

Bonsai Pest/Disease control

Pests -- aphids



Aphids on underside of leaf



Juvenile sucking plant
Adults have wings and can fly

Pests – scale insects



Scale on stems



Scales clustered on stem where found

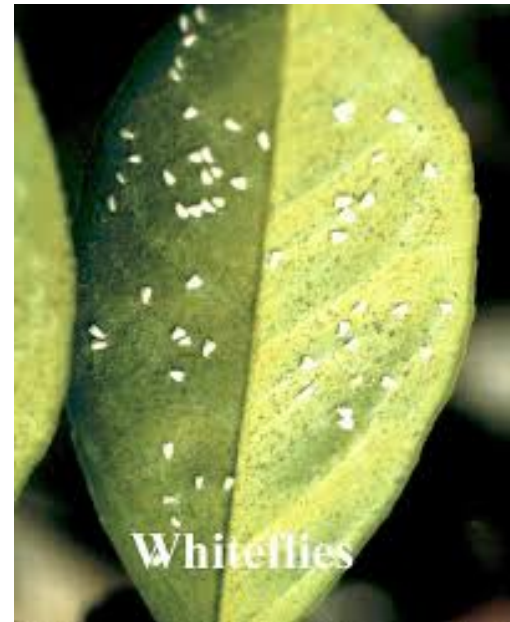


Showing size of scles

Pests -- whitefly

White flies on under-side of leaf

Adults and eggs magnified



Pests – woolly aphids



Symptoms on plant

Adult



Pests - mites

Leaf symptoms



One type of mite
magnified

Shows size



Pests - caterpillars

Leaf miner



Caterpillars eating leaves



Leaf folders



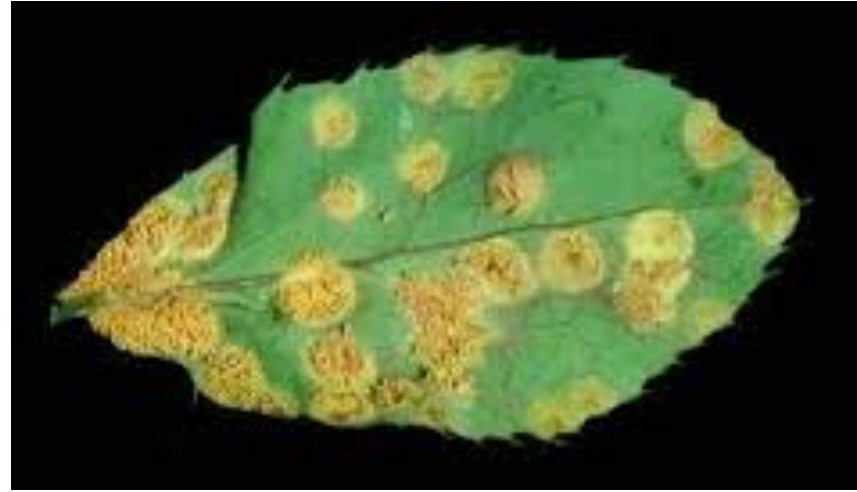
Diseases

- Fungal diseases – leaf blights, spots, rusts, root rots, scab – mycelia often seen
- Bacterial diseases – oozy, rots and leaf spots
- Viral diseases – transmitted by sucking insects. Leaf curling and yellowing. Best to control the insect. Remove leaves
- Nematodes – soil born worms – nematicides.

Fungal Diseases



Leaf spotting and browning



Apple leaf rust



Bacterial and Viral diseases



Virus yellowing and puckering symptoms



Soaps and Detergents

- Soaps can be used to control a wide range of plant pests. Small, soft-bodied arthropods such as aphids, mealybugs, psyllids and spider mites are most susceptible to soaps. Example is Dr. Bronners Castile soap
- Apply as dilute sprays
- No residual effectiveness
- 2-3% concentration – 2 – 3 tsp per pint.
- Some plants sensitive – hawthorns, cherry, plum – apply small area first.

Insecticides

- Malathion – organophosphate – relatively low human toxicity – many insects controlled.
 - 2 tsp per gallon = 2 ml
- Systemic insecticide (Acephate) – organophosphate – residual 10-15 days.
 - 2-3 Tbsp per gallon = 30-45 ml 1 fluid ounce = 30 ml
- Thuricide – *Bacillus thuringiensis* (Bt) – approved for organic. Controls caterpillars. Not residual.
 - 4 tsp per gallon = 20 ml
- Dormant spray oil – mineral oil – good for scales, mites, aphids – block air holes – few risks.
 - 2-4 Tbsp per gallon = 30-60 ml

Disease control

- Fruit Tree spray = Captan, Malathion and Sevin. Fungicide and insecticides.
 - 1.5 – 2.5 Tbsp per gallon = 22-45 ml
- Neem oil – organically approved – insecticide, fungicide and miticide
 - 2 Tbsp per gallon = 30 ml
- Daconil – controls many diseases – moderately toxic
 - 2-3 tsp per gallon = 10-15 ml

Safety

- Always wear rubber gloves
- Eye protection glasses
- Spray outdoors – never inside a closed room
- Clean sprayer with soap and water and dispose down toilet
- READ label for proper concentration
- Wash hands thoroughly with soap after use
- Apply as needed by carefully monitoring plants