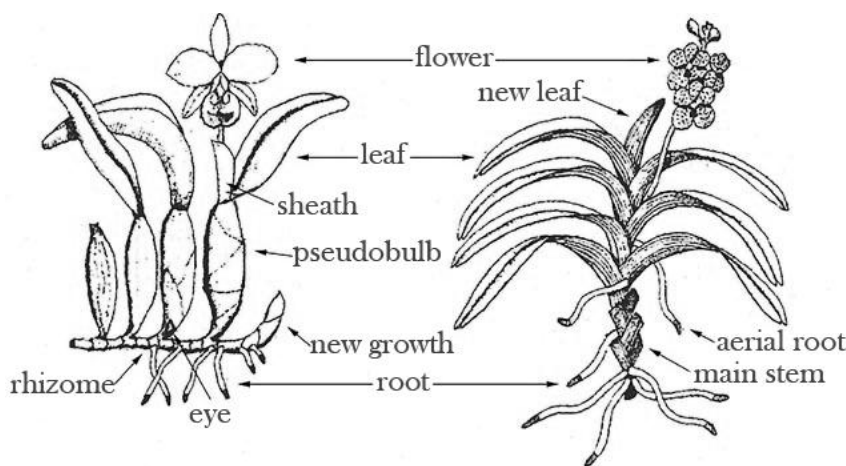


Greenhouse Pest Message, April 21, 2025
Charles Krasnow, UConn Extension

Orchids are a popular specialty flower, and as a group comprise the most diverse plant family. There are over 25,000 species of orchids, although the most economically important species fall in a relatively small grouping and include *Phalaenopsis* (potted plants), *Cattleya* (corsages), and *Cymbidium* (cut flower). Although they are grown on a limited scale in Connecticut, there are a number of large operations producing orchids, and some rare species as well. Many retail markets also carry an array of orchids. Due to the high value of the crop, the importance of preventing diseases and insect pests is heightened. The commonly grown orchids are epiphytes, and in nature grow on rocks and trees, with almost no “soil” to support the roots. Orchid plant structure is shown in the photo below. The plants have underground rhizomes and pseudobulbs that are essentially stems.



Orchid plant structure, photo credit aos.org

Commercial production of orchids is technical and the plants have an extremely long journey from “seed” to saleable plant. The whole process takes years. The initial stages are done in specialized labs and then greenhouses in China where labor is less of an issue. Once growers in the US receive plantlets, they often require 1-2 years of growing before sale (this is for the popular *Phalaenopsis* types). Greenhouses that produce orchids invest heavily in pest ID and IPM programs that can be used for the duration of the crop cycle. Watering and fertility are under precise control. Production of rare species is usually limited to small quantities of a given variety and the crop is not uniform and does not flower at the same time.

As the orchid crop spends over a year in production, pest control is essential. The most common insect pests are mealy bugs and aphids. The list of pathogens affecting orchids is extensive, however, only a few are of concern annually. These include *Phytophthora* root rot, bacterial leaf spots, and other leaf spot pathogens. Results of a trial to control *Phytophthora* root rot of *Cattleya* orchids are shown below, demonstrating the benefit of preventive fungicide

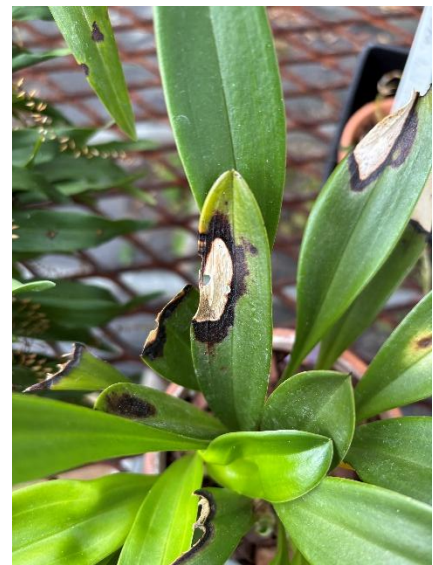
applications. Due to the high value of orchids, there is almost no acceptability for foliar and stem diseases. Many fungicides can be safely used on orchids, however, the flowers are sensitive and applying pesticides at flowering should be tested on a small scale before widespread usage.



