Cotton Outlook

OSU

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Current Crop and Insect Situation:

Bollworms have made their appearance in fields this week. All fields should be closely monitored especially non bt varieties. Remember do not make any spray decisions on damaged squares. Actual counts of bollworm larvae is the best indicator to decide if an application is warranted. Beet armyworm egg masses have been seen in Tillman and Harmon counties.

Mid Season Pest

The tobacco budworm and cotton budworm inflict similar damage to cotton, and infestations occur simultaneously throughout the growing season. In the field, cotton consultants and producers commonly refer to both insects as bollworms. In Oklahoma before Bt cotton, they were generally regarded as the most important insects pest of cotton. Although commonly referred to as mid-and late-season pests, they can attack cotton from the seedling stage through maturity. During certain years, a small percentage of fields may require treatments in June, especially if cotton was planted in late April.

Bollworms cause damage by feeding on squares and bolls. Larvae enter the fruit, feed on its contents, and cause the smaller fruit to shed. One bollworm can damage as many as 10 squares, 1 bloom, and 2 bolls before it pupates.

Infestations of bollworms may first appear in cotton at pinhead square. Generally, it is desirable to delay chemical applications, thereby preventing the disruption of beneficial insect populations. Bollworms normally increase as cotton begins to bloom and develop bolls. By mid-July through August, populations should be carefully monitored so that a control program can be initiated when populations reach economic thresholds. The tobacco budworm is generally more prominent in late August and early September and more difficult to control than bollworms.

16721 US Hwy. 283 • Altus, OK • 73521 • (580) 482-8880
Email: jrg@osu.altus.ok.us Website: www.osu.altus.ok.us

Bollworm eggs are about the size of a pinhead, dome shaped with minute ribs, and waxy white when laid. The eggs turn a light brown prior to hatching.

Females generally prefer to lay eggs singly in the terminals or on the bracts of small squares. During hot weather, eggs are often deposited on the underside of leaves on the lower part of the plant and in the blooms. After hatching (3 to 5 days depending on temperature and humidity), first instar larvae begin feeding in the succulent terminals or on a large number of different crops and weeds. As they mature in cotton, they feed first on terminals, then on small squares, moving to larger squares, then finally to small bolls. Larvae can be traced down the plant from the terminals to the bolls as they complete their life cycle. They undergo six molts during this period. When they reach the last larval instar, they leave the plant and tunnel into the soil to a depth of 1 to 10 inches. The larvae then transform into pupae and emerge as adults. It takes approximately 30 days to complete a life cycle; although in reality, overlapping generations are observed. Generally, three to four generations occur per year in Oklahoma. Moths may migrate into an area by upper-level air currents or emerge locally. Bollworms overwinter as pupae in the soil.

Full-grown larvae are approximately 1 5/8 inches long. They exhibit many color variations ranging from pale green to yellow to black to pink or to crimson. This color variation makes it difficult to identify by color alone. Bollworm larvae can usually be separated from other larvae found on cotton by the small spines covering the body

Economic thresholds are based on the plant growth stage related to the amount of damage that can be tolerated before control measures must be enacted to prevent economic loss. On non bt cotton treat when 10 small larvae and/or eggs are found per 100 plants during the first week of bloom (June 25-July 10) or 5 small larvae and eggs are found per 100 plants the remainder of the season (July 11-September 5). For late-season control (after September 5), treat fields if worms exceed 10 per 100 plants. On Bt cotton worm size is an issue. Only consider insect application when worms exceed 3/8 and populations exceed 8 per 100 blooms.

FIELD SURVEY
JULY 11, 2006

Irrigated		
Jackson County		
	Plant Stage	Pest
1	7 NAWF	1% Bollworm larvae 4 % damaged squares
2	6 NAWF	1% Bollworm larvae 6 % damaged squares
3	7 NAWF	1% Bollworm larvae 4 % damaged squares
Harmon County		
1	Pre-bloom	1% Bollworm larvae 6 % damaged squares 2 Beet armyworm hits
2	8 NAWF	1% Bollworm larvae 2 % damaged squares
3	Pre-bloom	1% Bollworm larvae 6 % damaged squares
Dryland		
Tillman County		
1	2 NAWF	1 % damaged squares
2	3 NAWF	1 % damage squares
3	3 NAWF	1 % damaged squares
Greer County		
1	Pre-bloom	1 % damaged squares
2	Pre-bloom	1% Bollworm larvae 4 % damaged squares
3	Pre-bloom	1% Bollworm larvae 6 % damaged squares

MOTH TRAPS:

Week of	Bollworm			
	Altus	Hollis	Manchester	Tipton
June 10	4	3	NA	3
June 17	9	6	NA	11
June 24	16	21	5	24
July 1	24	31	37	32
July 8	75	89	10	56
	Budworm			
	Altus	Hollis	Manchester	Tipton
June 10	0	0	NA	0
June 17	0	2	NA	1
June 24	2	1	0	10
July 1	6	4	0	9
July 8	9	16	0	25
	Beet Armyworm			
	Altus	Hollis	Manchester	Tipton
June 10	1	0	NA	0
June 17	0	0	NA	3
June 24	1	2	11	3
July 1	6	4	0	15
July 8	12	6	0	21

GROWING DEGREE DAY:

A **Growing Degree Day (GDD)** is defined as 24 hours of time in which the temperature is one degree above the lower temperature threshold (60°F - 100°F). By using this range and the high and low temperatures for each day of the growing season, the amount of heat available to the cotton, measured in day degrees, can be calculated. The heat unit data is collected from ***Mesonet weather network*** **weekly**.

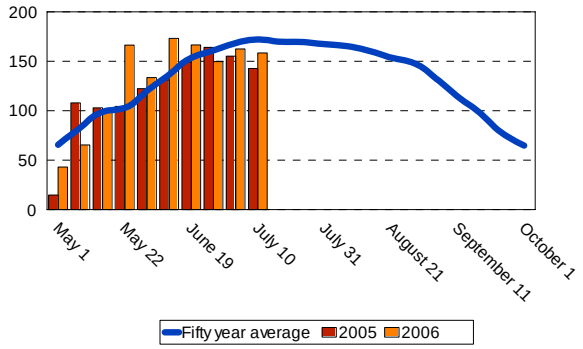
Cotton Growth Timetable

Stage of Growth	GDD	Days
Emergence	50 - 60	3 – 4
Pinhead Square	425 - 500	25 - 45
First Bloom	725 - 825	41 - 67
Open Boll	1575 - 1925	102 -127
Defoliation	2150 - 2300	120 -140

Altus

Growing Degree Days (GDD)

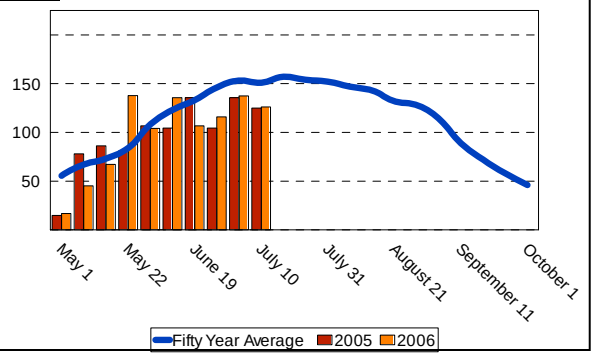
Week of	50 year	2005	2006
May 1	65.5	14.7	43.1
May 8	82.9	107.9	65.3
May 15	98.6	102.9	99.7
May 22	102.9	104.4	166.3
May 29	120.2	122.3	133.4
June 5	136.4	131.2	173.1
June 12	153.4	149.3	166.4
June 19	160.7	164.1	149.7
June 26	168.4	155.4	145.6
July 3	171.9	142.7	158.4
Total	**1,260.9**	**1,194.9**	**1,301.0**



Blackwell

Growing Degree Days (GDD)

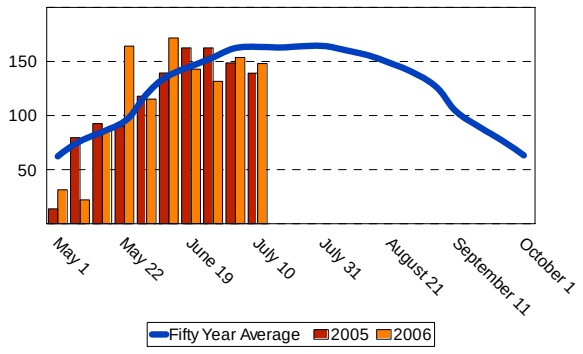
Week of	50 year	2005	2006
May 1	55.6	14.9	16.8
May 8	67.5	78.0	45.2
May 15	73.2	86.2	67.1
May 22	84.3	81.2	137.8
May 29	108.4	106.8	104.1
June 5	123.7	104.5	135.6
June 12	133.4	135.7	106.7
June 19	146.4	104.5	115.9
June 26	153.7	135.7	137.4
July 3	151.3	124.9	126.1
Total	**1,097.5**	**972.4**	**992.7**



Hobart

Growing Degree Days (GDD)

Week of	50 year	2005	2006
May 1	62.3	13.8	31.4
May 8	76.2	79.6	22.4
May 15	84.9	92.6	86.2
May 22	94.7	89.9	164.2
May 29	119.8	117.9	115.3
June 5	136.9	139.4	171.7
June 12	145.6	162.5	142.9
June 19	153.6	162.5	131.6
June 26	162.3	148.6	153.7
June 26	162.3	148.6	153.7
July 3	163.5	139.2	148.6
Total	**1,362.1**	**1,294.6**	**1,321.7**



FOR FURTHER INFORMATION CONTACT:

Jerry Goodson
Extension Assistant
16721 U.S. Hwy 283
Altus, Oklahoma 73521
Office: 580-482-8880
Mobile: 580-471-8969
E-mail: jrg@osu.altus.ok.us