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SCLEROTIUM ROLFSII SOUTHERN BLIGHT ON *BRASSIDIUM* HYBRID ORCHID

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Abstract. ***Brassidium* hybrid orchid leaves were sent to the University of Florida, Plant Disease clinic in the Summer of 2002. Symptoms on leaves were a spreading, cottony, white mass of mycelium with necrotic centers 3-5 × 5-9 mm. Approximately 1% of leaves submitted were affected. *Sclerotium rolfsii* Sacc. was isolated from the affected leaves using acid potato dextrose agar (APDA). Two plastic boxes were lined with wet paper towels and six uninoculated leaves were placed in each. Three leaves in each box were treated as controls and received a 3 mm square of APDA, while the other three leaves in each box received a 3 mm² of APDA, while the other three leaves in each box received 3 mm² of *S. rolfsii* culture on APDA. All leaves were misted with water and enclosed to maintain humidity. Twenty-four hours later, infection was visible on two treated leaves. Within 72 hours, significant infection was visible on three of the six inoculated leaves. All control leaves remained uninfected. *Sclerotium rolfsii* was consistently reisolated from the inoculated leaves.**

The fungus *Sclerotium rolfsii* Sacc. was first reported in Florida in 1893 and on foliage plants as early as the 1940s (Chase 1984, 1987; Chupp and Sherf, 1960). After that is has been found in nearly all countries and states between the northern and southern latitudes of 38°. *Sclerotium* infects more than 200 species of plants including ornamentals, cereals, fruit trees, forage crops, and numerous weeds (Alfieri et al., 1991; Alfieri and Knauss, 1970, 1972; Chase, 1984, 1987; Chupp and Sherf, 1960; Wescot, 1971). Currently, south Florida has many acres devoted to the production of orchids. In south Florida, *Sclerotium rolfsii* occurs on foliage plant leaves and stems during the wet warm summer months.

In south Florida, the orchid *Brassidium* are grown in pots and hanging baskets, both in gardens and also in the florist trade. An outbreak of a foliar disease on *Brassidium* was first observed in the Summer of 2002 in a large commercial nursery in Miami-Dade County, Fla. *Sclerotium rolfsii* was positively identified as the cause of southern stem and leaf rot on the orchid with 1% of the grower's crop infected, showing extensive necrotic areas on the leaves and stems rendering the plants unmarketable (Pratt et al., 2003). This pathogen presents a serious and continuing problem to growers. The purpose of this study was to reproduce the disease in Brassidium.

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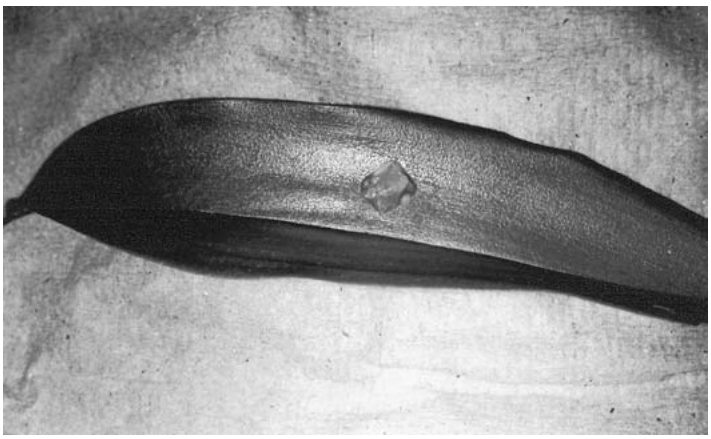

Fig. 1. *Brassidium* control leaves received a 3 mm square of potato dextrose agar without the *Sclerotium rolfsii* inoculum.

Materials and Methods

A culture of *S. rolfsii* originally isolated from naturally infected *Brassidium* on acid potato dextrose agar (APDA) was transferred periodically on ½ strength potato dextrose agar and maintained at 22 °C. This isolate was employed throughout this study. Two plastic boxes were lined with wet paper towels and six uninoculated leaves were placed in each. Three leaves in each box were treated as controls and received a 3 mm² square of APDA (Fig. 1), while the other three leaves in each box received a 3 mm² of *S. rolfsii* culture on APDA (Fig. 2). All leaves were then misted with water and enclosed to maintain humidity at ambient room temperature. Observations were made daily for disease symptoms.

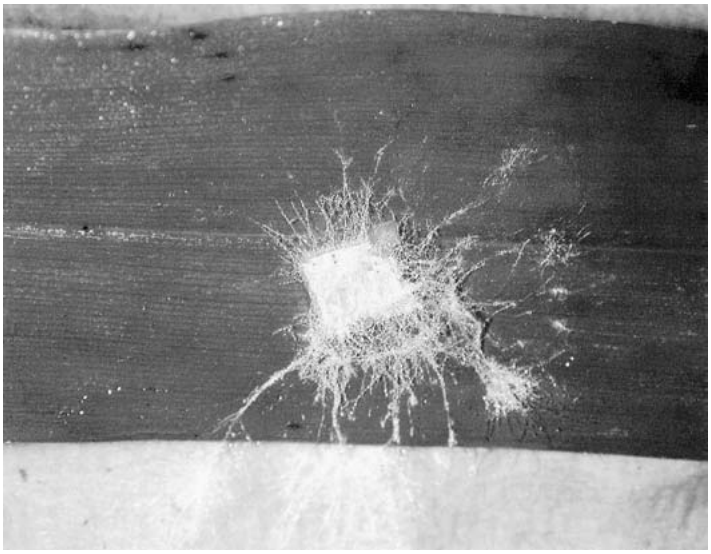

Fig. 2. *Brassidium* leaves received a 3 mm square of *Sclerotium rolfsii* on potato dextrose agar.

