

Crop Production Meetings

Winter 2016

Ron Smith

Extension Entomologist

Auburn University



Points to be Discussed:

1. Update on thrips resistance to seed treatments
2. Practices to improve thrips control
3. New thrips technology for the future
4. When to watch for bollworm escapes on Phytogen varieties
5. “Old World” bollworm coming?
6. New stink bug species present in Alabama
7. A different fleahopper is spreading
8. Spider mites – when to treat

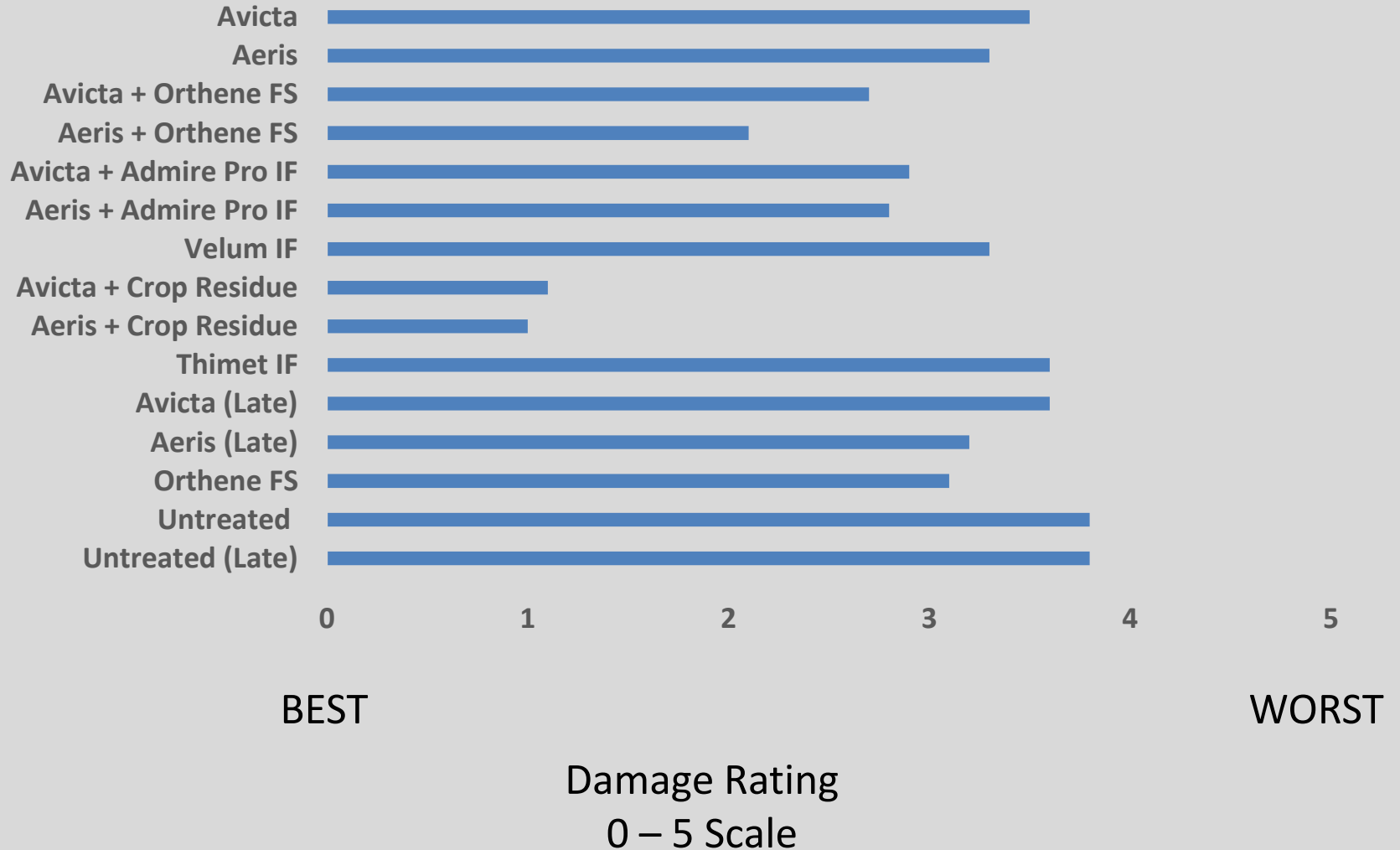
Thrips Resistance to Seed Treatments

- Samples were collected from over 100 sites, within Alabama and the Southern U.S. in the Spring of 2015. Sent to lab at North Carolina State University for analysis. The level of resistance from the Alabama sites ranged from 20 to 40% to both imidacloprid (Gancho, Aeris) and Thiamethoxam (Cruiser, Avicta).

