



# Cotton Comments

OSU Southwest Oklahoma Research and Extension Center  
Altus, OK



July 26, 2018

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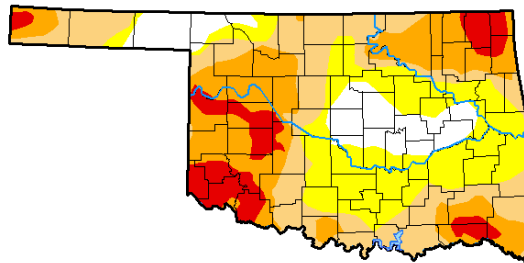
## 2018 Current Situation

### U.S. Drought Monitor Oklahoma

July 24, 2018

(Released Thursday, Jul. 26, 2018)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12.38	87.62	61.07	34.36	10.16	0.00
Last Week 07-17-2018	27.18	72.82	52.23	29.51	9.04	0.00
3 Months Ago 04-24-2018	42.23	57.77	47.44	42.07	34.84	19.50
Start of Calendar Year 01-02-2018	0.00	100.00	77.15	38.76	0.00	0.00
Start of Water Year 09-26-2017	64.46	35.54	0.77	0.00	0.00	0.00
One Year Ago 07-25-2017	47.74	52.26	16.15	3.99	0.00	0.00

Intensity:

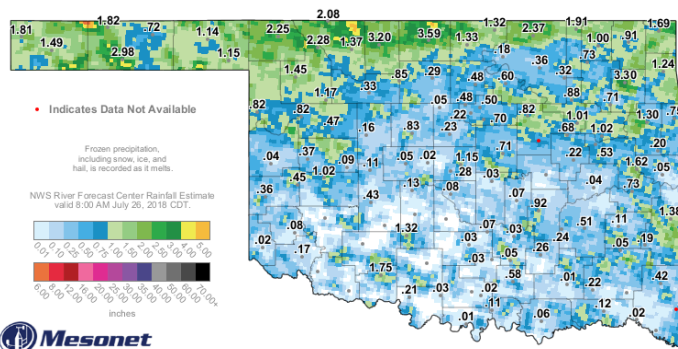
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:  
Chris Fenimore  
NCEI/NESDIS/N OAA



<http://droughtmonitor.unl.edu/>



Mesonet  
14-Day Rainfall Accumulation (inches)

8:50 AM July 26, 2018 CDT  
Created 8:54:58 AM July 26, 2018 CDT. © Copyright 2018

The 2018 drought continues with 87.62 percent of the state in drought, rainfall over the past 14 days has not been sufficient to alleviate this situation. The seven day forecast has increasing chances for rain. Hopefully this will occur.

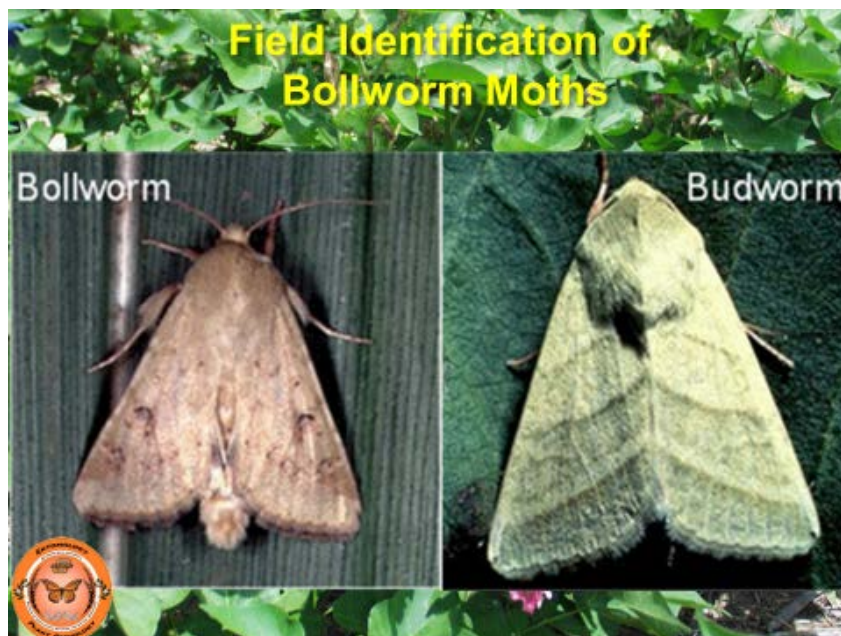
## Crop Update

The crop state wide is developing well where moisture is not limited. Hard decision had to be made in some fields where moisture was not adequate with yield potential being so low termination of the fields was the best economical decision. The abandonment as of July 13 was at 15 percent. If rainfall does not occur soon on drought stressed rainfall dependent fields these too shall be terminated.

