

Protect Your Wheat and Soybean Crops from Insect Pests

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True armyworm



Roger Schmidt, U. Wisconsin, bugwood.org

5475434

Why “true” armyworm?

Fall armyworm



Yellowstriped armyworm



Steve Brown, UGA, bugwood.org

5363052

Beet armyworm



John Capinera, UF, bugwood.org

5511782

Southern armyworm



Ron Smith, Auburn, bugwood.org

UGA1857061

Armyworm Identification

Body sleek with
small head

Broad, dark band along
the top of the body



Brown
net-like
pattern
and
dark arcs
on head



Body mottled
and variable in color
from brownish to
dark green, with
alternating and
contrasting stripes

True armyworm moth



Whitney Cranshaw, CSU, bugwood.org

5422275

Armyworm larva with parasitoid eggs behind head



Robert Bauernfeind, KSU, bugwood.org

5511471

Armyworm in wheat- management

- Egg laying concentrated in areas of dense plant growth
- Larvae nocturnal; shake plants and examine ground to find them during the day
- Feeding on leaves usually not damaging; larvae will clip heads when green tissue becomes scarce
- Threshold:
 - 6 or more larvae per linear foot of drill row

Aphids

- Direct damage: feed on phloem (all species), inject toxins (greenbug)
- Indirect damage: vectors of barley yellow dwarf virus (BYDV)



5511711

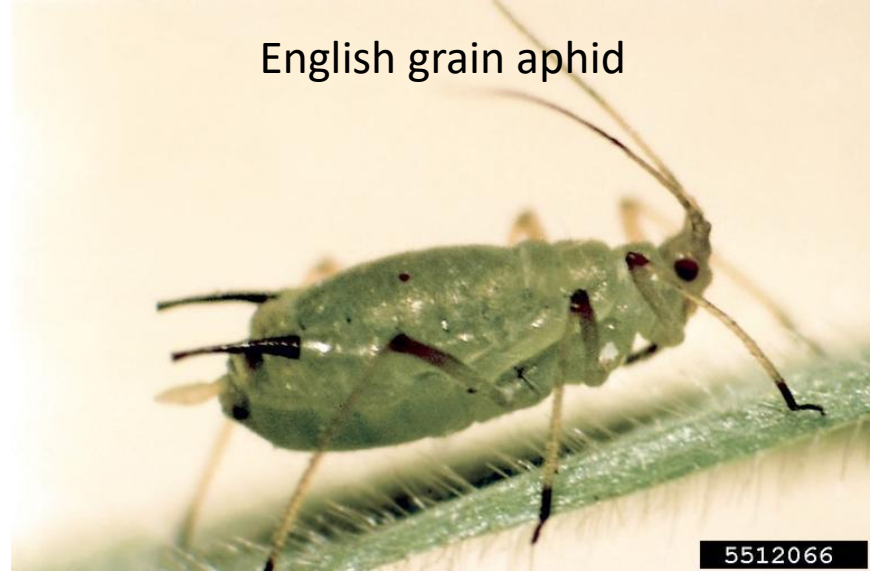
Brian Olson, OSU, bugwood.org

Know Your Aphids

Bird cherry-oat aphid



English grain aphid



Greenbug



Aphid management

- Planting after fly-free date will reduce risk of fall aphid infestations, BYDV infection
- Scouting: fall, especially seedling stage, is most critical
- Fall threshold (University of Kentucky):
 - First 30 days post-emergence: 3 aphids per row-ft
 - 30-60 days post-emergence: 6 aphids per row-ft
 - After 60 days: 10 aphids per row-ft
- Spring infestations: watch for infestations of 50-100 aphids per plant from boot until dough stage

Grape Colaspis



5428824

Photo: Natalie Hummel

Grape colaspis life cycle

- One generation per year
 - Adult emerges in mid-late June most years
 - Feeds and lays eggs in several plants, but especially legumes
 - Larvae feed on root hairs, non-damaging at this time; overwinter by burrowing deeper into the soil profile
 - In spring, larvae move back up the soil profile and feed on roots; this is the damaging period





Photo courtesy of Growmark, Inc.



