2017 Rice Insect Control Update

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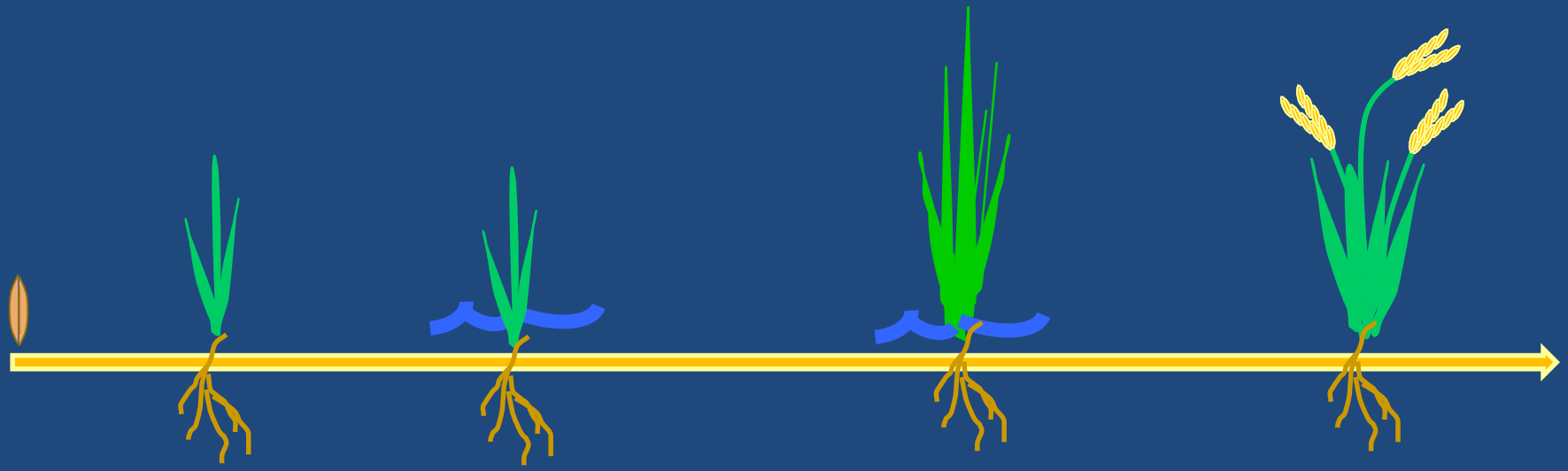
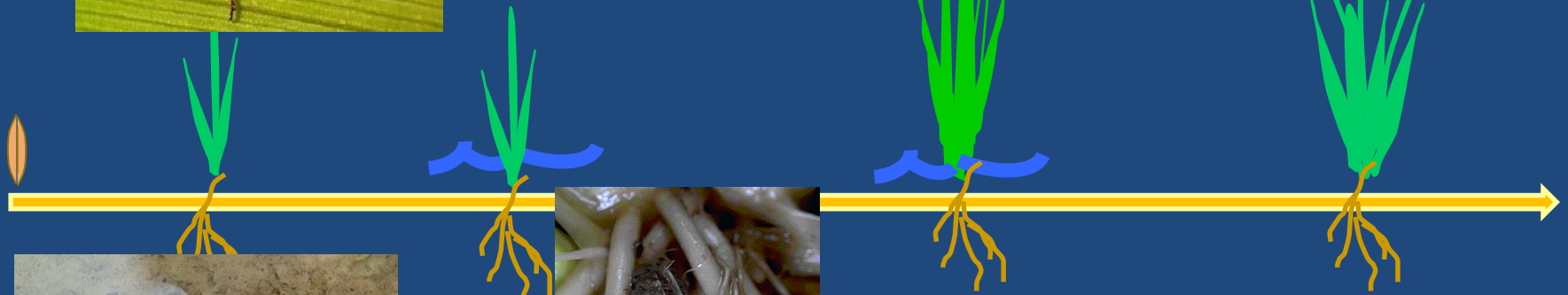
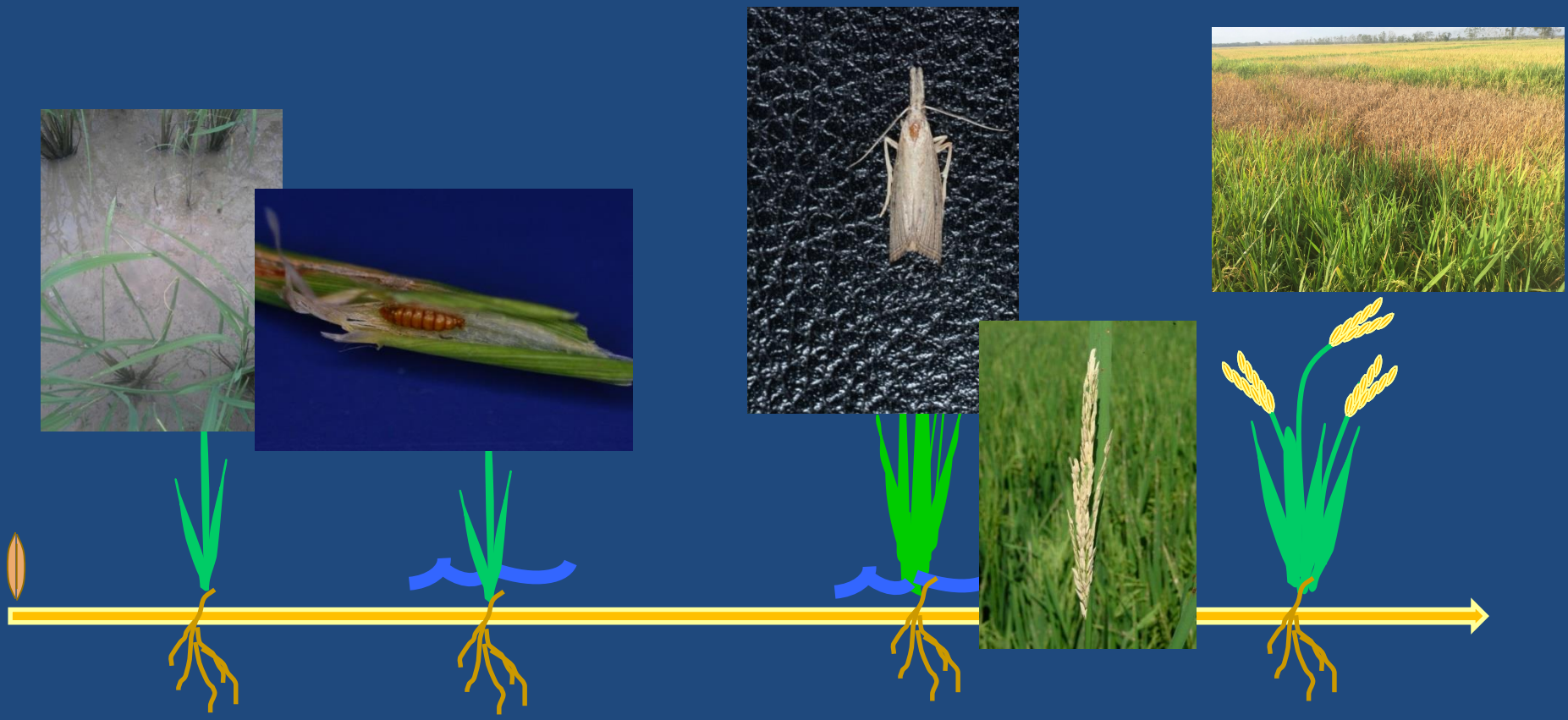
Insect pests in rice: a time of transition?



