



Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK



July 19, 2017

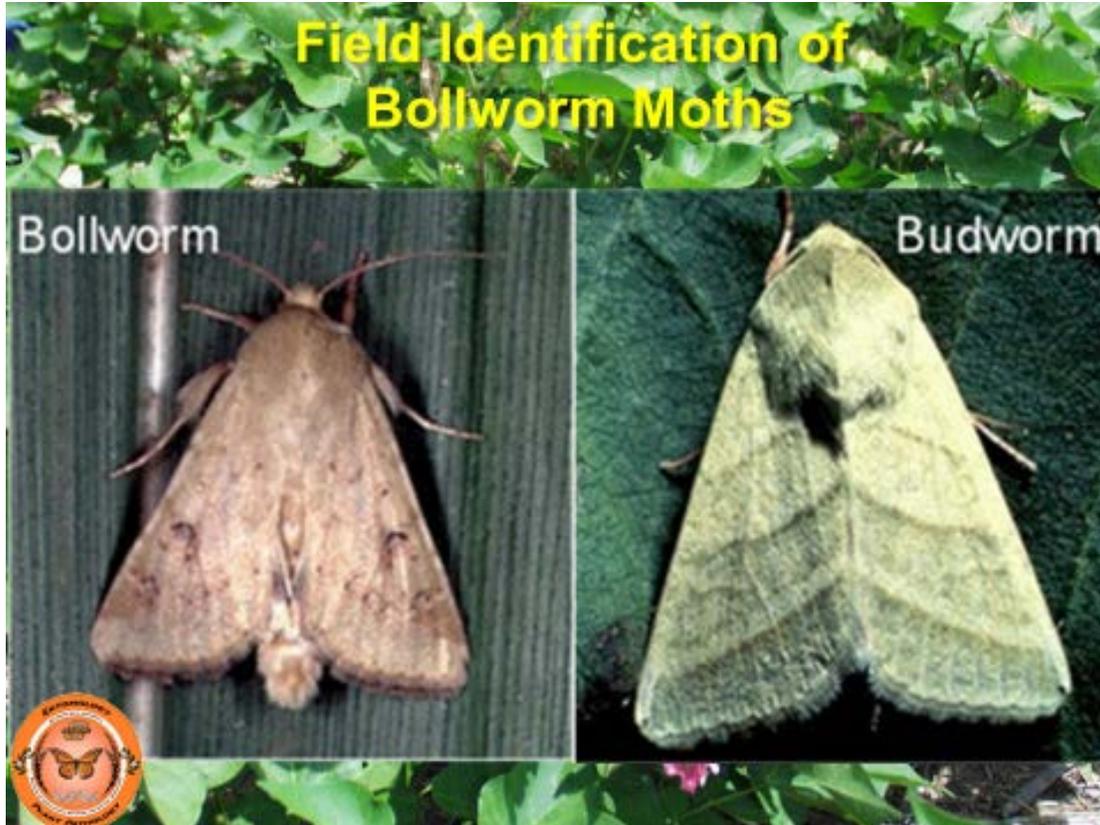
Volume 7 No. 7

Insect Update

Aphids are still a concern but many fields are getting “cleaned up” by beneficial arthropods. If aphids are discovered, beneficials should be noted, and within 5 days there should be an increase in their numbers. As more fields are starting to fruit, boll worm populations need to be watched.

Bollworm Complex

Bollworm injury in Bt varieties has been increasing in the past two years. This makes scouting for this pest crucial. **The economic threshold is 6% damaged squares with live worms present in Bt cotton. Please click on [Cotton Comments Volume 7 edition 6 July 14, 2017](#) for further explanation.**