Photo courtesy of Growmark, Inc.



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Photo courtesy of Growmark, Inc.



Photo courtesy of Growmark, Inc.



Grape Colaspis Damage “Bean Row Effect”

- Rice field in Arkansas, grown in rotation with soybean
- This rice was drilled; areas of empty stand are where the previous year’s bean rows were planted

Photo: Gus Lorenz

Management

- Corn or soybean grown after soybean (or another legume) can be infested
- Seed treatment performance in 2018 was spotty
 - Weather? Reduced susceptibility?
 - Lack of good control data in corn/soybean
- Soil insecticides
- Field history

Dectes stem borer



Photo: Eric Alinger

Dectes stem borer life cycle

- 1 generation per year
 - Adults emerge usually beginning in July, throughout August (long period of activity)
 - Lay eggs in petioles (often girdle petiole, which falls off)
 - Larvae feed on pith, bore up and down soybean main stem
 - Overwinter as a partially grown larva
 - Girdle base of stem, plug hole
 - Leads to lodging





Photo: Eric Alinger



Photos: Eric Alinger



Photos: Eric Alinger

Chemical control

- Chemical control is not recommended
 - Larvae are protected from insecticides
 - Adults can be controlled, but long oviposition period means prevention of larval tunneling is limited
 - Most situations, multiple applications would be needed to achieve satisfactory control

Management

- Management efforts should focus on preventing or managing lodging
 - Larval tunneling itself has little (if any) impact on yield
- Best management is timely harvest
 - We can't control the weather....
 - But we can prioritize soybeans with dectes infestation and get them out of the field ASAP
- Monitor for infestation
 - Broken off petioles (“flagged”)
 - Split stems when harvest approaches
 - “Sawdust” at base of girdled stems

