Orchids For Dummies®

Cheat Sheet

You Say Po-tay-toe, I Say Po-tah-toe: Pronouncing Orchid Names

Genus	Abbreviation	Pronunciation
Aeranthes	*Aerth.*	Ay-er-*an*-thees
Angranthes	*Angth.*	An-*gran*-theez
Brassavola	*B.*	Bra-*sah*-vol-lah
Brassia	*Brs.*	*Brass*-ee-ah
Brassocattleya	*Bc.*	Brass-oh-*kat*-lee-ya
Brassolaelia	*Bl.*	Brass-oh-*lay*-lee-yah
Brassolaeliocattleya	*Blc.*	Brass-oh-lay-lee-oh-*kat*-lee-yah
Bulbophyllum	*Bulb.*	Bulb-oh-*fill*-um
Catasetum	*Ctsm.*	Kat-a-*see*-tum
Cattleya	*C.*	*Kat*-lee-ya
Cochleanthes	*Cnths.*	Kok-lee-*an*-theez
Coelogyne	*Coel.*	See-*loj*-in-ee
Coryanthes	*Crths.*	Kory-*an*-theez
Cymbidium	*Cym.*	Sim-*bid*-ee-um
Dendrobium	*Den.*	Den-*droh*-bee-um
Encyclia	*Encycl.*	En-*sik*-klee-ah
Epidendrum	*Epi.*	Eh-pi-*den*-drum
Epilaelia	*Epl.*	Eh-pi-*lay*-lee-ah
Laelia	*L.*	*Lay*-lee-ah
Laeliocattleya	*Lc.*	Lay-lee-oh-*kat*-lee-ya
Lycaste	*Lyc.*	Lye-*kass*-tee
Miltonia	*Milt.*	Mil-*tone*-ee-ah
Miltonidium	*Mtdm.*	Mil-tone-*id*-ee-um
Miltoniopsis	*Mltnps.*	Mil-tone-ee-*op*-sis
Odontobrassia	*Odbrs.*	Oh-don-toh-*brass*-ee-ah
Odontocidium	*Odcdm.*	Oh-don-toh-*sid*-ee-um
Oncidiuim	*Onc.*	On-*sid*-ee-um
Paphiopedilum	*Paph.*	Paff-ee-oh-*ped*-di-lum
Phalaenopsis	*Phal.*	Fal-en-*op*-sis
Phragmipedium	*Phrag.*	Frag-muh-*pee*-dee-um

Helpful [redacted]

aerial: root type, grows away from the growing medium (ex. roots on vandas)
AM: Award of Merit. Designation awarded to plants receiving 80 - 89 points in formal judging
anther: part of stamen bearing the pollen
AOS: American Orchid Society
backbulb: an old pseudobulb behind the actively growing part of sympodial plant.
bifoliate: having two leaves
blight: rapid decline and death of plant parts
cane: dendrobium psuedobulbs
clorosis: yellowing of green parts of plant due to chlorophyll breakdown, caused by pests or problems with soil, moisture
community pots (compots): a pot containing many seedlings or clones from a flask
deciduous: a plant that drops its leaves
epiphyte: air plant, grows on another plant, but is not a parasite
FCC: First Class Certificate. Designation awarded to plants receiving 90 points or more in formal judging
genus: a grouping of plants that have similar characteristics
habitat: the location a plant lives or grows
HCC: Highly Commended Certificate. Designation given to plants receiving 75-79 points in formal judging
host: a plant that gives nutrients to another plant
hybrid: a cross between species or hybrids
inflorescence: flowering part of plants, spike of flowers
keiki: offshoot of a plant. Hawaiian word for baby plants formed from mother plant
labellum: also called lip of flower
lip: modified part on flower, also labellum
mericlone: a plant propagated by using tissue culture from parent plant
monopodial: plant which grows from a single stem (Ex. Vandas)
node: area or joint on stem that will bear leaf, leaves
Orchidaceae: Latin name for the orchid family
parasite: organism living on another plant and gets its nutrients from the host plant
petal: inner segments or parts of the flower
pistil: female reproductive part of flower; bears seed
pseudobulb: bulb-like portion of the plant
rhizome: portion of plant that sends up new shoots; root bearing part
sepal: outer segments of flower
sheath: a covering that encloses a developing leaf or flower
species: a subdivision of a genus
spike: an unopened emerging flower stalk
stamen: male reproductive part of flower; bears pollen
tribe: a group of related species
unifoliate: having one leaf

by Vivi's Orchid Corner http://viviorchids.com

MISCELLANEOUS ORCHIDS

BRIEF DESCRIPTIONS

Paphiopedilums- Commonly known as the" Lady Slipper Orchid". These orchids are excellent house plants, and do well in the Northern states, or in cooler climates. Paphs. require low light and can bloom several times a year. Because Paphiopedilums have flowers of heavy substance, they can last for several months. Grow with the same requirements as African violets. The Lady Slipper Orchid is a terrestrial type orchid.

Phragmipediums- Another type of Lady Slipper orchid. These orchids can be terrestrial or epiphytic with no pseudobulbs. Several flowers may appear in succession on a single stalk. Most Phrags. will take more light than Phalaenopsis or Paphiopedilums. Generally these orchids are not as easy to grow and require more experience and patience to grow them successfully.

Epidendrum - Very large family of orchids from North Carolina to Argentina.Most are epiphytic. Some have prominent, pseudobulbs and another group are reed-type epidendrums with pseudobulbs. Through the years many species of Epidendrum have been moved to another genera, the **Encyclia** family. Both of these grow very well in Florida, like bright light and good air flow. Many of them will mount well.

Cymbidiums- Cymbidiums like cooler conditions. Their tall spikes have from 10-25 flowers, ranging from 2 12" to 6" flowers which last from one to three months. Because Cymbidiums have such long graceful leaves, they are attractive as indoor plants. Cymbidiums can be grown outdoors from May to early mid-October. They like night temperatures to fall below 58 degrees to initiate the flower spikes. When indoors, give them as much light as possible, a south, east or west window. Keep moist at all times, except after repotting. Cymbidiums are terrestrial type orchids.

