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COTTON INSECTS

It is relatively quiet on the western front, at least as far as insect pests are concerned. There are some pitched battles taking place in some fields southwest of here with pink bollworms and a few scattered fields across the area have experienced problems with fleahoppers and western tarnished plant bugs (WTPB), but as a whole, it is pretty quiet.

Problems with western flower thrips should be over for most if not all fields. Late planted cotton rarely experiences thrips problems as thrips movement from alternate hosts to cotton has ended by the time this late cotton emerges.

Earlier planted fields should be at least approaching squaring or well into fruiting by now. Thrips numbers significantly decline once squaring commences but

reappear once flowers are present. In this latter capacity, thrips become an excellent food source for natural enemies. Recent bouts with weather have certainly hurt some fields but also have all but decimated the ranks of thrips.



More fields are squaring by now, moving them into the vulnerability window for both cotton

fleahoppers and western tarnished plant bugs. The fleahopper vulnerability window only lasts about 3-5 weeks depending upon yield potential and variety. The WTPB vulnerability window will extend a bit further, or until the last boll you want to take to harvest accumulates 350 or more heat units past flower.

Numbers of fleahoppers and WTPB remain well below threshold for more than 98% of the fields that are squaring now. A few fields have experienced problems with one or both of these pests but these are the exception. Usually there is an alternate host nearby that has unloaded these pests into the adjacent cotton. When weed or cultivated hosts become unsuitable for these two pests, they are forced to leave for greener pastures. I believe in many cases these are forced flights as cotton is probably not as high on their diet preference list as the weed or cultivated host (think alfalfa).



Thresholds for fleahoppers 25-30 insects per 100 plants inspected and square retention dropping to levels between 90-75%, depending upon week of squaring. Recent research has indicated that lower retention levels can be tolerated (probably 50-60%, depending upon supplemental water availability). WTPB threshold square retention levels are similar to fleahoppers but the number component is lower, about 7-8 insects per 100 plants.



WTPB nymph

The availability of water should determine how aggressive you are in maintaining higher square sets. Without water, the high square retention

rates obtained by spending money for insecticidal control of bugs will be adjusted downward through small boll shedding later on.

Some folks are using very aggressive tactics to manage these bugs early season. Some find reduced square sets and immediately assume that bugs are the culprits if they can find one or two while walking the field. Unfortunately for them, this is often a big mistake. Square retention can be greatly affected by variety, weather and other environmental constraints.

Don't be one of those that falsely accuse bugs for something they didn't do! Look at the [Cotton Fleahopper Management Tips](#) recently released in the Crop Production Guide Series of FOCUS.

Cotton aphids have been found in fields since the first crop emerged over a month and a half ago. The higher, earlier numbers has been a bit unusual but probably has been a blessing in disguise. These early aphids provide a much needed food source for the build up of natural enemy numbers. In some cases, heavier spots have developed in fields and aphids have moved out of the plant terminal and onto expanded lower leaves. Even so, beneficial insects have kept these in check. Remember that insecticides used for other pests, especially pyrethroids can disrupt a stable aphid situation, resulting in a big blow up and another insecticide application expense. Look at the [Cotton Aphid Management in West Texas](#) publication for further discussion of this key cotton pest.



Pink bollworms continue to emerge from overwintering sites, prolonging the need for preventative insecticide applications for some fields. Some of these fields have received up to four pyrethroid applications to date. These

fields are the exception rather than the rule. But many of the non-Bollgard fields in the higher risk areas of Gaines, Terry and Yoakum counties have needed 1-2 applications. Preventative applications are made once pinhead squares are present and field traps



average 5 or more moths per night. The moth catches from traps that are being run in Gaines, Terry and Yoakum counties by IPM Agents,

Andy Cranmer and Scott Russell, indicate that overwintered site emergence is winding down but not over. Only two fields trapped in Gaines County would have qualified for a preventative treatment this week.

Weekly numbers of pink bollworm moths caught in each of 8 traps in Gaines Co., 2004.