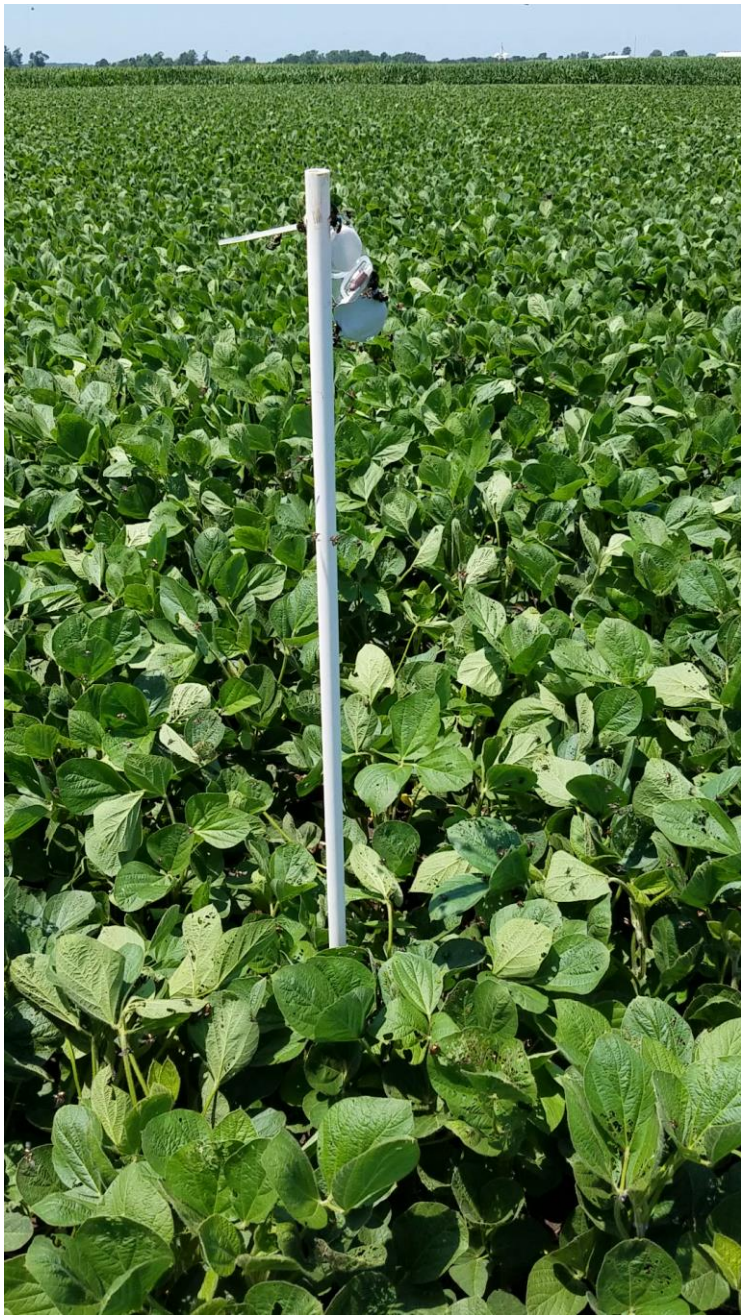


Other Management Factors

- Tillage that buries stalks reduces overwintering populations
- Giant ragweed is a host, favors higher populations
- Varietal differences exist, but not well characterized
- Cultural practices that reduce stalk size might reduce infestation, larval survival