Miltona- Miltonias, sometimes referred to as the "Pansy Orchid" should do well in the average home. They require low light conditions, and like a east or west exposure. Miltonias like to be kept fairly moist with a slight drying between watering. Miltonias like to be somewhat pot-bound, so allow room for only one year's growth.

Angraecum- The Angraecum orchids are constantly gaining popularity, even though they do not have the wide range of colors, such as the Cattleyas, and Vandas. The flowers are nearly all white or greenish white. Many are starlike, and all have a medium to long, slender spur. Angraecums originated from Africa and Madagascar. They grow well with temperatures of 55 degrees to 85 degrees. Short period of temperatures 10 degrees higher or lower are tolerated with little or no damage. Angraecums require low light and kept moist. Most Angraecums can be potted in mixtures used for Cattleyas, Phalaenopsis and Oncidiums.

Brassia- Sometimes called the "Spider Orchid" These orchids are known for their unusual, spidery flowers. Brassias can be grown with Cattleyas. Most of the flowers are in the light yellow shades, with brownish markings and barring. Brassias, like warm temperatures, kept moist and do not mind being pot bound. When they are repotted, keep in large divisions so they are not set back too much. Pot in the same mixture as, Cattleyas, or Phalaenopsis.

Bulbophyllum (bulb-oh-fill-um) constitute an enormous assemblage of species. They are widely distributed in North America, Central America, South America, Africa, India, Malaysia, Burma, Philippines, Australia and New Zealand, only excluding Europe. The flowers are often so small and ill-smelling that they are of little interest to orchid collectors. Because of they wide distribution, they are not easy to grow, unless one investigate the temperature requirements of the species they want to acquire.. MOST species in cultivation forgive abuse!!! Generally, proved lots of light, water, air movement and room.

Vanilla There are approximately 25 species in this genus. The Mexican Vanilla planifolia is by far the most commonly seen. Vanilla is a vine, which can grow many feet in length. Vanilla planifolia is the species from whose fruits (commonly called "beans") the flavoring vanilla is obtained. The flowers are in clusters of small yellowish flowers resembling the cattleya. Vanilla is terrestrial and epiphytic. If planted in the ground, provide a pole to which the aerial roots of the vines can attach. Strong light, high humidity, warm temperatures and good drainage will produce healthy Vanilla plants. **WORDS OF ADVICE:** Do not expect to harvest your own vanilla beans until the vines have grown 15 feet . Then when it flowers, it is necessary to hand-pollinate the flowers, keeping in mind that there is a flap over the stigmatic surface of the flowers. It is best to go to Publix and buy your Vanilla flavoring. Just grow the Vanilla orchid purely as an ornamental.

Zygopetalum There are sixteen species of Zygopetalum (zye-go-PET-a-lum) which are native to South America. Zygopetalums are very fragrant orchids. They thrive in cool or intermediate temperatures and can be grown outdoors in frost-free areas. They like lots of water, and fertilizer during periods of active growth in the spring and summer. The flowers are very striking with shades of greenish/brownish petals and sepals, with a large white lip accented with burgundy/plum markings.

Maxillaria Maxillaria (max-sil-Lair-ee-a) is native to a variety of habitats in the New World Tropics. There are approximately 300 species which can tolerate a variety of conditions. The species, Maxillaria tenuifolia, has a strong coconut fragrance. These orchids will thrive despite a hobbyist's unintended efforts to kill them. They are usually attached to tree fern, piece of wood or cork. They require fairly bright light, ample moisture and rapid drainage.

Grammatophyllum The Giants of the Orchid World. These can reach 25' with 5'-8' flower stalks. They can bear as many as 100 flowers with 5" to 6" flowers. Native to Asia to the Pacific. There are only 8 species in this family. They are cold sensitive.

Maximizing Your Collection's Potential During the Summer Growing Season

Despite the fact that plants, including orchids, grow year round here in south Florida, there is a distinct growing season. It is characterized by more robust, faster development. All you need to do is consider your lawn. It needs trimming more frequently from May through September, and even into October. Giving our orchids what they need at this critical time will help them reward us with more flowers in the future.

Take stock of your situation:

Examine your plants. How many still need repotting? What is the condition of your media?
Has other vegetation grown so large as to obscure light and air movement?
Have your healthy plants become larger and are now crowded?

Make a plan for the summer, starting right now.

Complete potting of sympodial orchids in June.
Complete potting of Phalaenopsis and resetting of Vandaceous orchids by the end of July.
Stock up on fertilizer, insect control products and fungicide.
Begin or continue a program of preventive fungus and bacteria control in June. Repeat monthly. It is best to use a broad spectrum product for this.
Apply snail bait lightly every half month.
Apply Bayer's Rose and Garden Pesticide to thrip loving outdoor plants.

Water issues

Especially in June, we expect deluges of rain. Opportunities to fertilize are few.
Plants need to dry out when possible.
July and August offer more opportunity to fertilize.

Pest and disease issues

Heavy rains of summer can cause rot and fungus.
Dryer stretches in July and August allow thrips and scale to attack.

Storm prep and recovery

Protect your orchids! Take **down** shade cloth or plastic. If you must leave them outside, soak them before the storm. If bringing in, bring in as dry as possible.

After the storm, get plants back out quickly. Treat for fungus and insects ASAP.