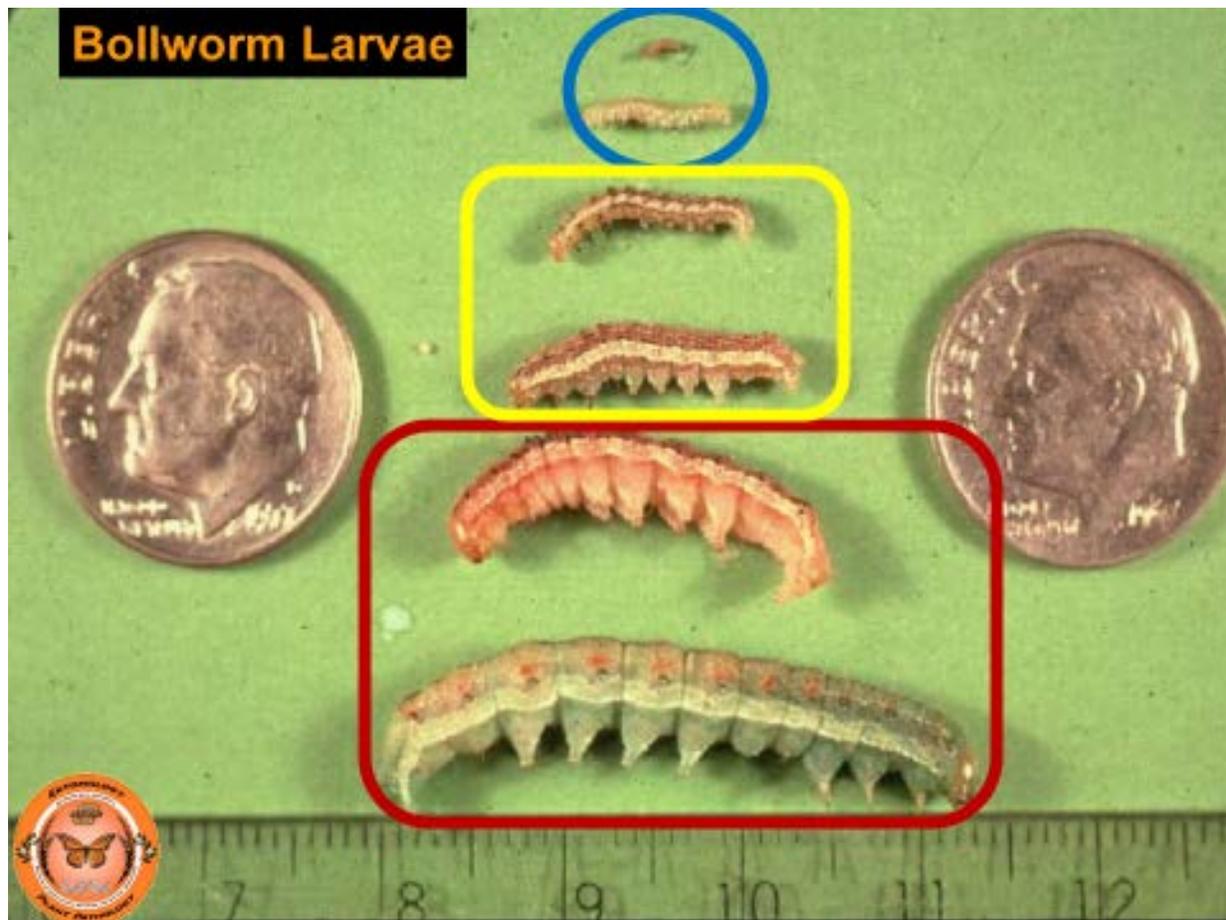
This can be what happens when weekly scouting is not performed. This was a field near San Angelo, Texas in 2016.

Near San Angelo – TwinLink Estimated 93% Loss



Slide courtesy of Dr. Kerns, Texas A&M AgriLife Extension Service

A fine line has to be drawn of what constitutes bollworm slippage and letting the technology work. The following slide shows relative size of bollworm larvae and when chemical control measures need to be considered. Larvae in the blue ring should be susceptible to the Bt technology. Larvae in the yellow rectangle can generally be controlled by chemical sprays. Pyrethroid insecticide resistance has been noted in some areas of the Cotton Belt, but we have not yet experienced this in our populations in southwestern Oklahoma. For bollworm larvae which fit into the red rectangle, we jokingly say that two bricks must be used for control. Typically these worms are too big to control with insecticides and they are nearing the time when they drop to the soil and pupate and “cycle out” of the cotton.