Established pests



Over the past decade: Invasive pests



Insect pest management in 2017

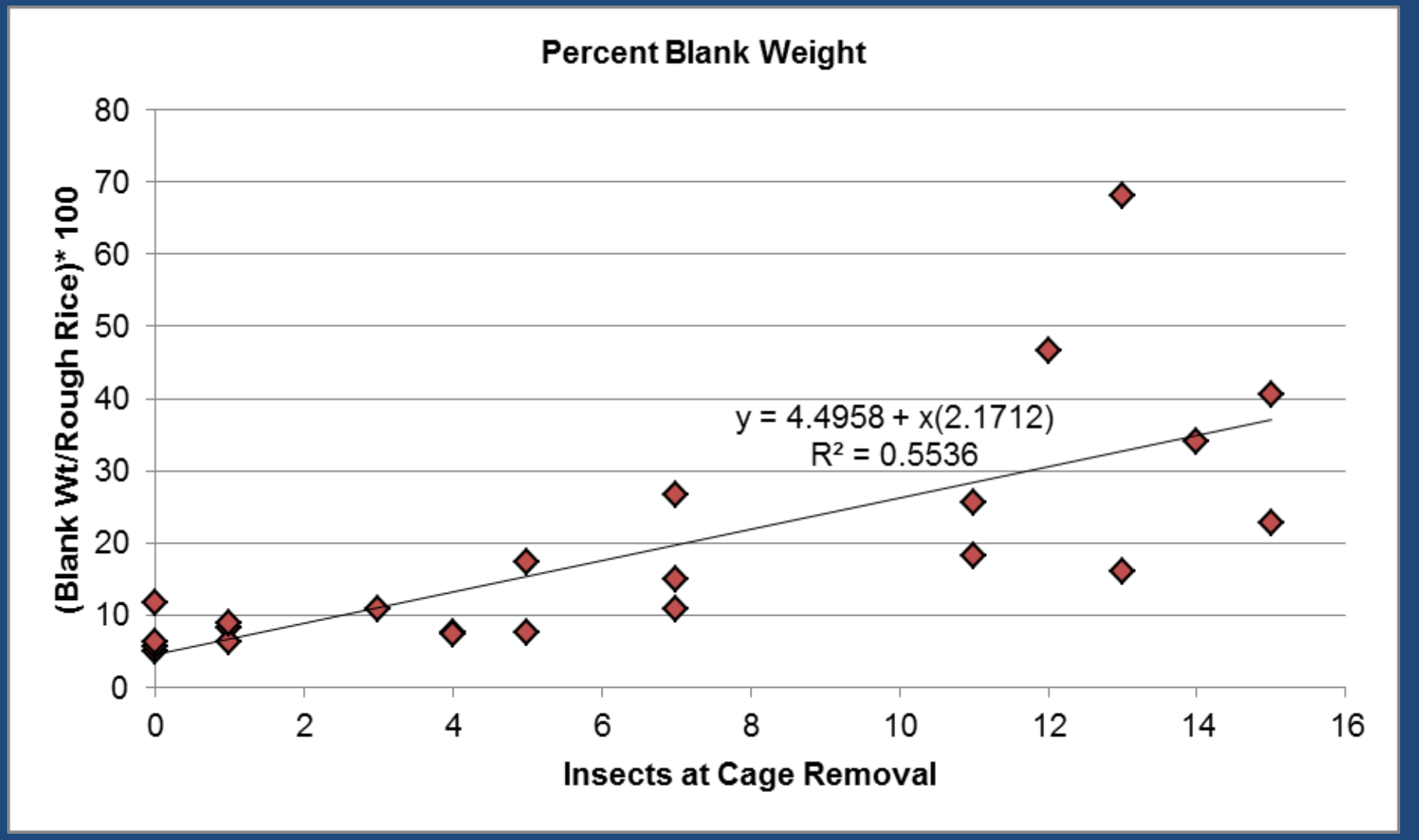
- Prepare for the established pests
  - -- Have a plan for managing rice water weevils
  - -- Scout for rice stink bugs
- Be on the lookout for invasive pests
  - -- Look for symptoms of Mexican rice borer, South American rice miner, rice delphacid
  - --Pheromone traps for Mexican rice borer

Rice stink bug

Weeds

Scouting and thresholds

- Begin scouting when rice is 50 to 75% heading
- 10 sweeps at 10 different areas
- Avoid hot hours
- First two weeks of heading: 3 bugs per 10 sweeps
- After first two weeks: 10 bugs per 10 sweeps
- **Count nymphs as well as adults!**

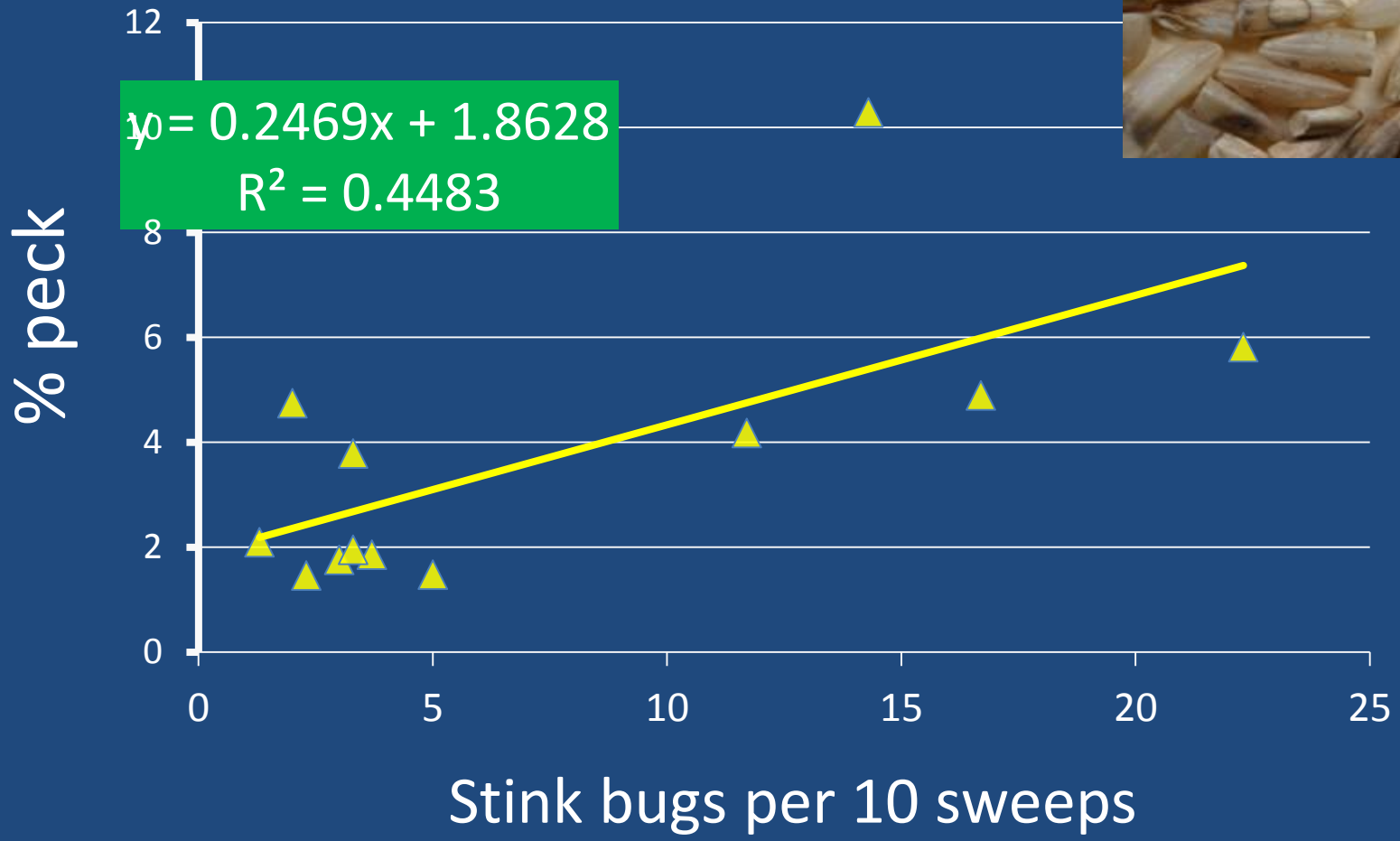

Percent Blank Weight
(Blank Wt/Rough Rice)* 100
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
Insects at Cage Removal
y = 4.4958 + x(2.1712)
R² = 0.5536