ORCHID CARE MONTH BY MONTH

	Vandas, Ascocendas	Oncidiums, relatives	Phalaenopsis	Cattleya
Jan.	**Feed 20-20-20,** 1 teaspoon/gallon once a week. Water every sunny day in the morning. Keep light at 46% shade year-round.	**Water twice** a week. Fertilize weekly after watering; fertilize regularly throughout the year. Light: 50% to 70% shade.	**Increase light** if possible: go to 63% shade cloth (from 73% used in summer). Minimum temperature should be 62°F as spikes mature. Use 10-30-20 fertilizer once a month. Use Super Thrive, 1 drop/gallon, every month year-round.	**Fertilize once or twice;** consider bloom booster formula. Apply Super Thrive to recently repotted plants, but not soluble fertilizer. Water to keep potting material from becoming absolutely dry. Grow in 50 percent shade. Use Orthene 75S for thrips. Protect plants from temperatures below 45°F.
Feb.	**Feed** as for January. Water every sunny day year-round. Protect from cold air.	***Oncidium splendidum*** blooms. Water twice a week. Light: 50% to 70% shade.	**Increase shade slightly.** Change to balanced fertilizer, such as 18-18-18. Do not repot. Watch for fungus; use Physan as a preventative.	**Fertilize once or twice.** Water as for January. Spray for thrips. Maintain good air circulation.
Mar.	**Feed 20-20-20,** 1 teaspoon/gallon once a week.	**Water equitant oncidiums** twice a week; they must dry between waterings.	**Increase shade slightly.** Minimum temperature should be around 65°F. Continue balanced (18-18-18) fertilizer. Phalaenopsis may still be in bloom. Repot those that flowered earlier; use New Zealand sphagnum moss. Check for fungus.	**Fertilize 2 or 3 times.** Growth usually begins after the 15th, depending on weather. Add Super Thrive to fertilizer. Water more frequently when breeze is abundant and temperatures are consistently higher. Repot sparingly.
Apr.	**Feed 10-30-20,** 1 teaspoon/gallon once a week for two weeks. Use Benlate, 1 tablespoon/gallon, as fungus preventive; spray once a week for 3 weeks. Repot as required.	**Most oncidiums** start new growth in spring. This is the best time to repot. Continue water, fertilizer schedule.	**Normal shade** of 73% for the growing season ahead. Or move plants beneath eaves of screened porch. Use a balanced fertilizer with one drop of Super Thrive per gallon. Fertilize every 2 weeks at half strength. Potting can continue on plants that have finished flowering. An application of Kocide fungicide is beneficial.	**Fertilize 2 to 4 times.** Increased humidity in rainy periods; less water needed. Return plants that flowered in past two months to former growing spots. Begin repotting as new growth emerges at base of pseudobulb. Control aphids, scale with Orthene 75S mixed with soap. Use Kelthane to control mites. Check for fungus. Reposition plants to avoid sunburn.
May	**Feed as for January.** Mist in afternoon if temperature is above 90°F. Use Manzate or Kocide, 1 teaspoon/gallon for brown leaf spots.	**Long-stemmed strap-leaved oncidiums** bloom. Water 2 or 3 times a week; let dry between waterings. Light: 50% to 100% shade.	**Keep close watch** as light is increasing rapidly. Continue repotting as necessary. Fertilizing should be kept up as plants are growing faster. Check for pests and fungus.	**Fertilize 3 or 4 times.** Water less when humidity is high. Watch for signs of "water mold" infections in leaves and pseudobulbs. Apply fungicide as needed. Continue repotting. Sterilize cutting instruments between uses.
June	**Feed 20-20-20,** 1 teaspoon/gallon once a week. Mist in afternoon if temperature is above 90°F. Watch for fungus in high humidity.	**Repot after blooming** as new roots and growths appear. Continue weekly fertilizer schedule and watering 2 or 3 times a week.	**Make sure light** intensity is 73%. Continue repotting as necessary. Fertilize and Super Thrive weekly using a balanced fertilizer of 18-18-18. Watch for pests and fungus. An application of Physan would help.	**Fertilize 2 to 4 times.** (If plants are growing outside and get rain frequently, fertilizer leaches quickly.) Water as for May. Finish repotting. Protect repotted plants from constant watering so these can make new roots. Use Truban against black rot. Spray only as needed to control slugs and snails.
July	**Feed and mist** as for July.	**Miltonias bloom.** Water 2 or 3 times a week. Feed at least weekly. Light: 50% to 60% shade. Continue regular water/fertilizer schedule.	**Continue using** balanced fertilizer. Repotting may continue if necessary. Mites may be a problem; check undersides of leaves. Excessive rain may cause a fungus or bacterial problem. Use a fungicide if necessary.	**Fertilize 2 to 4 times.** Water thoroughly as plants begin to dry; allow freshly repotted plants to dry out between waterings. Mix fungicide with fertilizer. Shriveled pseudobulbs indicate stress; too much light or excess water can cause root loss.
Aug.	**Feed and mist** as for July.	**Brassias, miltonias and miltassias** bloom this season. Water 2 or 3 times a week. Feed at least weekly.	**Protect against** excessive light. Use balanced fertilizer. Do not overwater. Repotting may continue. Stake spikes as they mature. Kocide as a preventative for fungus in this wet, humid period.	**Fertilize 2 to 4 times.** Continue fungicide program. Keep humidity as high as possible. Maintain good air circulation; add room fan. Water plants in the morning; sprinkle foliage lightly during the day when temperatures are highest.
Sept.	**Feed and mist** as for July. Watch for fungus.	**Brassias, miltonias and miltassias** need 50% to 60% shade. Feed half-strength solution weekly.	**Days growing shorter.** Fertilize with a balanced formula as usual. Repotting may continue. Stake up any stray spikes that have emerged. A treatment of Physan would help control fungus.	**Fertilize 2 or 3 times.** If plants are too green, use bloom-booster fertilizer on alternate treatments for the rest of year. Continue fungicide. Clean pseudobulbs of the protective sheathing. Position plants so newest growth faces southeast.
Oct.	**Feed 10-30-20,** 1 teaspoon/gallon once a week for two weeks. Spray with Benlate to prevent fungus.	**Light:** 50% shade. Can stand up to 75% full sun if accustomed to it gradually.	**Increase light slightly.** Change to a high-phosphorus fertilizer once a month. A treatment of Epsom salts, 1 lb. to 20 gallons of water, will help induce bloom spikes.	**Fertilize no more than twice.** Consider a bloom-booster fertilizer if plants are dark green and have been grown in deep shade. Continue fungicide. As the sun begins to fall, relocate some varieties to spots where light is adequate.
Nov.	**Feed 20-20-20,** 1 teaspoon/gallon once a week. Protect from cold air.	**Hybrids of *Onc. varicosum*** bloom in fall and winter. Water 2 to 3 times a week.	**Increase light** as necessary. Keep repotting to a minimum. Continue using high-phosphorous fertilizer formula.	**Continue October fertilizer regimen.** Do not leave potting material soggy. Watch for thrips and spider mites. Spray as necessary with Orthene 75S.
Dec.	**Feed 20-20-20,** 1 teaspoon/gallon once a week. Protect from cold air.	**Water oncidiums** 2 to 3 times a week. Light: 50% to 70% shade.	**Normal shade.** No repotting. Continue using high-phosphorous fertilizer. Keep all spikes headed south for proper development.	**Fertilize and water as for November.** Use fresh stakes when grooming. Continue fungicidal program. Watch for cockroach damage on roots and flowers.