Japanese Beetles

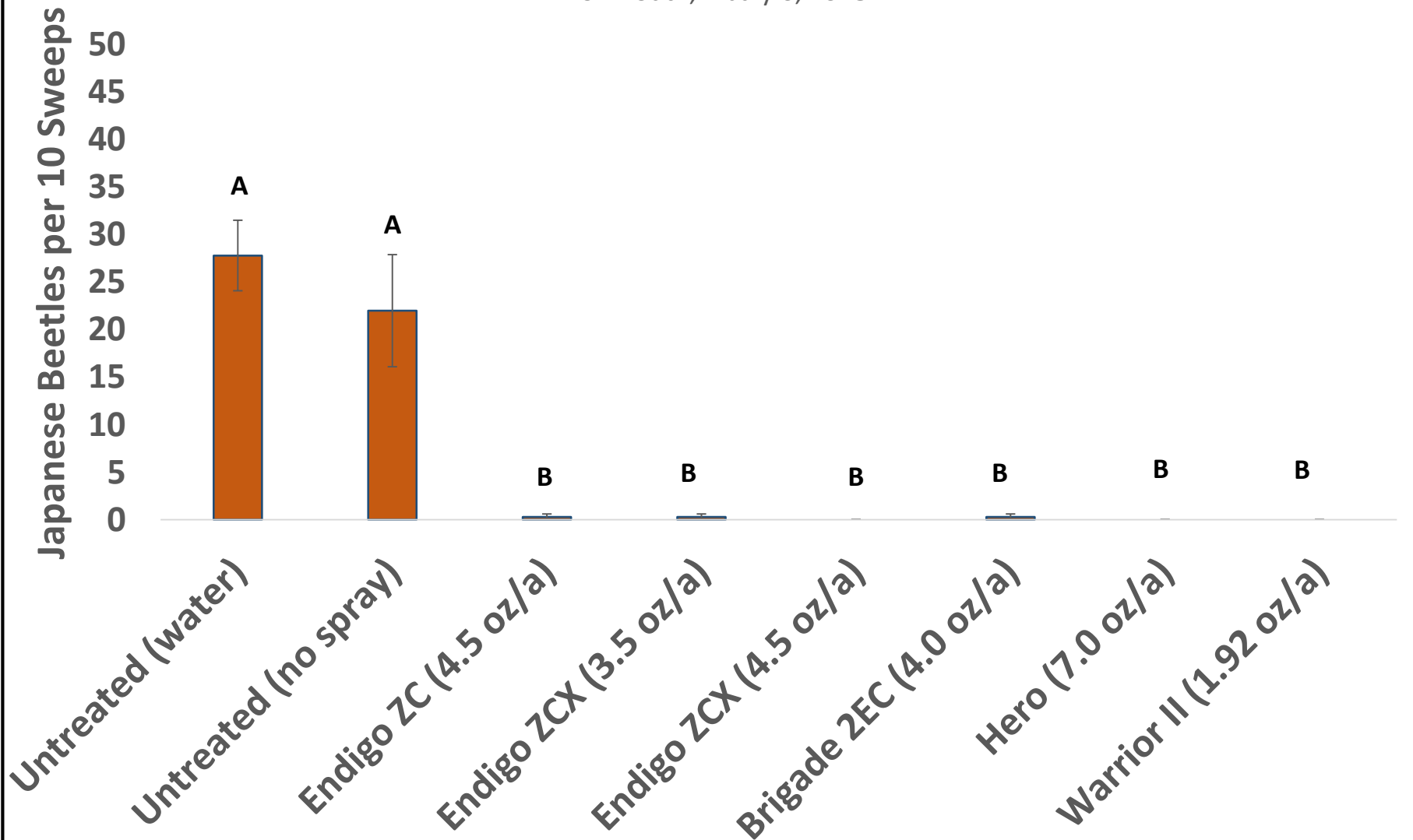




Insecticides for Japanese Beetle Control

3 Days Post-Application

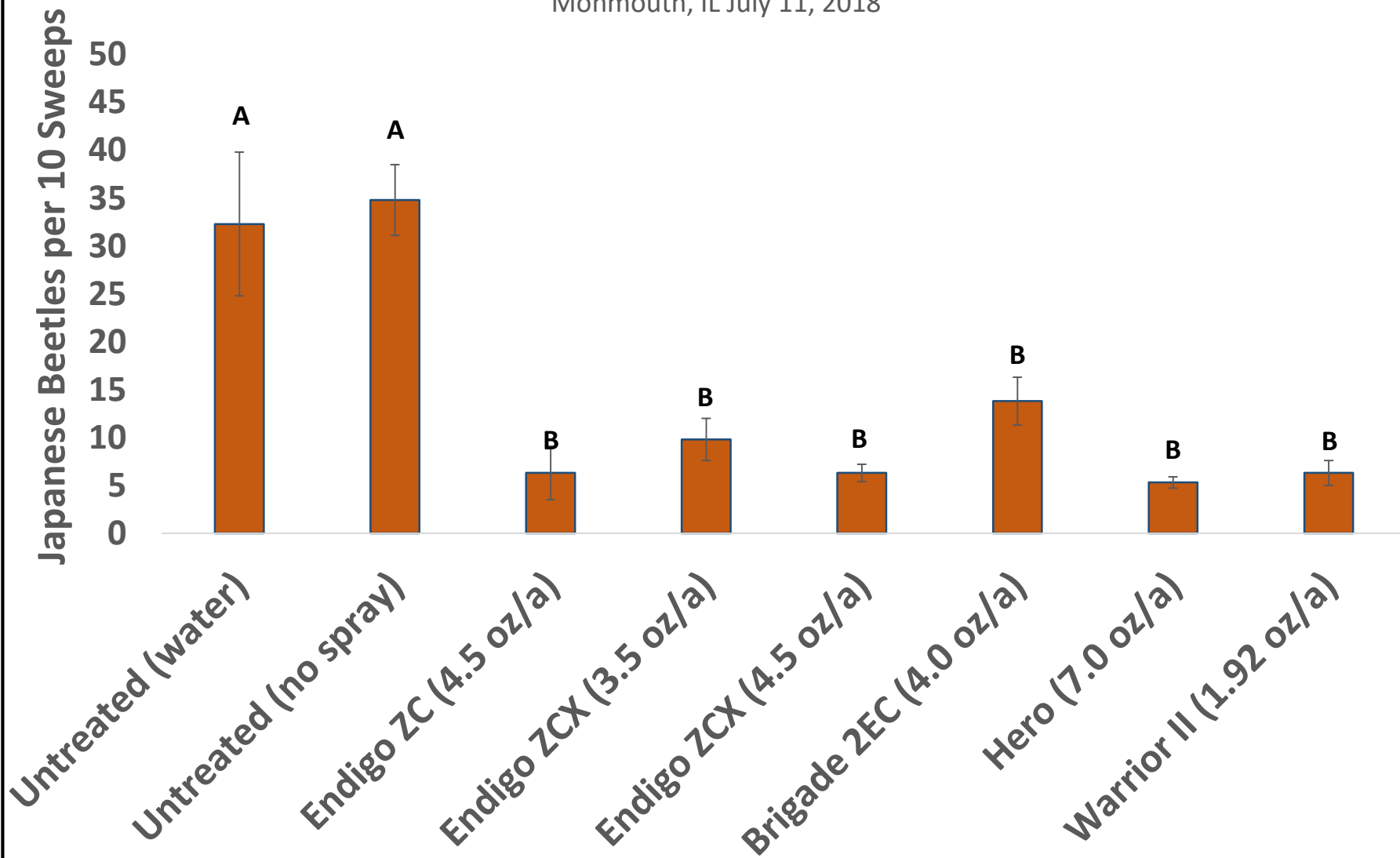
Monmouth, IL July 6, 2018



Insecticides for Japanese Beetle Control

