

ask? us

About Diseases



**By
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Diseases

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Q We've been battling a species of Burkholderia in our commercial orchid crop that appears to be completely resistant to copper. We haven't found anything that works to prevent or cure the problem. Do you know of anything that might be helpful?

A Two Burkholderia species, *B. gladioli* and *B. andropogonis*, can cause serious losses in orchid production. *B. gladioli* has been found in commercial production causing disease on Dendrobium, Oncidium, and Miltonia orchids. Hosts for *B. andropogonis* include Odontoglossum, Odontioda and Vuylstekeara orchids. Both bacterial species are capable of infecting Phalaenopsis. The symptoms caused by each bacterium are quite similar and include dark-green or brown/black lesions surrounded by water-soaked tissue. The lesions rapidly enlarge under wet, humid conditions, causing the entire leaf blade to decay and often drop from the plant. Unfortunately, these bacteria enjoy the same warm, moist conditions as orchids.

Based on observations in Japan, raising the temperature above 77° F could potentially slow the rate of disease development. Bacteria are easily splashed by water, so increasing plant spacing and using drip irrigation may help to limit spread. Increasing air flow and light exposure will help to create a less favorable environment by allowing leaf surfaces to dry more quickly. *B. gladioli* has been isolated from leaf surfaces of plants showing no visible symptoms, underscoring the importance of keeping the leaves dry. Because these bacteria can survive in soil and water, pond water and runoff into irrigation water are also potential sources of introduction. Disinfestation of bench tops and potting lines is important. Approximately 75 percent of *B. andropogonis* and 95 percent of *B. gladioli* isolates collected from orchids in Hawaii have been found to be resistant to copper and streptomycin, respectively. A team of researchers in Japan found an antibiotic mixture of oxytetracycline/streptomycin to be the most effective in controlling *B. andropogonis* on Odontioda orchids. However, I am unable to find an antibiotic product labeled for use on ornamental crops in the United States. Effective management options are limited, and control must rely heavily on cultural practices.

Q I've also heard of bacterial brown spot of orchid. Is this the same disease?

A Brown spot is primarily a problem on Phalaenopsis orchids caused by the bacterium *Acidovorax avenae subsp. cattleyae*. While other orchids can be infected, Phalaenopsis orchids are highly susceptible. Brown spot is an important disease of Phalaenopsis orchids in Taiwan, and diseased plants also have been observed in North America and Australia. I have seen this disease a number of times on Phalaenopsis in the United States. This bacterium is most likely being spread through the industry on infected plant material.

Initially, small, dark and sunken lesions develop on the leaf blade. A yellow halo of tissue surrounding each lesion is common. Lesions expand over time, resulting in soft rot and decay of the leaf. If infection progresses to the crown, the plant may die. Management of brown rot is difficult, and the same cultural guidelines should be followed as for the Burkholderia diseases.

*Do you have a question for our panel
of experts? Send your disease, pest or
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answer in an upcoming issue of GPN.*



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