii (California Avocado Commission 2016). Diseases on avocado, caused by members of the Botryosphaeriaceae, can result from entry through natural openings, wounds caused by mechanical damage, or pruning practices (McDonald and Eskalen 2011). In 2014, an avocado tree cv. Hass in a grove in Orange County, CA and a 50-year-old backyard avocado tree cv. Reed in Santa Barbara Co., CA exhibited branch dieback, including dry brittle bark and a powdery exudate on affected branches. Removal of the bark revealed large cankers. A single fungus was isolated on half-strength acidified potato dextrose agar (APDA) from cankers from both locations. Colonies were moderately fast growing with aerial mycelium and initially white, but later turned olivaceous black. Fungal isolates were sequenced using PCR amplification of the internal transcribed spacer (ITS1/4) and elongation factor 1-alpha gene (EF728/EF968) to determine species identity (Phillips et al. 2013). Sequences from both isolates were 100% and 99% identical to the ex-type isolate of *Neofusicoccum nonquaesitum* for ITS (GenBank Accession No. KF778850.1) and EF (GU251288.1) regions, respectively. Sequences of these isolates were deposited in GenBank and given the following accession numbers: (KT965281, KT965282) for ITS and (KT965283, KT965284) for EF. Pathogenicity tests were conducted in a greenhouse on 8-month-old avocado seedlings cv. Zutano with a representative isolate from Santa Barbara Co. and Orange Co. Five seedlings per isolate were stem-wound inoculated with a cork borer and a colonized APDA plug from each isolate was placed mycelium side down and wrapped with Parafilm. An equal number of seedlings were treated with noncolonized agar plugs as negative controls. The experiment was repeated once. Plants were observed for 5 weeks and then destructively sampled to measure internal vascular lesions. The mean vascular lesion length for seedlings inoculated with both *N. nonquaesitum* isolates was 10.4 cm and significantly different compared with the negative control at 0.05 cm ($P < 0.05$). *N. nonquaesitum* was consistently recovered from symptomatic vascular tissue on APDA, completing Koch's postulates and confirming pathogenicity. To our knowledge, this is the first report of *N. nonquaesitum* as a wood canker pathogen of avocado. Members of the genus *Neofusicoccum*, including *N. australe*, *N. luteum*, and *N. parvum*, have been previously reported as canker pathogens on avocado (McDonald and Eskalen 2011) and can

Article History

Print: 19 Jul 2016
Ahead of Print: 13 May 2016
First Look: 9 Mar 2016
Accepted: 23 Feb 2016





also survive as endophytes in other perennial hosts (Phillips et al. 2013). Understanding all components involved in avocado canker diseases can improve management practices aimed at preventing yield and vigor losses from members of *Neofusicoccum*, particularly when a tree is stressed from environmental factors or cultural pruning practices.

References:

Section: *Choose*

California Avocado Commission. 2016. Industry Statistical Data, 2013-2014. http://www.californiaavocadogrowers.com/industry/industry-statistical-data.

McDonald, V., and **Eskalen, A.** 2011. Plant Dis. 95:1465. 10.1094/PDIS-02-11-0136 [Abstract] [ISI]

Phillips, A. J. L., et al. 2013. Stud. Mycol. 76:51. 10.3114/sim0021 [CrossRef] [ISI]

Citation

