ORCHIDS 101

Carolyn S. Saft
Suwannee County
UF/IFAS Extension
One of the largest families of flowering plants

- More than 800 genera
- Over 25,000 species
- 120,000+ registered hybrids
Types of Orchids

- Epiphytic
- Terrestrial
- Lithophytic
Growth Habit

Monopodial
One foot - arises from a single main axis

Ascocentrum
Phalaenopsis
Vandas
Plant Parts - Monopodial

- Aerial root
- Main stem
- New leaf
- Crown
- Flower spike
- Flower
- Seed capsule
- Keiki
Growth Habit

**Sympodial**

Many feet – main stem (rhizome) grows horizontally and produces many determinate lateral branches

- Laelias
- Cattleyas
- Dendrobiums
- Oncidiums
Plant Parts - Sympodial

- Root
- Rhizome
- Eyes
- New lead
- Leaf axis
- Pseudobulbs (thickened stems)
Plant Parts - Sympodial

Leaves
Sheath
Bud
Flower
Seed pod
Keiki
Culture

Air Circulation

Potting Media

Light

Water

Fertilizer

Temperature
Site Location

- Water source
- Security
- Morning light
- Air circulation
- Temperature
Light

- Leaf color
  - High
  - Medium
  - Low

Temperature

- Highs
- Lows
- Low night time temps to bloom (*Cattleyas & Dendrobiums*)

*Cattleya amethystoglossa*
Air Circulation

- Reduces heat build up
- Prevents air stagnation & gas build up
- Helps evaporate excess moisture
- Slows break down of potting medium

*Ceratostylis philippinensis*
Water

Water depends on
   Season
   Humidity
   Wind speed
   Type of orchid
   Cloudiness
   Potting media
   Container
Water

- 90% of an orchid is water
- Nutrient transport
- Most orchids prefer to get wet and dry-out
- Over watering - The cause of most domestic orchid deaths
Water

- Signs of dehydration
- Each new growth should be larger than previous years growth
- Ways to check water
Water

- PH should be 7.0 or lower
- Avoid water from softeners
- Moderate water temperature
Avoid dunking in buckets
Avoid placing plants in saucers
Keep water from splashing up from ground onto plants
Stagger hanging plants

Aerangis hyaloides
Water

- Flush frequently with fresh water in coastal areas
- Water in AM *not* PM
- Keep water from puddling in crown
Some *Dendrobiums* need dry, dormant periods to stimulate blooming.
Fertilizer

NPK Ratio

Balanced
- 18-18-18
- 20-20-20

Unbalanced - Bark
- 30-10-10

Bloom Booster
- 10-30-20

Micronutrient - very important
Fertilizer

Water Soluble

Time released

Schedule
1-2 x per month

Fertigation
Types of Media

- Pine Bark
- Tree Fern
- Redwood Fiber
- Cork nuggets
- Pumice (volcanic rock)
- Charcoal
- Sphagnum Moss
- Vermiculite (expanded mica)
- Osmunda Fiber
- Coconut Fiber
- Lava Rock
- Styrofoam
- Solite (gravel rock)
Containers

- **Pots**
  - Clay (good drain holes)
  - Plastic (bulb or azalea)
- **Baskets**
  - Wooden slat (cedar or teak)
  - Wire or plastic mesh
- **Slabs**
- **Logs/Driftwood**
- **Trees**
- **Rocks**
- **Ground**
Common Insects

- Ants
- Aphids
- Cockroaches
- Mealy bugs
- Mites
- Moss flies
- Scales
- Slugs
- Snails
- Thrips
Ants