Re-evaluation of stink bug thresholds

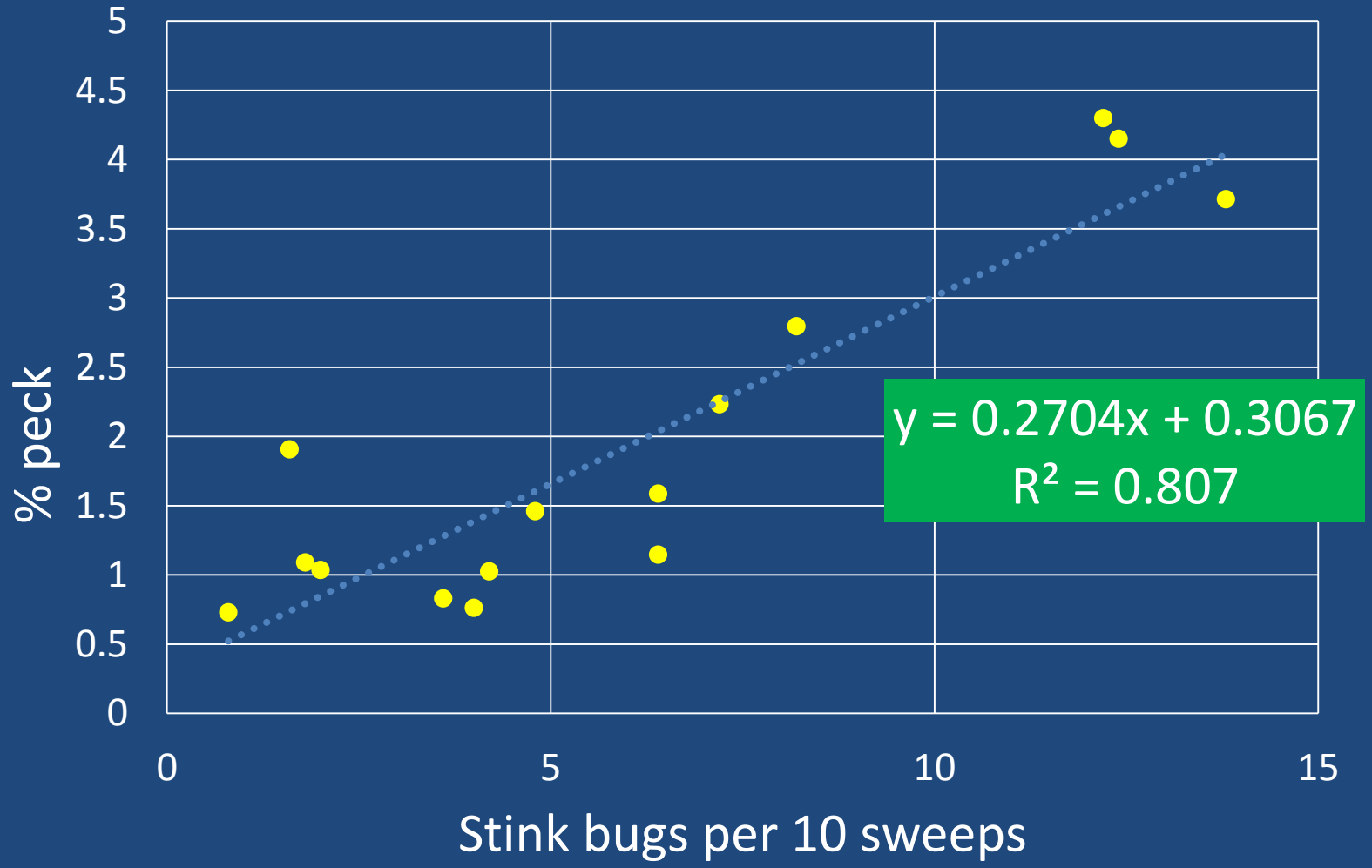
- Small field plots of ‘Cheniere’
- Plots assigned to three treatments: no insecticide, high rate of Karate applied every 2-3 days; low rate of Karate applied every ~ 6 days
- At grain maturity, collect 15 panicles per plot
- Hand thresh, separate filled from empty grains
- De-hull filled grains, process to measure peck and broken grains

Stink bug density vs. % peck, 2015

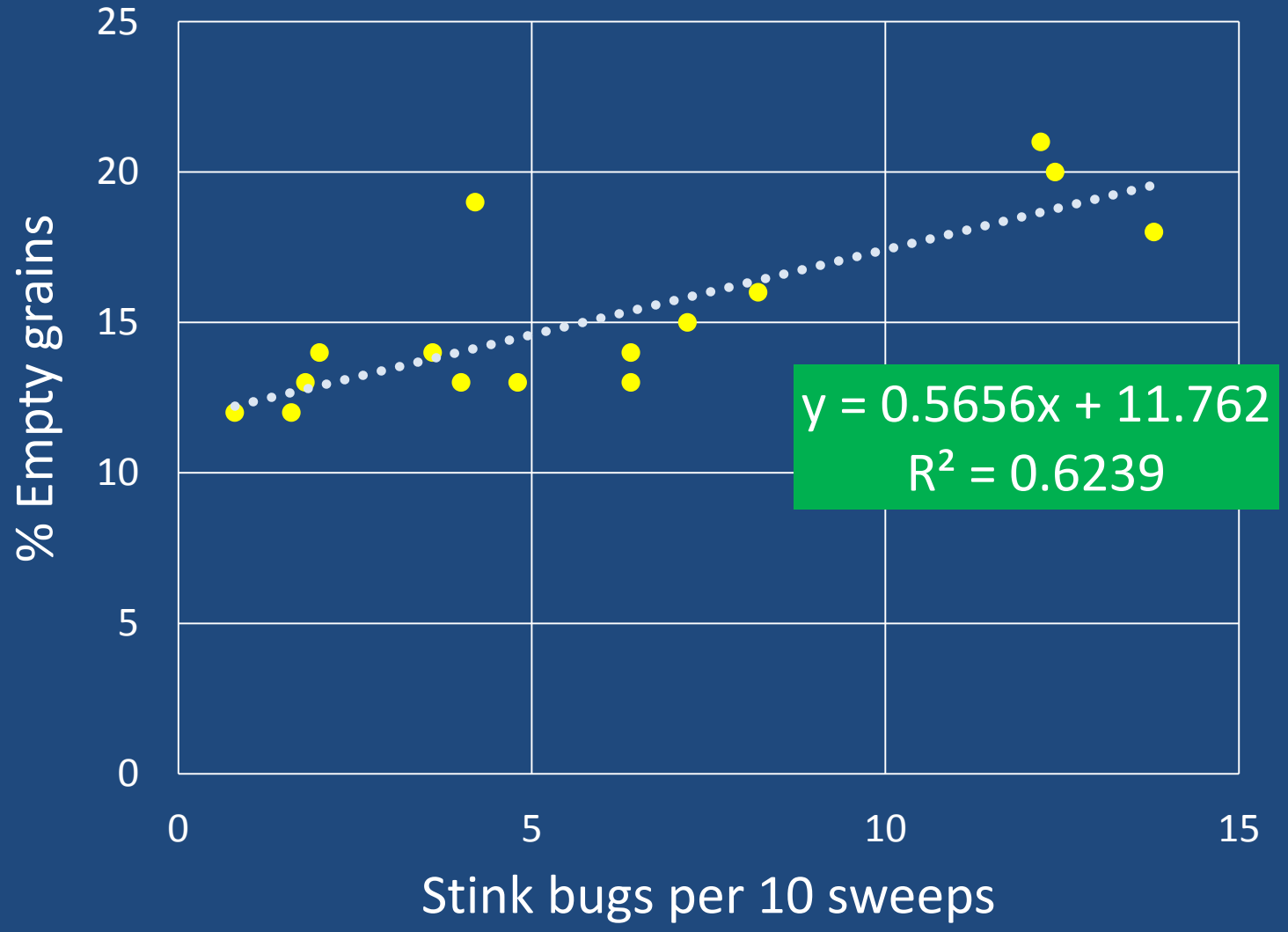
Each bug: 0.25% peck



Stink bug thresholds: bug density vs. % peck, 2016



Stink bug thresholds: bug density vs. empty grains



These density – damage relationships will allow us to calculate new economic injury levels/thresholds

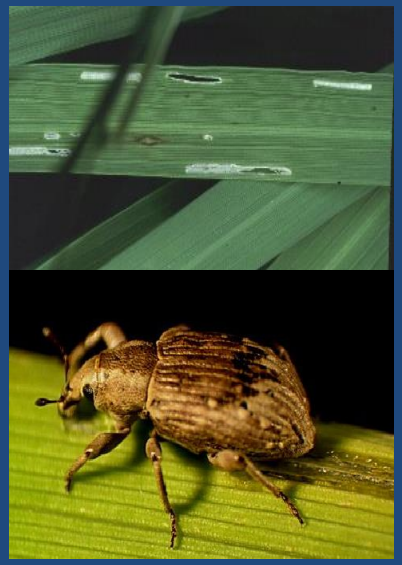
Rice Water Weevil Biology

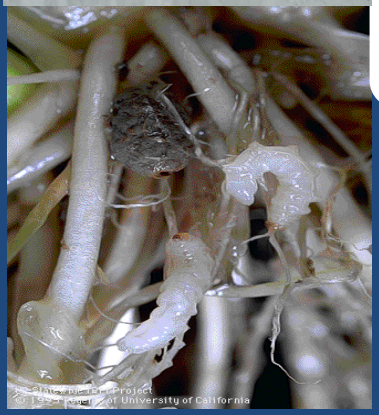
Over wintering

Root pruning

Adult feeding

Mating & egg-laying





Flooding triggers egg laying

What insecticide should I use?

