Shade Tree Insect and Mite Pests
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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

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
- Hosts
  - Ash and lilac trees
- Symptoms
  - Branches dying in tops of trees
  - Large holes present in trunk or large limbs
- 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
- Hosts
  - 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)
- Hosts
  - Elm trees of all species
- Symptoms
  - BB sized holes in trunk
  - Transmit Dutch Elm disease
    (American elm susceptible)
  - Galleries or tunnels under bark
- 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
- Hosts
  - 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
– Wilting 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

Black Walnut Bark Beetle
• 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 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

Locust Borer
• Host
  – Black locust
• Symptoms
  – Large holes
  – Abundant sawdust
  – Severe damage to trunk and larger limbs

Peach Tree Borer
• Host
  – All prunus species including fruiting forms
• Symptoms

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

Spray timing very important. Spray with malathion or acephate (Orthene).
- 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

**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

**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

**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

**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

**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

**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

**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.