

Insights on Brown Marmorated Stink Bug Behavior from a Mark/Recapture Field Experiment

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Why Disperse?

- Dispersal hazards
 - Increased predation
 - Failure to find host plant
 - Failure to find mates
- Host plant availability
 - Induced defense
 - Phenological changes





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Google earth

New Danville Pike

Goals

- How much does BMSB move?
- When does BMSB move?
- Where does BMSB move to?
- Mark/Recapture

Fluorescent Marking

- Mark insect with powder
- UV light
- Visible light reflection



Problems Marking BMSB

- Fluorescent powders
 - Sensory interference
 - Flight interference
- Fluorescent paints
 - Flight interference



Neon Pens

- Pen marking
 - UV fluorescent
 - Inexpensive
 - No cross contamination
 - Waterproof
 - Long lasting
 - Non-toxic
- Time consuming
- Potential handling damage

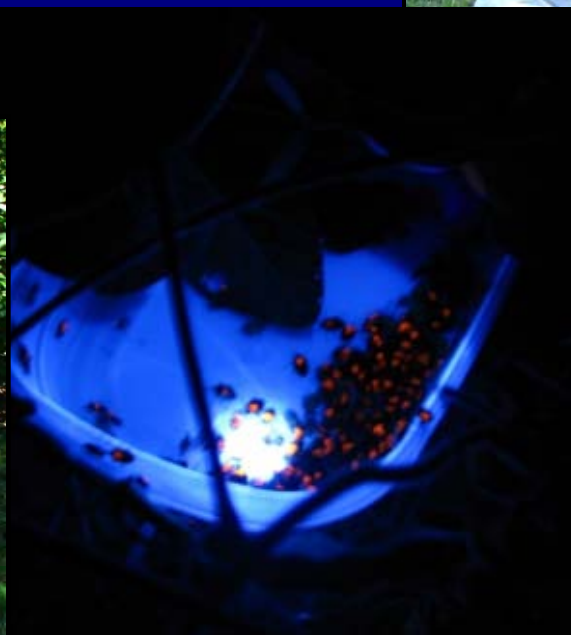


Fluorescent Stink Bugs



Tracking BMSB Dispersal

- 2,500 adult BMSB from soybean
- Knockdown CO₂
- Individually hand marked
 - Yellow released in woods
 - Pink released in soy