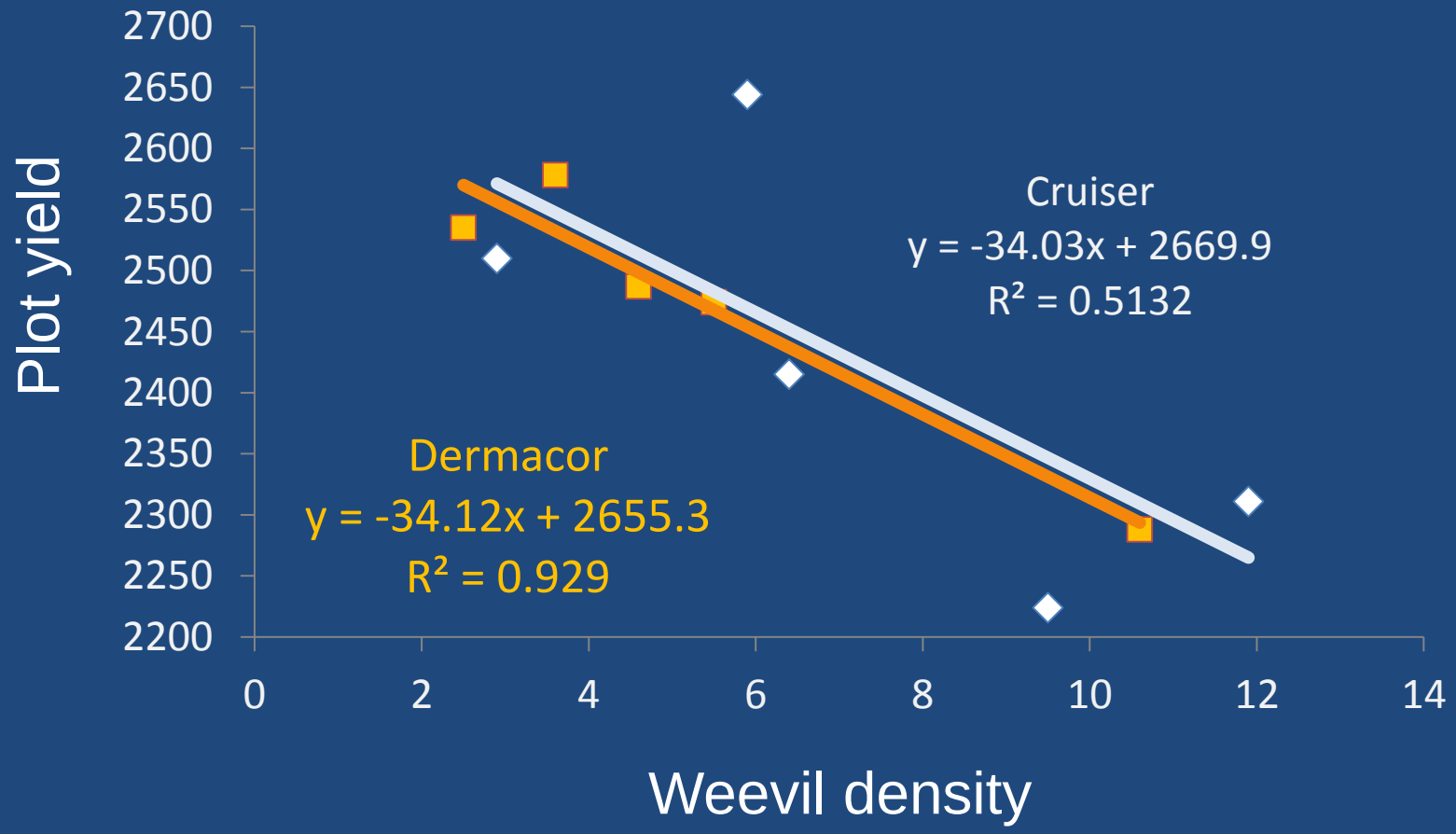
Foliar insecticides		Seed treatments	
Pyrethroids	Belay	Dermacor	CruiserMaxx NipsitInside

If you have a history of rice water weevil or stem borer infestations, probably best to use seed treatments

Justification:

Relationship between rice water weevil larval density and rice yield

- **Each weevil larva correlated with ~1% loss in yield**
- **Three larvae per core sample = ~$20 per acre**



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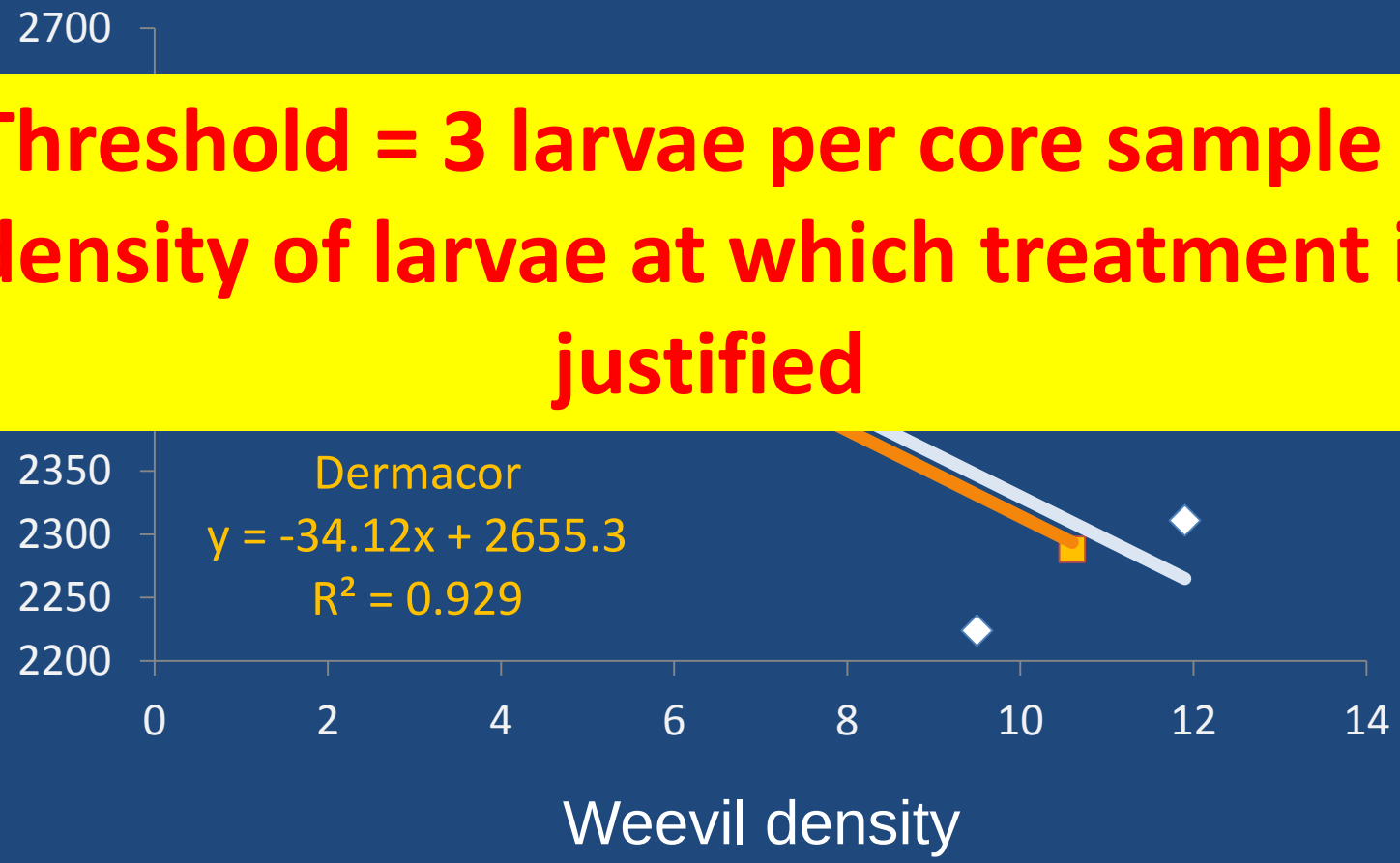
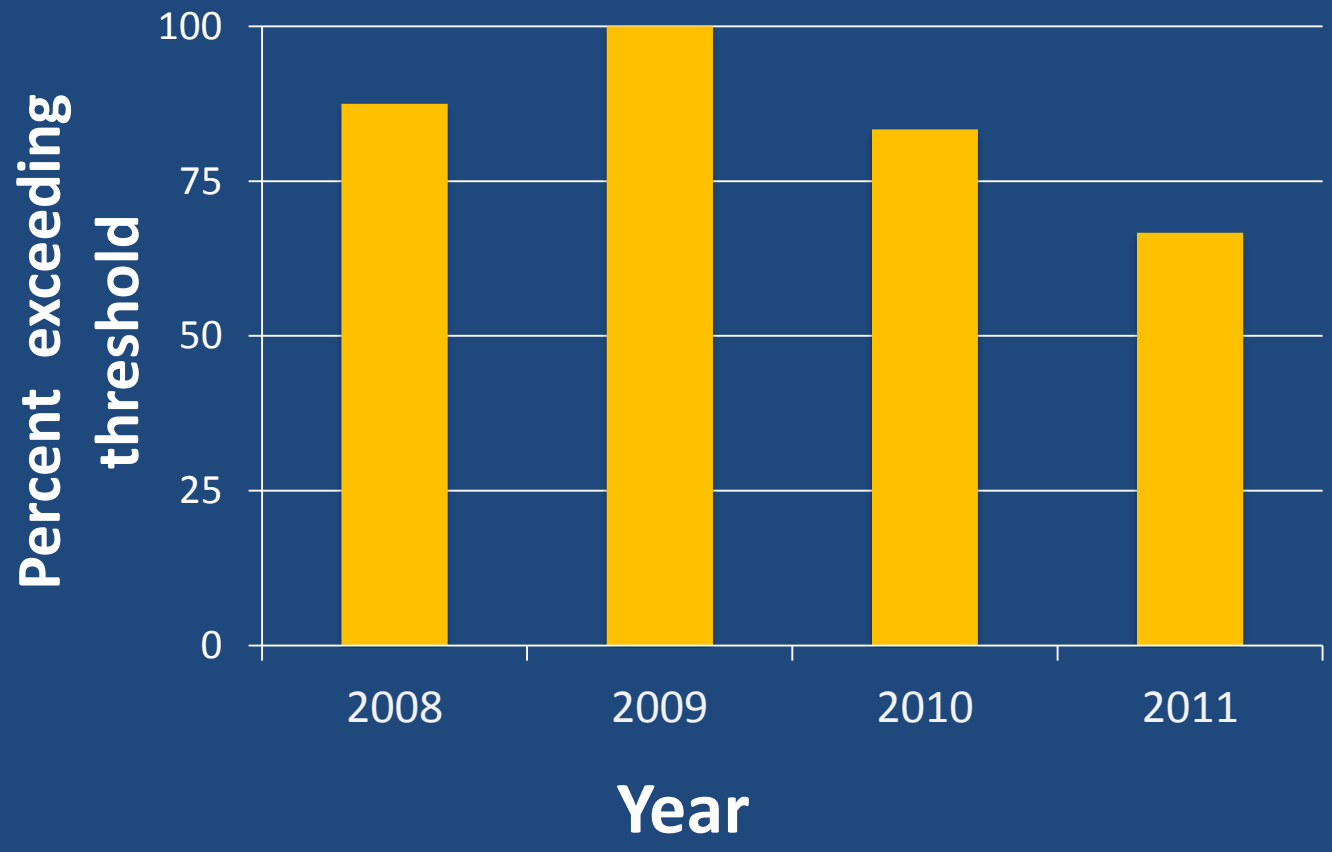


