St. Augustine Orchid Society
www.staugorchidsociety.org

# Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

It is summertime and the growing is easy. As the spring days lengthened and warmed, you ramped up your watering and fertilizing schedule to match the growth rates of your orchids. As new roots appeared, you were busy repotting orchids in need of a new home. Now your orchids are summering outdoors, loving the buoyant air movement and bright shade. There are some things to watch out for during the carefree days of summer.

*Light.* Summer days are long and the light intense. As long as the leaves do not get too hot, this light is great because the high photosynthetic rate allows the plant to store excess reserves for flowering. Feel the leaves during the hottest part of the day. If they feel hot to you, consider what options you have to cool the leaves to prevent heat stress. Shading and improved air movement will help cool the leaves, as will wetting under benches and outside the pots.

1. The greenhouse is covered with 50% shade cloth. An additional layer 30% layer is added inside at the spring equinox and taken down at the fall equinox.

2. The shade structure is covered with 50% shade cloth; a second layer is not required because of the buoyant air movement. Styrofoam fills the bottom half of the pots for improved drainage during tropical storms.

*Watering.* If you are growing under cover, you determine the watering schedule; otherwise, Mother Nature is in charge. Rainwater does wonderful things for orchids, gentle rains allow your plants to take up water over an extended period and help flush salts from the pot. If it rains often or you are subject to extended rainy periods with lots of gray days, your plants may get too much of a good thing. A sphagnum or pure bark based mix may be too water retentive to grow successfully outdoors when you cannot control when and how much rain the plant will receive. Roots can become waterlogged in a soggy mix, so you might elect to grow on mounts or in open baskets with no media. Of course, winter follows summer and orchids grown without potting media can be high maintenance indoors during cold weather. A coarse, freely draining potting mix may be a good compromise. When we get frequent showers, the pot will drain and the roots will have the air they love so much around them.

# Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

The coarser the mix, the more it has to be watered so if it does not rain, you will have to water every third or fourth day during the summer and perhaps weekly to biweekly in winter.

*Fertilizing.* Your fertilizer addition rate should match your plant's growth rate. In most areas, the summer is the main growth season so you should be using higher fertilizer rates so the increased light levels can be converted into more roots and leaves. High fertilizer rates will tend to form lush, softer growths more prone to disease and pests, particularly with high ammonia nitrogen forms. Lower fertilizer rates will result in slower growth, but this growth is stronger and less prone to damage from pests and diseases, particularly if sufficient calcium and magnesium are supplied. You will see recommendations ranging from using one-eighth strength with each watering to using full strength once a month. The fact is that fertilizer is much less important to your orchids than is the proper light, humidity, watering, air movement and temperature. Experienced growers with your local Orchid Society can guide you as to which fertilizer works well with your local water quality and growing conditions and whether calcium or magnesium supplements are required. If you are not sure how much water-soluble fertilizer to add, be cautious and start with a quarter-strength application. For those without a system to apply water-soluble fertilizers, top dressing with time-release fertilizer is an option.

3. Experienced growers at your local orchid society can help you select the fertilizers and supplements that will work best with your water quality.

4. Complete the bulk of your repotting before Independence Day. You can finish last minute repotting when the temperatures mediate in the fall.

*Repotting.* Hopefully, the bulk of your repotting is complete. Even if you have a few flowers left on your spring blooming phal, you should consider removing the spike and repotting so it can gather its strength for next year's bloom cycle. You may find an orchid requiring emergency repotting or a bifoliate cattleya throwing off new roots; otherwise avoid repotting during the heat and humidity of summer. The open wounds created during the repotting process together with disease pressure inherent to the season can combine with disastrous

# Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

results for your plant. If you do repot in summer, consider using a protective fungicidal drench and keeping the plant dry for a week or two after repotting to help prevent disease.

*Water Pocketing.* Do not allow water to accumulate in or around the aerial parts of your plants. The bacteria ubiquitous in our environment will thrive in this environment and cause plant tissue to rot. On sympodial orchids with pseudobulbs, a papery sheath known as a cataphyll protects the new growth from the sun and chewing insects. As the pseudobulb matures, sometimes a space develops between the pseudobulb and the sheath where water can pocket. Gently peel the sheath down so water can drain freely. On monopodial orchids, water can accumulate in the crown of the plant and rot the growing crown. If Phalaenopsis are not grown in an area protected from rainfall, consider angling the pots so water can freely drain from the crown.

5. Keep spray bottles of hydrogen peroxide and isopropyl alcohol in your growing area so you can respond immediately to any problem you see.

6. During the rainy season, the activated peroxide product ZeroTol is sprayed on leaves in the breaks between storms to help prevent rots.

*Sprays.* With the increased temperature comes an increase in pest populations. Scale seems to love cattleyas; mealybugs often appear on tender new plant tissue, mites on thin leaved orchids and thrips on buds and flowers. Keep a spray bottle handy, filled with isopropyl alcohol or one of the other home remedies used to kill on contact. You can follow up with a systemic product that is absorbed into the plant so it can provide more long lasting control. There are also insect growth regulators that can prevent the pest from completing its life cycle. Except for spraying the insect growth regulator Distance twice a year, I usually spray or drench only in response to a pest that has appeared in the growing area. Thrips are my nemesis, but a drench with Orthene at the first sign of damage seems to last for 6 to 8 weeks. Spider mites attack some of the catasetums each year as well as some of the thin leaved epidendrums and dendrobiums growing in the upper and drier section of the greenhouse. Avid controls them, but usually there is substantial leaf damage by the time their presence is known.

## Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

The increased humidity of summer encourages the growth of fungal and bacterial pathogens. Your best natural defense is buoyant air movement that helps keep leaf surfaces dry and prevent fungal spores from settling on leaves. Airflow can also be enhanced by choosing a location where the breezes are unobstructed and maintaining ample spacing between plants. If you find you continue to get disease outbreaks despite your best efforts, you can consider some precautionary sprays. Before you invest in one of these products, be sure you understand the disease causing the problem, whether cultural controls might prevent its occurrence, and how effective a given product is for that disease.

- For the leaf spotting fungi, you can use products with the active ingredients chlorothalonil (Daconil) or thiophanate methyl (Cleary's 3336, Banrot, Thiomyl).

- For bacterial diseases, household hydrogen peroxide is very effective, as are copper products but dendrobiums and some thin leafed orchids are sensitive to copper. Fungicides generally are not effective on bacteria.

- For black rot caused by the water molds, the pricey fungicides containing fosetyl aluminum (Aliette) and the more expensive metalaxyl (Subdue) are considered the most effective.

- Some broad-spectrum fungicides are effective on a wide variety of pathogens, including Banrot, Pageant. Heritage and Medallion.

*Tropical Storms.* Tropical storms often result in gray rainy weather for a week, and that extended period of leaf wetness without sunlight can result in bacterial and fungal infections. You might consider engineering a removable cover that could be installed over your orchids, using rolled plastic file or polycarbonate sheets. If you cannot protect your plants from the rain, before and after precautionary sprays and/or drenches should be considered. I spray hydrogen peroxide or Zerotol on leaves during breaks in a storm as a precaution.

*Hurricanes.* Orchid growers along the Gulf and East coasts are no strangers to the winds, rain and damage caused by hurricanes. You should be prepared for the associated power outages, heavy rains and secondary damage that can show up days to weeks after the hurricane passes.

If you can, bring your orchids into the garage or another safe haven. If this is not possible, place the plants low in an area not prone to flooding after heavy rains. Prevent contact with the pathogens in the soil. Push all the plant tags deep into the pots so they will not be lost if plants are jostled around.

# Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

After the storm, you will undoubtedly find lots of tree and landscape plant damage. Be cognizant of the change in light levels this causes so you can make the necessary adjustments to prevent your plants from sunburn. Keep your old shade cloth tucked away somewhere in case you have to use it to protect plants or use it as a temporary replacement for shade cloth shredded in the storm.

7. Make sure you have a plan for protecting your plants in the event of a storm. The high winds and excessive rainfall can cause real problems.

8. Mother Nature won this battle. Motes' book Florida Orchid Growing has good info on hurricane preparations and response.

Inspect all your plants carefully for any signs of mechanical damage or orchid diseases and treat any problems you find quickly. Your plants have been exposed to conditions very conducive to disease, extended periods of darkness and leaf wetness. Keep plants on the dry side to help prevent spreading pathogens. If a plant is diseased, isolate it from your other plants until it is healthy again.

- The insidious black rot caused by fast growing orchid killers *Pythium* and *Phytophthora* must be treated immediately. You must quickly cut away the soft, black, rotting tissue until you find healthy growth and apply one of the specialty fungicides like Aliette or Subdue to the remaining orchid.

- If you see quickly forming sunken spots or rot on the orchid, you may have a bacterial infection. Get some fresh hydrogen peroxide out of the medicine cabinet and apply it to the damaged area. You can spray or pour it on full strength. Zerotol is a concentrated formulation of activated hydrogen peroxide, available as Biosafe Disease Control in smaller quantities and lower concentrations. Copper compounds like Kocide can be used on orchids not sensitive to copper; make sure it is mixed with alkaline water without any fertilizer so the solution does not become acidic.

# Hot Humid Summers and the Tropical Storm Season

by Sue Bottom, sbottom15@gmail.com

- You might consider applying a protective fungicide. Hurricanes carry dust and spores from as far away as the Sahara desert, so your plants have likely been exposed to new and exotic pathogens. You can use one of the quaternary ammonium compounds like Consan or Physan. You might also apply one of the newer fungicidal formulations that are effective against a broad-spectrum of fungal pathogens, like Heritage, Medallion or Pageant.

Summer orchid care recommendations can be very different depending on your geographical area, so take advantage of some archived articles in past issues of the magazine. The June 1993 *American Orchid Society Bulletin* contains a great series of articles for summer orchid care in the Hawaiian Islands, Pacific Northwest and Alaska, Rocky Mountains, Southwest, Midwest, Northeast, Southeast and Central and South Florida. The eight authors have some great suggestions to share for their regions. You can learn something from each of them.

## Citations and Additional Reading

Schafer, Douglas B. Baker, Gary, Gum, Arnold, Wright, Ed, McDowell, Duane, Cohen, Rita, Bolt, Alvin L., Osorio, Rufino. Summer Orchid Care, a Regional Guide to the Basics in the United States, 1993. *American Orchid Society Bulletin*. 62(6) 622-629.

Easton, Andy. *Summer in South Florida*. https://staugorchidsociety.org/PDF/SummerInSouthFlorida-AndyEaston.pdf

Motes, Martin. PhD. Florida Orchid Growing Month by Month. Redland Press, 2008.

Withner, Carl L. 1997. *Good Orchid Growing or the Concept of Stress on Plants*. Orchid Society of Nova Scotia newsletter. May.