Slide courtesy of Dr. Miles Karner

A control spray is warranted in Bt cotton when the bollworm population exceeds the economic threshold of 6% square damage plus live worms present. Then the chemical choice becomes critical.

A broad spectrum insecticide can kill the targeted pest. Secondary pests can become a problem due to the destruction of beneficial arthropods which normally keep the secondary pests in check. The cost of one insecticide product versus another may be a factor when choosing which chemical to use. However, the potential consequences may far outstrip the initial savings one might encounter.

If a bollworm control spray event needs to occur, two options are possible. One is with a far cheaper product and one may be with a more expensive product. The broad spectrum insecticide may be initially cheaper, but destroy the beneficial population. Then the field has no biological “friendlies” to assist in holding back secondary pest populations.

In the long run the more expensive product may be a better choice if it is less harsh on beneficial arthropods. This retains the biological “friendlies” which are then available to reduce the potential of secondary pest outbreaks.

The gamble is with the absence of beneficial insects, some of the secondary pests may need to be controlled with insecticides. One can see that the costs can add up as noted in the slide below. Loss of beneficial arthropods can cascade into an aphid flare up which would then require one or possibly two applications to control. The next possible pest could become spider mites, which again will require more product and application for control.

Which is cheaper??

A Bollworm Spray Event

Technology Alone	Technology plus Prevathon®	Technology Plus Pyrethroid
\$6.42/acre Transgenic cost	\$6.42/acre Transgenic cost	\$6.42/acre Transgenic cost
	14 ozs/ace + application(\$7) \$22.30	Cheapest lowest rate \$9.81
	3 weeks residual beneficial population not effected	Aphid control application \$14.50* (Could Take Two)
		Spider mite control application \$14.50
\$ 6.42	\$ 28.42	\$6.42 + \$9.81+\$14.50 +\$14.50



The slides below are courtesy of Dr. David Kerns, Texas A&M AgriLife Extension Service.

Conclusions



- No Bt cotton variety or technology is immune to unacceptable bollworm injury.
- Scout your cotton.
- Give the technology a chance to work.
- Based control decision on fruit injury with the presence of live larvae.
- Fruit injury threshold ranges from 3.54-10.33% injured fruit depending on price of cotton and crop yield expectation; 6% is a good middle of the road threshold.
- Make sure you know which worm you are dealing with; Bollworm or Fall Armyworm.
- Do not let the worms get big and into the bolls.
- Select the right insecticide.
 - Pyrethroids are inexpensive but resistance is an issue in many area.
 - Pyrethroids are weak on FAW.
 - Prevathon or Besiege are highly effective and usually provide about 3 weeks control.
 - Pyrethroids and to a lesser extent Prevathon/Besiege are not as efficacious on deep canopy larvae.



Why do we sometimes see unexpected injury in Bt cotton from bollworms?



- Field data demonstrates ALL current Bt cottons can experience unacceptable injury
 - Obvious differences in efficacy among technologies
 - Possible contributing factors in Bt efficacy
 - Varietal expression
 - Plant maturity and health
 - Environmental conditions
 - Where eggs are laid
 - Resistance
 - High pest pressure
- 