Thrips Resistance to Seed Treatments

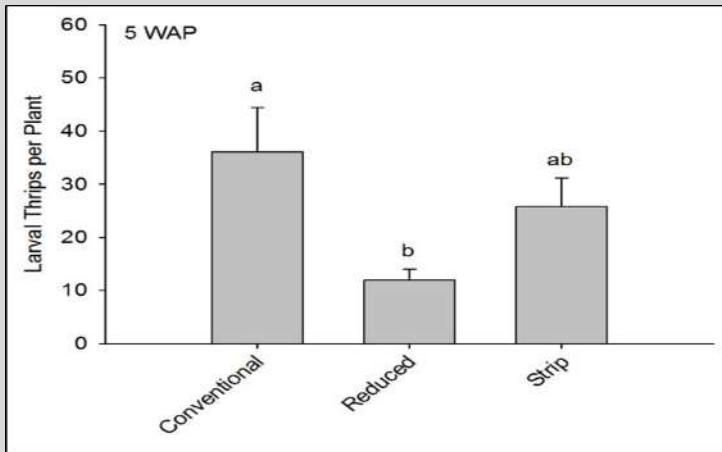
1. Resistance will likely increase with time
2. However, going into the 2016 season – Seed Treatments Still Have Value
3. We may see an increased need for foliar sprays, like acephate (Orthene), on top of seed treatments
4. Especially under high thrips pressure when seedlings are not growing rapidly (cool nights, dry conditions, conventional tillage)
5. Peak thrips pressure past 4 seasons has come in early to mid May and not in April
6. Do not plant late just to avoid peak thrips pressure

Thrips Control Options – Prattville AL – 2015



Effects of Tillage and Cover Crops on Thrips

- Thrips populations can be reduced on cotton seedlings by up to 50 percent when planting into a cover crop compared with cotton planted without a cover crop.



Numbers of larval thrips in conventionally, reduced or strip tilled cotton in North Carolina (2014).

Planting into a burned down Winter crop residue (rye) is the single most effective thrips control tool we have.

AVICTA



AVICTA PLUS RESIDUE



AERIS



AERIS PLUS RESIDUE



New Thrips Technology for the Future

No trait + seed treatment



Trait, alone



PHOTOS BY – Dr. Ames Herbert, Virginia Tech

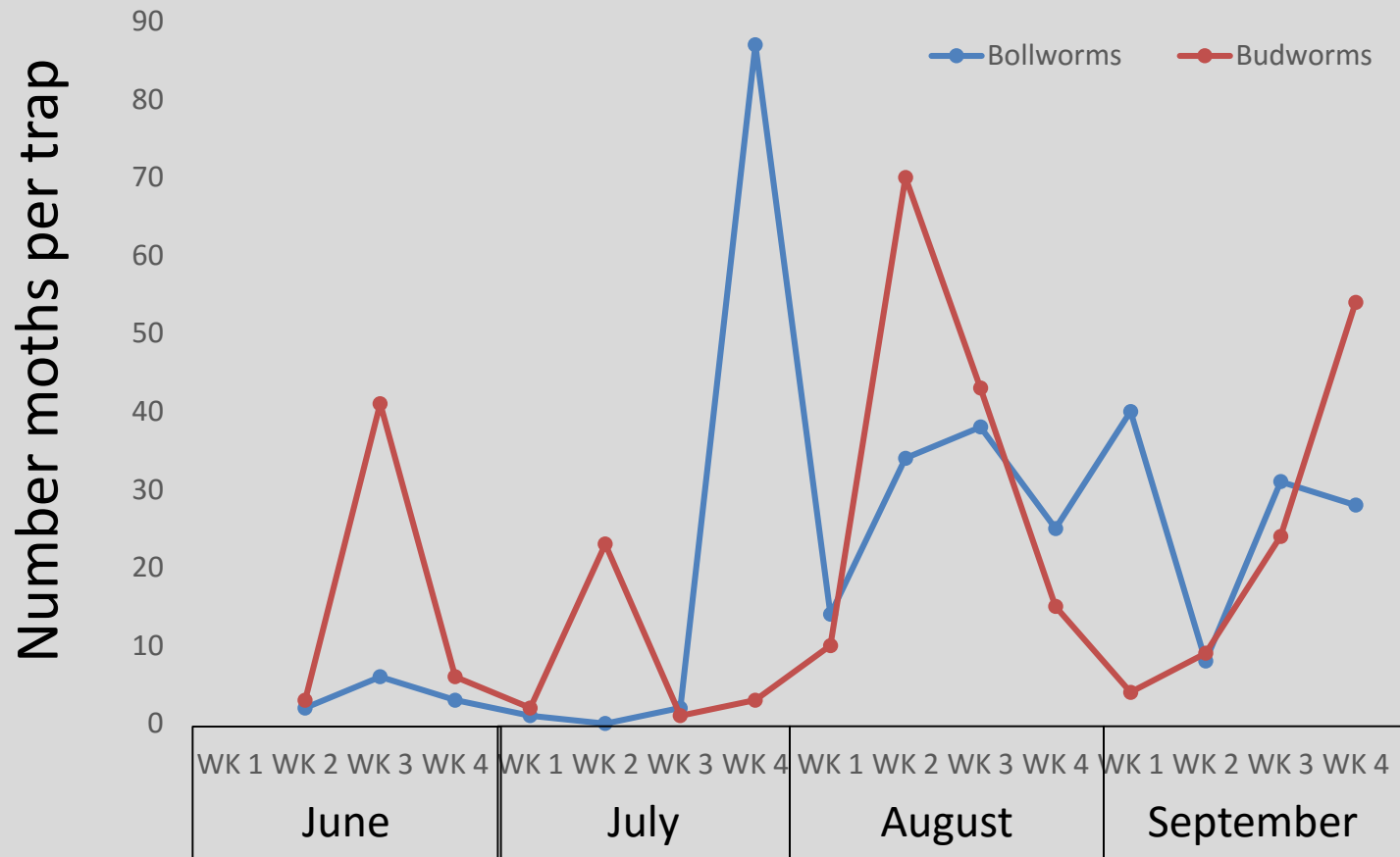
When to scout for escape bollworms on PhytoGen varieties. Presence of Armigera “Old World Bollworm”