Compliments of the: Martin County Orchid Society
P.O. Box 953211
Stuart, FL 34995-3211

FUNGICIDES USAGE		
Diseases	Fungicides & Formulation	Dosage
Damping-Off	Captan / Powder	1 Tablespoon per gallon
Fungus	Captan / Powder	1 Tablespoon per gallon
Fungus	Dithane M45 / Powder	1 1/2 teaspoons per gallon
Fungus	Neutral Copper/ Powder	1 1/2 teaspoons per gallon
Fungus	Kocide Copper / Powder	1 Tablespoon per gallon
Bacterial	Copper & Dithane	Mixed together becomes a Bactericide
Fungus & Rots	Subdue /Liquid / Systemic	7-30 drops per gallon
Fungus	Physan 20 / Liquid	2 Tablespoon per gallon

NOTES:

Damping-Off Diseases is found in seedlings.

When using Subdue, apply in six week intervals.

Do not use any Copper products on Dendrobiums.

SIGNAL WORDS OF TOXICITY

DANGER/ POISON --- Highly toxic

WARNING --- Moderately toxic

CAUTION --- Slightly to Least toxic

INSECTICIDE USAGE

Pests	Insecticide & Formulation	How It Works	Dosage
Ants	Diazinon/Liquid	Contact spray	1 Tablespoon per gallon
	Amdro /granules	Kills after eaten	See label for directions
Aphids	Malathion / Liquid	Contact spray	2 teaspoons per gallon
	Safer Insecticidal Soap	Contact	See label for directions
	Orthene / Liquid	Contact spray	1 teaspoon per gallon
Mealybugs	Malathion / Liquid	Contact spray	2 teaspoons per gallon
	Sevin / Liquid	Contact spray	2 teaspoons per gallon
Mites	Kelthane/Liquid/Miticide	Contact spray	1 Tablespoon per gallon
	Safer Insecticidal Soap	Contact	See label for directions
Scales	Malathion / Liquid	Contact spray	2 teaspoons per gallon
	Cygon / Liquid	Systemic	1 Tablespoon per gallon
Snails and Slugs	Metaldehyde / Bait or Dust	Kills after eaten	See label for directions

I have compiled a short list of pesticides, fungicides and fertilizers nearly all can be purchased on line from Amazon. When attending the orchid shows you can obtain most from the orchid supply vendors.

PESTICIDES: Orthene 2 teaspoons to the gallon: Apply early morning as a spray, kills scale, mealybugs, aphids and thrip. Reapply in 7 to 10 days to get newly hatched bugs. This is a systemic pesticide and is absorbed by the plants. The bugs are killed by ingesting the poison as they feed on your plants. Can be purchased on line from Amazon for approx. $15.00

Liquid Seven is a contact spray and is good for ants, roaches, etc that hide in the potting mix.

There are many other pesticides available, Orthene is my go to favorite.

FUNGICIDES: SA-20 disinfectant, this is a contact spray. I use to keep algae at bay and to freshen up potting mix. ¼ tsp to gal on seedlings in compots helps keep away damp off.

Dithane M-45 is a contact spray 2 teaspoons to the gallon. I mix this with Thiomyl which is a systemic to spray at the same time.

Captan WP is a contact spray 2 teaspoons to the gallon.

Thiomyl is a systemic and is absorbed by the plants. I use 1 teaspoon to the gal. This is also known as Clearys.

FERTILIZERS AND SUPPLEMENTS: Calcium Nitrate, Epsom Salt (magnesium), Maxicrop Liquid Seaweed, Magical (calcium, magnesium, iron), CalMag 15-5-15.

WATER:

I recommend a water test by professionals to let you know what supplements you need to add. This will also let you know if you have too much salt in your water.

I have County water, I run it through a charcoal filter to remove the chlorine. When I had the water tested by a laboratory I found out that there were practically no nutrients in it. The laboratory recommend that I use 15-5-15 CalMag fertilizer once a week at the rate of ¼ to ½ teaspoon to the gallon and that I supplement with magnesium weekly at the rate of one teaspoon to the gallon. It was also recommended that I adjust the PH of the water when apply chemicals and fertilizers to 5.5 to 5.8.

The County water has a high salt content approximately 110 ppm. Flushing the pots with copious amounts of water once a month helps to remove the salt build up in the pots and on the mix. Water well, wait 10 minutes, water well again. The first watering softens the salt that has dried on the pots and mix, the second watering flushes it out.

Epsom Salts – 1 tblsp/gal

DOSAGE CHART

Suggested dilution rates. The dilution rates provided in this list should serve as a general guide only. Remember to always start with smaller dosages. Always read the pesticide label and the manufacturer's recommended dosage for specific pests, plants approved, caution statements, pesticide application techniques and pytotoxicity info. We are not responsible for any problems you may have!

RATES PER ONE GALLON OF WATER			
INSECTICIDES		**FUNGICIDES**	
Black-Leaf 40	1 tsp.	Aliette	1 Tbsp.
Cygon 2-E	2 tsp.	Banrot	1/2 tsp.
Diazinon 25%	2 tsp.	Captan	1 Tbsp.
Isotox	1Tbsp.	Cleary's 3336	1/2 tsp.
Malathion 50%	2 tsp.	Liq. Copper	1 Tbsp.
Mavrick	1/4 tsp.	Dithane	1 Tbsp.
Orthene 75%	2 tsp.	Kocide	1 Tbsp.
Pentac Aqua Flow	1 tsp.	Natriphene	1 tsp.
Pentac W. P.	1 tsp.	Phyton 27	1/4 - 1/2 tsp.
Sevin W. P.	1 Tbsp.	RD20	2 tsp.
Sevin Liquid	2 Tbsp.	Thiomyl	1 Tbsp.
Slug-it	2 Tbsp.	Truban W. P.	1 tsp.
Dursban Liquid	1/2 tsp.	***only twice a year***	
Dursban W. P.	1/2 tsp.	Subdue	1/8 tsp.
Kelthane		1 Tbsp.	

