



## **A New Disease Caused by a *Cercospora* sp. on the Florida Native *Tetrazygia bicolor***

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The yellowish-orange *Cercospora* leaf spots were observed on *Tetrazygia bicolor* plants in the native pine lands of Miami-Dade County, FL. The leaf spots were affecting 30% to 50% of *T. bicolor* in the pine land stands. The actively expanding leaf spots were necrotic. A *Cercospora* sp. was isolated on acidified potato dextrose agar (APDA). Ten uninfected leaves of *T. bicolor* were placed in each of two plastic boxes lined with damp paper towels (incubation chambers ICBC). Five leaves were treated as controls and the other five were inoculated. Leaves misted with water prior to inoculation. Control leaves were inoculated with one, 3 mm square of uninoculated RSA. Treated leaves were inoculated with 3 mm squares of seven-day-old cultures of the *T. bicolor* on APDA. Leaves were then misted again, covered and incubated in the ICBC at 25 °C (77 °F). After six days, all of the inoculated leaves that were showing actively expanding leaf spots which were necrotic. *Cercospora* was reisolated from the inoculated leaves, thus proving Koch's Postulates.

The ornamental plant industry, comprising of decorative plants, shrubs, bushes, and trees is the single largest segment of Miami-Dade County's agricultural industry. The plant *Tetrazygia bicolor* (Fig. 1) is in the Melastomataceae family and is commonly found in the pine forest in Miami-Dade County, FL. There are seven genera listed in the Index of Plant Diseases in Florida (Alfieri et al 1984) found growing in Florida known as *Medinilla*, *Miconia*, *Monolena*, *Rhexia*, *Sonerila*, *Tetrazygia*, and *Tibouchina*. Two of the genera have been found to have *Cercospora* sp. leaf spot and at this report there are now three *Cercospora* sp. on *Tetrazygia* sp.

The purpose of this paper is to determine the cause of the leaf spot on the native *T. bicolor*.

### **Materials and Methods**

Ten uninfected leaves of *T. bicolor* were placed in each of two plastic boxes lined with damp paper towels (incubation chambers ICBC). Five leaves were treated as controls and the other five were inoculated. Leaves were misted with water prior to inoculation. Control leaves were inoculated with one, 3 mm square of uninoculated RSA on the underside of the leaf. Treated leaves were inoculated with 3 mm squares of seven-day old cultures (Fig. 2) of the *Cercospora* sp. on RSA on the underside of the leaves. Leaves were then misted again, covered and incubated in the ICBC at 25 °C (77 °F). To confirm that the fungal isolate from the leaf spot on the *T. bicolor* was the same fungus from the pine forest, an isolation was made from the leaves previously showing leaf spots that the isolates were taken from in the beginning. After six days, all of the inoculated leaves were showing actively expanding tan colored brown leaf spots, which were necrotic and identified to be a *Cercospora* sp. (Fig. 3).

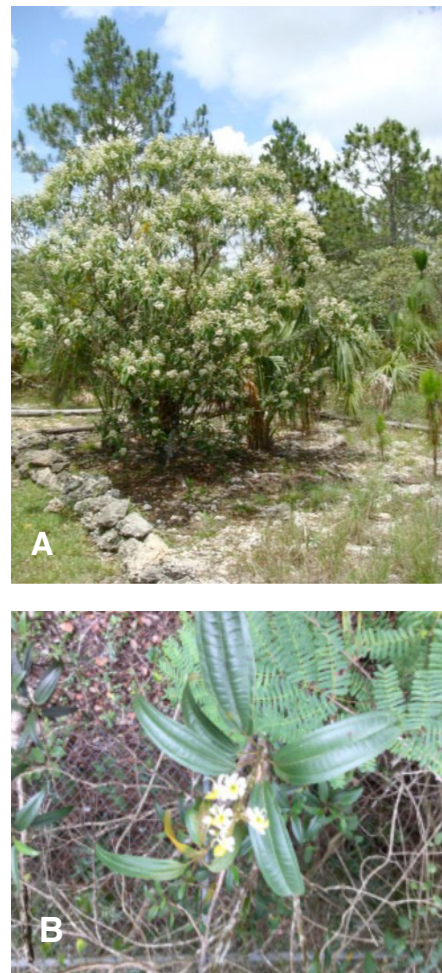


Fig. 1. The *Tetrazygia bicolor* tree in full flower (A) and a close up of its flower (B).

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Fig. 2. Necrotic leaf spots showing on the upper leaf surface of the *Tetrazygia bicolor*.



Fig. 4. *Cercospora* sp. needle-like conidia spores from the *Tetrazygia bicolor* culture.

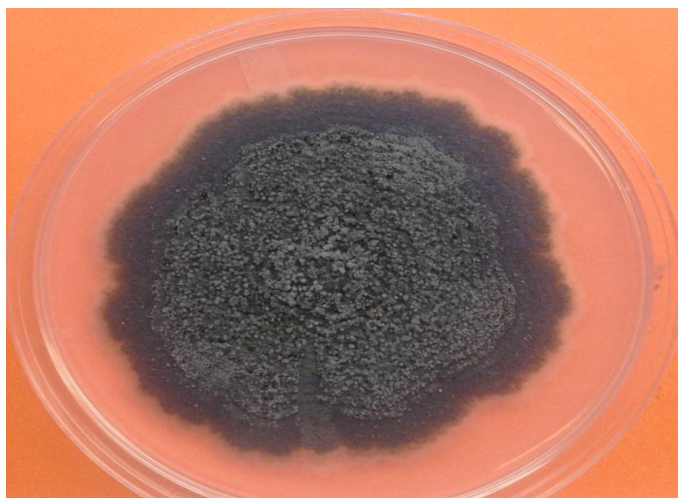


Fig. 3. Typical cultured isolate from the *Cercospora* sp. leaf spot on the *Tetrazygia bicolor*.

## Results and Discussion

After six days, all of the inoculated *T. dregeana* leaves were showing actively expanding leaf spots that were necrotic and water soaked. Leaf lesions on the tetrazygia leaf are at first noted on the under surface of the leaf as pale yellow sunken spots, mm in 1–3 diameter. Later the spots become slightly sunken and purple-black with the developing margins remain-

ing yellow. Following the appearance of spots on the lower leaf surface a corresponding yellow-pale green area can be seen on the upper leaf surface. Eventually the spots turn purplish black or black and producing needle like spores (Fig. 4). Heavily infected leaves abscise. *Cercospora* sp. was reisolated from the inoculated leaves and was identical to the original isolates thus proving Koch's Postulates

At present owners are removing the native plants such as the palmetto, silver palm, and the *Tetrazygia* as well from the native pine stands.

The genus *Cercospora* occurs on the genera *Rhexia* and *Tibouchina* in the family Melastomaceae. *Rhexia* is a perennial herb of the southern states sometimes grown as an ornamental.

*Tibouchina* is a small shrub from tropical America, grown for showy flowers in many landscapes, especially in Miami-Dade County.

The probable cause of diseased native pine woods exotics is the close proximity of diseased plants in the estates landscape next to the pine tree stands. This is the first time that *Cercospora* has been reported on *Tetrazygia*.

## Literature Cited

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