8 Days Post-Application

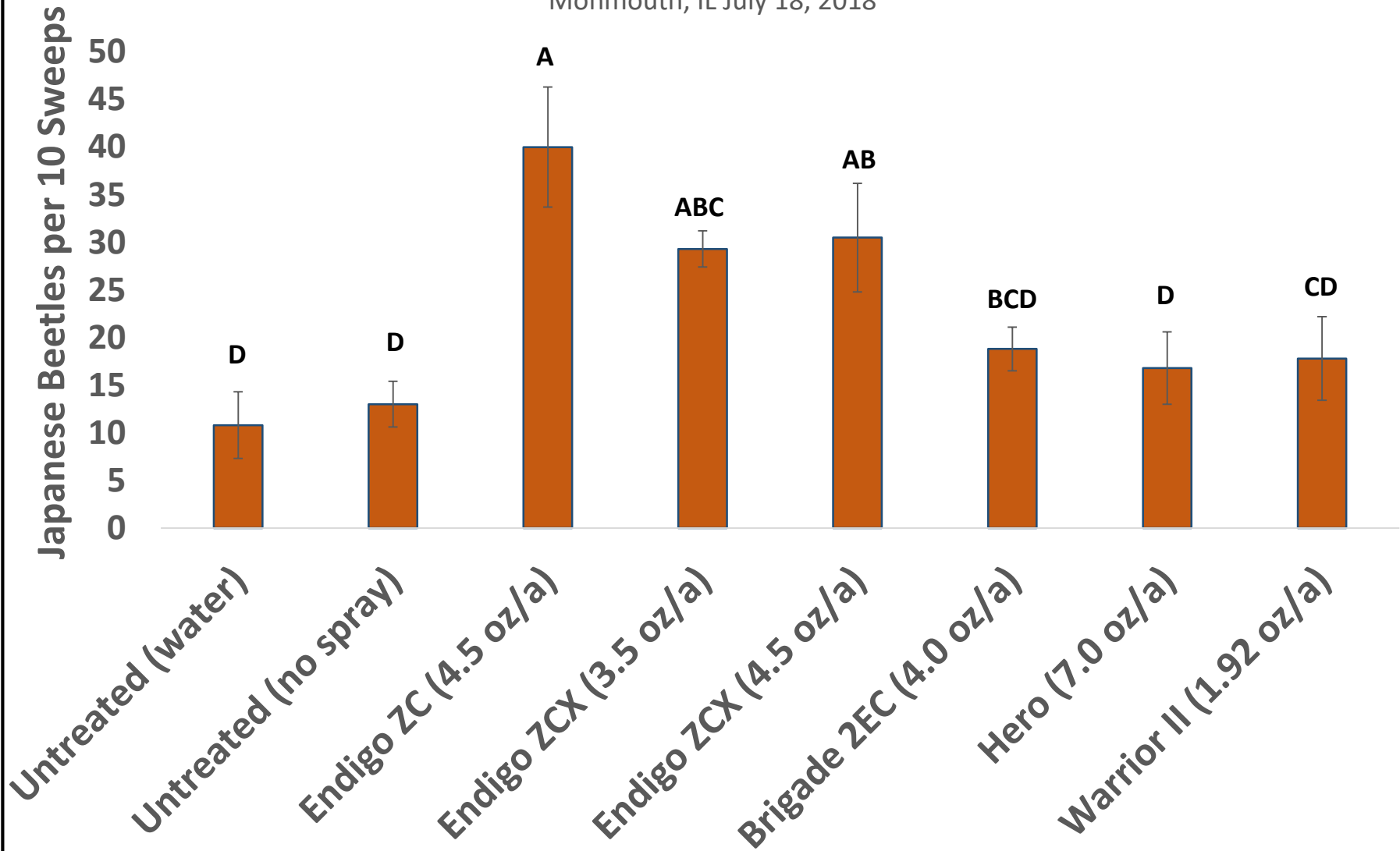
Monmouth, IL July 11, 2018



Insecticides for Japanese Beetle Control

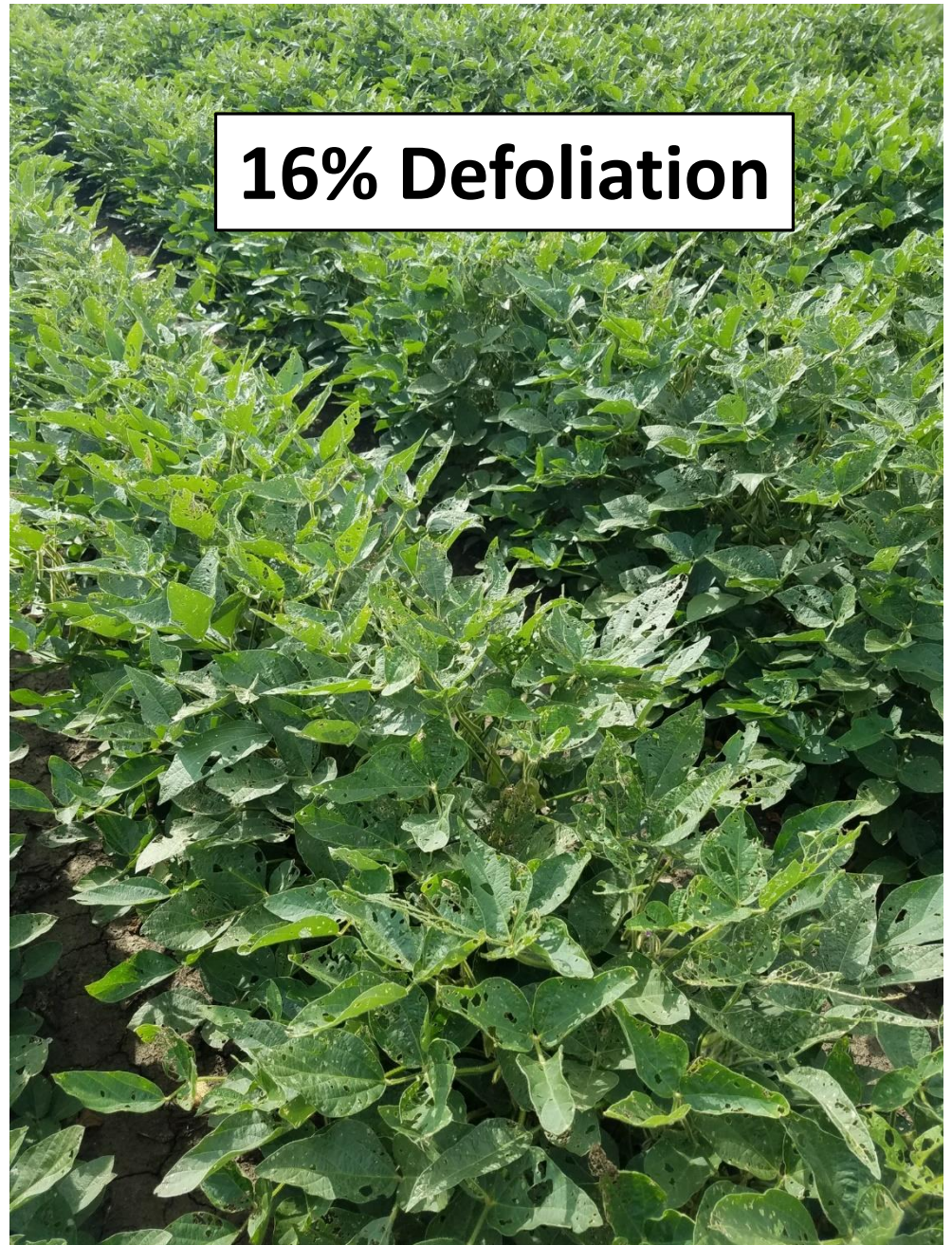
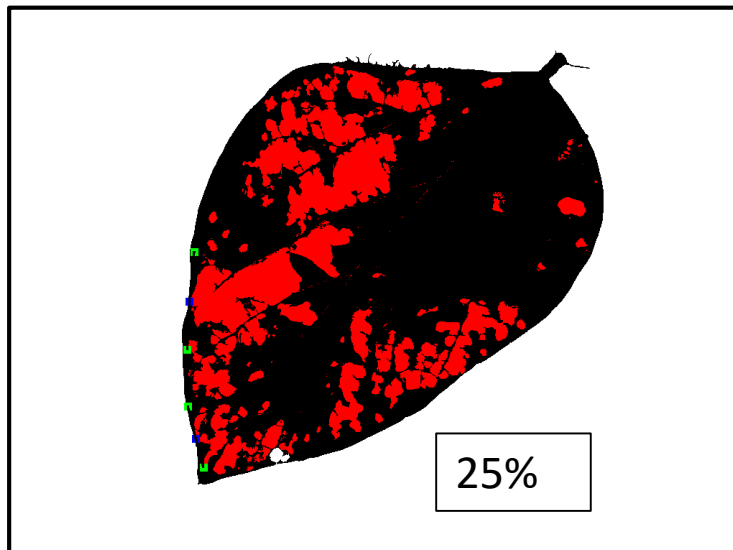