SYMPTOMS: insect sighting, look for scale, mealy bug or aphids

PLANT PART AFFECTED: Entire plant

TREATMENT: Drown with water, Spray with house & garden insect killer
Aphids

SYMPTOMS: Deformities & yellowing

PLANT PART AFFECTED: Buds, flowers & new growth

TREATMENT: Wash off with water or insecticidal soap spray
Cockroaches

**SYMPTOMS:** Chewing damage

**PLANT PART AFFECTED:** Buds, flowers & roots

**TREATMENT:** Sprinkle Sevin dust on roots & media
SYMPTOMS: Yellowing - plant discoloration - look for wooly exterior covering of insect
PLANT PART AFFECTED: Found in leaf axis, base of pseudobulbs, flower spikes
TREATMENT: Insecticidal soap or isopropyl alcohol
2 Spotted Spider Mite

SYMPTOMS:
Silvery patches on underside of leaves
Stippled appearance top of leaf surface

PLANT PART AFFECTED:
Leaves

TREATMENT:
Insecticidal soap or systemic miticide
Armored Scale (Diaspididae)

Boisduval scale
Proteus scale
Florida red scale
Red orchid scale
Vanda orchid scale

SYMPTOMS: Yellowish discoloration of leaves
PLANT PART AFFECTED: Rhizome, pseudobulb, leaf sheath, leaf
TREATMENT: Horticultural oils, systemic insecticides
SYMPTOMS: Leaf yellowing, chlorotic appearance
PLANT PART AFFECTED: Leaf, pseudobulb, under onion like “skin”
TREATMENT: Alcohol, insecticidal soaps
Snails & Slugs

SYMPTOMS: Holes, missing plant parts, severed root tips

PLANT PART AFFECTED: pseudobulbs, flower spikes and buds, roots

TREATMENT: Hand pick, snail &, slug pellets, keep area clean of leaf debris
Thrips

SYMPTOMS: Flower buds fail to open, flowers are deformed, flowers turn brown and petal are streaked or discolored

PLANT PART AFFECTED: Buds, flowers, flower spikes

TREATMENT: Insecticidal soap, Malathion
Diseases

- Bacterial
- Fungal
- Viral

Petal Blight - Botrytis
Bacterial Diseases

- **Brown spot** (*Pseudomonas*) - Soft, water soaked lesion on leaf turns brown or black (esp. *Phaleonopsis*)
- **Brown rot** (*Erwinia*) - small round water soaked yellow spot in middle of leaf, leaves have “greasy appearance”
- **Soft rot** (*Erwinia*) - through wounds, rapid, wet w/ odor. (esp. *Cattleyas*)
Bacterial Brown Spots

caused by *Pseudomonas*

caused by *Erwinia*
Fungal Diseases

- Black Rot (*Phytophthora*)
- Black Rot (*Pythium*)
- American Anthracnose (*Glomerella*)
- European Anthracnose (*Gloeosporium*)
- Rust (*Uredo*)
- Leaf spot (*Cercospora, Phyllostictina*)
- Snow mold (*Ptychogaster*)
European Anthracnose

Leaf Spot (Phylllostictina)

Rust
Fungal Diseases (cont.)

- Sooty Blotch (*Gloeodes*)
- Root rot (*Rhizoctonia*)
- Fusarium Wilt (*Fusarium*)
- Southern Blight (*Sclerotium*)
- Petal Blight (*Botrytis*)
- Sooty Mold (*Capnodium*)
Viral Diseases

- **Cymbidium Mosaic** - most common virus in Florida, over 60 Genera have been found with it - sunken brown to purple black patterns (longitudinal streaks, brown necrosis on flowers)

- **Cattleya Flower Break** (Tobacco mosaic virus “o” strain) - irregular splotches of color pigment in flowers

- **Vanda Ringspot** - Slightly raised, yellow, concentric rings esp. on upper leaf surface- yellow area dies & turns purplish black
Overview

Buy plants with nametags

Leaves - bright, grassy green color

White roots with bright green growing tips

Look for live eyes and new growth on bare root plants
Overview (cont).

- Most orchids like to get wet & dry out
- Air circulation is critical
- Bright light is needed for flowering
- Select media & containers suitable for your conditions

Renanthera monachica
Thank you & Happy Growing

Carolyn S. Saft
Suwannee County