Bollworm and Tobacco Budworm Moth Cycles



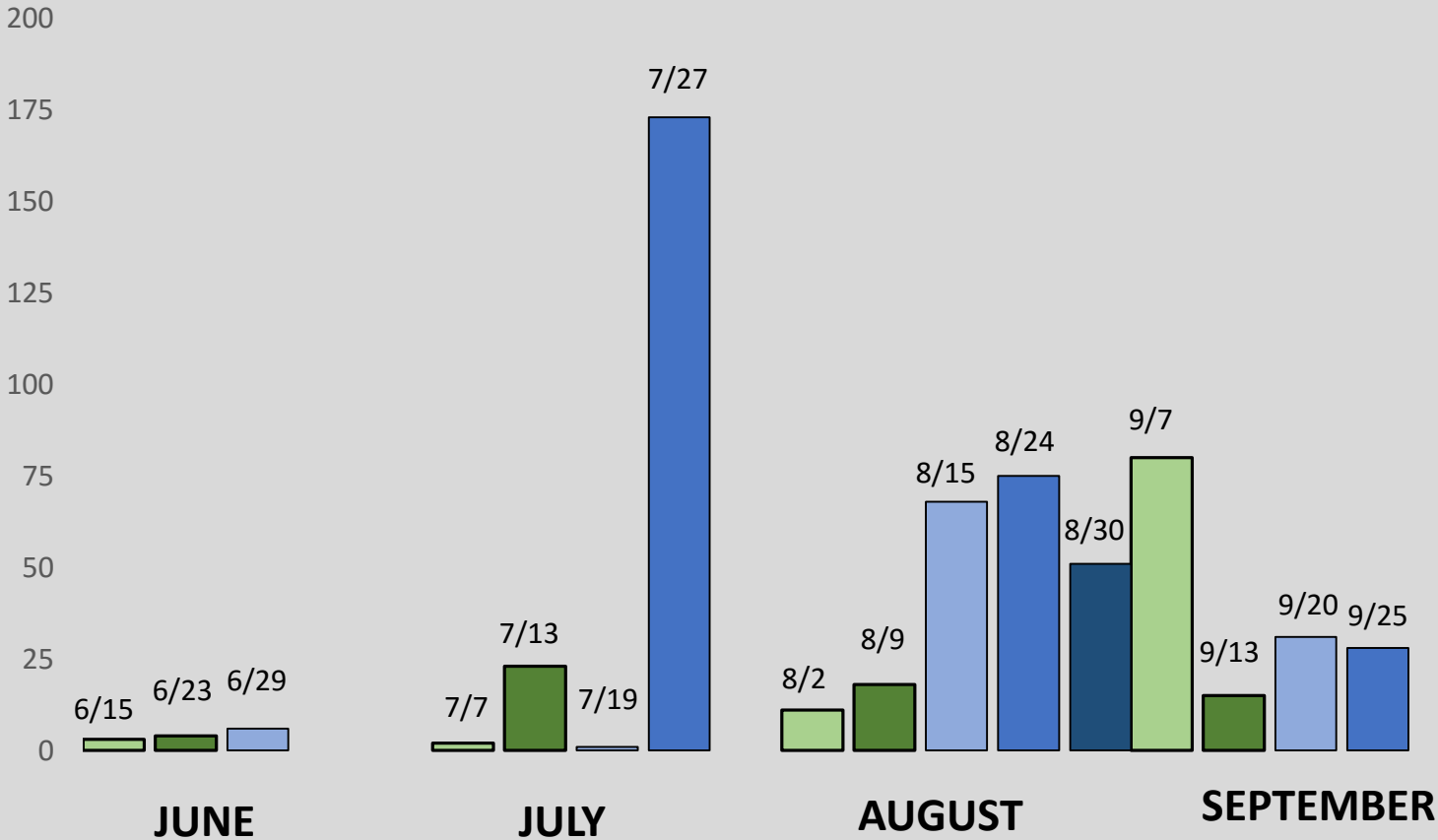
- Location of traps: Headland, Fairhope, Prattville, Belle Mina, Tallassee, and Auburn.