Trap	4/22	4/29	5/7	5/14	5/20	5/27	6/2-3	6/8	6/14-15	6/22
1	0	0	2	3	10	135	89	3	4	7
2	0	3	1	36	20	93	138	8	55	47
3	0	0	0	12	18	30	11	5	13	10
4	0	0	0	16	8	71	43	0	3	7
5	0	1	2	3	4	68	21	5	27	27
6	0	1	18	106	26	125	135	6	13	83
7	0	2	1	12	12	103	95	4	12	6
8	0	0	1	10	21	*	52	1	23	11
Total	0	7	25	198	117	629	584	31	150	198
No./trap	0	1	3	25	15	89	73	4	19	25

*Lost to wind.

Weekly numbers of pink bollworm moths caught in each of 5 traps in Terry Co., 2004.

Trap	5/24	6/1	6/7	6/14	6/21
1	17	29	6	7	2
2	40	79	7	17	11
3	*	19	2	5	1
4	10	39	*	4	0
6	2	28	9	3	3
Total	69	194	24	36	17
No./trap	17	39	6	7	3

*No data.

Weekly numbers of pink bollworm moths caught in each of 4 traps in Yoakum Co., 2004.

Trap	5/24	6/1	6/7	6/14	6/21
7	11	27	1	3	1
8	31	27	2	*	1
9	21	49	3	6	6
10	101	57	14	7	1
Total	164	160	20	16	9
No./trap	41	40	5	5	2

*No data.

For more pink bollworm information see [Pink Bollworm Management Tips I](#) and [II](#) in the Crop Production Guide Series of FOCUS and [Pink Bollworm Management In Texas](#).

Boll weevils trap catches are generally dropping off; signaling the end of emergence is approaching. The Texas Boll Weevil Eradication Foundation caught their first weevils in the Northern High



Plains zone this past week, but activity remains very low with the exception of the Permian Basin zone. Only about 1% of the PB acreage was treated last week with 0.13% and 0.12% treated in the NHP and SHP, respectively.

Average number of boll weevils caught per trap inspection and sprayed acreage through June 20. Number of boll weevils caught for the week ending June 20, 2004

High Plains Zone	2004	2003	Sprayed acres	Weevils caught the previous week
Permian Basin	0.011	0.0013	15,401	462
Western High Plains	0	0.0001	0	0
Southern High Plains	0.00001	0.00003	1,494	1
Northern High Plains	0.00003	0.00002	786	3
Northwest Plains	0	0	0	0

Other insects to be aware of include beet armyworms and of course the “friendly”, our natural enemy complex. . Beet armyworms have been fairly rare this year and have failed to develop into problems south of us thus far. Our



environmental conditions so far this year would have not been conducive to their establishment and overwintering success appears to be limited. We are growing a nice assortment of “beneficials”. Lady beetles and spiders have been fairly common. Let’s help them along by not spraying unnecessarily. JFL



COTTON AGRONOMY

Cooler, wetter, and higher humidity conditions have prevailed over much of the region for the past week. [Temperatures](#) have been lower than our long-term average for the last several days. Even with the recent cooler conditions, we are still well above normal for [heat unit accumulation](#) from May 1. With the appearance of the cooler conditions, numerous evening thunderstorms have been generated which provided good rainfall amounts in some instances, and devastating hail in some places.

Hailstorms have [damaged cotton stands](#) in Randall, Castro, Briscoe counties (perhaps some 30,000 acres lost from two events), Swisher County (perhaps 5,000 acres east of I-27), and Floyd County (40-50,000 acres mostly from Lockney through



the southeast portion of the county). Some losses also occurred in Hockley and Lamb counties over the last week. Water is still standing in some fields, and many playa lakes are filled. At this time, our best guess is that around 100,000 acres of the High Plains crop have either been destroyed or badly damaged. This amount is still very much below our long-term losses,

and when the good rainfall amounts associated with these storms are considered, the remaining crop north of Lubbock is in very good to excellent condition at this time.