Orchid Pests and Diseases

Warren Kelly of Orchid World International, spoke at last month's meeting about the control of orchid pests and diseases. He left the following chart to summarize some pest problems and possible solutions. He is a strong advocate of using TriSodium Phospate (TSP) to cleanse your cutting tools to help prevent the spread of disease. A comprehensive article about using TSP appeared in our newsletter of January 1996. The article describes the product and the advantages of using it. However, the authors caution that the solution can be irritating to the skin and advise protecting your hands when removing the tools from the solution. They also stress using straight TSP for use as a cleaning agent, not one of the many formulations with soap or detergent added.

INSECT AND PEST CONTROL CHART

from Orchid World Int'l., Inc.

Scale Insects and Mealybug	Cygon 2E = 2 tsp. per gallon of water Malathion 50% EC = 1 Tbs. per gallon
Mites	Kelthane 18% WP = 2 Tbs. per gallon of water 2 Applications 7-10 days apart should be made
Aphids	Malathion 50% = 2 tsp. per gallon of water Orthene 75s WP = 2 tsp. per gallon of water
Thrips	Orthene 75s WP = 2 tsp. per gallon of water
Snails and Slugs	Methaldehyde WP = Follow directions on label
Fungicides	Captan WP = 1 Tbs. per gallon of water Truban 30% WP = 1 Tsp. per gallon of water

Cinnamon as a Fungicide

The following is a reprint taken from the AOS Bulletin, February 1995. It was written by Jim Rice of Homer, NY, and has even been reprinted in England.

"Cinnamon, the table spice, has anti-fungal and antibacterial properties, this has long been known by chemical scientists. It has recently been used on orchids. I find our table-quality ground cinnamon is the finest chemical I have ever used on problems with phalaenopsis. Time will tell how well it works on other genera. When spots show, or there is leaf damage, or a need to cut a leaf, or whatever, cover it with a couple of shakes of ground cinnamon. It is amazing how quickly the spots dry up, the cuts seal over, and especially how quickly and completely those juicy, obnoxious blisters are dried up and contained at the size of discovery. Shake some cinnamon only where needed and most troubles disappear. Have affected parts moist enough for the cinnamon to stick; then keep the leaves dry for about a week. Powder the ends of a cut leaf when the cut is fresh and moist. Center rot of phalaenopsis seems to clear up completely." Bruce Ide, of AOS adds that he has used it successfully on cattleyas.

SOME COMMON SYMPTOMS

Diseases

Symptom	*What it might be*
Flowers become spotted with brown speckles	*Botrytis, Curvularia* and other fungi
Flowers show streaking of the colours (colour break)	Genetic defects; virus infection
Flower spray wilts and rots	*Phytophora* fungal infection
Leaves covered in sooty black deposit, especially at the base	Sooty mould
Leaves show heavy black patches or streaks	Virus infection; crown rot or black rot
Leaves show black streaks	Guignardia fungal infection
Leaves show black spotting or freckling	Cercospora, *Phyllostictina*, other fungi; viruses
Leaves show heavy yellow or yellow and black mottled discoloration	Virus infections
Leaves show ring-shaped black or yellow marks	Ring virus
Leaves show brown spots with yellow edges	Bacterial rot; Cercospora fungus
Leaf shows rapidly spreading brown patch of soft tissue	Bacterial rot
Leaf: dry dead part shows regular or concentric bands	Anthracnose fungus
Leaf becomes loose and lifts away, base is rotten	Black rot or crown rot; basal rot
Leaves in crown become brown and rotten	Bacterial rot; black rot/crown rot; damping off
Leaves in crown black, especially at the base, and lift away	Black rot or crown rot
Paphiopedilum leaves turn dark brown and shrivel	Cypripedium brown rot
Plant fails to thrive and leaves/roots appear dessicated	Fusarium wilt
Roots covered in white encrustation, plant dries out	Snow mould
Roots shrivel and rot	Black or basal rot, Fusarium wilt, *Pellicularia*
Shoots or pseudobulbs rot upwards from the base	Basal rot

SOME COMMON SYMPTOMS

Pests

Symptom	*What it might be*
Flowers show distortion and discoloration, flower spike may be distorted	Thrips
Flower spike may be eaten	Snails; beetles and beetle grubs; caterpillars; grasshoppers and locusts
Flowers eaten	Beetles
Leaves eaten	Snails; locusts; bird damage
Leaf whitish or silvery underneath, with yellow or black discoloration. Minute reddish specks may be visible	Red spider mites; false spider mites
Leaves covered with tiny brown specks that can be scraped off	Scale insects
Leaves eaten away in patches leaving a skin	Agonita beetle
Leaf bases or flower spikes infested with a white powdery mass	Mealy bugs
Root tips eaten away	Cockroaches; snails
Young leaves or pseudobulbs show small holes, small black insects that are hard to crush may be seen	Weevils; crane fly maggots
Young shoots and leaves eaten	Slugs, snails, squirrels, sparrows

Cultural Problems

Symptom	*What it might be*
Buds drop off before the flowers open	Polluted atmosphere; too much or too little water
Leaves turn yellowish green	Too much sun
Leaves turn wrinkled and dry	Not enough water; atmosphere too dry
Whitish patches of dead tissue form in the middle of leaves	Sunburn: give less direct sun
Plants will not flower again	Plants need repotting; plants too shaded; too much high nitrogen fertilizer; plants needs drying out after growing; imported plant unsuited to lowland tropics
Plants generally fail to thrive	Old potting material; pot too large or too small; failure to fertilize; inadequate or excessive watering; plant diseased

pH of Water

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by Dr. Courtney Hackney, hackneau@comcast.net

Orchid Growing Tips

Few orchid growers can explain why pH is important to orchid culture. If one looks up pH in the dictionary, the definition has to do with the number of hydrogen ions in water; a fact that has little meaning to most of us.

The pH of water used to grow orchids is important and so is the pH of the medium used. Most hobbyists use whatever medium is available and the water that comes from the tap. They do not need to understand pH because the combination of medium and water they are using is well within the ideal range for most orchids.