Elmore County: Number of Moths in Pheromone Traps by Week in in 2015



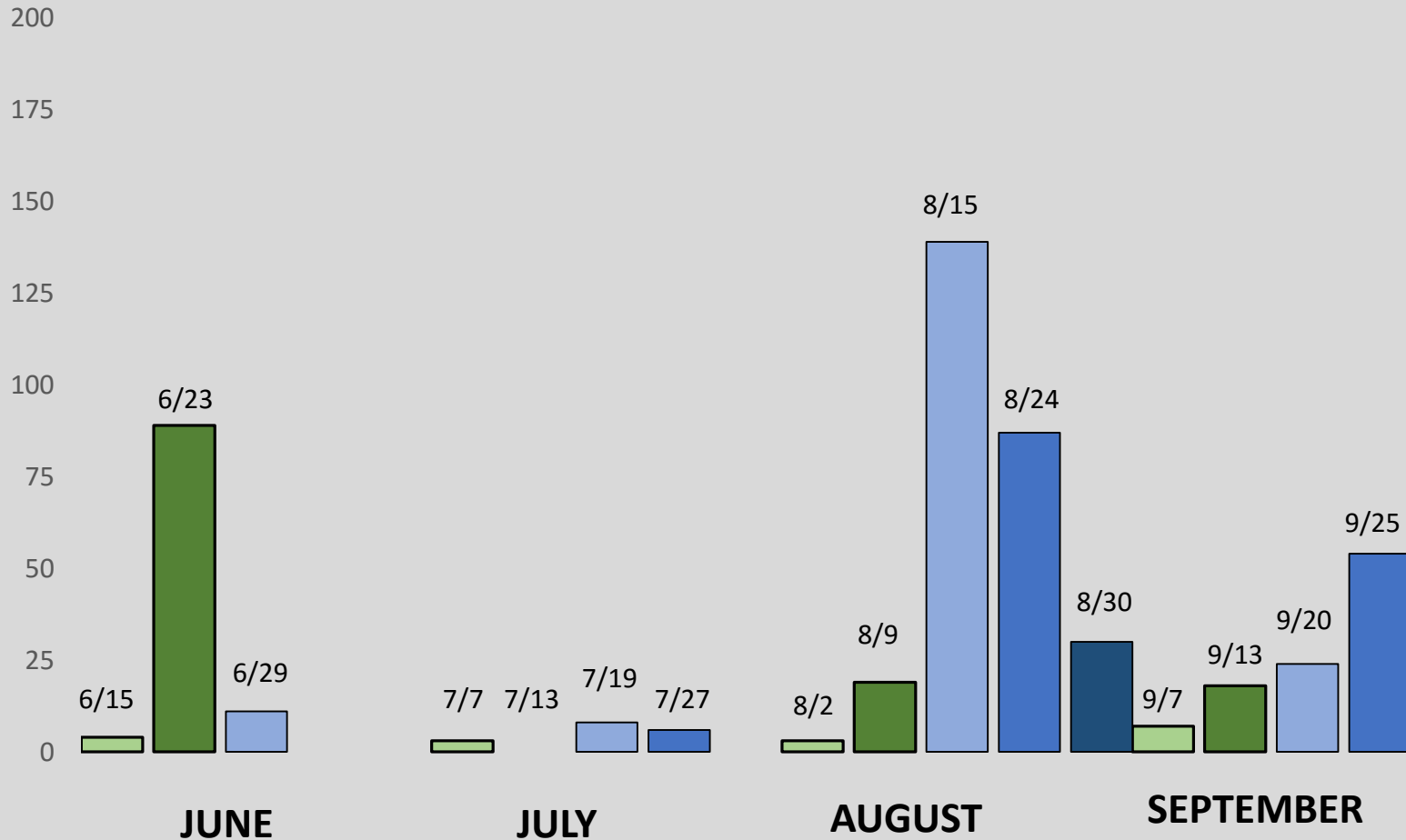
Bollworm Moth Captures 2015

2 Traps Per Site: Elmore County



TBW Moth Captures 2015

2 Traps per site: Elmore County



Old World Bollworm Coming?

Old World bollworm could threaten U.S. cotton, other crops

Pest has been identified in Florida

By Ron Smith
Farm Press Editorial Staff
ron.smith@penton.com

Old World bollworm, a new and potentially devastating insect pest of U.S. cotton and other crops, has been identified in Florida. It was discovered in Brazil in 2013, in Puerto Rico in 2014, and a few individuals were identified in Florida earlier this year.

"This is a severe economic pest in most places where it is established," says Greg

Sword, Texas A&M AgriLife Extension entomologist, who discussed the possibility of it becoming a significant pest in cotton, soybeans, wheat, small grains, and other U.S. crops during the cotton segment of the Texas Plant Protection Association's 27th annual conference in Bryan, Texas.

"The Old World bollworm is one of the world's most destructive agricultural pests," he says. "It is the target of more than 75 percent of all insecticides applied in India and China."

Managing the pest could be compli-



Old World bollworms are almost impossible to distinguish from these bollworms more common to U.S. crop production.



