

Berry-Feeding Insects

Diane Alston, Entomologist
Utah State University
Urban & Small Farms Conference
February 27, 2013
Salt Lake City, UT



Berry-Feeding Insects

- ✘ Early Season – bloom to fruitlet
 - ✘ Thrips
 - ✘ Lygus bug
- ✘ Late Season – mature fruit
 - ✘ Stink bugs
 - ✘ European earwig
 - ✘ European paper wasp
 - ✘ Grasshoppers
- ✘ Spider mites (foliage)



European paper wasp eating raspberry

Western Flower Thrips



Thrips larva (left) & adults
~1/20 inch long



Thrips feed on flowers & fruit with punch-and-suck mouthparts



Scouting for thrips in blackberry



Thrips blossom blast
on sweet pea

Distorted fruit with
pronounced seeds



Thrips Insecticides - Bloom

⌘ Commercial

- ⌘ diazinon – prebloom only to prevent bee kill (7 d PHI)
- ⌘ spinetoram (Delegate; 1 d)
- ⌘ spinosad (Success, Entrust^{Org}; 1 d)
 - ⌘ allow to dry \geq 3 hr before bee activity

⌘ Home use

- ⌘ acetamiprid (Ortho Max), azadirachtin^{Org}, bifenthrin, carbaryl, insecticidal soap^{Org}, malathion, permethrin, pyrethrin^{Org}, spinosad^{Org}



Wild bee pollinating raspberry flowers

Read and follow label directions carefully!

Lygus Bug

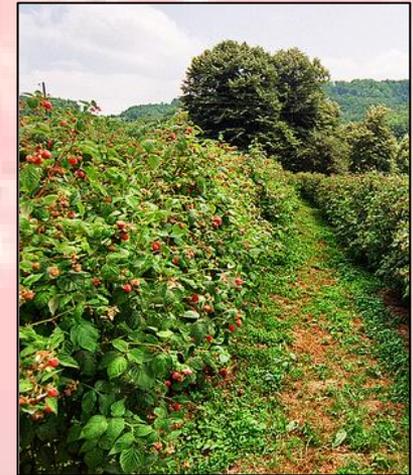
Western Tarnished Plant Bug



Lygus hesperus
~1/4 inch long, yellow V on back
Piercing-sucking mouthparts



Early feeding causes fruit distortion: “cat-facing”, due to damaged seeds - piercing



Lygus bug nymphs

Cultural & biological management:

- Alfalfa hay cutting
- Weed suppression & removal
- Flowering trap crop (careful monitoring)
- Natural predators & parasitic wasps
- Bug-vac



Lygus Bug Insecticides - Bloom

⌘ Commercial

⌘ *Beauveria bassiana*
(Mycotrol^{some Org})

⌘ fenpropathrin (Danitol; 2-3 d
PHI)

⌘ malathion (1 d)

⌘ thiamethoxam (Actara; 3 d) –
post-bloom only

⌘ Home use

⌘ azadirachtin^{Org}, carbaryl,
malathion, permethrin



“Cat-faced” strawberry fruits
caused by lygus bug

**Read and follow label
directions carefully!**

Stink Bugs

~1/2 inch
shield-shaped



Green stink bug, *Acrosternum hilare*, adult (left) and nymph



Mating consperse stink bugs, *Euschistus conspersus*



Barrel-shaped eggs,
laid in masses



Deformed, dry berries;
Piercing-sucking mouthparts



Release a foul odor that
contaminates berries;
Use similar cultural
mgmt. practices as for
lygus bug

Stink Bug Insecticides - Before Harvest

- ✘ Knock-down, contact chemicals & repellents
- ✘ Commercial
 - ✘ bifenthrin, esfenvalerate, fenpropathrin, malathion, zeta-cypermethrin
- ✘ Home use
 - ✘ acetamiprid, azadirachtin^{Org}, carbaryl, esfenvalerate, permethrin (raspberry only), insecticidal soap^{Org}, pyrethrin^{Org}
- ✘ Adjust air-blast or vacuum-suction cleaner systems on mechanical harvester to reduce insect contamination in berries

European Earwig



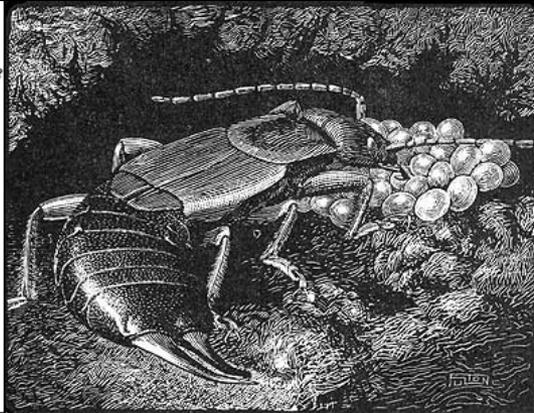
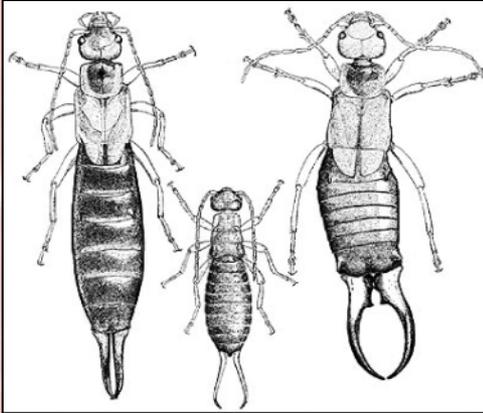
Female European earwig (straight cerci)