Many years ago, Ralph Wasdon, was known as one of the best orchid growers in Eastern North Carolina. He was noted for using only K-Mart generic fertilizer, one of the cheapest around. Other growers, noting his technique tried to duplicate his growth without success. Ralph knew nothing of pH, but by trial and error had found the right combination of growing medium, which when combined with his water source and fertilizer, provided an almost perfect pH balance for the absorption of nutrients. His very dilute fertilizer mix, resulted in water with a pH of 6.2, ideal for nutrient uptake.

There are a few of us who have extremely poor water or who decide to try a new type of fertilizer, growing medium, or pesticide/fungicide who do need to understand pH. Some water sources are extremely basic or acidic and there are a few fertilizers that contain excess micronutrients. Micronutrients can be toxic under very low pH.

Hobbyists that try to improve their growing by testing water for dissolved solids or pH may also fail to appreciate that it is the pH of the medium combined with water that is most important. While water source is one component, most water and nutrient uptake occurs where roots are in contact with the medium. Here, the pH may change dramatically from that of the applied water.

In peat based media, for example, the breakdown products of peat lead to acid conditions that may become extreme. If micronutrients are in the water source or applied as fertilizer they may become so soluble under acidic conditions that the orchids receive toxic levels. This can be exacerbated by using some of the high nitrogen Cal-Mag fertilizers especially blended for orchids. These fertilizers, when mixed with water, lower the pH. Typically, this is not a problem if the water source is full of minerals. If the source is rainwater or deionized water, the acidity can be so extreme that orchid roots are killed. Adding a solution that raises pH can produce fantastic growth in orchids, but requires control of the pH.

Many pesticides are most effective at a specific pH, usually slightly acidic. One popular fungicide, Kocide, can be toxic under a very acidic pH, but very effective if the pH is over 7. Kocide contains copper that is soluble and taken up by plants at lower pH values.

So what does the average orchid hobbyist need to know about pH. If your orchids are growing well, the answer is nothing. If you begin experimenting with new fertilizers, media or pesticides, a simple pH meter may prevent you from damaging your orchids and make you a better grower.

Orchid Basics: The How and Why of Water

More orchids are killed by incorrect watering than by any other reason. There are two separate components to proper watering; when and how. The vast majority of orchids grown by hobby growers are epiphytes, growing on trees above the ground where the light is more plentiful. These plants are adapted to having their roots exposed to light and air so in addition to water, orchid roots need air. The central core of an epiphytic orchid root is covered with a spongy material called *velamen* designed to store water. When this spongy material remains wet too long, the central core suffocates and begins to rot. Once the roots begin to rot, the plant can no longer take up water properly and a whole host of problems begin. At worst, root rot will spread upward into the rhizome and cause the death of the plant. In other cases, the loss of roots prevents the plant from absorbing sufficient water to maintain the plant in good condition and the leaves will take on a wrinkled appearance. Unfortunately, the symptoms of over-watering and under-watering are superficially similar and the tendency is to increase watering rather than inspect the roots. Over-watered roots will be brown and mushy while those on under-watered plants will be white or gray and obviously dry. Let's look first at when to water.

When do I water?

Orchids should be watered just as they dry out. This rule applies to all orchids with slight variations depending on whether your plant has pseudobulbs (thickened stems that are designed to store water) or not. Orchids such as cattleyas and oncidiums should be allowed to just dry completely between waterings while orchids such as phalaenopsis and vandas that have no water storage organs should be watered just before dryness occurs. For vandas, this may mean daily watering during the warm summer months. Vandas and ascocendas that are properly watered will have actively growing root tips at all times. If the root tips on your plants dry up and seal over, you are not watering often enough.

There's unfortunately no magic formula; i.e., water a plant in a 6" pot every 7 days and you'll be trouble free. This is because your growing area is different from anyone else's. Humidity, air movement, potting medium (type and age) and light levels all play a role. There are several ways to determine when a potted orchid is almost dry: 1) the surface of the potting mix will appear dry; 2) dry pots will feel lighter when lifted; 3) clay pots feel dry; 4) a wooden stake or skewer inserted into the potting mix will come out almost dry. If in doubt, a finger inserted into the potting mix is perhaps the best tool to determine the moisture content of the potting mix. It will cause no harm to the plant. And remember, fresh potting mix will always dry out faster than the old medium.

How do I water?

How to water is just as important to proper culture as when to water. When orchids are watered, they should be watered copiously. Water should be provided until it runs freely from the drainage holes. This serves several functions. First, thorough, copious watering is necessary to soak the potting medium. In addition, thorough watering helps to flush away the salts that naturally accumulate in the potting medium from the dissolved salts in our water supplies and the fertilizers applied for good growth. Also, this is your opportunity to examine how the potting mix behaves. If you cannot pour water rapidly through the pot, the potting mix is too dense and you run the risk of starving the roots for air. If you see finely divided material that looks like coffee grounds in the water coming from the drainage holes, your potting mix is breaking down and it's time to repot into fresh medium. At a minimum, try to thoroughly water your plants at least once a month.

Finally a couple of notes about mounted plants and those like vandas that are grown in baskets without additional potting medium. First, avoid dunking these plants in buckets of water. This practice very easily spreads diseases. If one plant has a disease, all those dunked in the same bucket of water will have been exposed as well. Also, two short waterings a few minutes apart are much more effective than one long watering. Once water runs off the plant, the roots will have absorbed essentially all they can at that time and excess water simply runs off to the ground. The proper technique is to water your plants and then a few minutes later water them again, always beginning with the first plant you watered. This allows time for the roots of the last plant watered to finish absorbing water before you wet them again. Roots that are completely saturated will be a solid color while those that are not will appear mottled.

Ron McHatton, AOS Director of Education

WATER

Clay pots dry out faster
Plastic pots stay moist longer
Tree-Fern plaques, cork slabs and hanging slat baskets need more water than plastic pots, because they dry out faster with the winds and breezes.

WATER QUALITY

Less than 525 ppm (parts per million) soluble salts is good.
525 ppm to 875 ppm, use with caution.
More than 875 use different water.
Clay pots absorb salts from fertilizers.
Plastic pot will not absorb salts.