Insect pressure is increasing. Bollworms infestation in Jackson County were discovered where the pest growth stage exceeded the size where the bt gene could control them. Control measures had to be used. These infestation all happen in varieties that did not have the VIP technology. Horror stores out of East Texas of Bollgard II being overwhelmed and majority of bollworms being tested were resistant to this technology. In fields that do not have the VIP technology, extra time and effort needs to be use to not allow this pest to cause economic damage. Beet armyworm infestation in the Caddo and Blaine County area is occurring in peanuts, silage fields and sunflowers. More reports of spider mites occurring are also being reported, no control measures have been made however.

I cannot stress enough *scouting of the field must be on a weekly basis until termination of the crop.*

## Bollworm Complex



Bollworm injury in Bt varieties has been increasing in the past three 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.**

Dr. David Kerns (Professor and Statewide IPM Coordinator with Texas A&M AgriLife Extension Service at College Station) and the midsouth entomologists working group developed the economic threshold for the bollworm complex in Bt cotton. It is 6% damaged squares with live worms present in Bt cotton. The following slides are courtesy of Dr. Kerns.



## 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



## 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 areas.
  - 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.

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

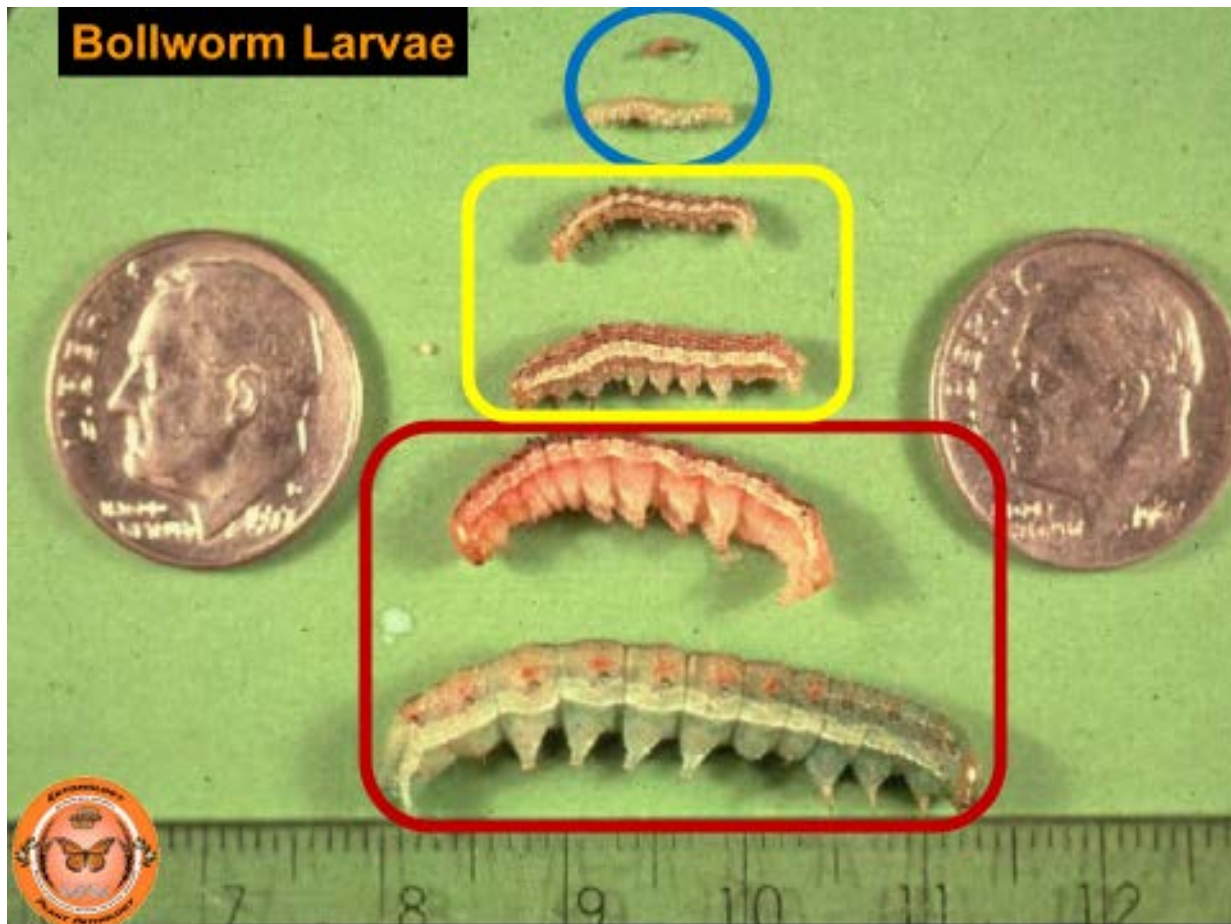
## Near San Angelo – TwinLink Estimated 93% Loss



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. 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. Pyrethroid insecticide resistance has been noted in most areas of the Cotton Belt.

