



First report of southern blight on *Vesicularia vesicularis* caused by *Sclerotium rolfsii* in Florida

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Vesicularia vesicularis, also known as vesicularia moss, belongs to the family Hypnaceae. *Vesicularia* moss thrives in a riparian habitat and is very common throughout the Everglades in south Florida. It is also grown in the ornamental plant trade where it is widely used in landscapes to accent rock gardens and waterfalls. During August 2015, a local nursery submitted a sample of *V. vesicularis* to the Florida Extension Plant Diagnostic Clinic in Homestead, Florida. The leaves and stem were covered with a white mat of mycelium and some sclerotia (Fig. 1).

Symptomatic tissues were plated on acidified potato dextrose medium (APDA) and grown at 25°C. White mycelium and light to dark brown sclerotia of 1 to 2 mm diameter were observed in APDA (Fig. 2). Microscopic examination of the morphological characteristics revealed the presence of clamp connections. The fungus was identified as *Sclerotium rolfsii* and identification of the fungus was confirmed by the amplification of the complete internal transcribed spacer (ITS) region of rDNA with the primers ITS1 and ITS4 (White *et al.*, 1990). The PCR product was sequenced and the resulting sequence was deposited in GenBank (Accession No. KX594831). A BLAST search in GenBank showed 98% nucleotide identity with an isolate of *S. rolfsii* (teleomorph *Athelia rolfsii*; KJ944396) causing sclerotium rot of *Vinca rosea* in South Korea. To further support identification, phylogenetic analysis by the Maximum Likelihood method (Tamura 3-parameter model) was performed (MEGA 7.07). In this phylogenetic analysis, the ITS sequences from *S. rolfsii* and *S. delphinii* strains formed three clusters. Cluster r-1 consisted of strains from both *S. delphinii* and *S. rolfsii*, cluster r-2 included only *S. rolfsii* strains, and cluster r-3 contained *S. delphinii* strains (Okabe & Matsumoto, 2003). The *S. rolfsii* isolate from this study grouped in cluster r-1 with other *S. delphinii* and *S. rolfsii* strains (94% bootstrap values, 1000 replicates) (Fig. 3).

Pathogenicity experiments were conducted using *V. vesicularis* distributed in five 10-cm diameter pots each inoculated on the surface with a mycelial plug of 2 mm taken from a seven-day-old APDA culture of *S. rolfsii*. The

same treatment was performed using two non-inoculated controls and the experiment was repeated. The experiments were conducted in a shade house where the temperature ranged from 25 to 32°C. Five days post inoculation the moss developed chlorotic spots around the inoculated area. The spots enlarged within days and were covered with the white fanlike mycelia of *S. rolfsii*. No symptoms developed on the non-inoculated controls. To our knowledge, this is the first report of *S. rolfsii* causing southern blight of *V. vesicularis* in Florida. *Sclerotium rolfsii* is an economically important pathogen causing southern blight affecting a wide host range of ornamental plants including orchids and tropical foliage (Alfieri *et al.*, 1984, Cating *et al.*, 2009).

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Figure 1



Figure 2

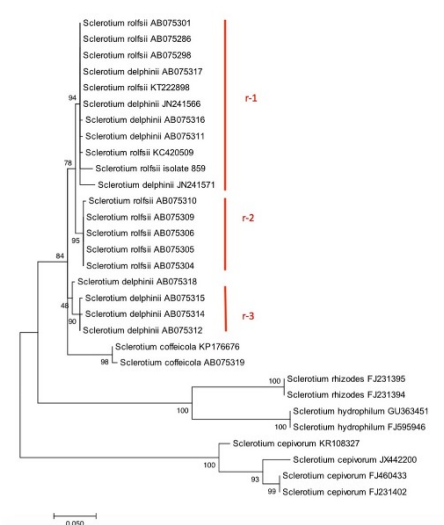


Figure 3

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