National Ag Day essay contest seeks entries

The Agriculture Council of America (ACA) is calling on ninth to twelfth-grade students to submit an original, 450-word essay or a two-minute video essay about the importance of agriculture.

This year's theme is "Agriculture: Stewards of a Healthy Planet" and the deadline is January 29. The ACA asks teachers and parents to encourage their students and children to participate.

This year's theme presents an opportunity for students to address how individuals involved in agricul-

ture can contribute to the nation's food and fiber production. The winning essay will be read at the National Ag Day celebration, and the winning video will play during the Celebration of Ag Dinner.

This is the 43rd anniversary of National Ag Day. The goal of the ACA is to provide a spotlight on agriculture and the food and fiber industry. The ACA not only helps consumers understand how food and fiber prod-



Old World Bollworm Coming?

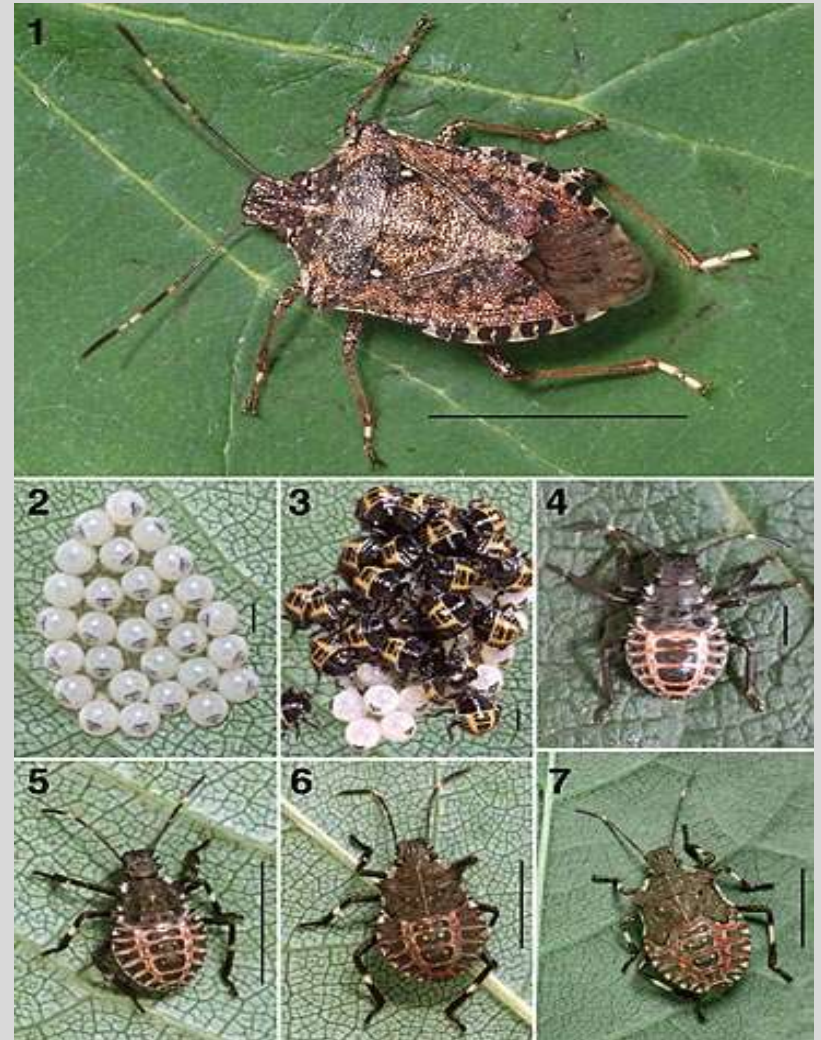
- Old World Bollworm, Armigera, is one of the world's most destructive agricultural pest. It is the target of more than 75% of all insecticides applied in India and China. Caused millions of dollars in losses in South America to cotton, soybeans and corn since 2013. Established in Puerto Rico and moths were captured in Bradenton, Florida in Summer of 2015. Moths may be dispersed by tropical storms or hurricanes.