Field Surveys – Week Ending July 21, 2017

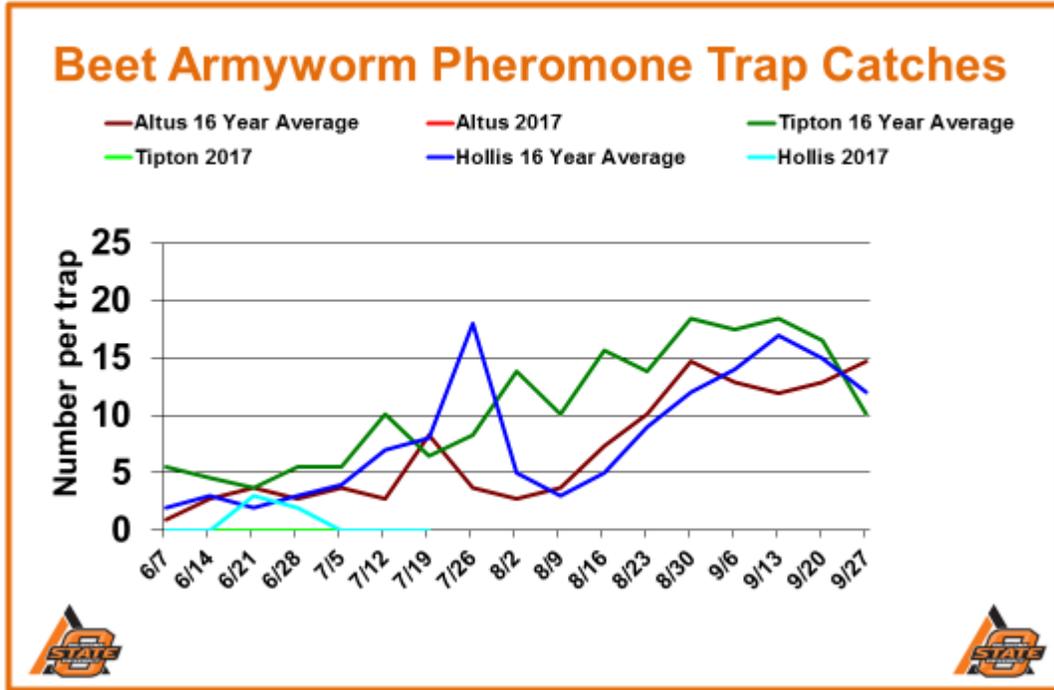
Location	Date of planting	Plant Stage	Insects	Comments
Blaine Irrigated Cotton Inc Enhanced Variety - Schantz	May 26	8.5 NAWF	NONE	GOOD
Blaine Irrigated Dow Innovation - Schantz	May 26	8.0 NAWF	NONE	GOOD
Caddo Irrigated OVT – OSU Caddo Research Station	May 30	8.75 NAWF	NONE	GOOD
Jackson Irrigated DT RACE – Darby	May 15	6.5 NAWF	NONE	FAIR
Jackson Irrigated Bayer CropScience APT	May 24	6.5 NAWF	NONE	FAIR
Jackson Irrigated OVT – OSU SWREC	May 24	8.0 NAWF	APHIDS	FAIR
Jackson Dryland DT RACE - Abernathy	June 7	MATCH HEAD	NONE	GOOD
Jackson Irrigated Cotton Inc Enhanced Variety - Abernathy	May 9	7.75 NAWF	APHIDS	GOOD
Jackson Irrigated Innovation-Abernathy	May 10	8.25 NAWF	APHIDS	GOOD
Jackson Irrigated PhytoGen Innovation Trial – OSU SWREC	May 24	7.75 NAWF	NONE	FAIR
Jackson Irrigated Entomology Trials – OSU SWREC	May 8	6.0 NAWF	NONE	FAIR
Tillman Irrigated DT RACE – Nichols	May 12	7.5 NAWF	NONE	GOOD
Tillman Dryland OVT – OSU Tipton Valley Research Center	June 13	MATCH HEAD	NONE	FAIR
Tillman Dryland DT RACE - White	June 12	MATCH HEAD	NONE	GOOD

DT RACE – Dicamba Tolerant - Replicated Agronomic Cotton Evaluation Trial (Oklahoma Cooperative Extension)

OVT – Official Variety Trial (Oklahoma Agricultural Experiment Station, Altus, Tipton, Fort Cobb)