Hard water can be a problem.
Do not use water softener water for your plants.
City water is usually acceptable.

Ph- A symbol for the degree of acidity or alkalinity of a solution.
Ph should be between 5.5 and 6.5.

Rainwater is not as pure as it was years ago. Avoid using holding tanks, since problems for disease or bacteria can be created by keeping rainwater for long periods of time.

Exploring Orchids

Bud Blast

There are numerous reasons for this problem. Here are a few:
Location: A change in location is one of the most frequent causes of blast. This can mean a new home or just a move within your environment.

Chemicals: Improper use of any chemical can wreak havoc on buds and plants. Follow the label unless told otherwise by a reliable source.

Insects: Thrips, aphids and mealybugs are all culprits. Mites will damage your plans, leading to blast. Use Orthene systemic, Malathion, Bayer Systemic with Imidacloprid or Safer Soap. The systemics are often used as preventive care. Safer soap is used when insects are present. A safe alternative is: 1 part 409, 1 part alcohol and one part water. Shake well and spray. Also soak the medium if the infestation is heavier than just a few bugs. That formula will work on mites, but will be even more effective on them with the addition of some cooking oil.

The Weather: Rain can cause blast by soaking a bud in its sheath. Sudden changes in temps can do it. Any kind of bacterial infection or fungus will affect buds, and that can come from too much moisture.

Fruit: Ripe or ripening fruit in proximity to orchids will cause drop. The fruit exudes ethylene gas, which is death to buds and open flowers alike.

How to Make A Detox Center for the Potting Bench

Ed Wright and Bill Tippit explain how cleanliness leads to a healthy orchid collection.

Cutting tools pose a constant threat for infecting plants. Left loose in the greenhouse or on the potting bench, pruners, knives and razor blades can accumulate a deadly assortment of pathogens. One way to minimize the risk is to store cutting tools in a high pH or alkaline solution. Trouble is, most of these solutions are extremely corrosive. The exception is a chemical called tri-sodium phosphate or TSP. This useful product is sold in paint stores as a deglossing agent for priming paintwork and it is also sold in many formulations as a cleaning agent. For greenhouse use, get straight TSP, not one of the many formulations with soap or detergents added. Cost should be about $1.50 per pound in 5 pound-boxes. When cutting tools are stored in a saturated solution of TSP, they not only stay clean, they stay rust free. We have single edge razor blades that have been in a saturated solution of TSP so long they're old enough to shave, and none has rusted. There are some cautions, however. First, protection for ourselves. Strong TSP solutions can irritate the skin and can also cause thinning and curling of fingernails. To avoid this, we retrieve our tools out of TSP baths with kitchen tongs. For razor blades, we have a special pick-em-up gadget that will be described later. A second concern is for the handles on some shears and scissors. If handles (or blades) are made of aluminum, pot metal or zinc compounds, they will corrode or dissolve in TSP over an extended period. Tools with stainless steel, most other steels and plastic parts will not be affected. Follow good greenhouse practice and test each item before committing to unqualified use. A few supplies found around the house can be assembled into a detox center for orchids where tools can be kept clean and handy.

A final concern is the saturated solution. Saturated means the solution will absorb no more TSP; any surplus will simply appear on the bottom of the container as granules. This is what we want: free TSP granules on the container bottom. They indicate the solution is saturated and is at maximum strength and effectiveness. Next, rinse each cutting tool after use and before it is put back into the TSP solution. This will keep foreign-matter contamination to a minimum. You may also want to rinse each cutting tool when taking it from the TSP solution for use: not for the plants, but to keep TSP levels from building up on your hands. As a keystone for good sanitation practice, a TSP tool laundry can serve economically and effectively.

In practice we reserve cutting tools in a TSP solution stored in a 3-gallon Rough Tote storage container made by Rubbermaid. Install some version of this treatment center in your greenhouse in the near future. While no reasonable procedure seems 100% effective against every orchid ailment, we feel this one has significantly reduced our plant-disease problems, promoted all around better results and given us peace of mind out of all proportion to the modest cost.

Documentation

If you only have five, it won't take long, but old hands will tell you that the addiction will strike, and overnight you will find you have fifty. So start documenting whatever you now have. What method do you want to use to keep your records? Bob VonStein started with a rolladex, but outgrew it; Georgia Loudermilk keeps a loose-leaf notebook page for each, complete with picture; Cy Sommer paints each one as it blooms, and John Murchake keeps his large collection in a database on his computer. No matter which method you choose, be as complete as possible. Start by giving each a number. I also put these numbers on the pots and on the labels. Be sure to note its full name, if it is a species, what country it comes from; if it is a hybrid list its parents.

Describe the plant: (unifoliate, bifoliate, pointed leaves, etc.) Record the date you acquired it, from whom, when it was last divided, when it bloomed, how many blooms, color and size of bloom, fragrance if any, and any characteristic you may observe, such as "blooms best when potbound." When the plant needs repotting I put a big R in the margin; then when it has been repotted, I note how many divisions, and if I sell one, that is noted. You might list the price you got for a division; that might help you price another division at a later auction.

I am sure you have thought of other items to be recorded. But if you already have kept an inventory, maybe for many years, why not take this semi-dormant time, perhaps right after our Orange Blossom show, to check all your plants and bring your inventory up to date. I am going to make a new list of plants that need repotting, and those I intend to put in the next auction. At this time I will cut through the rhizome of the repottables where I think the division should be made, and hopefully that will stimulate new roots on each division before spring when I pull them out of the old pots. This process was mentioned by our speaker at the October meeting, and I remembered Dave Cree describing it at a potting session several years ago. It worked well for me.