Threshold = 3 larvae per core sample = density of larvae at which treatment is justified

Proportion of untreated rice with weevil infestations that exceeded threshold, 2008-2011

Threshold = 3 larvae per core, ~$15-$20 loss per acre

Average weevil density = ~11 larvae per core sample



Proportion of untreated rice with weevil infestations that exceeded threshold, 2008-2011

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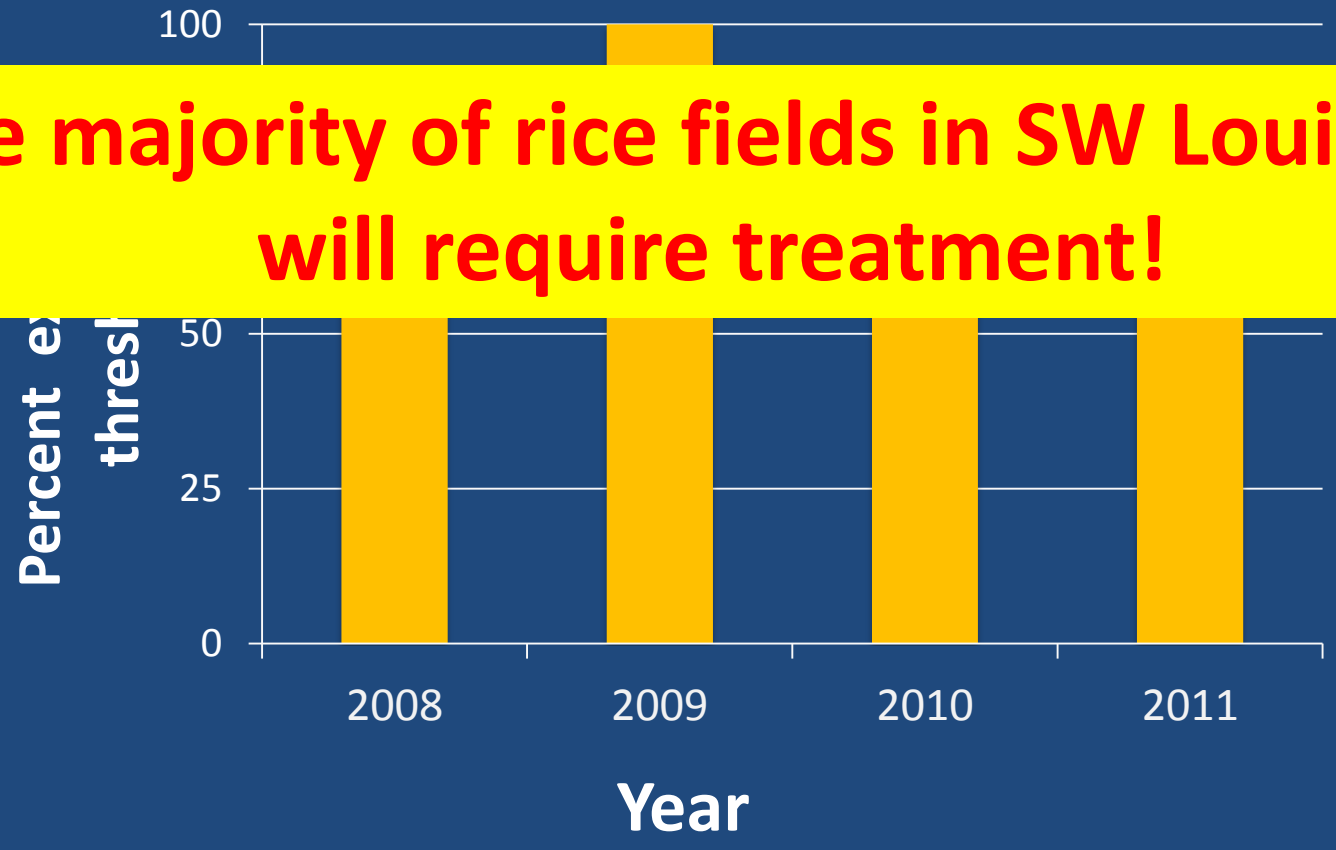


The majority of rice fields in SW Louisiana will require treatment!

Spectra of activity

Cruiser/Nipsit





Dermacor X-100



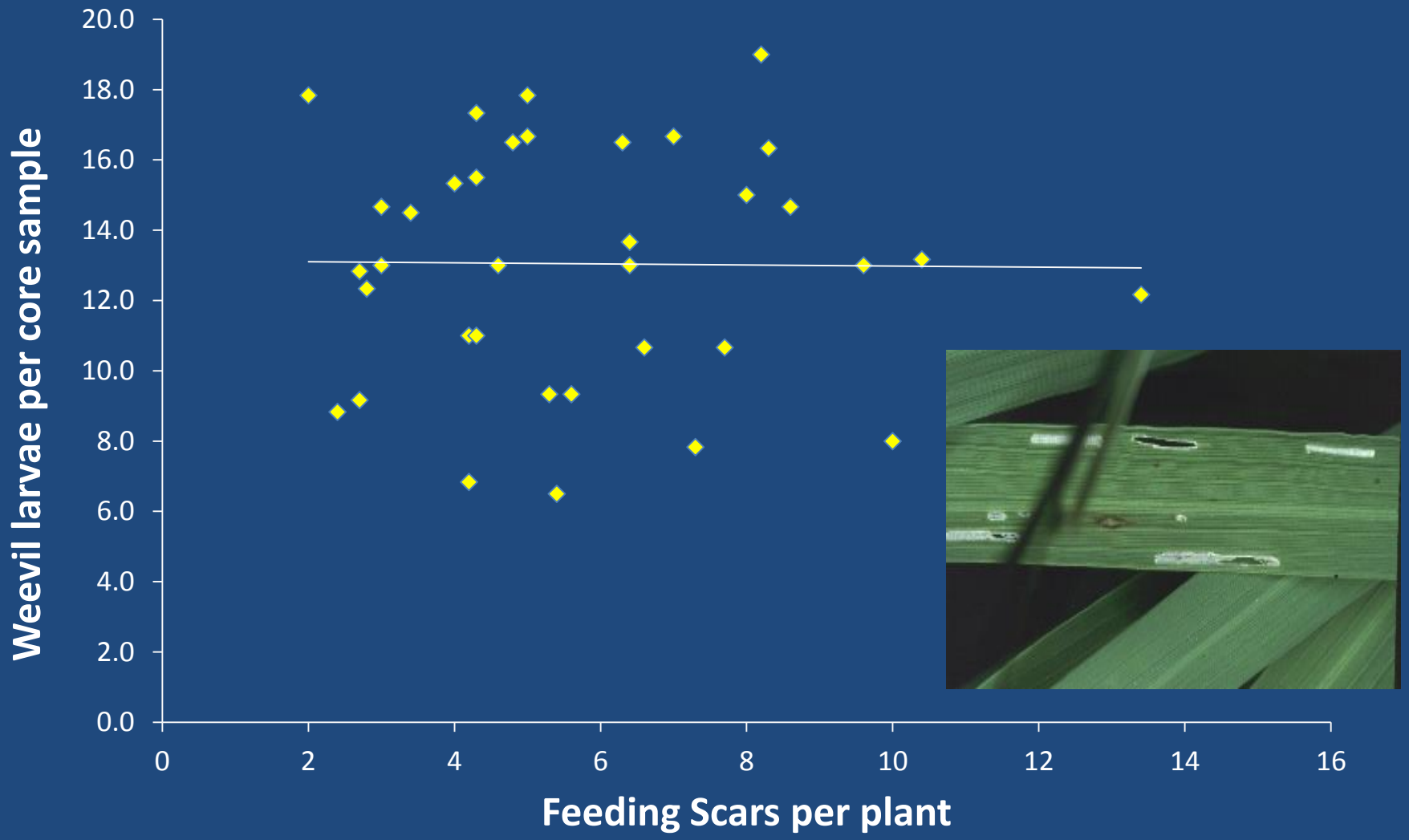

Pyrethroids very broad spectrum, Belay not as broad-spectrum

If you have a history of rice water weevil or stem borer infestations, probably best to use seed treatments

For early planted fields without a history of weevils or stem borers, may consider foliars (pyrethroids and Belay)

The question with foliars – when do I treat?

