

Major Arthropod Pests of Ornamentals

Diane G. Alston

Extension Entomologist

Utah State University

Plant Pest Workshop

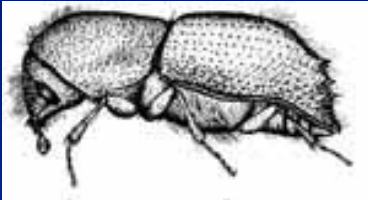
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Current Topics

- Ips bark beetles
- Tree borers – flatheaded, shothole, clearwing moths
- Systemic insecticides – application to trees & shrubs
- Spider mites
- Root weevils

Ips Bark Beetles



Ips species

- *Ips pilifrons* – spruce
- *Ips pini* – pine
- *Ips confusus* – pinyon pine



Ips Facts

- Bark beetle family (Scolytidae)
- Adults colonize & reproduce in conductive tissues
- Construct tunnels (galleries) to lay eggs & feed
- 6-8 wk life cycle; up to 5 gens. per year
- Attack trees under stress
- Attack smaller diameter limbs at tops of trees first

Spruce Ips (*Ips pilifrons*)

Attacks spruce

Secondary pest

Prefer fresh downed wood and slash, and weakened trees

Population build-up in area can result in attack on nearby healthy trees

Current Utah situation: many stressed spruce in landscapes and nurseries



Spruce Ips

Distinctive gallery pattern

Central chamber with Y or star-shaped side galleries (eggs)

Attack smaller diameter limbs in upper tree first and then move down tree

Conditions to avoid: drought stress, particularly in spring and high density sapling stands



Spruce Ips Management

- ❑ Maintain tree vigor, avoid stress (proper watering, planting site, avoid injuries)
- ❑ Remove & dispose of infested material
- ❑ Apply chemical insecticide:
 - Carbaryl (Sevin): flowable
 - Permethrin (Astro)
 - Treat in spring before beetle flight (late April to early May) or treat in fall
 - 12-18 months protection (carbaryl)

Landscape Ornamental Pests

Tree Borers



Major Tree Borers

- Beetles

- Roundheaded/Longhorned borers – Cerambycidae (Aspen borer, Locust borer)
- Flatheaded/Metallic wood borers –Buprestidae (Bronze birch borer, Flatheaded apple borer)
- Weevils – Curculionidae (Poplar-and-Willow borer)
- Bark beetles – Scolytidae (Shothole borer, Ips)



- Moths

- Clearwinged Moths - Sessidae (Peachtree borer, Lilac/Ash borer)
- Other moths (American plum borer – Pyralidae)



Tree Borers



- Avoid planting trees with borer problems (birch, poplars, aspen, ash)
- Maintain good tree health – stressed trees are more prone to attack
- Preventive trunk insecticide sprays
- Systemics??



2002 Borer Observations

- Greater incidence of borers
- These borers are generally secondary pests



Flatheaded Borer (*Chrysobothris*)



Girdling Injury



Older Trees & Shaking Injury



Beetle larva



Adult

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American Plum Borer

Larvae bore into cambium



Moth adult

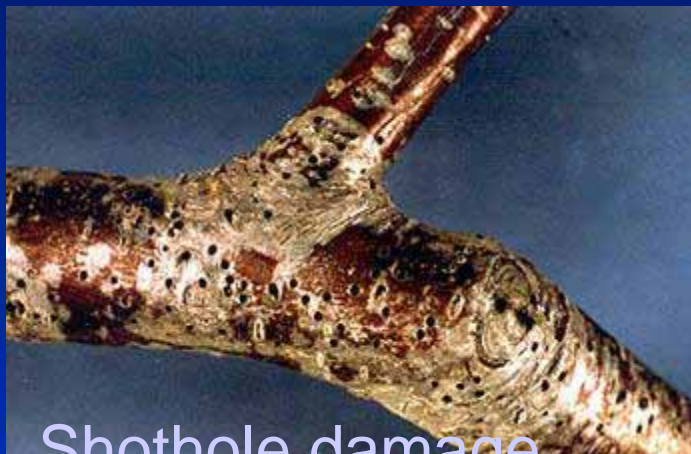


Cocoon under bark



Trunk & limb injury

Shothole Borer



Shothole damage



Galleries



Adult Beetle



Exude sap
from holes

Why are borers on the increase?