Nocturnal – feed on fruits & leaves
with chewing mouthparts



European Earwig



Earwig Management - Before Harvest

- ✘ Same insecticides as for stink bugs
- ✘ Insecticidal soap + pyrethrin^{Org}
 - ✘ reapply every 3-5 days
 - ✘ suppressive
 - ✘ combine with trapping & habitat management
- ✘ Predation by fowl
 - ✘ chicken, turkey, duck



Dense & moist ground covers, such as birdsfoot trefoil, can provide attractive daytime refuge for earwigs (not so for wheat straw & paper mulch)

Earwigs prefer dense, moist refuge

European Paper Wasp

Polistes dominula



European paper wasp (left) has a more slender waist than a yellow jacket (right)

E. paper wasp likes to feed on ripe fruit, but is also a predator



Deformed wing disease
EPW in Utah since 1990s

European Paper Wasp Management



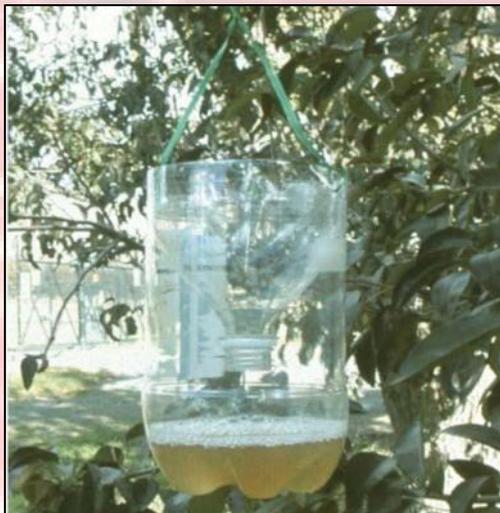
Spring and early summer: beneficial predator of caterpillars

Treat nests with aerosol wasp sprays & remove nests to eliminate larvae developing in cells

Mid summer to early fall: feed on ripe fruit

Trap: fruit juice/yeast bait in pop bottle

Protect fruit with insecticide sprays (same as earwig & SB)



Yellow jacket traps ineffective



USU Extension
video fact sheet

utahpests.usu.edu
slideshows

Grasshoppers on Berries



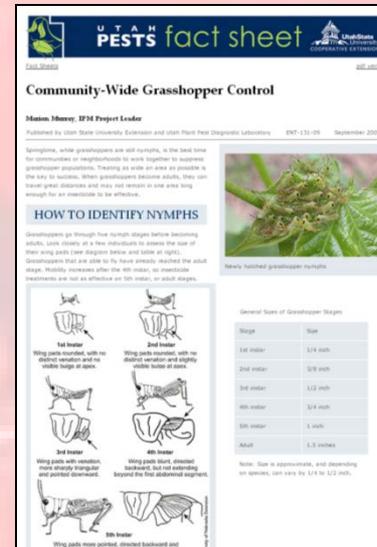
Strip the foliage

Some eat fruit: e.g., Differential grasshopper,
Melanoplus differentialis

Late summer to early fall
Hot, dry conditions

Grasshopper Management

- ✘ Floating row cover fabric
- ✘ Cultivate around plants in fall and/or spring to disrupt overwintering eggs in soil
- ✘ Predation by fowl
- ✘ Insecticides
 - ✘ similar products as for earwigs, wasps, and stink bugs
 - ✘ treat a larger area around farm/garden
 - ✘ insecticides and baits
 - *Nosema locustae*, carbaryl



Community-Wide Grasshopper Control Fact Sheet

utahpests.usu.edu Fact sheets

Spider Mites



Hot, dry conditions
“Mite burn” begins on lower leaves first
Mites move up from weeds on the ground
Raspberry leaves are sensitive to mite feeding: bronzing

Management:

- Overhead sprinklers (cool & wet)
- Avoid disturbing ground cover
- Predators (predatory mites)
- Avoid harsh insecticides
- Insecticidal soap, horticultural oil
- Commercial miticides: Acramite, Savey, Vendex

Utah Pests Web Site

USU Links >> USU Home A-Z Index calendars MyUSU directory contact

Utah State University
COOPERATIVE EXTENSION

UTAH PESTS



UTAH PESTS Home | Utah Plant Pest Diagnostic Lab | Integrated Pest Management | Bees | Cooperative Agricultural Pest Survey

Google™ Search

- Home
- Fact Sheets
- Video Fact Sheets
- Image Galleries
- Slideshows
- Utah Pests News
- Quarterly Newsletter
- Contact Us



Utah Plant Pest Diagnostic Lab 

Just \$7 gets your pest problem diagnosed or insect identified.

Integrated Pest Management 

Your source for fruit, vegetable, and landscape pest problems.

Bees 

Honey bees aren't the only bees that pollinate plants in Utah.

Cooperative Agriculture Pest Survey 

CAPS protects Utah agriculture through statewide monitoring of invasive pests.

Recent Plant Pest Info

Pantry Pests
Feb 15, 2013

Grasshoppers in My Yard and Garden
Feb 15, 2013

Hobo Spiders
Feb 15, 2013

UTAH PESTS' is a group of Extension entomologists and plant pathologists that helps to solve the thousands of plant pest issues that concern Utah citizens every day. The UPPDL identifies, the IPM Program educates, and the CAPS Program investigates. Open one of the websites to get answers!

Utah State University is an affirmative action/equal opportunity institution. © 2013 Utah State University Utah Pests