Old World Bollworm Coming?

- Currently *Armigera* are controlled by the Bt gene in cotton so soybeans, peanuts and other crops would be where greatest damage might occur in U.S. They are resistant to the pyrethroid chemistry. Moths look identical to our bollworm moths. USDA-APHIS is monitoring in Florida, we will continue trapping across South Alabama (Fairhope, Brewton and Headland).

New Stink Bug Species Present

- Brown Marmorated Stink Bug



Stink Bug Damaged Cotton, Prattville Station, 2015







History of BMSB Spread

- The BMSB is a native of Asia and was first detected in Pennsylvania in 1998. It has slowly spread to the southeastern U.S. They have been identified in more than 15 Alabama counties, primarily in the Northern areas of the state, but have been detected in Escambia County, on the Florida line. We have allowed the population to build on the Prattville Research Farm for the past 2 or 3 summers.
- In 2015, heavy damage to both cotton and soybeans was observed on the Prattville farm. We will be conducting research there in 2016.

What is different about the BMSB?

- They are a large SB with a large mouth part. In cotton, they will damage bolls up to maturity. Other stink bugs prefer bolls about a quarter in diameter. This means that we will likely have to protect our bolls later into the season where the BMSB is present.
- Some Positive Points:
 - They prefer to feed on field borders and do not spread rapidly across fields. “Border Sprays Important”, border damage can be near 100% boll damage.
 - They can be controlled with pyrethroid insecticides.
 - They are spreading much slower than the kudzu bug did.
- Other Crops:
 - Can cause major damage to soybeans. Damaged beans will remain green and never drop leaves or mature.
 - Will be major pest of fruits, vegetables and home gardens.

A New Fleahopper is Spreading

- Garden fleahopper



Fleahopper Damage



Immature Stage Green in Color



Garden Fleahopper

- Reported in Mississippi in years past
- First found in Mobile County, Alabama about 2012 on cotton
- Found in several other SW Alabama counties in 2014 and 2015 on cotton, peanuts and soybeans
- Now occurring in SW Georgia
- Economic damage unknown, but may occur as hundreds per row foot
- Second hand reports indicate that pyrethroid chemistry did not give adequate control
- Just wanted growers, scouts and agrifieldmen to recognize and be aware of this insect.

Spider Mites: When to Treat

- Hot, dry weather pest
- Treat when mites are scattered over most of a field and the weather outlook is hot and dry for the next 5-7 days
- Miticide Choices:
 - Abamectin (Agri-Mek) or generic
 - Zeal
 - Portal
 - Oberon
- Most of my feedback has been with abamectin at 10-12 oz/ac.
- Different formulations – Need .014 lbs active
- Bifenthrin, chlorpyrifos (Lorsban) diamethoate (Cygon) give inconsistent control

Sugar Cane Aphid on Grain Sorghum



Recommendations for 2016

1. Pick a tolerant variety



List of Resistant Hybrids

- <http://sorghumcheckoff.com/pest-management/>
- www.LSUAgCenter.com

Company/Brand	Hybrid*	Maturity
Pioneer	83P17	Med-Full
Pioneer	83P56	Med-Full
DEKALB	37-07	Med-Early
DEKALB	Pulsar	Med-Early
Sorghum Partners	SP 7715	Med-Full
Sorghum Partners	SP 78M30	Med-Full
Sorghum Partners	SP 73B12	Med-Full
Richardson	RS260E	Med-Full
Richardson	Sprint W FG	Med-Early
Richardson	Jowar I	Full
Richardson	Swift	V. Early
Alta	AG1201	Early
Alta	AG1301	Med-Early
Alta	AG1203	Med-Early
Mycogen	627	Med-Early
Mycogen	1G688	Medium
B&H Genetics	BH 4100	Medium
B&H Genetics	BH 3400	V Early
Warner Seed	W-844-E	Med-Full
Warner Seed	W-7051	Med-Full
Golden Acres	3960B	Med