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.

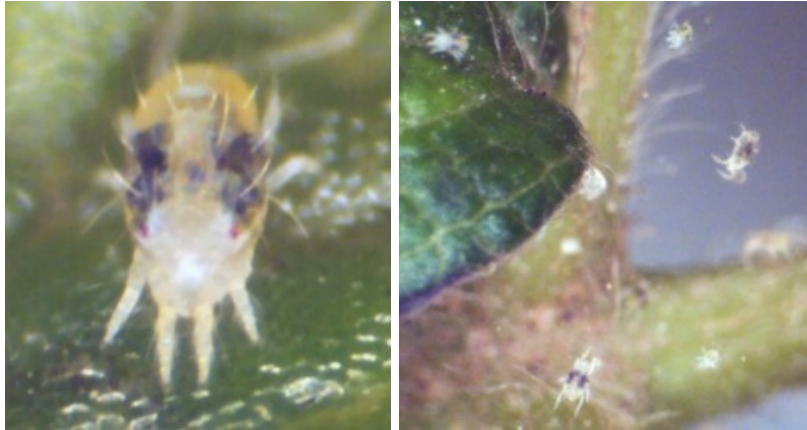
## Which is cheaper??

**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
<b>\$ 6.42</b>	<b>\$ 28.42</b>	<b>\$6.42 + \$9.81+\$14.50 +\$14.50</b>



## Spider Mites



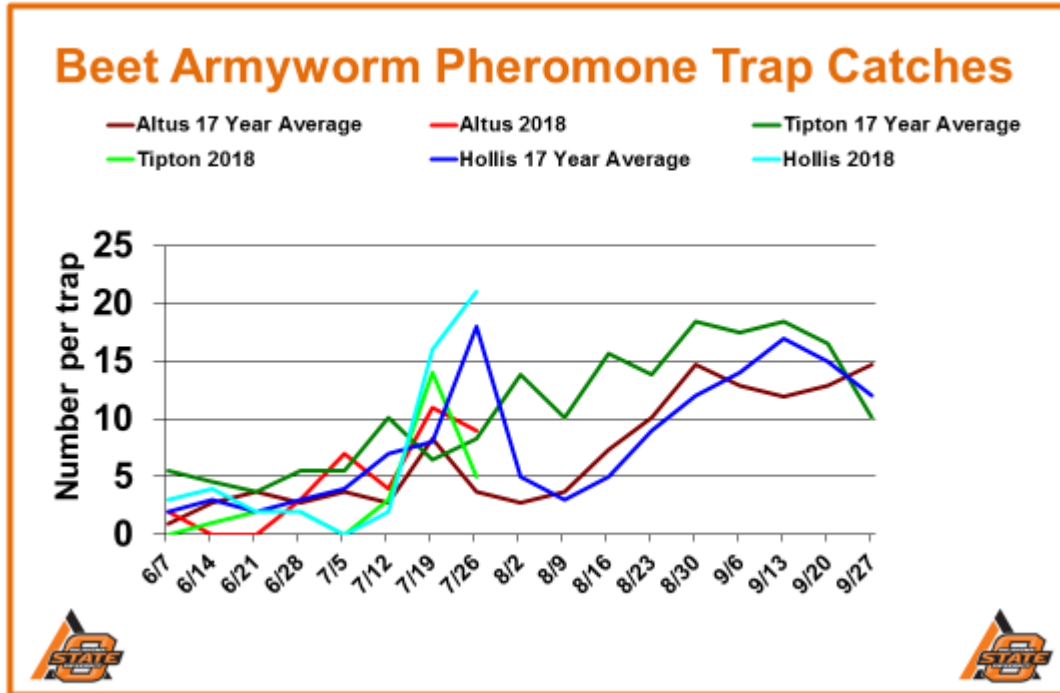
Spider mites often attack cotton when insecticides have removed beneficial arthropod populations which normally keep this pest in check. Infestations are generally aided by hot, dry weather. In most cases, infestations will be localized in a field. Spider mites damage cotton by feeding on the plant juices and the foliage will turn a reddish or yellowish color under a heavy infestation. Mites are small in size and are generally found on the underside of the leaves. A close inspection is necessary to determine if mites are present. Before considering control measures please contact this office.