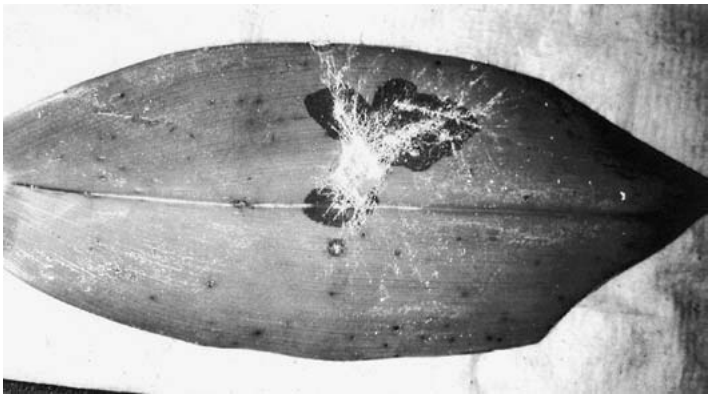

Fig. 3. *Sclerotium rolfsii* infected *Brassidium* leaves first appear as water soaked spots 20 mm in diameter.

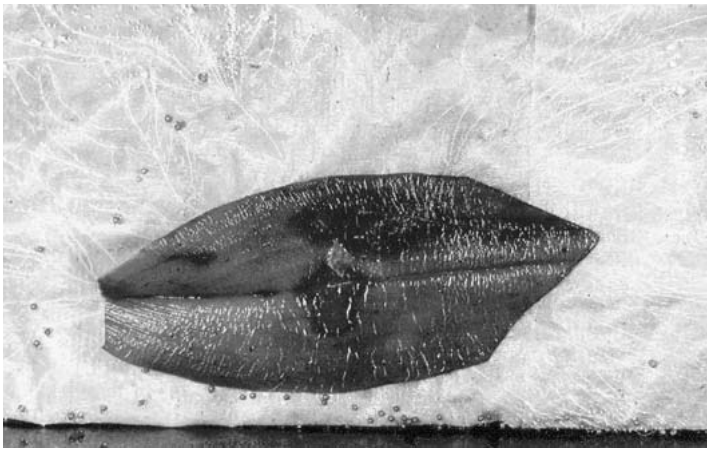

Fig. 5. *Sclerotium rolfsii* infected *Brassidium* leaf with mycelium wefts growing over the damp towels forming mature tan sclerotia.

Results and Discussion

The disease symptoms on the *Brassidium* leaves first appeared as water soaked spots 20 mm in diameter (Fig. 3). From the water soaked spots white wefts of mycelium spreads over the leaf surface in a fan-shaped fashion and spreading out over the moist paper towels. The sclerotia formed in wefts are first white, and later turn a reddish tan or light brown (Fig. 4). The mature sclerotia were very small, round, tan, about the size and shape, and color of mustard seed (Fig. 5). The entire control orchid leaves remained uninfected. *Sclerotium rolfsii* was consistently reisolated from the inoculated orchid leaves.

Over the past 12 months, *S. rolfsii* has been reported in 30% of commercial orchid nurseries as well as homeowner orchid collections in Miami-Dade County, Fla. No resistance to this disease in orchids has been reported.

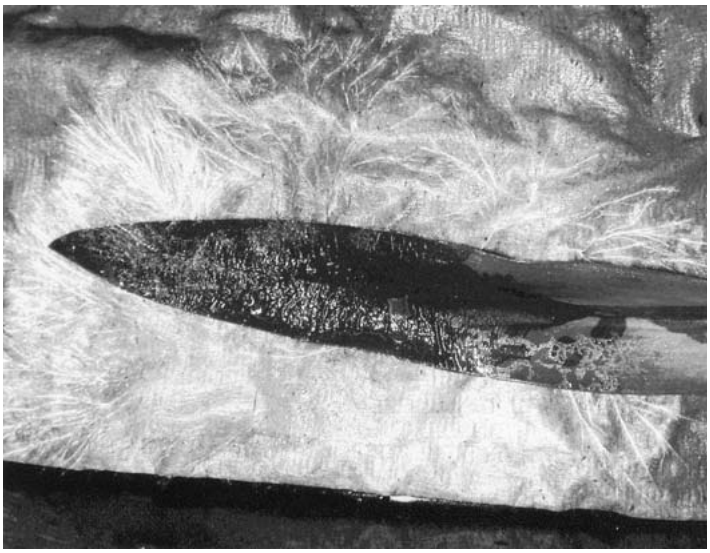

Fig. 4. The *Sclerotium rolfsii* infected *Brassidium* leaf with mycelium wefts growing over the leaf surface in a fan-shaped fashion and spreading out over the moist paper towel.

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