Why is this important?

*It is imperative to ID a pest before you can manage a pest

- Where and how a pest feeds will affect how you manage that pest
- If you choose to use chemicals, whether synthetic or naturally occurring, recall that not all pesticides are created equal

I will not be discussing specific management strategies for these pests today.

Friendly Reminders:

- Not all plant injury is caused by direct feeding of insects or mites
- Gall makers – feeding or oviposition by insects, mites
- Nesting – bumblebees, webworms, leaf rollers
- Oviposition scars – Cicadas
- Disease vectors – aphids, thrips and leafhoppers
- Honeydew producers – attracts sooty mold and other fungi with block photosynthesis
Friendly Reminders Cont:
Non-arthropod plant damage
• Snails & slugs
• Small animals
• Deer
• Birds
• Abiotic factors

Friendly Reminders Cont:
• ID is much easier if you can locate the pest.
• Many pests w/ black eyes are on the plant.
• Some pests w/ flies when disturbed.
• Some pests are only active at night.

Thanks for lunch!!
Megan Schrage, Creighton University
**Phylum: Arthropoda**

**Classes:**

- **Insecta** – insects
- **Arachnida** – ticks & mites (Acari), scorpions, spiders...
- **Others** – millipedes, centipedes, pillbugs, roly-poly...

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**Insect Lifecycles**

**Complete metamorphosis**

- Beetles
- Butterflies and moths
- Flies
- Ants, bees and wasps...

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**Insect Lifecycles Cont.**

**Incomplete metamorphosis**

- True bugs
- Grasshoppers/crickets
- Cockroaches
- Termites
- Dragonflies
- More
Types of Mouthparts

- Biting/Chewing: beetles, caterpillars, sawfly larvae, snails
- Piercing/Sucking: true bugs, mites, mosquitoes
- Sponging: Flies
- Siphoning: Moths, butterflies
- Chewing/Lapping: honey bees
- Rasping/Sucking: Thrips

Ornamental Pests Groups:

- Taxonomic group (beetles, caterpillars)
- Plant or plant part attacked (foliar pests, root feeders, etc.)
- Feeding method (chewing, sucking, gall forming, etc.)
Biting Chewing: Foliage Feeders

- **Defoliators or generalized feeders:** Caterpillars & sawflies
- **Specialized feeders:** skeletonizers, leaf notchers, hole makers
- **Nest makers:** Bagworms, tent cats, webworms, etc.

Gypsy Moths: Defoliators

Other defoliators:

- Grasshoppers
- Walking sticks
Biting Chewing: Foliage Feeders

- Defoliators or generalized feeders: Caterpillars & sawflies

- Specialized feeders: skeletonizers, leaf notchers, leafminers, etc.

- Nest makers: Bagworms, tent cats, webworms, etc.

Japanese Beetle Adult: Skeletonizer

Chewing Damage, Cont.

Japanese Beetle Larvae: AKA white grubs

Leaf Notching caused by Black Vine weevil

Columbine Leafminer: A fly!!!

Biting Chewing: Foliage Feeders

- Defoliators or generalized feeders: Caterpillars & sawflies

- Specialized feeders: skeletonizers, leaf notchers, leafminers, etc.

- Nest makers: Bagworms, tent cats, webworms, etc.
Fall Webworm

Chewing Mouthparts:

- Foliage discoloration: stippling, yellowing, bronzing
- Plant distortion: leaf & stem twisting and curling
- Excrement deposits: tar spots, honeydew, sooty mold

Lace bug damage on rhododendron
Plant Bugs:

Hoppers:
Leafhopper damage on grape

Aster Yellows

Potato Leafhopper:
**Summary**

- Must ID the Pest
- Damage may not be arthropod related
- Not all insecticides are created equal
- Always refer to the pesticide label

**Resources**

- Buckeye Yard and Garden online
  - Subscribe for Free
- ohioLINE.osu.edu
  - Factsheets

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**Thank you!!**

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