Texas Agricultural Extension Service - District 11

INSECTS AND WEEDS IN FOCUS

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WEB SITES FOR NEWSLETTER

This newsletter can be found on the web at the District 11 Agfacts web site. The address for Dr. Parker's page is: http://agfacts.tamu.edu/~rparker/. It is also available at the Texas A&M University Extension Entomology web site: http://entowww.tamu.edu. RDP

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COASTAL BEND COTTON INSECT REPORT

Spotty, isolated showers and thunderstorms were reported over the past week. The Kleberg County weather station southeast of Ricardo reported 0.50" of rain yesterday (7/11), while the station on the King Ranch reported 0.86" yesterday and an additional 0.64" on July 6. Nueces County rainfall was variable with the Perry Foundation reporting 0.27" on July 6 and 7 and the station on the Dodson Farm between Corpus and Chapman Ranch reporting 1.19" on July 7. Rains in San Patricio County were much lighter ranging from 0.27" on July 6 at the Midway Gin to 0.11" on July 11 at the Barrett Farm. We would still appreciate a month of dry, sunny weather to facilitate grain, corn, and cotton harvest.

Kleberg County. Not much to report this week regarding insects anywhere – so this will be short and to the point. **Cotton bollworm** and egg numbers were down significantly this week compared to last week. This week we found 35 bollworm eggs and 40 worms (down from 55 and 72 last week) on 1,375 plants in 15 fields.. The greatest percentage of eggs and worm damaged squares was 12% and 16%, respectively, found in a field southeast of Ricardo near the beach. This field was at 14.5% open boll and last week's report was its last. The most worms reported was 12% in a field southwest of Ricardo. **Lygus bugs** (0-16%), **cabbage loopers** (0-1%), **cotton leafperforator** (light), and **squash bugs** were reported. Actually, the squash bugs were reportedly as heavy in some fields, ranging up to 21%. I've never heard of squash bug infestations in cotton, but I would assume they should be handled similar to stink bugs. Thresholds for stink bugs are 5 per 10 row feet. Twenty-one percent would be 2 per 100 plants, so I would not think this is a threshold level. Besides, the crop in almost every field is getting mature enough to not be of concern.

Nueces County. Cotton bollworm numbers continue to decline in Nueces County. This week we found a grand total of 49 bollworm eggs and 31 worms (62 and 60 last week) on 950 plants in 9 fields. The most eggs and worm damaged squares found was 9% and 12%, respectively, in a field near Petronila. The most worms found was 12% in a field near the Perry Foundation. Other pests reported included **cotton leafperforator** (light), **lygus bugs** (0-6%), **cabbage looper** (0-6%), and **beet armyworms** (0-3%).

San Patricio County. Cotton bollworm numbers were relatively stagnant this week compared to last week. This week we found 32 bollworm eggs and 28 worms (28 and 33 reported last week) on 500 plants in 5 fields. The overall density of worms and eggs around the county is up since we found similar numbers of worms and eggs on fewer plants, but these numbers are still very low. The greatest density of eggs and worms found was 7.5% and 8.5%, respectively, in a field between West Sinton and IH-37. The most worm damaged squares found was 11% in a field near

Coastal Plains Gin. This same field had 7% eggs and 5% worms. Not surprisingly, the 2 aforementioned fields are both irrigated and, consequently, their insect damage windows are longer (or larger). Other late-season pests included **lygus bugs** (0-7%), **cabbage looper** (0-2%), **beet armyworm** (0-4%), and **saltmarsh caterpillar** (0-1%).

Though we are still finding a few worms, almost all the cotton is very near escaping the bollworm damage window. As our cotton cultivars continue to mature we should see fewer and fewer bollworms and eggs. During the last week we did not find high enough densities of bollworm eggs to warrant performing identifications in search of tobacco budworms.

Finally, the number of fields in the scouting and monitoring programs are rapidly dwindling. At this time we are still scouting or monitoring 11 fields in Kleberg County, 8 fields in Nueces County, and 4 fields in San Patricio County. The last report on a field often is not a complete insect report, but only a boll count and percent open bolls. EDB

LATE SEASON MICRONAIRE MANAGEMENT

I attended a meeting at the TAMU Research and Extension Center at Corpus Christi last Friday concerning micronaire and how producers could manage this lint quality parameter through the use of defoliation timing. This meeting was arranged because cotton marketers are very concerned with our area's propensity for high micronaire cotton. If we can avoid this quality problem and offer cotton with micronaire of 3.9-4.4, we should be able to easily market our cotton and get a premium price.

