Update from the UW Insect Diagnostic Lab: Wisconsin Insect Trends

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The UW Insect Diagnostic Lab

- Lab established in 1978 to serve as a resource for Extension colleagues
- Managed by Phil Pellitteri for 35 years
- Currently in its 46th year
- Main service: arthropod diagnostics
  - Receive ~2,500 diagnostic requests annually
- Other services: pest management consultations, outreach, teaching, providing context

Snapshot of Lab Activities in 2023

- 2,498 Cases
- Cases from 71/72 WI counties
  - ~65% of cases from within Wisconsin
  - Cases from 24 US states/territories; 9 foreign countries
- Who: General public (63%), Extension (18%*), green industry (10%), pest control (6%)…farmers/ag, medical, gov/Vet
- Where: Yard/landscape (54%), agricultural setting (9%*), buildings/structural (34%), med/vet (3%)
- What: 63% “digital” samples, 29% physical specimens, descriptions

Wisconsin’s Weather Patterns

- Many part of Wisconsin experienced dry conditions during the warmer months in 2021, 2022, and 2023
- Dry conditions can directly affect certain arthropods
  - Boxelder bugs, spongy moth, etc.
- Weather patterns can indirectly influence insects via impacts on landscape plants

Wisconsin’s Recent Weather Patterns

- This winter’s statewide average total snowfall was 100.6 inches, over 36 inches above last year.
- Source: WI State Climatology Office
Occasional Invaders, Overwintering Pests and More

Winter Cutworms (Noctua pronuba)
Subject: This is going to sound a little strange

Multicolored Asian Lady Beetles
- Adults
- Pupa ( indoors)
- Larva ( outdoors)

Brown Marmorated Stink Bug

Boxelder Bugs

Elm Seed Bug (Arocatus melanocephalus)
Broad-Nosed Weevils (Curculionidae: Entiminae)

Commonest Broad-Nosed Weevils
- Strawberry Root Weevil
- Black Vine Weevil (BVW)
- BVW

Black Vine Weevil (SVW)

Commonest Broad-Nosed Weevils
- Strawberry Root Weevil
- BVW

Millipedes

Springtails along a basement window

Springtails

Foreign Grain Beetle

"Secondary" Bark Beetles & Other Borers
- Pseudopityophthorus minutissimus
  - Associated with really stressed oaks and cut branches/wood
- Pityogenes hopkinsi
  - Associated with smooth-barked portions of dead/dying white pines
- Hylesinus aculeatus
  - Associated with dead, cut or seriously weakened ash trees
**Velvet Longhorned Beetle (Trichoferus campestris)**

**Flies & ants**

**Top Small Flies at the IDL:**
- Typical *Drosophila* spp. Fruit Fly
- Dark Fruit Fly (*Drosophila repleta* group)
- Phorid Fly

**Fungus Gnats**

**Less-Common Small Flies**
- Lesser Curly Fly (Family Sphaeroceridae)

**Top Ants at the IDL**
1. Carpenter ants
2. Odorous house ants
3. Pavement ants
4. Cornfield ants (outdoors)
Medically Important Arthropods

Bed Bugs & Relatives

Bat Bug
(Cimex adjunctus)

Bed Bug
(Cimex lectularius)

Bat Bug
(Cimex adjunctus)

Bat Bug
(Cimex adjunctus)

Biting Mites:

Chigger

Pyemotes

Itch Mite

Ticks

Deer Tick

American Dog Tick
(Wood Tick)

Bat Ticks

Lone Star Tick

Mosquitoes

• 2023: Mosquito activity varied greatly around the Midwest

• Moderate WNV cases

Weather Patterns & Mosquito Activity

Temporary Meltwater Pool

Mosquitoes

Woodland Pool Mosquito
(Aedes canadensis)

Cattail Mosquito
(Coquillettidia perturbans)

Asian Rock Pool Mosquito
(Aedes japonicus)

Asian Rock Pool Mosquito
(Aedes japonicus)

Source: DHS

Source: DHS
Murder Hornets in the News

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<th>Insect</th>
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<th>2020</th>
<th>2021</th>
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<td>11</td>
<td>13</td>
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<td>Total</td>
<td>78</td>
<td>70</td>
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* Top 5 IDs taken in Wisconsin

Murder Hornets….Mistaken Identity

Yellow-Legged Hornets

- From SE Asia
- Reported in Georgia (August)
  - Not in WI...

Social Wasps

- Eastern Yellowjacket
- German Yellowjacket
- Bald-faced Hornet

Not my “typical” bee case:

- Anthophora abrupta

When there are no insects...

- Many ID requests don’t involve insects, mollusks, annelids, etc.
Outdoor Insects

Spongy Moth (formerly “gypsy moth”) - Majority of reports submitted to UW IDL

Spongy Moth Population Dynamics
- Starvation and disease occur when populations are too high to be maintained
- Point at which population is too high to survive
- Ideal weather conditions can help populations grow
- Point at which population is at outbreak level

Two Lined Chestnut Borer (Agrilus bilineatus)
- Yearly number of cases at UW-IDL
- 2019: 10
- 2020: 11
- 2021: 16
- 2022: 26
- 2023: 40+

Emerald Ash Borer
- Invasive Leaf Beetles

Invasive Leaf Beetles
- Viburnum leaf beetle
- Lily leaf beetle
**Aphids & Spider Mites**

- Feed on 100+ plant species
  - Tree of Heaven
  - Fruits: grapes & tree fruits; Hops
  - Landscape/forest trees (maple, walnut, poplar, willow, etc.)

**Damage**

- SLF nymphs on roses
- Adult: Dorsal View
- SLF adults covering tree trunk

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**For Your Radar: Spotted Lanternfly**

- Invasive planthopper from SE Asia
- Detected in PA - 2014
- Not yet in WI...

**Current SLF Distribution & Potential Range**

**Periodical Cicadas**

- Brood XIII 17-year periodical cicadas will emerge this year
  - Last emerged in 2004

**Where will we see periodical cicadas? When?**

- Map of the United States showing map locations.
Will we see any potential impacts to landscape plants?

- Females use ovipositor to cut slits into twigs/branches
  - Large trees: damage mainly cosmetic; “flagging”
  - Small trees: damage can be more problematic—consider mesh netting

Key Things to Know About Periodical Cicadas:

1. Distribution is restricted to very specific spots on the map
   - Most of Wisconsin will not see these

2. Site history is a key factor!
   - Were they present at a site in 2007? If not, you won’t see them in 2024 either…

3. Periodical cicadas are generally harmless and don’t need to be managed
   - Small trees would be the exception

Questions?

insectlab.russell.wisc.edu