We do have some “ragged up” cotton, but by and large, many fields are doing very well. I don’t believe that in my 8 seasons here, the stands and crop conditions in many fields have ever been as impressive.

Many fields that were planted in a timely manner are now squaring.



Over the last week, we have received some badly needed moisture across a significant portion of the dryland region south of Lubbock.

However, it is estimated that perhaps as much as 200,000 acres of dryland cotton was dry planted and has yet to have any significant rainfall. Other dryland acres have only had low rainfall amounts and may not emerge to a good stand. This situation is still changing daily, as the evening thunderstorms continue to paint some of these dryland acres with sorely needed moisture.

Tank cleanout concerns. I have had several calls over the last couple of weeks concerning hormone-type herbicide damage on cotton. Typical symptomology includes “strapping of leaves.” Producers should be aware, especially in light of the “tank cleaning ability” of some of the newer herbicides, that phenoxy residue in tanks can be a real problem. My suggestion for our growers is that tanks and sprayers, which are used for



applying phenoxy type herbicides be dedicated SOLELY to that purpose. If producers are unable to purchase separate tanks and/or sprayers, then it is imperative that several issues be addressed. Do not leave herbicides in tanks for an extended period of time. If multiple herbicides are used in the sprayer, then I suggest that producers purchase various tank cleaning agents from their dealers and follow the directions, including cleaner concentration, religiously. The last thing a cotton field needs is for a phenoxy material (even at low concentrations) to get “pulled from the tank or hoses” and get sprayed on cotton – especially those fields with high yield potential (such as subsurface drip). If a tank/sprayer is to be used on cotton, I suggest that the tank be flushed out with clean water and the appropriate tank cleaner be mixed at the appropriate concentration. The producer should then spray the solution run through the booms and nozzles. Leave the booms in a horizontal position and let the cleaning solution sit in the tank at least overnight. This might help reduce some anxiety over phenoxy damage later. It doesn’t take very many lost bales of production to pay for an additional tank/sprayer. **RB**

COTTON DISEASES

Fusarium wilt has been on the increase in the last few years in the southern counties

(Dawson, Terry, Gaines). This disease is a fungus that can interact with the root-knot nematode to cause a serious wilt problem. When a susceptible variety is grown in the presence of these two pathogens, Fusarium wilt can kill plants as seedlings and young (< 90-day old) plants. In recent years, Fusarium wilt-susceptible varieties have been introduced into west Texas. This has probably resulted in more disease pressure in the soil.

Plains Cotton Growers funded a Fusarium wilt variety trial

this year, and some of the results will be presented. The variety test was planted into a field with high pressure from Fusarium wilt and root-knot nematode. At 29 days after planting (DAP), the varieties were trying to recover from being sand blasted, and had not yet demonstrated symptoms of Fusarium wilt. By 42 DAP, Fusarium wilt was going full blast, with plants completely dead and plants just coming down with symptoms. A list of the varieties being tested, and the change in plant stand between 29 and 47 DAP is provided below.

Most of the plant loss is due to Fusarium wilt, though some may be due to sand blasting. It is important that fields are scouted now for the disease, since once the plants are dead; it is difficult to identify the cause. Plants can be positively identified with wilt when leaves show severe and sudden turgor loss, regardless of the time of day. The more classic signs of chlorosis in the leaves also make identification easy. Once the plant becomes desiccated, but has not completely dried out,



Fusarium wilt variety test in Dawson County, 2004

Variety	% Stand loss due primarily to wilt between 29 and 47 DAP ²
All-Tex Atlas	26 a ³
All-Tex Atlas RR	26 a
¹ AFD 3511 RR	27 a
PM 2326 RR	28 ab
PM 2280 BG/RR	29 ab
All-Tex Excess RR	30 ab
ST LA887 (Resistant check)	30 abc
PM 2379 RR	31 abc
All-Tex Xpress	33 abc
PM 2167 RR	36 a-d
ST 3539 BR	38 b-e
ST 2454 R	40 c-f
FM 960 BR	43 d-g
DP 5415 RR	43 d-g
All-Tex Top-Pick	43 d-g
AFD 2428	45 d-g
ST 4793 R	45 d-g
ST 4892 BR	47 efg
BCG 30 R	47 efg
BCG 24 R	47 efg
BCG 28 R	48 fgh
DP 555 BG/RR	49 f-i
FM 989 BR	50 f-j
AFD 2485	50 f-j
FM 958	52 g-j
FM 819	53 g-j
ST 5599 BR	53 g-j
FM 966	57 hij
TAMCOT Sphinx (susceptible check)	59 ij
FM 832	60 j