Can we predict larval densities by counting adult weevils or feeding scars?



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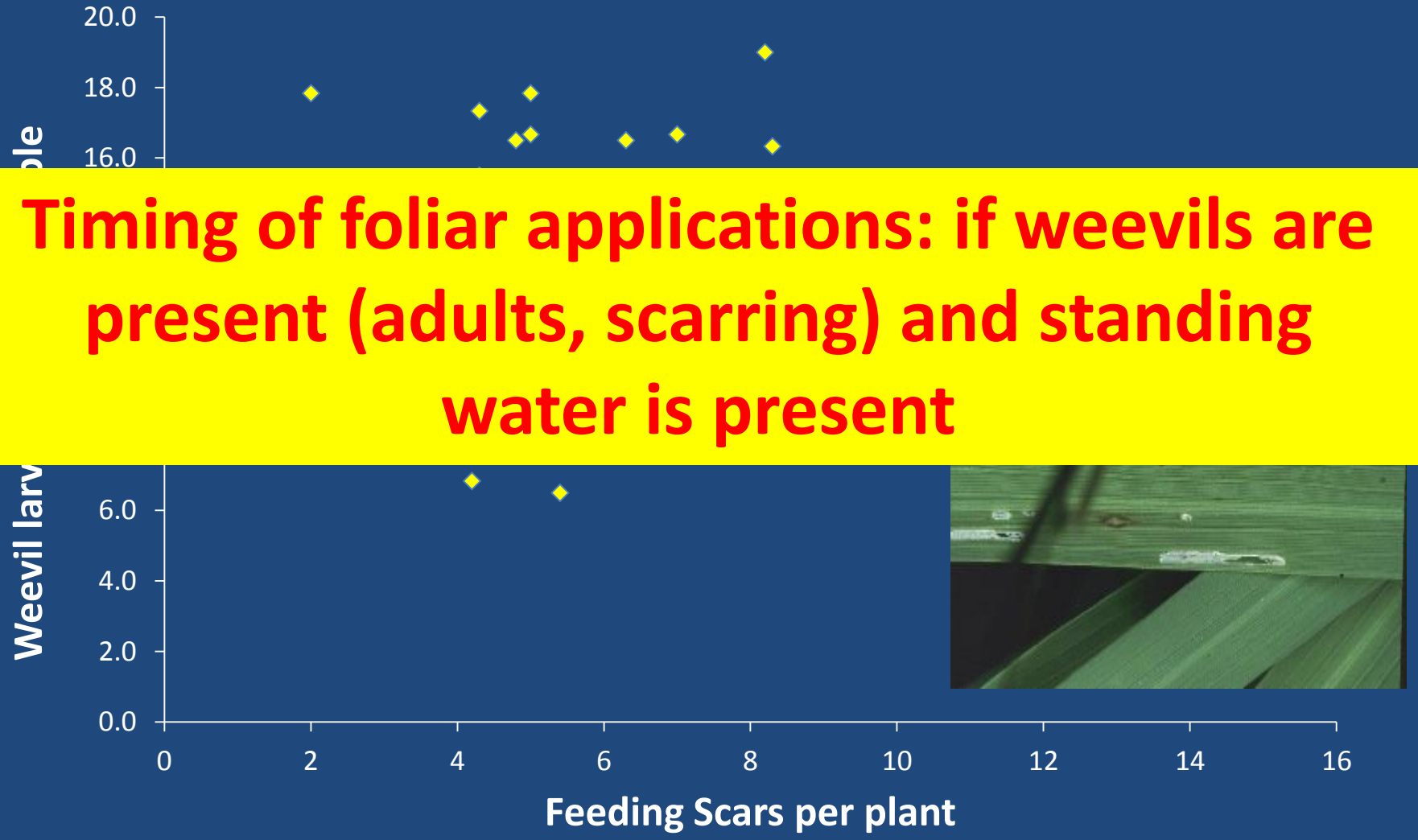
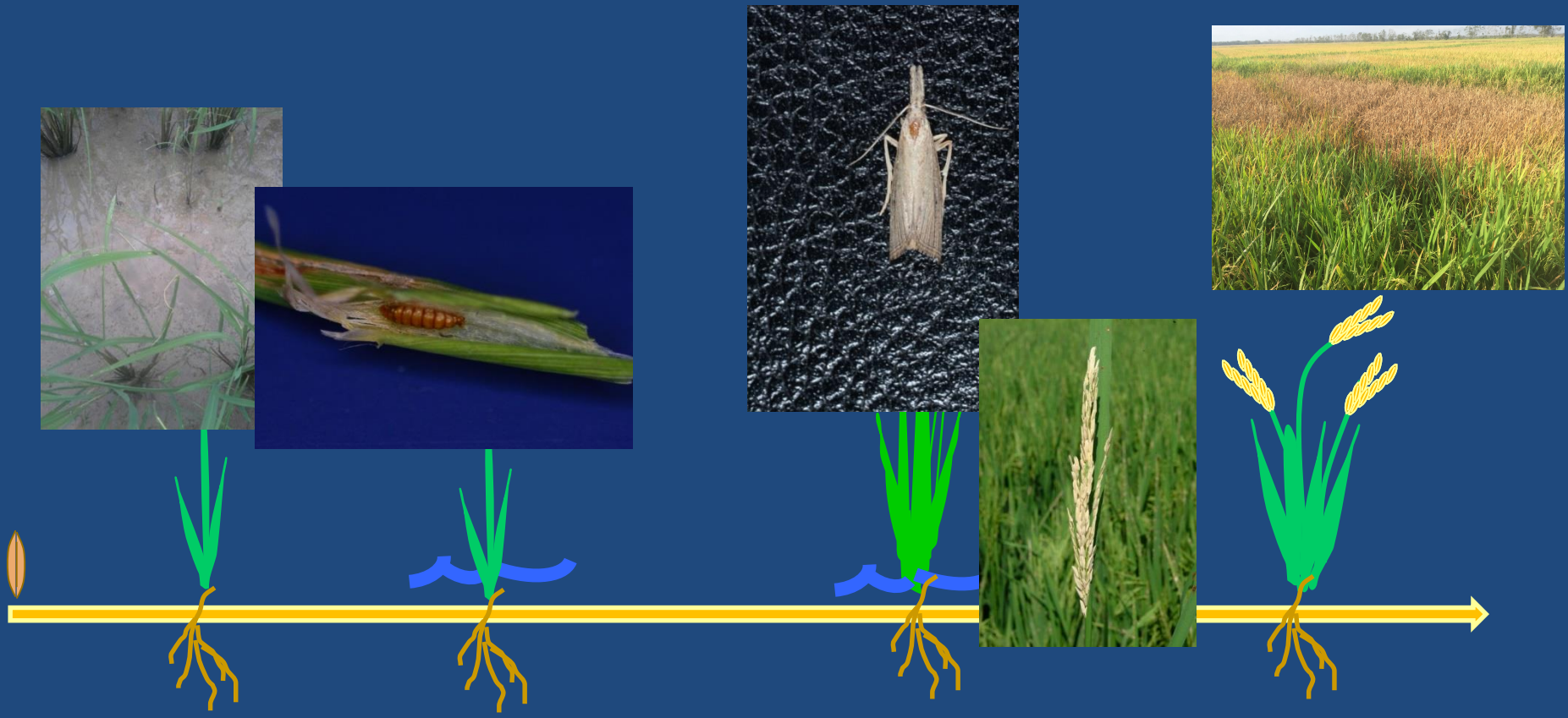


Timing of foliar applications: if weevils are present (adults, scarring) and standing water is present

But…over the past decade: Invasive pests




UGA5189079

South American Rice Miner

- Will the SARM be a problem again in 2017?

  --Cannot predict, previous widespread infestation was 2005

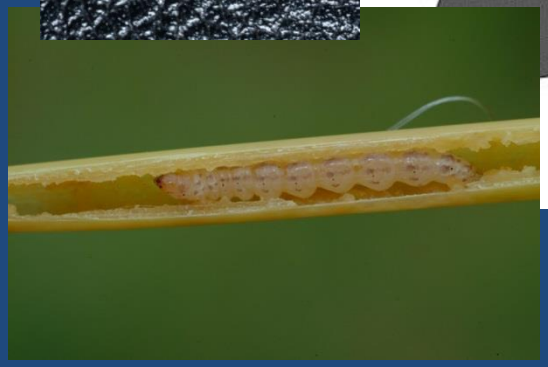
- Will seed treatments control SARM?