Nobile Dendrobiums

1. These need high light, so grow with Cattleyas or other Dendrobiums. They are getting enough light when their leaves are light green.
2. Any fast draining medium is fine as long as you adjust your watering habits to suit. You will need to water more frequently if using Aliflor, Hydroton or other expanded clay medium.
3. Do not overpot. Like other Dendrobiums, these like tight shoes. Repot when the medium has broken down or the pot will no longer hold the plant. The new pot should be no larger than to allow for 2 years growth, maximum.
4. Winter rest. In their natural environment, rain is very sparse in winter, but there is fog and other moisture. Water very sparingly in winter, allowing nature to do the job. But don't let the plant completely dry out. Resume normal watering when you see growth, typically buds. Hold off fertilizer during the rest period.
5. Leaf drop. Nobiles are naturally deciduous. They will drop their leaves and the buds will form on the bare, fleshy canes.
6. Temperatures. Unlike the hard caned Dens we grow, these actually relish some cold weather and can even tolerate a short frost. Don't protect them from our mild winters.

Here are some great web sites:

The St. Augustine Orchid Society has a wealth of information:
Staugorchidsociety.org

To learn about orchid species, use Jay Phal's orchid encyclopedia:
Orchidspecies.com

For information on semi hydroponic growing, potting materials, natural remedies, a photo gallery and much more try Ray Barkalow's site:
Firstrays.com

Call or write me anytime over the summer break if you have any questions that you think I might be able to answer.

Catasetinae Plant Culture

Cycnoches, Catasetums, Mormodes, and Clowesia

The cultural information below is a generalization and will apply in most situations; however each grower and growing environment is different. I encourage you to make adjustments based on your experience and growing conditions.

Catasetinae have a distinctive growth and rest period (dormancy). For best plant growth it is important to understand and respect these growth phases. When the plants are in active growth maintain constant root zone moisture and fertilize regularly. This is essential to optimizing the development of new growth. When the plants are dormant little or no water is needed as the pseudobulbs store enough moisture and nutrients to survive the dormancy.

Catasetinae plant culture is not difficult. All it takes is an understanding of the seasonal growth patterns. The plants vegetative state signals to the grower their changing needs. Interpret the signals and make the appropriate cultural adjustments. Here is what to look for:

Early spring:

Catasetinae begin their new growth in early spring. However, watering should wait until the new growth has well developed new roots. This means you should let the new roots grow to an approximate length of 3-5" before you begin watering. Let me emphasize this point. Wait to water until the new roots are well developed. The waiting to water is not easy, my natural instinct is to begin watering when I see new growth, but I have learned through trial and error that it is better to wait to water than start watering too soon. I also believe that Catasetinae roots deteriorate during dormancy and in the following year they are not as effective at taking up moisture and nutrients. This makes the new roots vital in the plants health. This reinforces the message about not watering too early.

Mid-Season:

Once the new roots are sufficiently developed, this is the period where the plants are rapidly developing their new pseudobulbs. There is a surprising amount of growth that occurs in these 3-4 months, often the plants will double their size. Due to this, the plants require constant moisture and regular fertilization. In most cases, irrigation will be need 2 or 3 times a week. A balanced fertilizer at full strength is suitable for this rapid growth. Light levels at or above those suggested for Cattleya will help insure strong good growth and flowering. This is the time when the fruits of your labor will begin to pay off as the flowering season is in underway.

Late Season:

Sometime after flowering, in the late autumn the plants will begin to enter the dormancy phase. Understanding the signals of the onset of dormancy and the factors triggering it are important is good plant culture. The plant first signals are the yellowing and browning off of the leaves, at this time stop fertilizing and reduce watering by ½ and when most leaves are yellow/brown and have dropped off cease watering altogether. The general rule to follow is: by the 15 th of November stop fertilization and reduce watering by ½. Most leaves should have yellowed or fallen off by the 1 st of January, however, if the plants still have leaves all irrigation should be stopped at this time.

The onset of dormancy is caused by several factors, the maturity of the pseudobulb, shorter day length, cooler day/night temperatures and a reduction of root zone moisture. In most of the country dormancy occurs naturally however when the plants are cultivated in warm growing areas such as in South Texas, Florida, Hawaii, or in the home or under lights sometimes dormancy needs to be encouraged. I have found that stopping watering in early January regardless of the number of green leaves will trigger the dormancy.

Note: Watering during dormancy should only be done it the plant shrivels severely. Usually a single irrigation is sufficient to restore the bulbs.

Here's a summary:

- As the new growth develops wait to irrigate until the new roots are well developed and are 3 to 5" long. (don't be in a hurry to water, it is better to wait)
- Irrigate and fertilize frequently while the plants are in active growth.
- Stop fertilization and reduce irrigation by ½ around by mid November.
- Cease watering by the 1 st of January.

Light levels: Catasetinae like light levels comparable to Cattleyas at about 2500-4000 foot candles (fc) However, the plants are widely adaptable and do well with light levels as low as 1500 fc and as high as 5000 fc. For optimal growth I suggest a Southern exposure or a location where a the plants will receive plenty of bright, filtered light

Potting mix: For mature plants I have been using a 3/1 of mix of fine 'Kiwi Bark' and medium Perlite. For seedlings up to a 3" pot size I like to use New Zealand sphagnum moss with the bottom 1/3 of the pot filled with Styrofoam peanuts. However, this genus is not too particular in what it is potted in and any well drained media will work well.

Containers: I prefer to grow in plastic pots, however clay pots, baskets, and cork slabs will all work. Catasetinae don't like to be over potted, select a pot size that will allow for 2-3 years of growth.

Fertilizer: When in active growth, regularly use one teaspoon of your favorite fertilizer per gallon of water.

Air movement: Catasetinae enjoy abundant air movement, if you are growing in a green house use air circulating fans. Also, hanging the plants allows for maximum air movement around them and often they do best hanging.

Repotting and Dividing: Is done as the new growth is just starting to develop and before the new roots start to show. (remember no watering until the roots are well established, 3-5" long). Unlike most orchid plants Catasetinae do well when divided in to 2 bulb pieces. Divisions are made by cutting with a sterile tool or by pulling the bulbs apart. I try to keep the size of my plants between 2 and 5 bulbs.

Insect pests: Catasetinae are generally pest free, however spider mites are attracted to the soft leaves of these plants. Spider mites are quite small, they live and feed on the undersides of the leaves. Take care in checking for them as the plants are leaning out and control them with a recommended miteacide from your garden center. Although the leaves will drop off during dormancy this is not an excuse to not treat for them.

Please feel free to contact me on any question regarding the growing of this genus. Once the basics are understood they are very rewarding. fred.clarke@worldnet.att.net