¹AFD = Associated Farmers Delinted, PM = Paymaster, ST = Stoneville, BCG = Beltwide Cotton Genetics, and FM = FiberMax.

²DAP = days after planting.

³Letters that are different indicate significant (consistent) differences between means values for % loss to Fusarium wilt between 29 and 47 days after planting, based on the Waller-Duncan k-ratio t-test with $P = 0.05$.

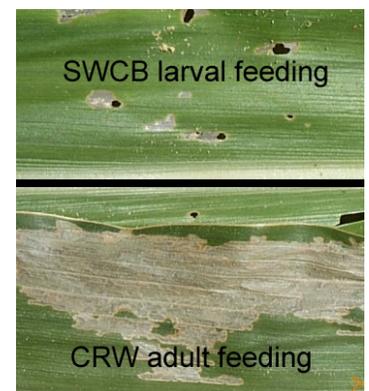
identification can still be made by looking for discoloration in the vascular system.

Control of this disease is to plant a more resistant variety and to control the root-knot nematode (Temik 15G at 5-7 lbs/acre at planting). Fusarium wilt can survive for many years in the soil, so a short rotation out of cotton may not reduce wilt substantially. Once the soil levels have been built up with high levels of wilt, it may take several years using less susceptible varieties to reduce the levels of wilt. All varieties tested were susceptible to some degree to Fusarium wilt. **TW**



CORN AND SORGHUM INSECTS

There is not much of note happening in corn or sorghum right now. We still have corn earworm and fall armyworm feeding in corn, but not at treatable levels. Spider mites are still present at low numbers in some fields. Corn rootworm adults are beginning to emerge, and you will notice their feeding damage on corn leaves. They will switch over to feeding on silks when available, and could possibly achieve pest status when they begin silk clipping.



Feeding damage from the corn rootworm beetle and southwestern corn borer are easy to tell apart, in part because the rootworm beetle does not puncture the leaf. Rather, it eats away a layer of tissue, but it will be quite awhile before the dead tissue in the middle of the leaf actually

dries up and falls away. Southwestern corn borer is not shy about punching through the leaf.

Corn leaf aphid is easy to find in sorghum, but these aphids are serving as a good food source for our beneficial insects.

Unfortunately, I need to mention hail damage to these crops. We have an excellent publication that will help assess the loss due to hail. You can find it on our website at <http://lubbock.tamu.edu/corn/pdf/cornfreezedamage.pdf>. The tables in this publication list the percent of leaf area destroyed at different



Hailed on grain field

growth stages and its effect on yield. The striking thing is that corn in the V14 and younger growth

stages can tolerate a huge amount of defoliation with very little effect on yield. This is why moderate corn earworm and fall armyworm feeding, while it is ugly, will not affect yields appreciably. PP

SORGHUM AGRONOMY

Replant/Late Plant decisions thrust upon us with recent bouts with hail. How quickly things change. At this writing last week there was little need for hail out and replant information. Extension released the annual South Plains edition “[2004 Alternative Crop Options After Failed Cotton and Late-Season Crop Planting for the Texas South Plains](#)” last week. It is also available from your county Extension office. You can access information for evaluating hail injury and stand reduction for cotton, corn, grain sorghum, and sunflower.

Making replant decisions too quickly can cause some producers to underestimate the potential

that is still in damaged crops. There’s no kidding about a crop that is wiped out. But what about a corn crop at the 15-leaf stage that loses half its leaves? Expect about a 15% reduction in yield. What about a sorghum crop at 7 weeks that loses 50% of its leaves? Expect about a 30% reduction in yield. The damage is real, and so are the potential losses, but these remaining crops still have better potential than trying to start any new crop. See the above guide.