  --Has not yet been tested, because insect does not show up consistently

- What else can be done about SARM?

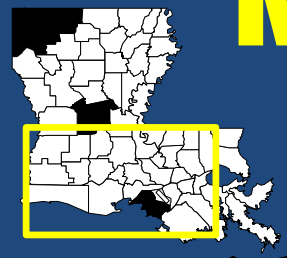
  --early planting, adequate seeding rates

Mexican rice borer now in all rice-producing parishes in Louisiana



Source: Blake Wilson

MRB Range Expansion



Allen

Evangeline

St. Landry

Pointe Coupee

EBR

WBR

Acadia

Calcasieu

Laf.

St. Martin

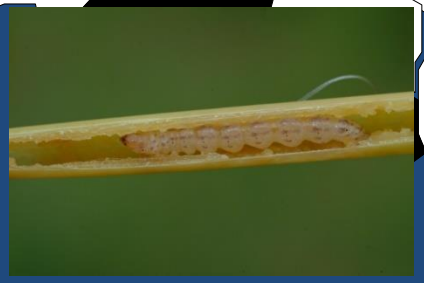
Iberville

Iberia

Assump.

St. Martin

Vermilion



2008

2011

2013

2014

2015

2016

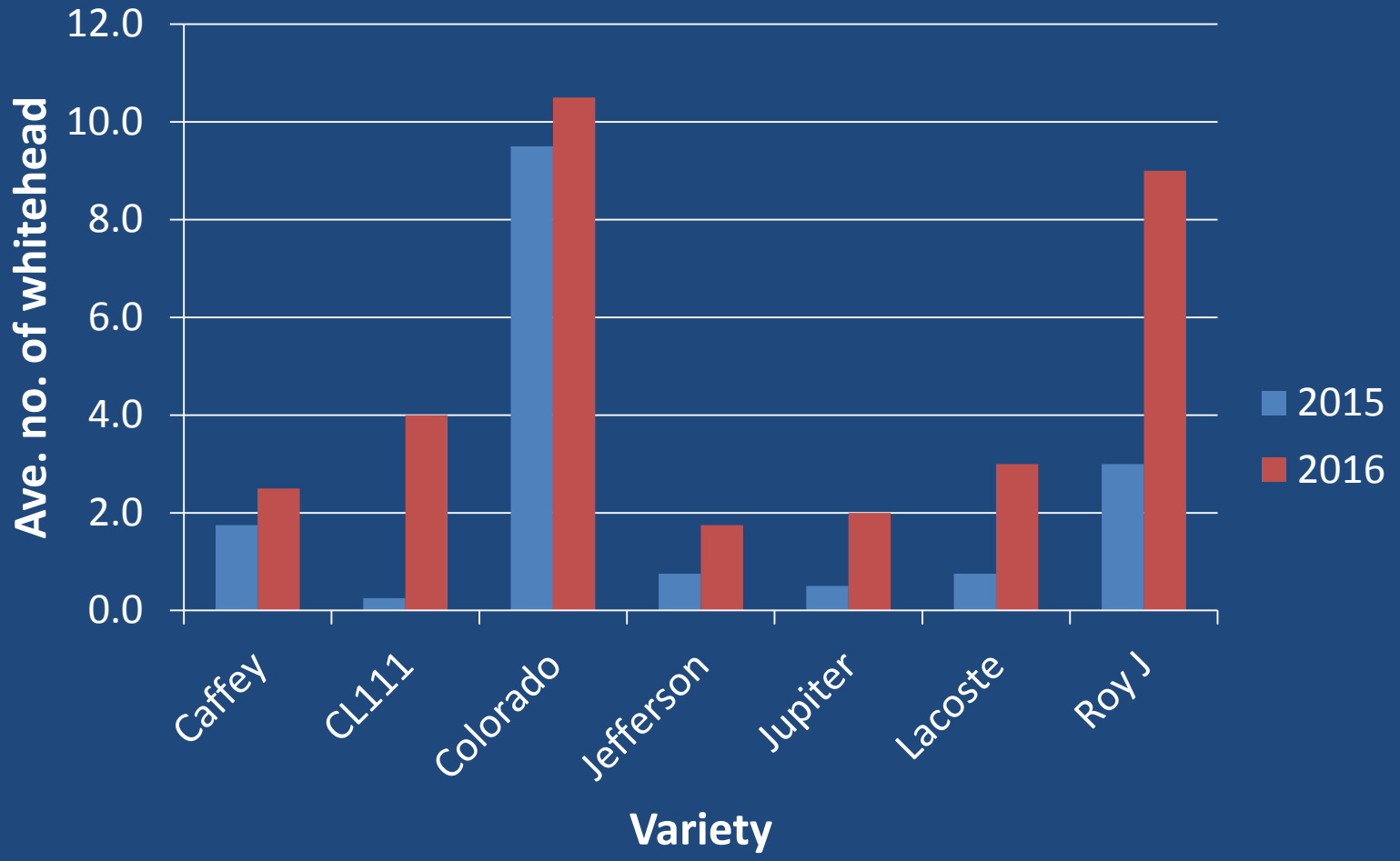
Not yet detected


TRAP1


Boris Castro

Stem borer management program

- Use Dermacor X-100 to control weevils and suppress stem borers
- Plant early to avoid severe infestations of borers
- Plow fields in fall/winter to eliminate overwintering habitat
- Use less susceptible varieties
- Scout and use pheromone traps; foliar insecticides if needed
- Silicon soil amendment may reduce borer densities



Stem borer infestation (mean whitehead/variety) in Crowley, 2015-2016

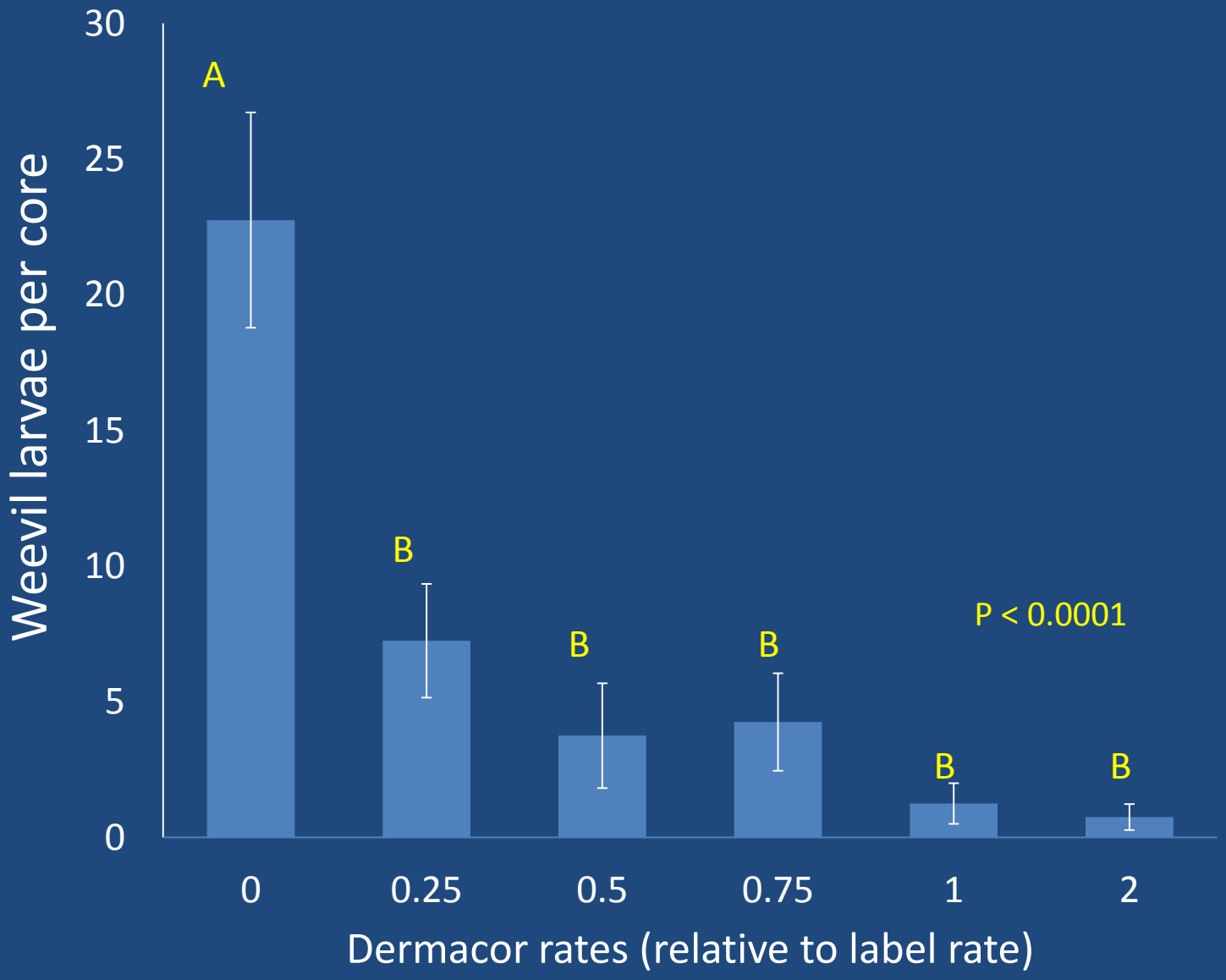
Rice delphacid (planthopper) in Texas (2015)