Just a recap on micronaire: Micronaire is the quality parameter developed as the lint fills. Staple length is developed the first 18-20 days after bloom and micronaire development occurs the remaining time before harvest. The micronaire development period here in the Coastal Bend is usually from June 15 or so until about the 1st week of July. High micronaire situations occur when carbohydrate production (photosynthesis) is going strong but the fruit load is light.

Like everything involving cotton growth, temperature plays a very important role in micronaire development. Cool temperatures and cloudy weather result in lower micronaire values since photosynthesis (carbohydrate production) and the resultant lint filling would be scaled down. However, higher temperatures facilitate maximum photosynthetic production (to a point) and, consequently, maximum lint filling and higher micronaire values. Other factors to consider that effectively lower micronaire values include good fruit loads and high plant competition. These factors provide adequate sinks for all the carbohydrate production, reducing the rate of lint filling. Conversely, things that reduce boll load, like drought and insects, result in higher micronaire values (more carbohydrate for less lint to be filled).

This year's good fruit load and relatively cool, often cloudy weather leads me to believe that micronaire should not be a major problem this season. But, the difference at market between 4.7 micronaire cotton and 4.1 micronaire cotton could be huge this season in the eyes of our cotton buyers.

So, what can you do to lower micronaire. One tactic that has been found to lower micronaire is to apply Roundup at about 30% open boll. This tactic was originally developed by Dr. Juan Landivar to reduce regrowth problems, but it was also found to sometimes lower micronaire by about 0.1. Roundup reduces the photosynthetic efficiency of the cotton plant, effectively reducing the carbohydrate production and lint filling capabilities of the plant. For this use the recommended rate of Roundup is 12 oz., but in very dry weather a lighter rate can be used (say, down to 8 oz.) and in wetter weather (like this year) a heavier rate of 16 oz. should be used. Defoliants should not be applied until 7-10 days following preconditioning with Roundup.

The second strategy to reduce micronaire is to defoliate sooner than normal. Dan Fromme, IPM Agent up the coast, has been working with the COTMAN computer system to time defoliation. His work has shown that defoliating at roughly 850 heat units past 5 nodes above white flower slightly reduces micronaire values while maintaining yield. Like the Roundup strategy, this tactic shuts the plant down as soon as economically feasible (from a yield standpoint) to reduce lint filling and micronaire. Fromme's work has shown that this strategy can reduce micronaire 0.1-0.2. EDB

Heat units	% open bolls	Yield[1]	Bolls/lb /lint[2]	Micronaire[3]
650	0	616 b	329 a	3.54 b
750	6	680 a	283 b	4.08 b
850	28	725 a	281 b	4.29 a
950	56	734 a	272 b	4.38 a
1050	77	699 a	268 b	4.47 a

[1] P=.0088, LSD=61.2
[2] P=.0000, LSD=12.608
[3] P=.0000, LSD=.208

BOLL WEEVILS INCREASING

Boll weevil reproduction has increased due to an abundance of squares in many fields and rainfall has interfered with or washed off Boll Weevil Foundation treatments. Although boll weevil numbers are relatively low, tremendous pressure should be applied to this insect to force their continued reduction. It was relatively easy during the dry production years of 1996-1998, but don't expect it to remain that way now, since so much food is available. I would encourage producers to make sure traps are operational, that they are being checked and

that treatments are being applied each time enough weevils are caught to initiate treatments. Watch for very late season insects such as aphids, cotton leafperforators or armyworms.

Please make plans to be extremely aggressive in destroying cotton stalks. It is the sure way to reduce weevil numbers by depriving them of food and larval development sites. No more than 5 days should elapse from harvest to shredding. Then, as soon as possible, plow or pull stalks. If fields

become muddy and regrowth occurs kill the cotton with herbicide. One reason for certain boll weevil "hot spots" this season was the lack of thorough stalk destruction in 1998.