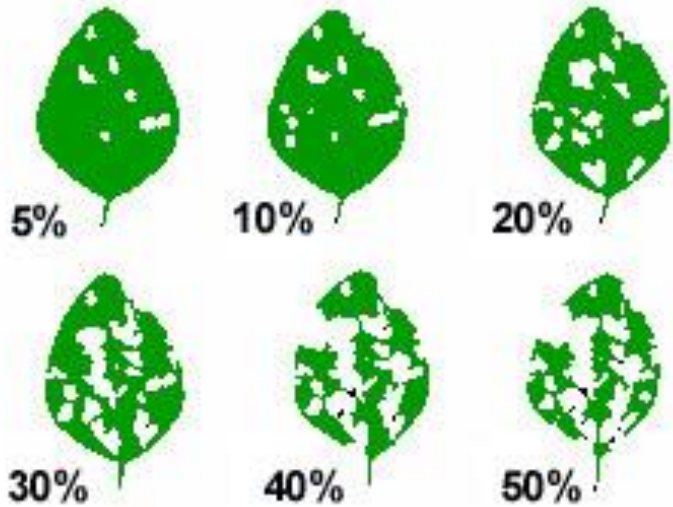
15 Days Post-Application

Monmouth, IL July 18, 2018



Japanese beetle management

- Previous experiment: no differences in defoliation or yield among treatments
- Economic threshold for Japanese beetle and other defoliators is 20% defoliation
- Initial knockdown w/ insecticides is good, but residual control is short-lived



Questions?

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