**All of these hybrids may need to be treated with an insecticide if the action threshold is reached*



Sorghum Hybrids

That Offer Some Protection From
Sugarcane Aphid With Expected
Availability in 2016



Sorghum hybrids that have demonstrated resistance to sugarcane aphid. ^a						
Company	Hybrid	Av. Yield across Locations – La. (bu/ac)			Resistance Confirmed by:	
		OVT ^b	SCA resistance screens ^c		LSU AgCenter	Other
			Aphids sprayed	Aphids nonsprayed		
Alta	AG1201	--	--	--		X
	AG1301	--	--	--		X
	AG1203	90.8	--	--	X	X
B&H	BH 4100	--	--	--		X
	BH 3400	--	--	--		X
Dekalb	DKS37-07	--	115.5	115.9	X	X
	Pulsar	--	--	--		X
Dyna Gro	GX15561	89.5	--	--	X	
	627	--	--	--		X
Mycogen	IG688	--	--	--		X
	IG855	95.3	--	--	X	
Pioneer	83P17	101.8	110.3	104.8	X	X
	83P56	--	--	--		X
Richardson	RS260E	--	108.2	111.1	X	X
	RS84353	--	93.8	97.7	X	
	Sprint W FG	--	--	--		X
	Jowar I	--	--	--		X
Sorghum Partners	SP7715	94.0	97.9	94.6	X	X
	SPX17414	89.2	96.1	95.2	X	X
	SPX17514	88.6	79.0	84.8	X	X
	SPX760	--	102.3	102.3	X	
	SP6929	--	112.9	105.9	X	
Terral/Rev	9782	100.0	--	--	X	
Warner	W-844-E	--	110.6	112.4	X	

Information compiled by Rick Mascagni, Fangyong Huang, Sebe Brown, Julien Beuzelin and David Kerns, LSU AgCenter; Brent Bean, United Sorghum.
^aAlthough resistance is reported, unacceptable numbers of sugarcane aphids may still develop.
^bYields represent an average of six Louisiana OVTs in 2015 at five locations: Alexandria, (non-irrigated), Bossier City (non-irrigated), Crowley (non-irrigated), St. Joseph (non-irrigated) and Winnboro (non-irrigated).
^cYields represent an average among three La. locations: Alexandria, (non-irrigated), St. Joseph, (non-irrigated) and Winnboro (irrigated).
^dYields where sugarcane aphids were sprayed and controlled as well as nonsprayed and left uncontrolled are represented.

Authors: Sebe Brown, Assistant Area Agent, Pest Management, Northeast Region

Visit our website: www.LSUAgCenter.com

Recommendations for 2016

2. Use a seed treatment
3. Plant early
4. Scout often but do not treat on first detection (can explode rapidly)
5. Apply recommended insecticide on threshold (50 aphids/leaf on 25% of plants)
 - Transform – (available only through Section 18, emergency use) .75-1.0 g/ac.
 - Sivanto – 4-7 oz./Ac. on label (4-5 oz./Ac.)
6. Use high volume of water for complete coverage (10 gpa)
7. Protect beneficials – do not add pyrethroid unless other insects are at damaging levels
8. Keep aphids out of the heads prior to harvest (can mix harvest-aid product with insecticides)

Other Economic Pests of Concern in 2016

1. Red banded stink bug in soybeans
 - Native of South America
 - Economic pest of soybeans in LA for past 15 years
 - First observed in Baldwin County, AL in July 2010
 - Susceptible to cold winters but are adapting (15 degrees F past two winters in Fairhope (Baldwin County))
 - Now present in multiple SW AL counties
 - Has caused 13% average yield losses in LA
 - Loss is in volume and not weight
 - Will damage pods later than other stink bugs
 - May have to control even after applying harvest aids
 - Pyrethroids should control – but resistant in LA