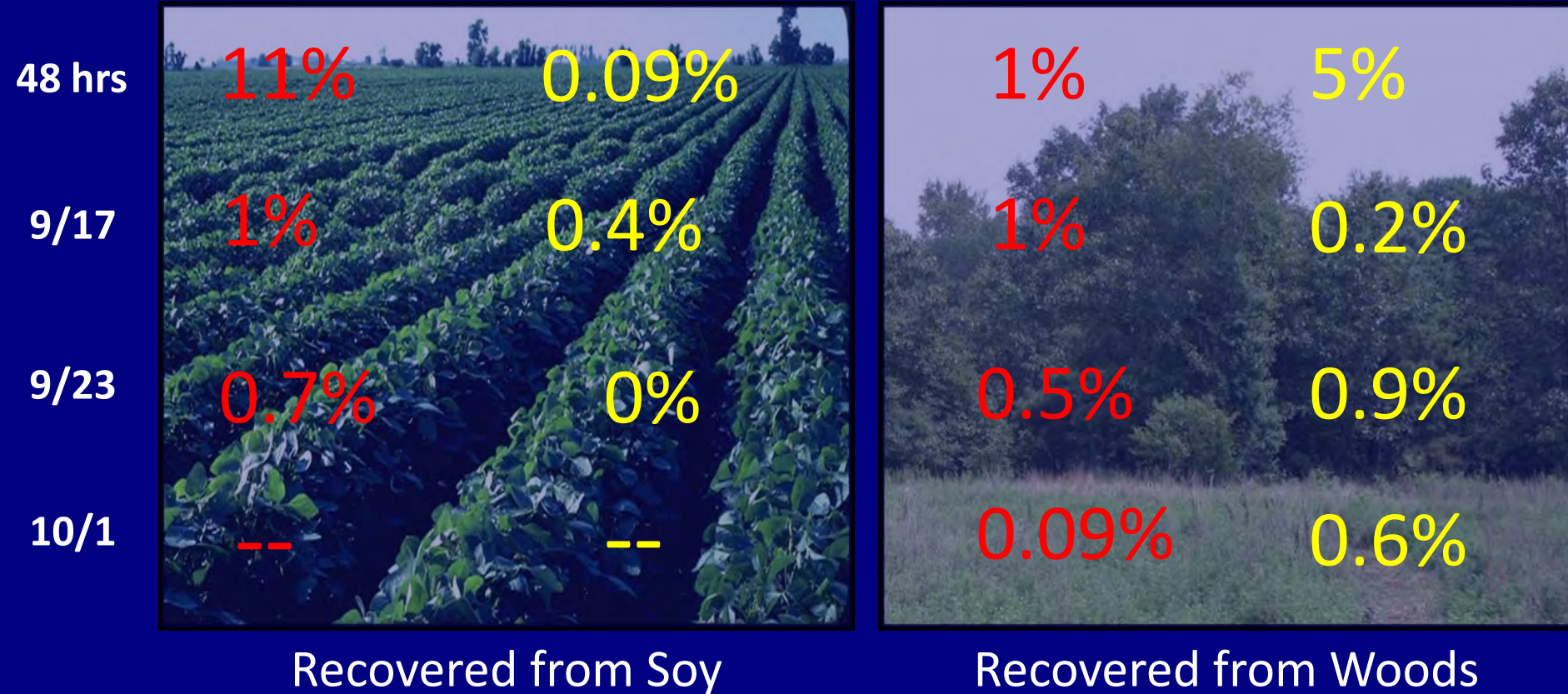
Recapture-UV Flashlights



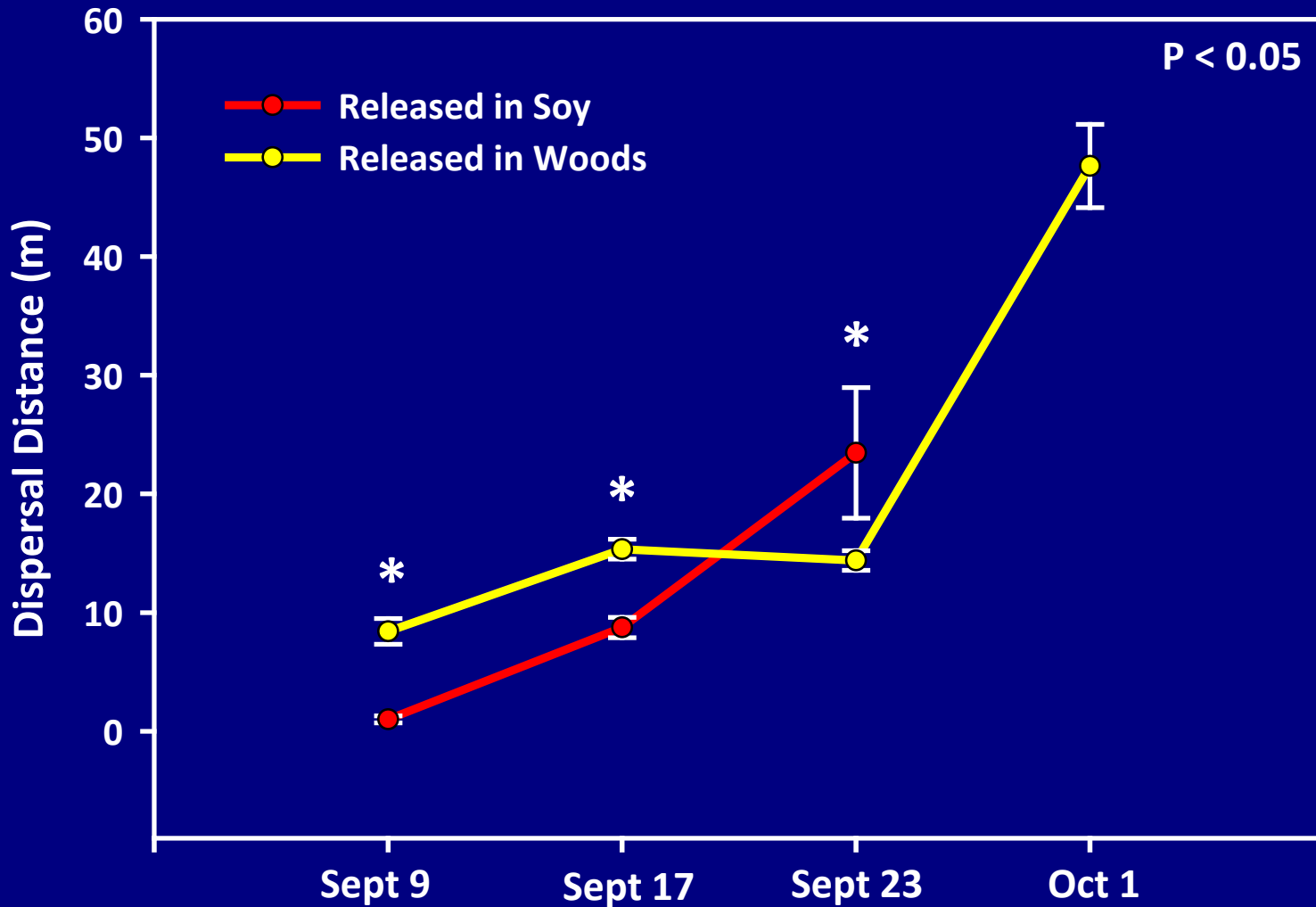
Successful Recapture

3 Consecutive Weeks

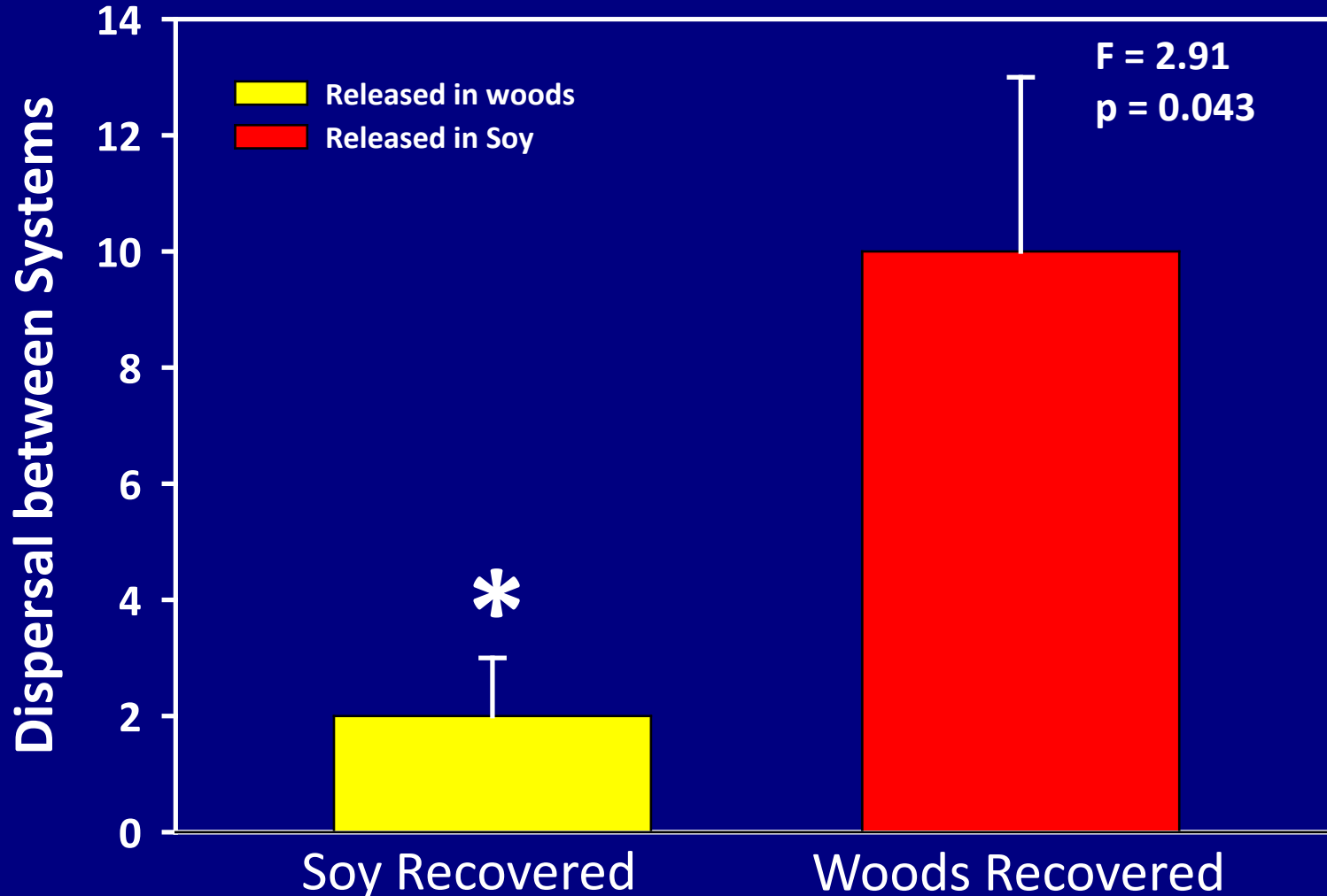
Released in Soy
Released in Woods



Dispersal Distance



Higher Dispersal from Soy to Woods



Mass Marking Technique

- Fluorescent powder
 - Diluted water
- Spray and rinse
- Less handling



Increased Fluorescence Coverage





Recapture Distance

- Neon pens = 11.2 m
- Powder spray = 6.5 m



Conclusions

- Recapture 3 weeks after marking
- Some BMSB stay in system 3 weeks
- Established 2 mark/recapture methods-BMSB

Marking Does Not Appear to Interfere with Behavior

- Flight
- Host plant finding
- Feeding
- Mating
- Oviposition
- Diapause induction
- Longevity
- Predation?



Dispersal from Overwintering Sites

- Spring 2014
- Mark 10,000?
- ID wild host plants



Improved Recapture

- Cherry picker
 - Access tree canopy
- Mounted UV spotlights
- Field sites?



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