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First Report of *Seimatosporium vitis* Associated with Grapevine Trunk Diseases on *Vitis vinifera* in Italy

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In spring 2018, in a vineyard (7 ha) located in Matera province (southern Italy), during a survey to verify the sanitary status of grapevines in Basilicata Region, *Vitis vinifera* plants (25-year-old, cv. Sangiovese) were found with typical “esca disease” symptoms on the leaves (tiger stripes). In addition, trunk cankers and internal wood necrosis were observed. More than 30% of the living plants were symptomatic and 10% more were dead. To isolate the likely pathogen, small pieces from trunk discs of living, symptomatic plants were surface sterilized with 70% alcohol, plated in Petri dishes containing potato dextrose agar (PDA), and incubated at 24°C for 14 days in darkness. From all samples, only a single fungal species was isolated, and this was identified as *Seimatosporium vitis* X.P. Xiao, Camporesi E. & K.D. Hyde through morphological comparison ([Senanayake et al. 2015](#)) and a molecular analysis based on three genes including the rDNA-ITS region (ITS), β -tubulin-2 (TUB2), and translation elongation factor 1- α (TEF1- α). The sequences of four pure-culture isolates were deposited in EMBL GenBank under accession numbers LS991528 to LS991531 (ITS), LS997596 to LS997599 (TUB-2), and LS999502 to LS999505 (TEF1- α). All sequences showed 99 to 100% identity with authentic *S. vitis* sequences already present in the GenBank database under the following accession numbers: ITS (KY632661, KX555652, and KU721882), TUB-2 (KY706248, KY706254, and KY706257), and TEF1- α (KY06328, KY06331, and KY06332). A phylogenetic tree, based on combined ITS, TUB-2, and TEF1- α data, was obtained using MEGA version 6.0 with the maximum parsimony analyses revealing that all isolates fell in the *S. vitis* clade, confirming the species identification. Koch’s postulates were fulfilled using four *S. vitis* isolates inoculated on woody stems of 2-year-old potted cultivar Sangiovese. Shoots were surface sterilized with 70% alcohol and then wounded with a sterile scalpel. Discs (0.5-mm diameter) from 14-day-old agar cultures were applied to the wound and sealed with Parafilm, and then the plants were kept in a growth chamber at 24°C and 90% humidity and 16-h light. Sterile PDA discs were used as controls. Each isolate was inoculated onto 10 plants, and five others were used as controls (45 plants in total). The pathogenicity test was carried out twice. About 45 days after inoculation, each inoculated shoot presented a canker lesion about 3 to 4 cm long around the inoculation point and interveinal chlorosis on leaves. Control plants were always symptomless. Only *S. vitis* was consistently reisolated from inoculated tissues. Pathogenicity assays confirmed that *S. vitis* from *V. vinifera* plants is the causal agent of the observed symptoms in grapevine. *S. vitis* was reported to be associated with grapevine trunk diseases (GTDs) in Hungary ([Váczy 2017](#)) and in California ([Lawrence et al. 2018](#)). [Senanayake et al. \(2015\)](#) had earlier reported *S. vitis* from Italy but not in association with GTDs and without pathogenicity tests. This is the first report of *S. vitis* associated with the GTDs in Italy.

References:

- Lawrence, D. P., et al. 2018. **Plant Dis.** 202:1081. <https://doi.org/10.1094/PDIS-08-17-1247-RE>
- Senanayake, I. C., et al. 2015. **Fungal Divers.** 73:73. <https://doi.org/10.1007/s13225-015-0340-y>
- Váczy, K. Z. 2017. **Plant Dis.** 101:253. <https://doi.org/10.1094/PDIS-07-16-1011-PDN>