For a complete guide to spider mites, click here:

[Texas A&M AgriLife Extension Spider Mite Management Guide](#)

## Moth Trap Counts 2018

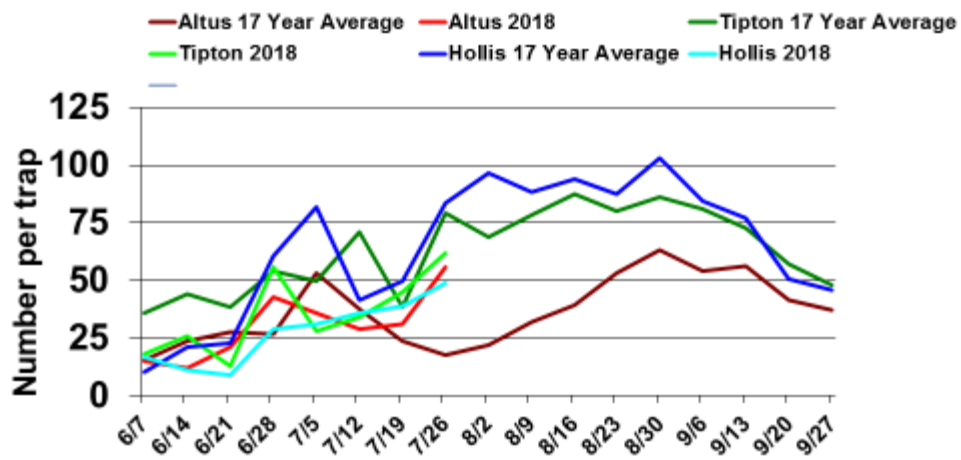
Moth numbers are on the increase although still far below yearly average except for the Beet armyworm. . The drought will affect the bollworm moth distribution where they will seek out lush fields over drought stressed fields. The distribution of moths will more narrow and some fields will have more than their “share”. .



Beet armyworm moth  
Photo courtesy of University of Georgia

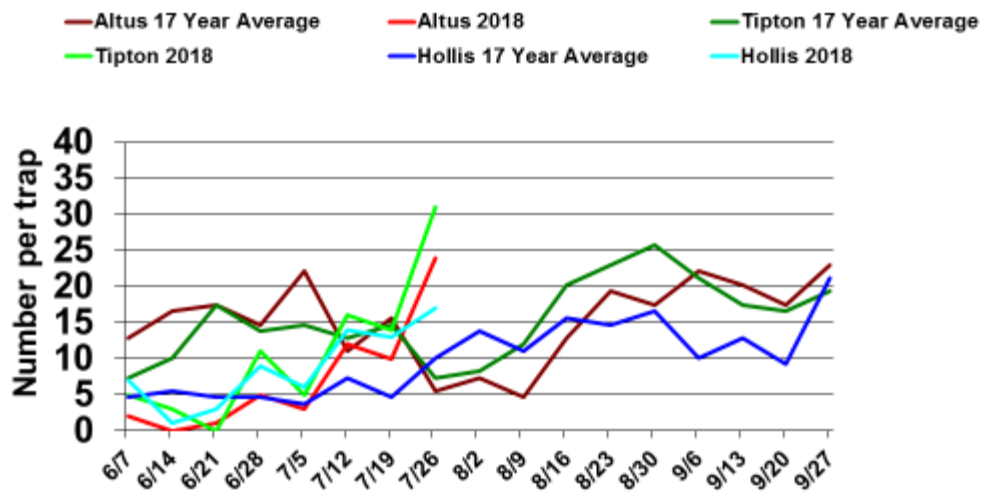


## Cotton Bollworm Pheromone Trap Catches



Cotton bollworm moth  
Photo courtesy of University of Georgia

## Tobacco Budworm Pheromone Trap Catches



Tobacco budworm moth  
Photo courtesy of University of Georgia

## Fall Armyworm Trap Results 2018

Date Week ending	Jackson	Tillman	Harmon	Caddo
6/8	5	0	7	5
6/15	2	3	4	7
6/22	9	4	5	11
6/29	16	12	9	18
7/6	11	16	18	25
7/13	19	31	21	34
7/20	14	20	18	16
7/27	9	14	16	29

Jackson OSU Southwest Research and Extension Center  
Tillman OSU Southwest Agronomy Research Station  
Harmon Harmon County Fair Complex  
Caddo Caddo Research Station



Photos courtesy Oklahoma State University

If you have questions concerning insect control issues, please call the OSU Southwest Research and Extension Center or contact your local OSU County Extension Educator. The Cotton Comments Newsletter is maintained by Jerry Goodson, Extension Assistant. If you would like to receive this newsletter via email, send a request to:

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