- Source of insects (old, weakened, neglected trees, burn & firewood piles)
- Tree stress (drought, heat, winter injury)
- Newly planted orchard next to infested source especially susceptible

Borer Management

- Keep trees healthy & vigorous
- Remove & burn sources
- Do not plant new blocks next to sources
- Prevent trunk sunburn by painting trunks
- Keep weeds and debris away from base of trunks
- Insecticide treatment to prevent egg-laying
 - Flatheaded borer: June 1 & July 1 (Thiodan or Lorsban) to trunk and lower limbs
 - Shothole borer: April to May & August to September (Thiodan, Lorsban or Sevin)

Tree Borer Management

- Trunk Protection
 - Timing is critical (northern Utah)
 - Ash/Lilac borer – May 1- late June
 - Bronze birch borer – late May – June
 - Aspen borer – May-July
 - Peachtree (Crown) borer – late June – August
 - Poplar-and-Willow borer – July – Sept.
 - Locust borer – August – Sept.
 - Shothole borer – June and late Sept.
- Insecticides: carbaryl, endosulfan, pyrethroids (permethrin, bifenthrin)

Systemic Insecticide

- **Imidacloprid** (Merit, Bayer Advanced Garden Tree & Shrub Insect Control, BAG Plant Spikes (fert. + insect.)
 - Soil drench, soil injection, foliar
 - Soil: translocation delay of 60 days or longer
 - Target insects: soft-bodied pests on leaves and limbs (aphids, adelgids, leafminers, leaf beetles, mealybugs, psyllids, scale); tree borers??

Landscape Ornamental Pests

Chewing Injury



Strawberry Root Weevil



- Common hosts: lilac, peony, dogwood, yew, privet, cotoneaster, arbovitae, others
- Adults chew irregular notches in leaf edges – target with foliar insecticide (Orthene, Merit, Sevin, Diazinon) – in late spring
- Larvae feed on roots – target with soil insecticide (Diazinon) or insect-feeding nematodes



European Earwig



- ❑ Feed on young, tender plants; chew holes in flower petals, fruits; nuisance pest
- ❑ Adults are also predators; nocturnal
- ❑ Cultural controls: avoid overuse of mulch and damp debris where they hide during the day; place and remove rolled newspaper; attractant traps: tuna can with bacon grease
- ❑ Chemicals: pyrethroids (ornamentals); target young



Grasshoppers



- ❑ Young (nymphs) & adults chew holes in leaves, completely consuming foliage
- ❑ Move into yards from nearby rangeland, grassy areas, undeveloped lots
- ❑ Treat borders of property when young grasshoppers are first seen moving in
- ❑ Young are much easier to kill than adults
- ❑ Insecticidal baits: wheat bran + insecticide (carbaryl) – effective on young & adults
- ❑ Malathion, Sevin – most effective on young
- ❑ *Nosema locustae* (No-Lo-Bait) – natural pathogen of grasshoppers – treat young

Landscape Ornamental Pests

Piercing-Sucking Injury



Aphids



- Suck fluids from leaves and stems; curl leaves; produce sticky honeydew; black sooty mold
- Only control if honeydew is a nuisance problem or distortion of leaves is severe and aphid numbers are very high
- Delayed Dormant Spray: Dormant oil + Diazinon or Thiodan (at bud break)
- Spring and Summer control: Merit (systemic), insecticidal soap, horticultural oil, others
- Biological control: lady beetles, lacewings, syrphid flies, parasitic wasps

Spider Mites



- ❑ Very small; infested plants appear “dirty”; produce webbing, suck sap (remove chlorophyll); leaf speckling
- ❑ When severe, cause bronzing or silvering of leaves; populations build quickly in hot weather
- ❑ Controls: pressurized stream of water, horticultural oils, insecticidal soap, weed control
- ❑ Don't recommend Kelthane or Vendex unless a rescue treatment
- ❑ Biological control: Predaceous mites



Contact Information

Diane Alston

Utah State University

Extension Entomologist

(435) 797-2516

dianea@biology.usu.edu