Managing Interior Plant Pests

Category 307 – Interior Plants

Benefits of Interior Plants

- Considerable health benefits:
  - Increase oxygen, reduce carbon dioxide
  - Raise humidity
  - Filter toxins (formaldehyde, benzene)
  - Promote healing
  - Reduce fatigue, headaches, colds, blood pressure, absenteeism
  - Improve concentration, productivity

Value to Businesses

- Well-maintained interior plants convey an image:
  - Prosperity
  - Professionalism
  - Cleanliness
  - Welcome

- The interior plant technician plays a vital role in the success of the business

The Interior Plant Technician

- Knowledgeable about plants and their needs (learn the binomials!)
- People skills
- Sensitive to needs of management and staff
- Professional appearance, attitude
- Dependable – can’t skip those waterings!

The Plants’ Perspective

- No such thing as an “indoor plant”
- Many are tropical
- Exposed to harsh indoor environments
  - Dry indoor air
  - Heat, cold
  - Variable light conditions

Stress Factors

- Too much OR too little:
  - Light
  - Heat
  - Moisture
  - Nutrients

Stress increases the potential for insect and disease problems
**Integrated Pest Management**

- Always take an integrated approach:
  - Understand the stress factors in any given situation
  - Do what you can to mitigate them
  - When pest problems arise, do what you need to do to control them, but ALSO address the stressors
  - Greatest long-term success

**Prevention is the Best Defense**

- Keep plants healthy:
  - Monitor, observe closely
  - Check surrounding air flow (drafts!)
  - Check light levels
  - Position plants to optimize light
  - Check soil moisture

  **Know what is normal for your plants!**

**What Pest Problems Do You Encounter?**

- Infestations often isolated to one or a few plants – discard if possible

**Fungus Gnats (Bradysia spp)**

- Related to flies, mosquitos
- Adults are a nuisance, live 4-5 days
- Larvae live for weeks in the soil
- Feed primarily on decaying plant matter, fungi

- Capture and monitor adults with yellow sticky traps
- Bt-i as a soil drench for larvae
- Infestations often isolated to one or a few plants – discard if possible
- Systemic insecticides - Imidacloprid
**Soft Scales**

- Scale insects (female) are mostly immobile
- Soft and armored – soft are more often a problem on indoor plants
- Soft scales often produce lots of honeydew

**Brown Soft Scale (Coccus hesperidum)**

- One of the most common pests of indoor plants
- May be first noticed by the honeydew
- Outdoors, lots of natural predators
- Indoors, may be difficult to control
- Infestations may flair

**Brown Soft Scale (Coccus hesperidum)**

Insecticidal soaps
- Less phytotoxic than detergents
- Test on inconspicuous area
- Alcohol – apply directly with swabs

**Mealybugs**

- Soft bodied insect with covering of white wax
- Related to scales
- Citrus and long-tailed mealybugs infest many common indoor plants (ficus, philodendron, coleus, poinsettia, etc.)

**Mealybug control**

- Regular scouting
- Remove by hand, or with alcohol swabs
- Cut out badly infested areas
- Insecticidal soaps
- Horticultural oils
- Systemic insecticides
Spider Mites
- Two-spotted spider mites infest a wide range of plants
- Prefer warm, dry conditions – most commonly found on indoor plants with good sunlight

Clover Mites
- An outdoor pest of turf
- Moves inside in spring, found in warm windows
- NOT a problem of interior plants

Spider Mites
- Two-spotted spider mite has widest host range of plants of all plant pests in the world
- Most common mite pest of indoor plants
- Look for fine webbing
- May need a hand lens to see the mites
- Speckling, silvering of leaf tissue
- Feed on undersides of leaves

Spider Mites Control
- Alter the environment – spray with forceful jet of water
- Insecticidal soaps
- Horticultural oils
- Few miticides available for indoor plants
  - Mite X: Cottonseed oil, garlic oil, clove oil

Other Possible Pests
- Armored scale
  - Found on woody material
- Thrips
  - Very small insect, need hand lens to see
  - Burned appearance of flower buds
- Aphids
  - Lots of sticky honeydew
- Whitefly
  - Cannot overwinter outdoors
**Armored Scale**
- Primarily on found on woody tissue
- Uncommon in the interiorscape
- If present, probably came with the plant!

**Thrips**
- VERY tiny insect
- Rasping-sucking
- Common pest of vegetable gardens, flowers

**Aphids**
- Many (200+) species in Colorado
- Sticky honeydew
- Unusual lifecycle
- Produce copious offspring

**Whitefly**
- Greenhouse whitefly does not overwinter outdoors in Colorado
- Inspect new plants carefully!
- Nymphs are difficult to see – resemble scale/mealybug

**General Conditions**
- Interiorscapes provide optimal environments for indoor pests
- Reproduction in the interiorscape proceeds continuously
- Pest populations have the potential to explode exponentially
- Regular monitoring is essential for indoor pest management

**IPM Basics**
- Scouting
- Determining levels
- Determining strategies
- Applying tactics
- Evaluation of tactics
- Modification as needed
IPM Basics

- Integrated Pest Management uses a variety of tactics
  - Cultural
  - Mechanical
  - Biological
  - Educational
  - Chemical

Lots of tools in your toolbox!

Cultural Considerations

- Light – may be most important
- Watering
- Nutrients
- Educating clientele

Lots of tools in your toolbox!

Diagnosing from Symptoms

- Sign vs symptom?

Chlorosis

- Older leaves:
  - Nitrogen deficient
  - Overwatering
- New leaves:
  - Possible nutrient imbalance

Chlorosis

- Older or newer leaves?

Leaf Drop

- What is normal for the plant?
Leaf Drop
- Senescence normal for older leaves
- Common on Ficus, some others
- Change of light?

What is this?

Edema
- A condition where the plant cannot give off as much water as it is taking up
- Some cells swell and burst, resulting in cell death
- Much more common during extended periods of cloud cover

Leaf Spots
- Many possible causes
  - Bacterial or fungal (disease)
  - Insect related – scout!
  - Nutrient imbalance (usually excess)
  - Mechanical damage
    - Bring suspected disease problems to the Extension office

Leaf Spots

Biggest Interior Plant Pest?
- Humans…
- Interior plants easily damaged by touching
- Introduction of plant pests from bringing in personal plants, plants received as gifts…
To Spray or not to Spray?

- Clearly understand the needs of your clientele
- Remember you are contributing to their image
- May need to treat off premises
- Systemics
  - Soil applied
  - Discrete