



St. Augustine Orchid Society

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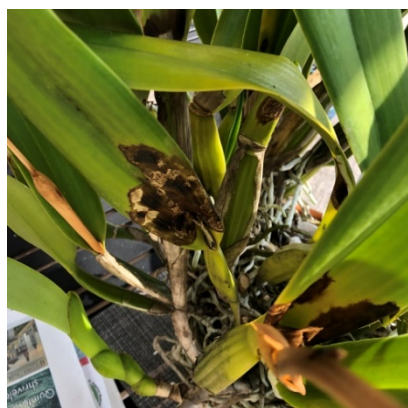
Anthracnose on Cattleya Alliance Plant

by Sue Bottom, sbottom15@gmail.com

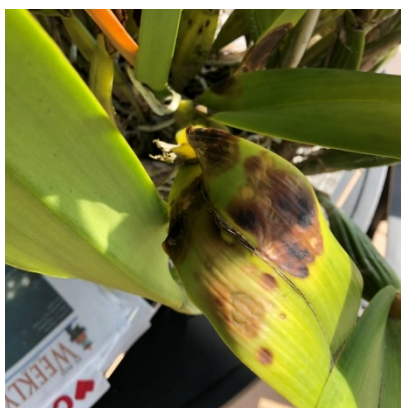


1. Roberta's *Laelia purpurata* was in bloom in mid-May with over 40 flowers, a real looker.
photo by Roberta Hicks

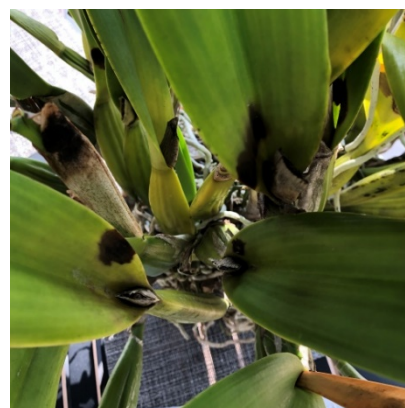
A fellow St. Augustine Orchid Society member sent over a picture of her *Laelia purpurata* with over 40 blooms. Roberta was hoping the flowers would last until the meeting so she could bring it to the show table. Less than three weeks later, another email arrived, with these three pictures, saying simply, Help!



2. Severely damaged leaf, with black necrotic discoloration and spores evident in the discolored area.



3. It almost looks like sunburn on the top of the leaf, but the discoloration began above the leaf axil where sunburn is unlikely.



4. You might think this is rot from water pocketing in the sheath, but there is no sheath and the tissue is green above the leaf axil.

photos by Roberta Hicks



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These symptoms were unlike anything I had ever seen before. It sounded like it happened fast, suggesting either sunburn, a bacterial infection or black rot. One of the images looked like sunburn, but that usually appears on the highest point of the leaf where the sun's rays impact the most directly. That was not the case for the discolored area in the other in the other images. So perhaps a bacterial rot from water pooling in the pseudobulb sheath, but there was no sheath and there was green tissue between the leaf axil and the discolored area. The next thought was perhaps black rot, but the discolored tissue was not soft or odorous. Whatever the source of the problem, there was a clear need for emergency surgery to stop the spread of disease.



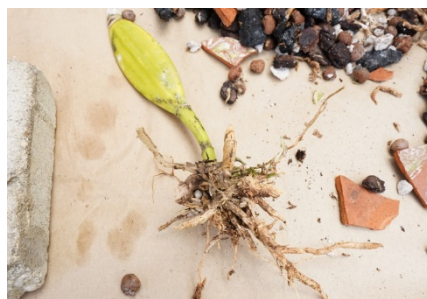
5. Some withered bulbs and dead areas in the middle of the pot.



6. The happy roots were growing all around the outside of the pot.



7. It was a bear to remove the diseased tissue from this overgrown monster.



8. Root death from Rhizoctonia.



9. Diseased tissue was cut away.



10. We discarded lots of the plant.



11. The healthy bulbs were ready for repotting



12. Their new home in a 10 inch slotted clay pot with Styrofoam.



13. The clean pieces were potted up and are ready to rock and roll.



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The plant had spent many years in the same 8 inch pot, with the bulbs extending over the edge and the roots wrapped around the outside of the pot. There were some withered pseudobulbs in the center of the part, suggestive of Rhizoctonia that typically occurs in the older part of the plant, and results in root rot and a dried, husky bulb. Was the leaf discoloration how Rhizoctonia looks when it infects the aerial part of the plant? The Florida Department of Agriculture laboratory in Gainesville analyzed a leaf sample and determined the disease is Anthracnose caused by *Colletotrichum* fungi.



14. Anthracnose usually begins at the leaf apex and moves toward the base, with alternating bands of dead tissue and sporing bodies in the dead area.



15. In this Cattleya alliance plant, the circular area of dead tissue from Anthracnose begins above the leaf axil and there are numerous spores in the dead area.

Anthracnose is a name given to fungal infections caused by *Colletotrichum* and *Glomerella* species. Many fungi reproduce both sexually and asexually, and each stage produces different fruiting bodies and spores. Typically, the asexual stage is more important in the spread of the disease. The pathogen usually associated with Anthracnose is *Colletotrichum gloeosporioides* (asexual stage, the sexual stage is known as *Glomerella cingulata*). We often recognize Anthracnose caused by this pathogen by the alternating lines of dead tissue with little tan dots that extend down from the leaf tip. The Bakers describe the symptoms of Anthracnose from *Colletotrichum gloeosporioides* as follows:

Leaf tips turn brown beginning at the apex and proceeding toward the base. Dark brown or light gray patches develop, sometimes as concentric rings or as numerous dark bands across the leaf. The affected area is usually sharply defined and somewhat sunken, while the remainder of the leaf appears normal. Sporing bodies develop in the infected area.

In this cattleya alliance plant, the damage was in roughly circular patches at the base of the leaf rather than at the leaf apex. The first step in responding to anthracnose is to sanitize the plant, which means removing all the damaged tissue to remove the fungus and its sporing bodies to prevent it from spreading. Afterwards, a protective fungicide can be applied to help prevent recurrence. Copper or Daconil can be used, as can Cleary's 3336 or Heritage, although the more expensive Pageant provides very good control.



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Citations:

Baker MLB, Charles O (1996) Orchid species culture: *Dendrobium*. Timber Press, Portland.

McMillan Jr, R.T., 2011. Efficacy of Fungicides for Control of *Colletotrichum gloeosporioides* on Dendrobiums. In *Proc. Fla. State Hort. Soc.* (Vol. 124, pp. 314-316).

Simone, Gary W. and Burnett, Harry C. 2002. Diseases Caused by Bacteria and Fungi, pp 50-70. In: *Orchid Pests and Diseases*. Rev. Ed., T.J. Watson editor, American Orchid Society, Delray Beach, Florida.