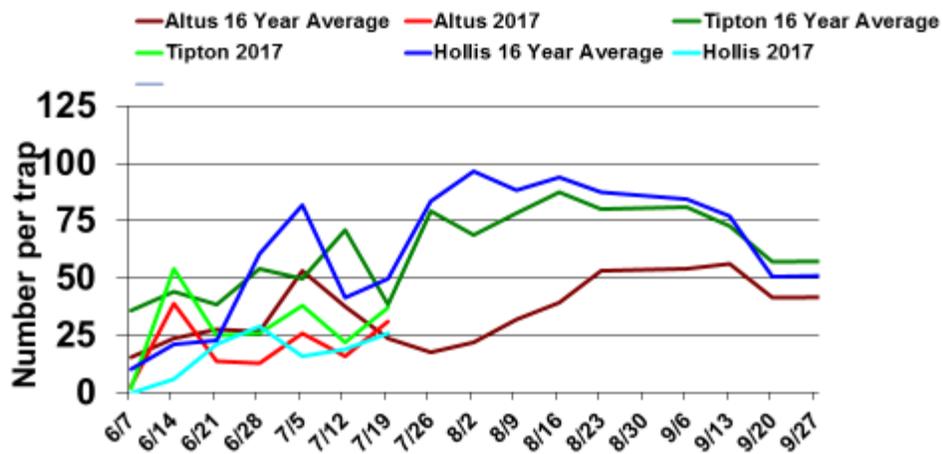
APT – Agronomic Performance Trial

Over the past few growing seasons, bollworm moth pheromone traps data indicate that the pressure is considerably lower than what we have historically seen (see moth trap graphs below).



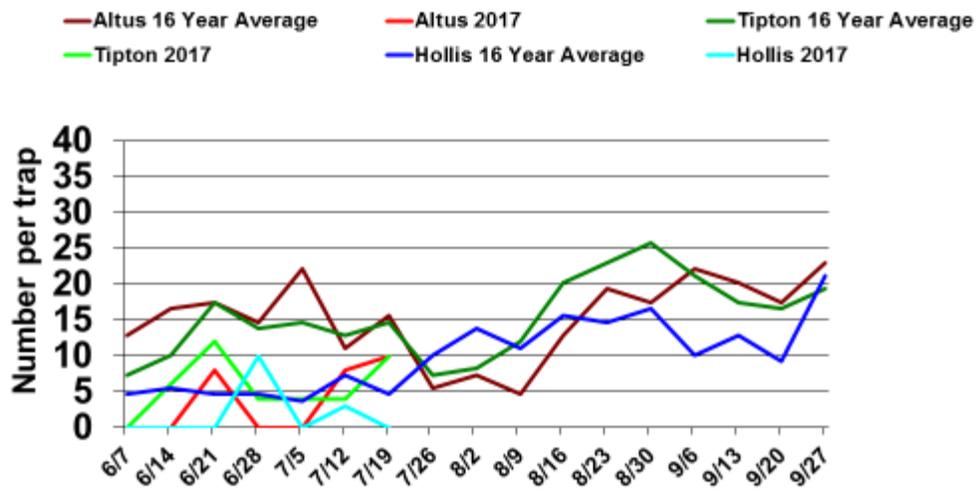
Beet armyworm moth
Photo courtesy of University of Georgia

