

# ORCHID PESTS & DISEASES

## Part 1 - Pests

VAOS Growers Clinic Presentation

# Objectives

- How to identify common pests
- Early symptoms of pests
- Treatment and control
- Focus on new growers with small collections
- Focus on home remedies, natural products and readily available contact pesticides

# Common Orchid Pests

- Common Insects
  - Scale
  - Thrips
  - Mealybugs
  - Aphids
  - Whiteflies
- Spider Mites
- Snails & Slugs
- Ants & Roaches

# Best Practice to Avoid Pests

- Examine plants closely and frequently
  - Under leaves, base p-bulb, leaf axis, roots
- Isolate and treat problems promptly
- Good air circulation – increase when hot
- Well- spaced plants (cat walk)
- Maintain clean growing area/remove debris
- Peel off dead sheaths after rain
- Water early a.m. or late afternoon

# Treatment – Home Remedies

- Alcohol/Water/Soap
  - Basic recipe: 50% alcohol - 50% water – few drops soap
- Variations
  - Add 1 cinnamon stick for bacterial benefit
  - Some add ½ tsp. neem oil
  - Use Dawn or Ivory dish liquid for soap
  - Use only 70% isopropyl rubbing alcohol
- Application
  - Spray heavily top and bottom leaves, isolate, set in shade
  - Spray every few days for 2 weeks

# HOME REMEDIES

- “Kill Sauce”
  - 2 parts water
  - 1 part alcohol (70% isopropyl)
  - 1 part Simple Green or Murphy’s Oil Soap or 409
  - Spray 3 to 4 day intervals for 2 to 3 weeks

# Dreaded SCALE!

- Common and destructive
- Most important pest in orchid collections
- By the time you see it.....
- Difficult to control and eradicate
- Symptoms
  - Yellow spots & turtle shells on leaves
  - White spots under p-bulb sheath
  - White cotton like masses at base of p-bulbs, under leaves and leaf axis

# Boisduval Scale





# Scale Treatment & Control

- Inspect plant carefully
- Peel off dry sheaths
- Examine base of p-bulb and leaf axis for soft scale (male)
- Examine leaves for yellow spots and turtle shells (female)
- Examine under dry sheaths for crawlers
- Jet stream of water to dislodge soft scale
- Soft toothbrush to dislodge scale (sterilize)

# Scale Treatment & Control

- Alcohol/water/soap spray every 3-4 days for 2-3 weeks
- Isolate plant during treatment. Suspect surrounding plants.
- Remove turtle shells manually
- Spray entire plant including underside of leaves
- Consider repotting if badly infested
- Dead scale flicks off with fingernail

# Scale Treatment & Control

- Natural Treatments
  - Neem oil, Nature's Care, etc.
- Contact Pesticides
  - Insecticidal soap
- Systemic (Orthene) Big Guns! Use caution
- Rotate pesticides
- Only use products labeled for Ornamentals
- Have developed resistance – will return

# Thrips

- Piercing/sucking insects
- Attack buds
- Dry, hot weather (Year round)
- Most difficult to prevent/control
- Can spread virus
- Early warning: Indented rings or girdling around new root tips
- Damaged, distorted buds (too late!)
- Virus-like damage to flowers (color break)
- Prematurely browning of flowers
- Tiny slim black crawlers under petals

# Thrips



# Treating Thrips

- Alcohol/water/soap - spray buds daily if suspect
- Commercial contact pesticides
- Systemics:
  - Orthene (Acephate 97%)
  - Imidacloprid (Bayer Tree & Shrub)

# Mealybugs

- Hide on roots & rhizomes & under sheaths
- Active – crawl from 1 plant to another
- Look for longtail filaments
- Weakening & loss of leaves, buds, flowers
- Create honeydew – attract ants
- Similar to soft scale

# Mealybugs

- Infections spread quickly
- Overlapping generations – treat every 10-14 days
- Repotting may be necessary
- Alcohol/water/soap spray
- Contact pesticides



# Mealybugs



# Aphids

- Common orchid pest – sap sucking insect
- Slow moving, soft-bodied, related to scale
- Female births 100 ea. day for 20-30 days!
- Symptoms: poor growth, stunted plants, curled/distorted leaves
- On new growth, base of buds, flowers (mottled or distorted) , underside of leaves
- Excrete honeydew, attracting ants