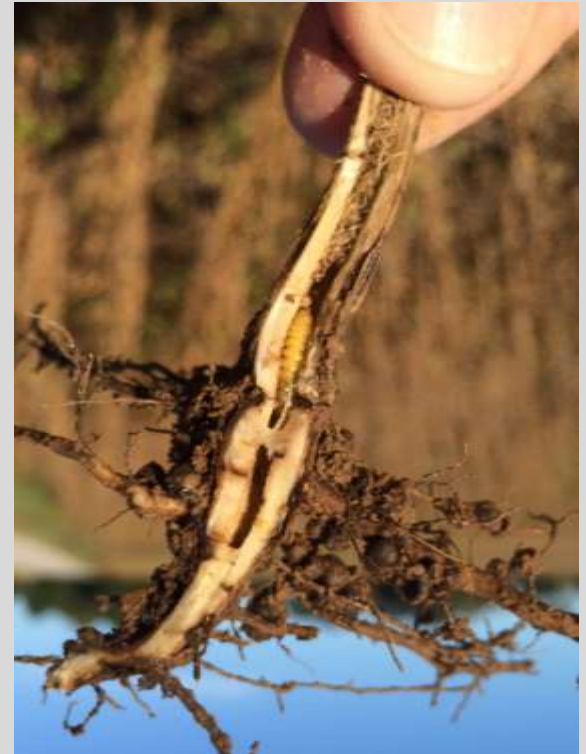


Red Banded
Stink Bug



Other Economic Pests of Concern in 2016

2. Stem Borers in Soybeans



Other Economic Pests of Concern in 2016

2. Stem Borers in Soybeans

- Damage has increased in recent years
- Damage is caused by the immature borer cutting the plant stem from inside
- Damage causes lodging
- Damage is most severe in early planted fields where beans follow beans the previous seasons and are not harvested as soon as possible after maturity
- No effective chemical controls
- Deep plowing or rotation is effective

Other Economic Pests of Concern in 2016

3. Soybean Looper Control

- Foliage feeders only
- Can cause economic losses if they have 3-5 or more per foot of row
- Pyrethroids do not give adequate control
- Must control with:
 - Intrepid 5-6 oz.
 - Intrepid Edge 4 oz.
 - Belt 2-3 oz.
 - Prevathon 14 oz.
 - (Besiege) 7 oz.
- Use same chemicals and rates for S. Loopers on peanuts
- These insecticides are more expensive than pyrethroids but give 30+ days control (long residual and rain fast)

Other Economic Pests of Concern in 2016

4. Lesser Corn Stalk Borer – Peanuts

- Can be very economic pests
- Populations thrive in sandy soils under dry conditions
- Rain event gives as good control as insecticides
- Lorsban (old stand by) likely will not be available after 2016 (EPA)
- Alternatives that show promise:
 - Dimilin 4 oz. x 3 app = 12 oz.
 - Diamond 9-12 oz.
 - Prevathon 14 oz.

Other Economic Pests of Concern in 2016

5. Burrower Bug – Peanuts

- Greatest problem in strip-till systems during dry seasons
- Deep turning is the most effective control
- Irrigation or adequate rainfall helps reduce damage
- White margined species not damaging to peanuts



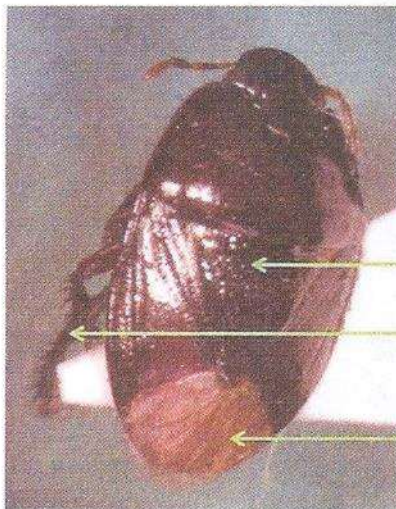
Sucking mouthparts (beak) of burrower bug tucked in between the legs.

Pangaeus bilineatus – Damaging to peanuts
(image sources: Bruce Getty, www.bugguide.net)



Smooth dark thorax (~8 mm) with brown spiny legs.

Cyrtomenus ciliatus – NOT damaging to peanuts
(image source: John Maxwell, www.bugguide.net)



Dark body with a large triangular scutellum. Body with hair and numerous pits.

Legs densely covered with spines

Wings are semi-hardened. The soft terminal portion of wings overlap when folded on the back.

Pangaeus bilineatus – VERY damaging to peanuts
(image source: ACES)



Shiny black body (~8 mm) with white wing margin. Also known as the white-margined burrower bug.

Sehirus cinctus – NOT damaging to peanuts
(image source: Mike Quinn, www.bugguide.net)

A wide-angle photograph of a cotton field. The foreground and middle ground are filled with rows of cotton plants, their white bolls contrasting with the brown stems. A single dirt path runs down the center of the field. In the background, a dense line of green trees marks the horizon under a clear, light blue sky.

Questions?