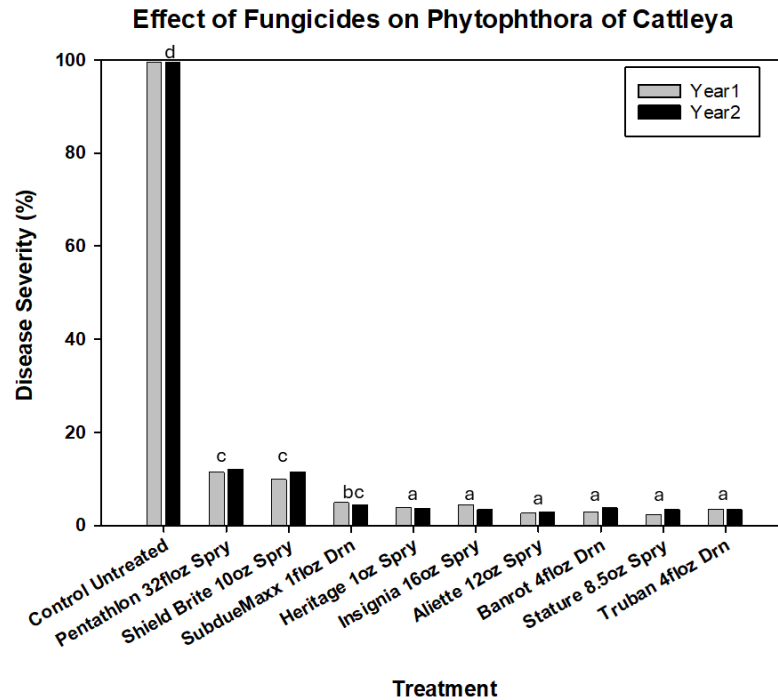
Photo: Commercial production of orchids. High value rare species (left), large scale production of Phalaenopsis (right), note the uniform flowering. Photos by C. Krasnow.

Controlling pathogens is a constant challenge in greenhouse production of orchids. Although the jungle environment that these plants originated in is harsh with long dry or wet periods, the uniform climate controlled greenhouse can also be a difficult growing environment. Overwatering and improper fertility are some of the most common concerns for this crop. Greenhouses use specific watering practices such as flood floor and ebb and flow benches to control root moisture. Mist is fogged into the greenhouses to increase relative humidity and mimic the natural environment. Some recommendations for culture conditions can be found here:

<https://www.purdue.edu/hla/sites/cea/wp-content/uploads/sites/15/2005/08/15-The-Orchid-Grower-part-II.pdf>



Phyllosticta leaf spot.



The graph above shows two years of data from trials at the University of Florida. Cattleya orchids (2 yr old) were drenched or sprayed on a 7-d interval for 5 weeks (May to June). Inoculation was made after the first treatment.

Orchid disease control best practices:

- Avoid overwatering
- Monitor fertility program
- Apply labeled fungicides
- Avoid applying fungicides during flowering
- Scout regularly for common diseases (Phytophthora root rot, bacterial soft rot)
- Talk with other growers and orchid society for recommendations

As orchids are a specialty crop, there is limited research on them for the northeast. Past work from MSU and OSU looked at improving Phalaenopsis culture, including timing, lighting, and watering with ice cubes (Just Add Ice Orchids).

Some additional links on orchids below:

https://secure.aos.org/media/Content-Images/PDFs/GrowingtheBestPhalaenopsisPart_4.pdf

<https://www.purdue.edu/hla/sites/cea/wp-content/uploads/sites/15/2005/07/16-The-Orchid-Grower-part-I.pdf>

<https://gpnmag.com/article/orchids-not-just-specialty-crop-anymore/>

<https://ctorchids.org/> <https://www.massorchid.org/>