Cotton Bollworm Pheromone Trap Catches



Cotton bollworm moth
Photo courtesy of University of Georgia

Tobacco Budworm Pheromone Trap Catches



Tobacco budworm moth
Photo courtesy of University of Georgia

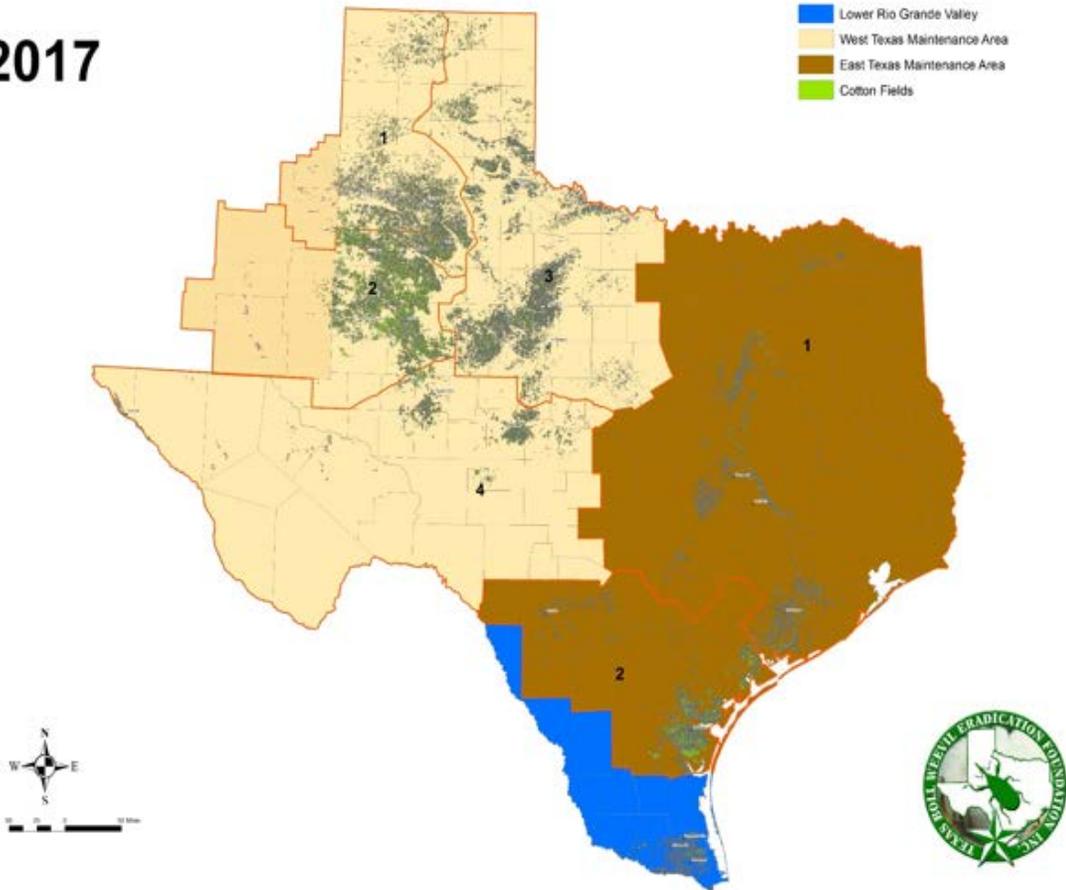
JG

Oklahoma Boll Weevil Eradication Organization Update: Quarantine of Cotton Harvesting Equipment Coming From Certain Areas of Texas

John Henderson, Director of the Oklahoma Boll Weevil Organization, based at Altus, provided the information below. Eradication of the boll weevil across most of the U.S. Cotton Belt, and in the state has been very successful and is a major contributing factor to the continued profitability of cotton production. It has been a long, difficult, and expensive task to rid our state and most of the Cotton Belt of this invasive species that for such a long time negatively impacted our production. There is still a difficult fight with this insect pest in south Texas, and we all need to do our part in keeping this pest from resurfacing in our state.

Cotton harvesting equipment entering Oklahoma from two eradication areas in Texas has to be certified as boll weevil free prior to movement into our state. Please contact the Texas Boll Weevil Eradication Foundation (TBWEF) at least 48 hours in advance of equipment departure from these two areas. This will allow TBWEF to inspect the equipment. A USDA-APHIS phytosanitary certificate is issued and is required before equipment can be transported from these areas. These **ONLY** include the Lower Rio Grande Valley Eradication Zone (blue area on the map below) or the East Texas Maintenance Area (brown area on the map below). This is critical to meet USDA-APHIS requirements and prevent the re-infestation of boll weevils into eradicated areas. It is illegal to move non-certified cotton harvesting equipment from these areas into the state of Oklahoma.

2017



Texas Boll Weevil Eradication Foundation: 325-672-2800
After Hours and Weekends: 325-668-7361

Oklahoma Boll Weevil Eradication Organization:
580-477-4280 Office
580-471-7962 John Henderson Cell

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Editor

Randy Boman

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