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Disease Notes

First Report of *Neofusicoccum macroclavatum* as a Canker Pathogen of Grapevine in New Zealand

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In a 2008 survey, 120 isolates of the Botryosphaeriaceae were recovered from a representative subsample of *Vitis vinifera* plants and propagation materials collected in nine New Zealand grapevine nurseries. Isolates were identified by amplified ribosomal DNA restriction analysis (ARDRA) (1) as *Neofusicoccum luteum* (56%), *N. parvum* (18%), *N. australe* (8%), *Diplodia mutila* (7%), *Botryosphaeria dothidea* (5%), *D. seriata* (3%), and *N. ribis* (2%). One isolate (M353) from 1 cm below the graft union of a nonsymptomatic 1-year-old grafted plant from the Nelson Region was not identified by ARDRA and was morphologically distinct from all others. Mycelium produced by the novel isolate on potato dextrose agar (PDA) was initially moderately dense, flat, and white and turned olivaceous brown within 10 days. The isolate did not produce pycnidia in PDA or prune extract agar, but when grown in water agar with sterile pine needles for 8 weeks at 25°C and a 12-h light/dark regimen, small, black pycnidia covered with mycelium were produced but no conidia were observed. To identify the novel fungus, genomic DNA was extracted and the ribosomal DNA (rDNA), β-tubulin gene, and elongation factor α-1 gene were amplified and sequenced (4). The sequences of the PCR products were compared with sequences present on GenBank. The rDNA (503 bp), β-tubulin (371 bp), and elongation factor α-1 gene (227 bp) sequences of M353 were 100% identical to reported sequences of *N. macroclavatum* on GenBank (Accession No. DQ093199/198/196 for rDNA, DQ093207/206 for β-tubulin, and DQ093219/217 for elongation factor α-1). These

genes differed from the same genes in other *Neofusicoccum* species by at least 11, 2, and 3 base pairs, respectively. The *N. macroclavatum* isolate was tested for pathogenicity on wounded grapevine (Sauvignon blanc) green shoots and 1-year-old rooted canes (n = 4 per plant type) using mycelium plugs from a 4-day-old PDA culture. Sterile agar was used for the negative control. Green shoots inoculated with *N. macroclavatum* developed brown lesions with an average length of 40.5 mm 6 days after inoculation. Bark from inoculated 1-year-old canes was peeled off 28 days after inoculation and brown-to-black lesions on the wood, with an average length of 52 mm, were observed. Control plants produced no lesions. The pathogen was consistently reisolated from the inoculated plants while none were found in negative control plants. To our knowledge, this is the first report of *N. macroclavatum* as a pathogen of grapevines and the first report of its presence in New Zealand (3). *N. macroclavatum* was first reported as a pathogen of *Eucalyptus globulus* in Western Australia in 2005 and has not been reported as a pathogen of grapevines (2).

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