# Aphids

- Spread by crowding, new infested plants
- Easy to eradicate
- Alcohol/Water/Soap or contact pesticides
- Treat 3 times, 7-10 days apart



# Whiteflies

- Sap suckers, related to aphids & scale
- Weaken & kill plant
- Look for weak, damaged, unhealthy new growth; yellow mottled leaves that drop
- Visible on underside of leaves
- Honeydew – sooty mold and ants
- Cloud of tiny white insects when disturbed

# Whiteflies

- Yellow sticky cards
- Orange Guard, soap spray



# Spider Mites

- Microscopic sap suckers
- Arachnid spider family – not insects
- Many types – False, red, phalaenopsis mites
- Weaken & disfigure plants
- Inspect underside of leaves
- Tiny yellow or red specs
- Sooty mold grows on mite infestations
- Thrive in warm, dry conditions
- Partial to thin-leaved orchids (catasetums, dens)

# Spider Mites

- Alcohol/water/soap spray effective
- Contact pesticides for mites
- Apply heavily
- Every 3 days for 8 applications
- Insecticides not effective
- Miticides for large infestations – caution (Avid)



# Spider Mites





# Phal Mites



# Snails & Slugs

- Slug & Snail Bait
- Sprinkle a few pellets on top of media
- Refresh often/after rain
- Other: Fresh beer in saucer
- Pick & squash!





**Snail damage to flower and roots**

# Ants & Roaches

- Orange Guard
- Active ingredient – orange peel extract
- Safe around food, humans, pets
- Contact natural pesticide
- Crawling insects: ants, roaches, fleas



# Treatment – Natural Insecticide

- Neem Oil
- Insecticide, Fungicide, Miticide
- Treats insects and mites
- Natural and safe
- Kills by smothering
- Mix in with alcohol/water/soap spray
- Caution – don't spray oil on hot sunny days!





- Natural Insecticide

## Dr. Bronner's Peppermint Soap

1 Tbs. per Qt. water



# Treatment – Contact Pesticide

- Sevin
  - Ready to spray
  - Active Ingredient – Carbaryl
  - HD, Lowes, Walmart
  - Kills over 100 pests
  - Kills ants



# Organic Products

- Miracle Gro Nature's Care
- Organic
- Insecticidal Soap
- Disease & Mite Control
- Ready to use
- Walmart, HD, Lowes





# Treatment – Systemic Pesticides

- Taken up by plant – provides up to 30 days residual treatment  
(Contact pesticides kill on contact, are not residual)
- More caution required with systemics
- Try home remedies or contact pesticides first and for smaller collections
- Preventative pesticide treatment not recommended (builds resistance)
- Follow label instructions carefully!

# Treatment – Systemic Pesticides

- Bayer Advanced 3 in 1
- Active ingredient – Imidacloprid 0.47%
- Ready to spray or concentrate
- Risk to honey bees!
- Banned/restricted in Europe and N.Y.
- Consider other products!



# Treatment – Systemic Pesticides

- Orthene or Acephate 97UP
- Excellent for scale, thrips and other pests
- Active ingredient – Acephate 97%
- Up to 30 day residual
- Use caution



# Pesticide Storage & Application

- Store in cool dry place
- Mark application rate on container
- **Use caution - Read package instructions – apply as instructed**
- Spray chemicals early or late in day
- Drench technique – mix in 1 - 5 gal bucket outside growing area. Use within 24 hours.

# Summary – Pest Treatment Options

- First
  - Home remedies and natural
    - Alcohol/water/soap spray
    - Neem oil; Orange Guard, Natural products
- Second
  - Contact Pesticides (Insecticidal soaps, Sevin)
- Third
  - Systemic chemicals (Orthene, etc) Ensure marked for pest you are treating. Use caution

# Resources

- St. Augustine Orchid Society Website – Pests & Diseases Section
  - AOS Website – Pests & Diseases Section & Home remedies
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- Prepared by VAOS Growers Clinic Team. Revised June 2021
  - Plant pest photos courtesy of AOS and St. Augustine Orchid Society
  - Use caution in applying chemicals and always follow package instructions.