Grazing or baling of early planted forage sorghum.

If hay is not the plan, several fields that were planted to forage sorghum in early May should be grazed immediately. I have seen several fields that are now over 4’ tall that are losing forage quality for



grazing. Furthermore, the forage is growing rapidly and can easily outpace the ability of all but a great number of livestock to keep it from getting too tall or “stalky.” On the other hand, because forage sorghum does re-tiller, we also don’t want to grub the forage into the ground so much that it won’t regrow.

If baling is your goal, the ideal time for forage sorghum cutting is about boot stage. We are less worried about the tonnage because we are confident in the ability of the forage to regrow another high quality forage crop.



Forage quality vs. tonnage. Forage quality in summer annual forages declines with maturity. But how much? The table below details the

stage of growth vs. % total digestible nutrients and % crude protein on a sorghum/sudan. Unfortunately, yields were not collected on this data. What type of animal you will feed the forage to may dictate the quality of forage you choose to harvest. Stocker cattle are not going to readily gain weight when protein decreases, especially below 10%.

Change in forage quality with increasing maturity in a forage sorghum.

Stage of Maturity	% Total Digestible Nutrients	% Crude Protein
Early Vegetative	71.5	19.7
Late Vegetative	70.9	16.6
Boot	67.7	13.6
Heading	65.3	12.6
Bloom	61.5	11.0
Dough	58.8	7.8

In 2002, Extension harvested forage sorghum on two-week intervals beginning August 13th. Obviously tonnage was increasing but the quality of that tonnage was decreasing with later cuttings. Again, producers should ask themselves what they want to do with the forage. Cutting sorghum/sudan, as noted above, at boot stage is a good medium between quality and quantity, and with the regrowth potential available it enables producers to focus on quality. CT

Changes in forage sorghum quality and tonnage for a forage harvested at 2-week intervals (Swisher Co., 2002).

Stage of Maturity	Wet Tons Per Acre (2-week intervals)	% Crude Protein
Mid-Boot	10.0	15.1
Full Heading	12.9	13.0
Post-Flower	15.7	10.6
Dough	18.2	8.8

PESTICIDE NEWS

West Texas growers now have another insecticide to do battle with pink bollworms. **Lock-On**, a long residual formulation of

chlorpyrifos received a [Special Local Need](#) (EPA 24(c)) registration through the Texas Department of Agriculture on June 24th. This Dow AgroSciences product already had a label in California and Arizona and their experience indicated Lock-On would capture the pink bollworm control market. This material will go head-to-head with presently used pyrethroids with three advantages; long residual activity, less damaging to natural enemy populations and less disruptive of aphid and mite infestations. While no product is yet available in Texas, I understand that UAP in Seminole has ordered the product. JFL

CROP PRODUCTION GUIDE SERIES

Most of you already know about the new Crop Production Guide Series (CPGS) being released under the FOCUS banner. These include in-depth articles on specific issues addressing insects, diseases, irrigation management, weeds, weather damage assessment, etc. Before the series is complete, there should be well over 30 guides in the series covering cotton, sorghum, corn, cotton, sunflower, peanut and other crops. These are electronic publications that will be rich in information links and pictures.

The newsletter, FOCUS on Entomology has grown considerably over the last 25 years addressing much more than just insects. This growth has often resulted in very lengthy newsletters with considerable load time. The use of guides should result in a significant reduction in newsletter size and more manageable access to information resources.

The most recent addition to the FOCUS CPGS has been several articles by Dr. Peter Dotray and colleagues on weed management. The most recent one covers, “Mid-season Weed Control in Cotton and Peanut”. (go to: <http://lubbock.tamu.edu/focus>). JFL

**FOCUS on Entomology is published by
Texas Cooperative Extension
Route 3, Box 213AA
Lubbock, Texas 79403**

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Web Layout: Michelle Coffman

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