Shade Tree Insect and Mite Pests
The World Has More Than One Million Different Insects
Some Insects Seem Larger Than Life
Some Seem To Have An Attitude
Some Even Have Religious Leanings
Shade tree pests cause problems including:

- Nuisance
- Defoliation
- Tree structural damage
- Death
- Stress that increases susceptibility to other pests
Pest control is difficult for many reasons

- Homeowners lack ability to identify pests and affected plants
- Homeowners lack equipment to spray trees effectively
- Homeowners lack resources or desire to control pests
Pest control is difficult for many reasons

- Life cycles and control methods are not known
- Neglected or abused trees become pest breeding sites
Insect problems intensify if trees are stressed by

- Soil problems
- Pollution
- Diseases
- Planting disorders
- Water problems
- Other environmental problems
Beneficial Pollinators
Cosmetic Damage from Spruce Gall Adelgid
Life Threatening Bark Beetles
Bark Beetle Cedar Breaks
Shade Tree Insect and Mite Pests in Utah
Aphids

• Host
  - Many Plants

• Symptoms
  - Leaves curl or twist in the spring
  - Honeydew on leaves or dripping from tree
  - Insects on leaves or branches
  - Growth of black, sooty mold
Aphids

• Control
  - Monitor predators including ladybugs, green lacewings, and others.
  - Do not spray if numbers of predators are developing.
  - Use spray oil, soaps, malathion, or acephate (Orthene). Dormant oil controls early outbreaks.
Honeysuckle Witches'-Broom Aphid

• Hosts
  - Shrub honeysuckle

• Description
  - Similar to other aphids
  - Cause overabundance of side shoots that resemble witches' brooms
Honeysuckle Witches'-Broom Aphid

• Damage
  - Curls leaves and causes formation of spindly side shoots

• Control
  - Prune early in season
  - Resistant varieties
  - Systemic insecticides (Orthene)
  - Soil application (Merit)
Wooly Aphids

• Hosts
  - Mainly conifers
  - Apple wooly aphid -- apples and elms

• Description
  - Secrete wax-like “wool” threads that cover body
Wooly Aphids

• Damage
  - Galls
  - Leaf Curl
  - Honeydew covered with black mold

• Control
  - Susceptible to carbaryl
Ash or Lilac Borer

• Larvae of clear-winged moth

• Host
  - Ash and lilac trees

• Symptoms
  - Branches dying in tops of trees
  - Large holes present in trunk or large limbs
Ash or Lilac Borer

• Control
  - Prune out affected areas.
  - Keep trees healthy by proper fertilization and watering.
  - Spray with pyrethroids about May 20th.
  - Pheromone traps used for proper spray timing.
Aspen Twig Gall

• Host
  - Aspen trees and other poplars

• Symptoms
  - Marble sized galls on small twigs
  - Caused by the feeding of a small fly
Aspen Twig Gall

• Control
  - Causes cosmetic damage so control is not usually warranted
  - Remove and destroy infested branches.
  - Spray when holes appear in galls, but spraying is NOT likely to be highly effective
Bark Beetles (Elms)

• Host
  - Elm trees of all species
• Symptoms
  - BB sized holes in trunk
  - Transmit Dutch Elm disease (American elm susceptible)
  - Galleries or tunnels under bark
Bark Beetles (Elms)

• Control
  - Keep trees vigorous by watering and fertilization.
  - Prune out dead or damaged wood.
  - Spray after leaves emerge with pyrethroids.
Dutch Elm Disease Vectored by Elm Leaf Beetle
Bark Beetles

• **Host**
  - Many conifers

• **Symptoms**
  - Feeding damage under tree bark often producing intricate galleries
  - Trees show flagging, and eventual death with severe infestations
  - May vector fungal diseases
Bark Beetles

• Control
  - Keep trees vigorous.
  - Remove dead and infested trees; these serve as breeding sites.
  - Pyrethroid sprays on the trunks prior to egg laying are expensive but effective if timed correctly.
Black Walnut Bark Beetle

• Host
  - Black walnut

• Symptoms
  - Death of trees
  - Holes in bark
  - Wilted branches
Black Walnut Bark Beetle

• Control
  - Recommendations not yet established.
Boxelder Bugs

• Host
  - Boxelder trees, other maples and ash

• Symptoms
  - Insects feed on newly emerging seeds and foliage
  - Insects collect in winter months on warm exterior walls
Boxelder Bugs

• Control
  - Main complaint is insects invading buildings. Seal openings to prevent insect entry.
  - Remove female boxelder trees.
  - Spray immature insects with sevin or pyrethroids in the spring when they are small.
Bronze Birch Borer

• Host
  - Most birch trees

• Symptoms
  - Limbs dying in the tree tops
  - D-shaped exit holes in trunk or large limbs
Bronze Birch Borer

• Control
  - Keep birches vigorous with adequate water and fertilizer.
  - Control iron chlorosis.
  - Prune out dead wood.
  - Apply pyrethroids to trunks and limbs in mid May when beetles emerge.
Eriophyd Mites

• Hosts
  - Many species

• Symptoms
  - Produces galls on leaves and twigs
  - Galls often are misshapen and have unusual colors
Eriophyd Mites

• Control
  - Usually not recommended because damage is largely cosmetic.
  - Prevent plant stress.
  - Select resistant species.
  - Dormant oil sprays prevent some infestations.
Hackberry Nipplegall

• Host
  - Hackberry

• Symptoms
  - Prominent warty leaf galls on the underside of leaves, often covering the entire leaf
Hackberry Nipplegall

• Control
  - Often controlled by parasitic wasps.
  - Overwintering psyllids are important prey for birds.
  - Chemical control is rarely necessary but acephate (Orthene) is highly effective
Leaf Beetle

- **Host**
  - Elms

- **Symptoms**
  - Leaves skeletonized or chewed by yellow and black striped 1/4 inch larva or yellow-tan and green striped beetles
Leaf Beetle

• **Control**
  - Seal buildings to avoid invasion
  - Use acephate (Orthene), sevin, malathion, when insects are feeding in May-June.
  - Apply sevin as a trunk band (2-3 ft wide) when larvae begin to pupate
  - Biological controls available. (M-one - BT for beetles)
Leaf Miner

• Host
  - Birch, boxwood, lilac, poplar and others

• Symptoms
  - Leaves browning
  - Tunnels or tracking present in leaves when held up to the light
  - Usually only cosmetic damage
Leaf Miner

• Control
  - Ignore damage unless severe
  - Spray timing very important. Spray with malathion or acephate (Orthene).
Leaf Rollers, Canker Worms

• Host
  - Boxelder and many others; Gambel oak attacked by canker worms

• Symptoms
  - Skeletonizes leaves of boxelder and will defoliate entire trees
  - Worms often hang from trees on silken threads
Leaf Rollers, Canker Worms

• Control
  - Outbreaks are cyclic.
  - Ignore unless very severe.
  - Spray with B.T. (Dipel), malathion and Sevin.
Locust Borer

• **Host**
  - Black locust

• **Symptoms**
  - Large holes
  - Abundant sawdust
  - Severe damage to trunk and larger limbs
Locust Borer

• Control
  - Keep trees vigorous.
  - Woodpeckers feed on larvae.
  - Apply pyrethroids at 3 week intervals beginning mid August with 3 applications.
Peach Tree Borer

• Host
  - All prunus species including fruiting forms

• Symptoms
  - Holes or cast insect skins or gumming just above soil line
  - Tree declining without other apparent causes
Peach Tree Borer

• Control
  - Apply pyrethroids to trunk and let puddle on soil the first week of July and August.
  - Don't let the spray touch fruit.
Pear or Cherry Slug

• Host
  - Pears, plums, cherry and others

• Symptoms
  - Leaves are skeletonized
  - Upper surface of leaves are eaten away leaving net-like veins on surface
Pear or Cherry Slug

• Control
  - Easily controlled with any common spray.
  - Ignore unless severe damage occurs.
Poplar Willow Borer

• Host
  - Poplars, including aspen, willows

• Symptoms
  - Large holes 3/8” in diameter in trunk and branches
  - Dieback of branches
  - Sawdust apparent in borer holes
Poplar Willow Borer

• Control
  - Spray insecticide into actual borer holes.
  - Remove dead wood
Sawflies

• Hosts
  - Mainly conifers, also some deciduous

• Description
  - Class, not a single species
  - Similar to caterpillar visually
  - Differentiated by six or more pair of prolegs on abdomen (caterpillars, 2-5)
  - Adults are stout-bodied, non-stinging wasp
Sawflies

• Damage
  - On conifers, damage occurs early in year before new growth develops

• Control
  - Prune affected branches
  - Oils
  - Orthene
  - Sevin
Scale

• Host
  - Many trees

• Symptoms
  - Limbs doing poorly
  - Partial death of branches
  - Small, raised areas on leaves or branches
Scale

- Control
  - Use dormant oil plus or just prior to bud break.
  - Use summer oils during growing season.
  - Use sticky bands around limbs to identify crawler stage. These are susceptible to most insecticides.
Seed Pod Gall Midge

• Host
  - Honey locust trees

• Symptoms
  - Leaves become swollen and look like seed pods
Seed Pod Gall Midge

• Control
  - Ignore damage unless severe.
  - Select tolerant varieties.
  - Female midges overwinter in leaf or soil debris; rake leaves in fall.
  - Chemical control is usually ineffective. Acephate (Orthene), applied gives some control every 1-2 weeks.
Shothole Borer

• Host
  - Cherry, apple, hawthorne and many others

• Symptoms
  - Declining tree health or lack of vigor that resembles drought
  - BB sized holes in trunks or large limbs
Shothole Borer

• Control
  - Keep tree growing vigorously.
  - Spraying usually not effective.
  - Prune out affected branches.
Spider Mites

• Host
  - Many species

• Symptoms
  - Brown discoloration of foliage occurring during hot weather
  - Webbing sometimes present
  - Use the paper-check for mites
Spider Mites

• Control
  - Keep trees clean.
  - Use dormant oil, summer oil, or soap sprays as needed.
  - Use sprays of kelthane or vendex, oil or soap; will kill predators as well as damaging mites.
Spruce Spider Mite

• Hosts
  - Spruce
  - Juniper
  - Pine

• Description
  - Green, no spots on sides
  - Orange eggs on needles and twigs
Spruce Spider Mite

• Damage
  – Discoloration
  – Needle drop

• Control
  – Use dormant oil, summer oil, or soap sprays as needed
  – Avoid using insecticides that kill their predators (Carbaryl, Malathion)
Spruce Gall Aphid

- **Host**
  - Spruce and Douglas fir

- **Symptoms**
  - Large swollen galls on new growth
  - Primarily visual damage
  - Damaged young spruce trees by preventing new growth
Spruce Gall Aphid

• Control
  - Ignore damage.
  - Prune out galls.
  - Monitor white, cottony aphids on new growth.
  - Sprays of sevin or pyrethroids as the new growth unfolds may be effective.
Stinkbug

• Host
  - Birch trees

• Symptoms
  - Small 1/4 to 3/8" insects with a disagreeable odor on leaves and seed pods
Stinkbug

• Control
  - Mobile pest so control is difficult.
  - New arrive even if others are destroyed.
  - Acephate (Orthene) is registered for birch pests.
  - Apply when problem occurs.
Sycamore Plant Bug

• Host
  - Sycamore Trees

• Symptoms
  - Numerous small holes throughout the leaves because the bugs feed on the developing buds.
Sycamore Plant Bug

• Control
  - Common only in certain areas
  - When you see damage it is too late for control.
  - Most insecticides including oils work but are not recommended
Trunk Borer

• Host
  - Many trees

• Symptoms
  - Coarse excelsior-like borings around tree base
  - Black swollen scars on trunk and limbs
  - Interior limbs and trunks honey-combed with galleries
Trunk Borer

• Control
  - Keep trees healthy and avoid stress.
  - Many different kinds and life cycles make control difficult.
  - Treat borers in holes if they are feeding.
Tussock Moth

• Hosts
  - Ornamental Blue Spruce, rarely a forest pest

• Description
  - One inch long gray to light brown caterpillar with tufts of brightly colored hairs along back
  - Two longer and more slender tufts originate behind head, single tuft from posterior of body
Tussock Moth

• Damage
  - Defoliation of tree
  - Most commonly concentrated at top of tree, occurring in early June

• Control
  - BT gives only fair results
  - acephate, cyfluthrin, bifenthrin, fluvalinate, and carbaryl applied with first new growth give good results
Webworm, Tent Caterpillars

• Host
  - Many species, especially poplar and willows

• Symptoms
  - Caterpillars groups in webs defoliate branches
  - Tent caterpillars occur in the spring
Webworm, Tent Caterpillars

• Control
  - Ignore unless severe outbreak occurs.
  - Spray with B.T. (Dipel, Thuricide), sevin, or acephate (Orthene). Spray must penetrate webs.
  - Prune and destroy individual clusters.
The End
Come Back
Next Week