RDP

HEAT UNITS FOR COTTON - CORPUS CHRISTI

Date	Daily H.U.[1]	Acc. H.U.[1]	Date	Daily H.U.[1]	Acc. H.U.[1]
Mar	-	250.7[2]	7/5	20.5	1978.1
Apr	-	428.3[2]	7/6	19.7	1997.8
May	-	565.1[2]	7/7	20.0	2017.8
June	-	629.9[2]	7/8	20.6	2038.4
7/1	22.8	1896.8	7/9	20.7	2059.1
7/2	22.4	1919.2	7/10	19.8	2078.9
7/3	20.8	1940.0	7/11	20.9	2099.8
7/4	17.6	1957.6			

[1] H.U. = heat units. Accu. H.U.= accumulated heat units
[2] Monthly accumulation

STANDARDIZED SORGHUM TESTS

Results of the replicated sorghum variety test on the Texas Agricultural Experiment Station Meaney Annex are shown below. Yield data was adjusted to 14% moisture.

Table 1. Grain yields and performance factors for 12 sorghum hybrids, Texas A&M Extension Standardized Sorghum Hybrid Performance Tests, Meaney Farm Annex, Nueces County, 1999. Steve Livingston

Hybrid	Population (1000's)	Plt Ht (inches)	Yield (lbs/ac)
TS 489	54.2	46.0	6029.4
NC+ 7R83	68.2	47.2	5924.5
5440	62.2	44.0	5556.2
K73-J6	75.7	44.0	5494.5
PS 233	70.7	44.2	5409.0
A 570	65.5	45.2	5307.1
DK 52	82.2	45.5	5281.2
84G66	69.0	44.0	5041.1
TR 481	63.5	43.5	5032.7
TR 404	68.0	42.2	4922.6
AP 2468	84.5	43.5	4566.1
W 625Y	74.0	45.0	4450.5
Average	69.8	44.5	5251.2

100 YEARS OF ENTOMOLOGY AT TAMU

The first pink bollworm discovered in the United States was discovered by a Texas A&M student, Ivan Shiller, who was working for USDA in the summer of 1917. Schiller went on to become the first student to receive a master's degree in entomology at Texas A&M in 1920.

This year the Department of Entomology is offering its first-ever course in forensic entomology, or using insects as evidence in a court of law. These cases can range from civil lawsuits about pesticide drift to criminal murder cases where a close inspection of insects on a cadaver can help pinpoint the time of death.

Note: Refer to issue #8 dated May 10, 1999 for information about the first entomologist hired by TAMU.

RDP

INTERESTING INSECTS

Were it not for insects, the United States' July 4th Independence Day celebration might occur a few days later. It has been reported that horse flies were so bad in Philadelphia in the summer of 1776 that the signatories rushed to wrap up their work a few days earlier than planned.

In World War I, in East Africa, Germans hid and booby-trapped beehives with trip wires to delay British troops.

During the American Civil War, blow flies were used in surgical operations. If a wound would not heal, larvae of the blow fly were placed on the wound. It seems mechanical stimulation of the wound area by feeding and crawling, along with antibacterial factors present in larvae feces, accelerated the process of healing the wound.

An army of Danes and Norwegians was repelled from undermining the foundations of the wall of Chester in 908 AD by having the city's bee hives dropped down onto them. Similarly, during the siege of Kissingen in Bavaria during the 17th century, bees were used to defend the city. RDP

FIRST COTTON HARVEST-AID TEST - '99

The first Extension cotton harvest-aid test was established near Weslaco on June 29, 1999. All treatments were replicated four times. In general, cotton plants were large and lush at treatment. This test plot might be considered similar, however, to many 1999 South Texas cotton fields. While all parameters rated are important, perhaps the best single indicator of overall product activity would be in the performance column. This rating takes into account the overall response of the product for defoliation, desiccation and regrowth.

Rain prevented ratings being taken until 9 DAT (days after treatment). Test conditions are listed below with results for performance, defoliation, desiccation, and cotton regrowth, (top and bottom). Which is the best treatment? This is a good question. Every producer must decide the answer for himself. Any treatment with a 90-95% or greater performance would be considered excellent. Cost of treatment must be considered against speed and performance. Please keep in mind that this represents only a small number of the thousands of possible treatment combinations and rates. The list should simply serve as an indication of performance at one location.