If you see “symptoms” of these invasive pests, contact your county agent – we need to know how severe and prevalent these problems are

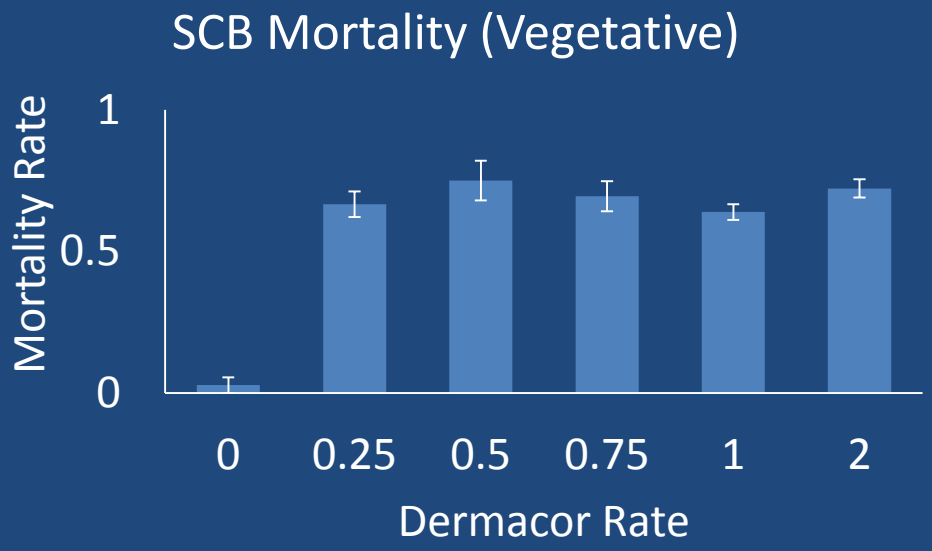
2016 Dermacor trial

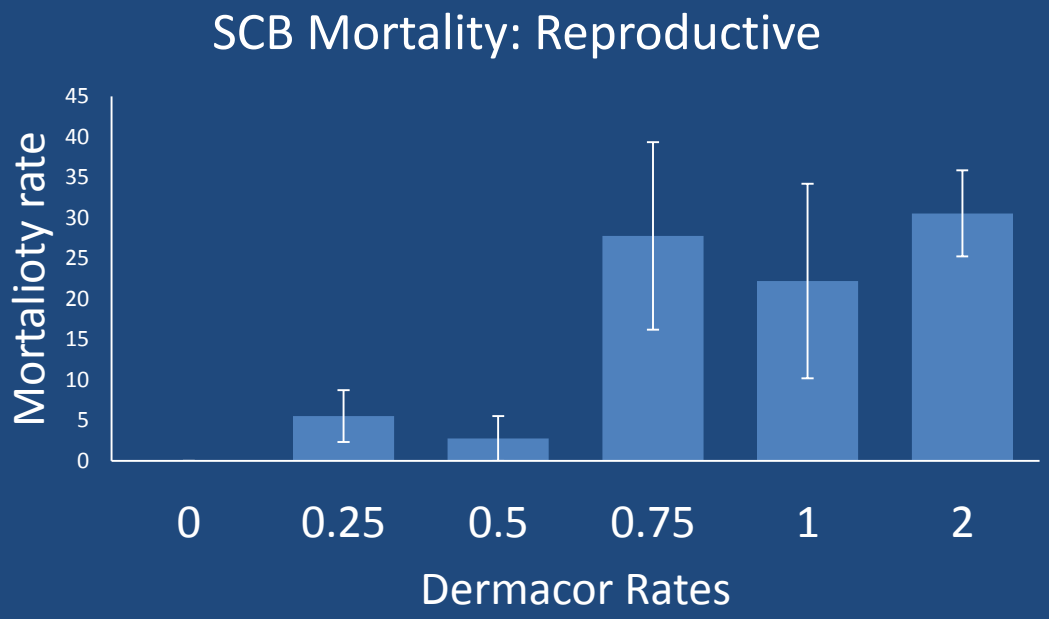
- Wanted to test the effectiveness of Dermacor at several rates against rice water weevils and stem borers
- Small rice plots at H. Rouse Caffey Rice Research Station
- Rice water weevils-core samples
- Rice stem borers-infest cut stems in lab at two growth stages
- Lab analysis of chlorantraniliprole levels

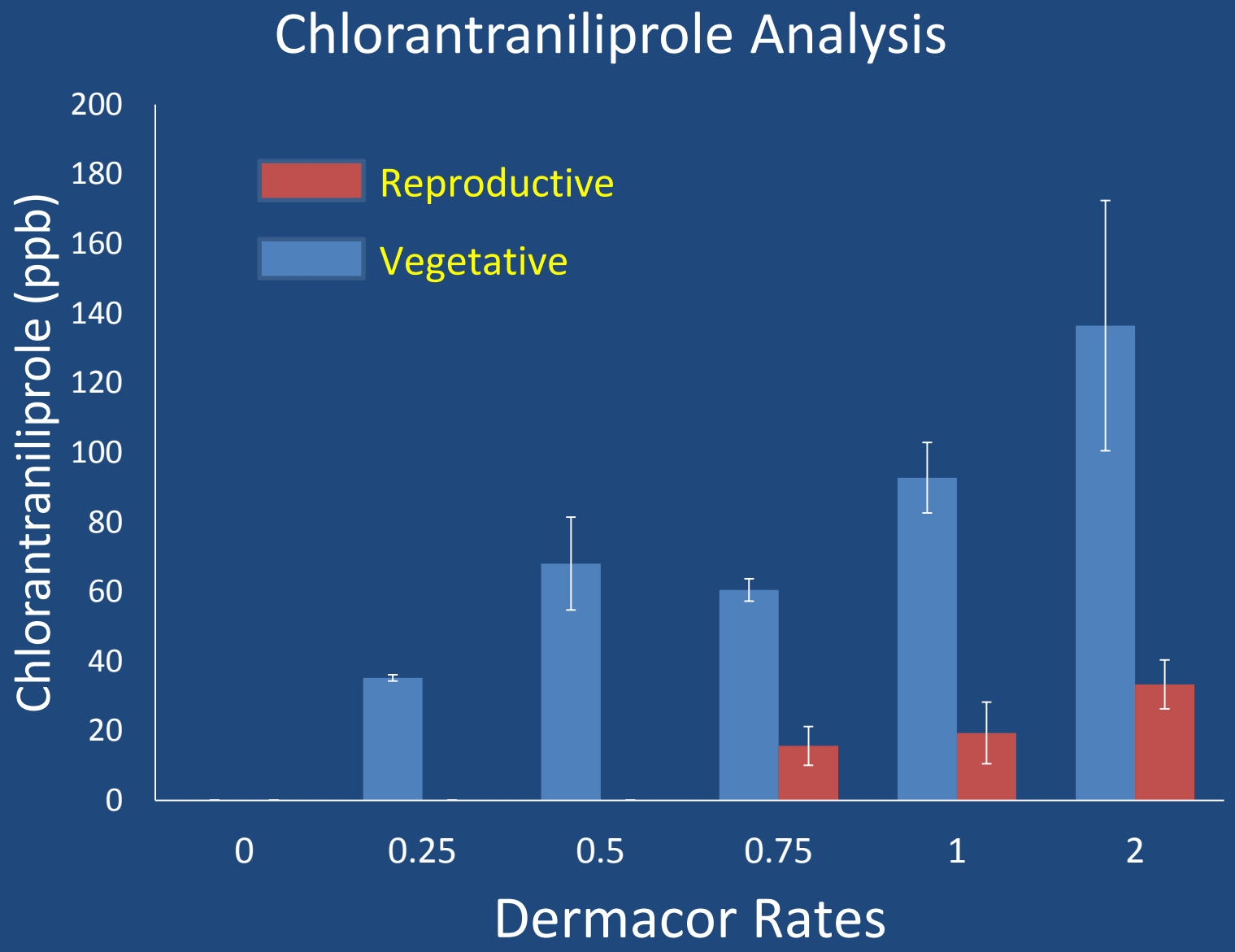
Dermacor is very effective against rice water weevils…



Dermacor also provides protection against stem borers






Chlorantraniliprole Analysis
Chlorantraniliprole (ppb)
200
180
160
140
120
100
80
60
40
20
0
Reproductive
Vegetative
0
0.25
0.5
0.75
1
2
Dermacor Rates

“Rice Insects Information” website & Rice Scout App

www.lsuagcenter.com/riceinsects

http://ricescout.lsuagcenter.com/

- Information on biology and management
- Pictures
- Links to videos

Questions or feedback?

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