Other product possibilities for pre-harvest (at least 7-10 days before defoliation), might include Roundup Ultra. Use of this treatment has shown regrowth suppression in other test years along with the potential to reduce micronaire somewhat. JEB

EXPERIMENTAL CONDITIONS
B267

Date of Application	29 June 1999	SOIL:	Type	Hidalgo Sandy Clay Loam	
Type	Broadcast		Temp.(F)	85	
Equip. Speed (mph)	4.1		Surf. Moist.	Dry	
Type	Spray-Trac Spider		Sub. Moist.	Moist	
Nozzle Tips	XR11002VS	CROP:	Variety	Suregrow 125	
Volume (gpa)	10		Date Pltd.	25 Feb. 1999	
Pressure (psi)	30		Date Harv.	(Expected 7/13/99)	
WEATHER: Sky:	Partly Cloudy		Growth Stage	% Open boll - 81.9 Plant Height (in.)- 36.0 NACB - 6.4	
Wind (mph):	SE 5.7	WEED:	Size (in):		
Temp. (F):		MOISTURE:	%		

Performance of 1999 Harvest-Aid Treatments on Lower Rio Grande Valley Cotton 9 DAT*.

Trt#	Treatment	Formulation	Rate/ac (Prod)	Performance (%)	Defoliation (%)	Desiccation (%)	Regrowth (%) Top	Regrowth (%) Bottom
1	Dropp	50 WP	0.2 lb/ac	96.3 a**	97.3 a	0.8 bc	7.5 def	2.5 cd
2	Dropp	50 WP	0.1 lb/ac	90.8 ab	90.3 ab	0.3 bc	10.0 c-f	5.0 bcd
3	Dropp Harvade Agridex	50 WP 5 SC 99 SO	0.1 lb/ac 6.5 oz/ac 1% VV	97.3 a	96.3 a	0.8 bc	11.3 c-f	1.3 d
4	Dropp Finish	50 WP 4.5 EC	0.1 lb/ac 16 oz/ac	96.5 a	96.8 a	1.0 bc	15.0 b-f	2.5 cd
5	Dropp Accelerate	50 WP .52 EC	0.1 lb/ac 12 oz/ac	91.3 ab	91.5 a	0.0 c	22.5 b-f	20.0 a-d
6	Dropp DEF	50 WP 6 EC	0.1 ob/ac 16 oz/ac	96.8 a	94.8 a	4.8 bc	6.3 ef	2.5 cd
7	Dropp Cottonquik	50 WP 2.28 SL	0.1 lb/ac 56 oz/ac	96.3 a	93.0 a	6.0 abc	5.5 ef	1.3 d
8	Harvade Finish Agridex	5 SC 4.5 EC 99 SO	6.5 oz/ac 24 oz/ac 1 % VV	83.8 bc	86.0 abc	0.5 bc	33.0 bc	36.3 a-d
9	Harvade Cottonquik Agridex	5 SC 2.3 SL 99 SO	6.5 oz/ac 56 oz/ac 1 % VV	77.5 cd	79.3 bcd	0.0 c	58.8 a	38.8 abc
10	Ginstar	1.5 EC	8 oz/ac	92.3 ab	85.3 abc	14.5 a	16.8 b-f	26.3 a-d
11	Cyclone Val-Flo	2.0 EC 80 SO	8 oz/ac 0.5 % VV	74.8 d	77.3 cd	0.0 c	25.0 b-f	40.0 ab
12	Cyclone Val-Flo	2.0 EC 80 SO	16 oz/ac 0.5% VV	85.3 bc	85.5 abc	8.0 abc	21.3 b-f	48.8 a
13	Finish	4.5 EC	16 oz/ac	69.5 d	72.8 d	0.0 c	30.0 b-3	50.0 a
14	DEF	6 EC	32 oz/ac	90.0 ab	91.5 a	0.8 bc	37.5 ab	38.8 abc
15	Ginstar	1.5 EC	6 oz/ac	95.0 a	93.5 a	6.0 abc	1.3 f	0.0 d
16	Dropp Ginstar	50 WP 1.5 EC	0.05 lb/ac 6.5 oz/ac	95.5 a	92.8 a	9.8 ab	7.5 def	5.0 bcd
17	DEF Val-Flo	6 EC 80 SO	32 oz/ac 0.5% VV	91.0 ab	92.0 a	0.5 bc	37.5 ab	31.3 a-d
18	Cyclone Sodium Chlorate	2.0 SL 6.0 SL	8 oz/ac 6 pt/ac	92.0 ab	94.3 a	1.3 bc	26.3 b-f	21.3 a-d
19	Check	-	-	0.0 e	0.0 e	0.0 c	16.3 b-f	7.5 bcd

* DAT=Days After Treatment-B267.
** Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT).