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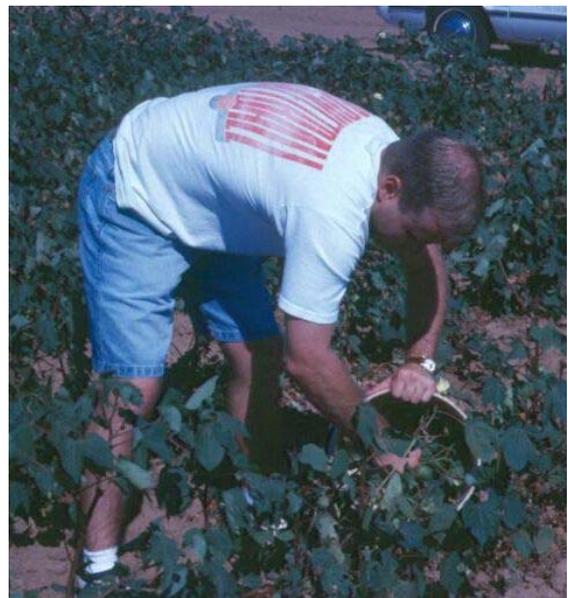
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COTTON INSECTS

Dry, hot conditions pushing cotton rapidly toward cutout. Without timely rains or irrigation, producers' fields have been cutting

out prematurely. This will have a direct impact on insect management decisions. Not only will yield be limited, but plants will begin to shed bolls in an effort to rebalance resources to boll demand. Square retention continues to be very high, but this will put increasing stress on fields needing water, causing significant boll shed. Under these conditions, it would be foolish to invest dollars in protecting these bolls from caterpillar damage if they are to be shed anyway.

The goal of managing late cotton is to encourage a high square retention rate and then protect the early bolls from insect damage. As fleahopper and Lygus bug numbers increase (and they have been the last few weeks), square protection will become more critical and costly. I like the potential of two methods for sampling these two pests. The first is the beat bucket method where a 5-gallon bucket is used to beat plants into, dislodging whatever insects are present. Plants must be approached carefully to avoid disturbing these pests. Count adults first



Beat Bucket

to avoid missing the insects as they attempt to fly away. Sample 3 plants in rapid succession and then count the insects dislodged.

Thresholds would still be the same for fleahoppers---25-30 bugs per 100 terminals. Lygus bugs are often sampled with a drop cloth and therefore their numbers are expressed in numbers per 3 feet of row. Since their threshold is 1 per 3 feet of row prior to bloom and 2 after bloom is initiated, you will have to know how many plants you average per foot of row to use this method for Lygus bugs. For example: if you average 3.5 plants per foot of row and you have captured 7 Lygus in 20, 3-plant bucket samples, you would average 1.2 Lygus bugs per 3 feet of row. Fruit retention level, of course, would also have to be taken into account to make your final decision.

The other method I like for sampling Lygus bugs is the drop cloth. It ceases to be very effective once the canopy approaches closure. You must also be very quick in counting insects, especially winged adults before they rapidly fly away. I only use the sweep net for preliminary sampling of fields to detect if adults are moving into the field. The sweep net does not provide a very consistent sampling procedure. See our [cotton insect management](#)



Drop Cloth

[guide](#) for more details on sampling and thresholds.

Most fields have not experienced problems with plant bugs. But there has been a gradual increase of both pests, even as far north as Clovis, New Mexico. In the case of Lygus, we often see a rapid increase in their numbers following the cutting of alfalfa adjacent or near our cotton fields. These adults will move back into the alfalfa in a few days once some new growth is produced. Unfortunately, these Lygus can cause considerable damage and lay eggs before moving back into the alfalfa field. If Lygus adult numbers are 2X to 3X the threshold in this situation, I would not hesitate to treat immediately, rather than waiting to see if damage increases. You'll never bring the field back into normal fruiting mode. I would also most likely choose a pyrethroid insecticide to get the greatest knockdown and residual activity, realizing that I will most likely decimate my beneficial insect populations and could flare existing aphid infestations.

Incidentally, I have referred to Lygus bugs like there is only one kind when in fact there can be two fairly common species with a third showing up in small numbers. The species with the lowest number is the Tarnished plant bug, the most common one in southern and Delta cotton producing regions. The western tarnished plant bug is probably the most common species we have although the similar looking pale legume bug is a close second sometimes in some areas. While the pale legume bug can have high numbers in other hosts, my California colleagues inform me that 95% plus of the Lygus population in a cotton field is always the western tarnished plant bug. They also tell me that the pale legume bug does not have the same damage potential as the western tarnished plant bug even if it does make it into your cotton field.

We have been going through an early flurry of bollworm activity across most of the High Plains area. This has coincided with similar activity patterns in south and central Texas

where cotton is much further along and bollworm infestation levels are much higher. Our caterpillar infestations have generally been too low to warrant treatment; even adjusting for the so-called, “nickel and dime” egg lay patterns we often have observed. Some fields have had egg counts as high as 3 per plant in the morning but by nightfall, heat and predators have mostly neutralized these numbers. Both high temperatures and natural enemies have prevented these early bollworms from making any headway in our cotton. Be careful with Bollgard fields as plants get older and their canopy begins to close. Under high temperature conditions, especially dry conditions, bollworm moths will tend to lay eggs below the terminal on older plant parts and bloom pedals where the Bt toxin is less concentrated. There could be more escapes under these conditions.

Most of the latest bollworm egg laying activity has been concentrated in the terminal. Small

plants and high heat levels reflected from the soil are probably discouraging moths from laying eggs lower on the plant. This can change as canopy closure approaches.



Newly hatched bollworm

Because of the increased

bollworm activity reported this year in central and south Texas, I am putting everyone on alert for the potential for heavier bollworm infestations in our area this year. This would most likely come in August when much of our moisture-stressed cotton is cut out and the remaining oasis’s of lush cotton will act as magnets for bollworm moth egg laying activity.

Pink bollworm infestations have been reported in Gaines County. We are not

currently running pinkie traps in this area, nor is the Texas Boll Weevil Eradication Foundation. Look at the [FOCUS Supplement](#) released earlier this year for additional information on managing this pest. Do not let pinkies sneak in and establish in your fields. I think they are harder to get rid of than boll weevils. Bollgard cotton is almost impervious to pinkies but non-Bt cotton is not!

Beet armyworm moth captures are somewhat up this week. I would keep an eye open for this pest as well, especially later in the season.

Cotton aphid numbers remain light in most instances with sticky areas forming in a few fields. We have noticed a trend toward aphids beginning to move out of the terminal area and down on to the undersides of fully expanded leaves. This can mean that

aphid populations could start increasing. Later next month, fields with higher nitrogen levels (late fields or fields with little



boll load) could be the target of aphids. Eradication program malathion applications and especially pyrethroid insecticide application could accelerate this process. Beneficial insects, especially lady beetles, have helped tremendously in cleaning up these infestations. In case you haven’t heard, EPA will not be granting any Section 18’s for Furadan 4F use this year for cotton aphids unless there are a number of control failures involving recommended rates of either Centric or Intruder. Both of these insecticides have been performing exceptionally well in other parts of Texas this year as well as across the cotton belt. You should not miss having Furadan 4F this year. These other materials are much more environmentally friendly and besides, they work very well.

Even though there is increasing spraying going on for boll weevils, trap catches are generally down this week. The reason for the increase? ----more hostable cotton fields.

There were no weevils caught in the Northwest Plains, Western High Plains or the Northern High Plains zones the week ending July 20.



Low weevil numbers were captured in traps in the Permian Basin and Southern High Plains/Caprock zones.

Average accumulative number of boll weevils caught per trap through the week ending July 20.

Zone	2003	2002	2001	2000
Northwest Plains	0.00001	0.0001	0.0127	0.1418
Western High Plains	0.00001	0.0003	0.019	0.5234
Permian Basin	0.0026	0.0001	0.0185	0.5706
Northern High Plains	0.00005	0.0042	0.0842	-----
Southern High Plains	0.00003	0.0024	0.2545	-----

Treated acreage so far has been very low with the exception of the Permian Basin zone, where the Texas Boll Weevil Eradication Foundation (TBWEF) is still trying to reverse a problem that developed as a consequence of volunteer cotton going undetected in fields replanted to sorghum last year. This zone remains the only real glitch in an otherwise very successful eradication program across the five High Plains zones.

The TBWEF has finally gotten back on track following all the June weather disasters that

destroyed hundreds of traps and disrupted the trap checking routine. The good news is that in spite of the Permian Basin Zone problems and earlier weather problems, eradication is still ahead of schedule and budget in our area. Once the program is brought to a close this year, we should be where we want to be. **JFL**

COTTON RESEARCH BRIEFS

Importance of beneficial arthropods in insect pest management in the High Plains.

A study conducted last year at the AG-CARES facility in Lamesa showed that the beneficial insect activity began during the cotyledon stage. The population complex of beneficial insects increased, as plants grew older and the number of insect pests increased. The

population abundance of beneficial insects exhibited two population peaks, the first in late June and the second occurring in mid-August.



Twice-stabbed lady beetle

We did not see a

meaningful insect pest population to explain the first peak of beneficial insects, but it appeared that the second peak in beneficial arthropod numbers followed the aphid population peak. Predaceous beetles (lady beetles and red-cross beetles) were the most dominant foliage-dwelling predators followed by spiders, predatory bugs, and lacewings during the first half of the cotton-growing season. Lacewings dominated the beneficial arthropod complex during late season.

A preliminary laboratory study showed a great potential of lady beetles, red-cross beetles, and minute pirate bugs in suppressing bollworm populations through egg predation. A starved adult convergent lady beetle could remove up to 115 bollworm eggs in 24 hours, whereas a

red-cross beetle and minute pirate bug removed 85 and 2 eggs per day, respectively.

Lady beetles and lacewings were the most effective predators of cotton aphids that removed 250 and 90 aphids per day, respectively. Other predators that were effective against cotton aphids included red-cross beetles (11 aphids/day), scymnus lady beetle (10



Green lacewing larva

aphids/day), and minute pirate bug (5 aphids/day). Despite a large abundance of hooded beetles in our cotton system, the laboratory feeding study showed that hooded beetles are not effective predators of cotton aphids.

Do recognize that these studies involved starved predators that were placed in small cages with their prey. This would not ideally represent the real world but would give some indication of predation potential. **MP**

PEANUTS, SORGHUM AND CORN INSECTS

Rootworms in peanuts. There was a fairly heavy egg lay by southern corn rootworms in the Gaines County area. Consultants are now seeing moderate numbers of rootworm larvae. This is a reminder that Lorsban 4E is NOT LABELED FOR POST-PLANT USE. Use of Lorsban 4E now would be off label. Lorsban 15G can be used now to prevent damage by rootworm larvae. I don't know of any other insecticide that is labeled and effective in this situation.



Corn rootworm larvae

We may have a tough time with sorghum midge this year, especially in fields that were replanted to sorghum late and/or failed to achieve a uniform maturity. Fields that complete flowering before early August will probably escape significant midge damage. However, sorghum midge completes a generation every 14 to



Sorghum midge

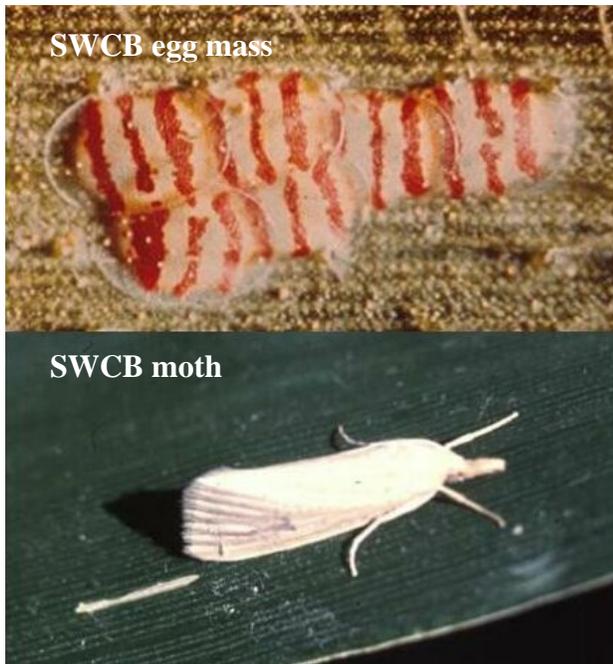
16 days, and will continue to build in numbers in August and September. Fields that flower later are at increasingly greater risk the later the flowering date. And because of the huge variability in planting dates we had this year we may be generating more midges than usual. On the positive side, we may have a significant gap in flowering between the early fields and the replant fields. If this happens, midges emerging from the early fields will have nowhere to lay eggs. This may break the cycle of population increase. Our guide, "Managing Insect and Mite Pests of Texas Sorghum"

http://lubbock.tamu.edu/ipm/AgWeb/PDFs/SorghumInsect98_b1220.pdf provides a lot more information on sorghum midge.

Fall armyworms, corn earworms, and corn leaf aphids are being found in sorghum.

Southwestern corn borers are flying now. Based on his computer model and real-world insect observations, Greg Cronholm, Pest Management Agent in Hale and Swisher counties, is predicting 50% adult emergence on July 19 for the Hale Center and Cotton Center areas. Edmonson can expect 50% emergence around July 24. This all matters because economically damaging infestations generally occur after 25% emergence in areas with abundant moths, and later in

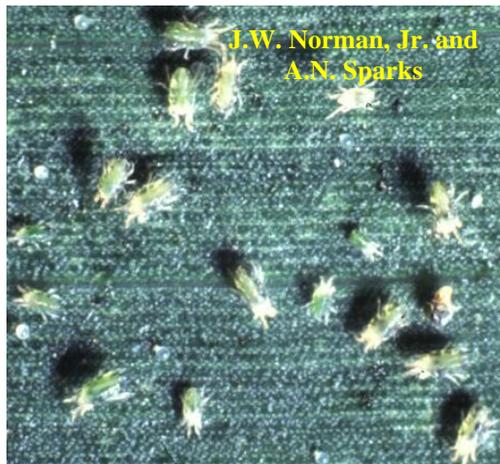
areas with less abundant moths. It is time to start scouting for SWCB and European corn borer. You can view a video on scouting for these insects in [Quicktime](#) or [Real Player](#).



SWCB egg mass

SWCB moth

Mite numbers remain fairly low, but this can change rather quickly. Any corn borer control decisions should be made with mites in mind. Dr. Robert Bowling, Pest Management Agent in Moore County, headed up a screening project for mite resistance to Capture (bifenthrin) last year. He found some fields with highly elevated mite tolerance to Capture north of Amarillo. Down in the Southern Plains area we could reasonably expect some tolerance to be in the mite populations, but far less than Robert found up north. Capture is still a good miticide in our area. Other pyrethroids will do a good job of corn borer control, but their use may make mite problems worse in the long run. An alternative for borer control that would avoid the potential downside



Banks grass mites

of pyrethroids would be Intrepid 2F, which is newly labeled for field corn. As mentioned in the [June 6 edition of FOCUS](#), we have no efficacy data for this product against corn borers. **PP**

PESTICIDE NEWS

Starane approved for kochia control in sorghum. The Texas Department of Agriculture has approved a crisis exemption for Dow AgroSciences' Starane herbicide (active ingredient fluroxypyr) for use in controlling kochia and other broadleaf weeds in grain sorghum. The exemption expires July 31, 2003.

Due to hundreds of thousands of acres of cotton that were lost due to storms earlier this year many growers replanted to grain sorghum. In areas where weeds such as kochia are a problem, these late grain sorghum plantings may suffer economic loss.

There is a 120-day replant restriction to all crops except wheat, barley, and oats.

According to the label farmers may expect additional control of cocklebur, morningglory, ragweed, velvetleaf, puncturevine, and other weeds. Suppression is expected for field bindweed, nightshade, and Russian thistle. Texas Cooperative Extension research has also noted fair control of pigweed.

For further information on the Section 18 for Starane contact your chemical dealer, the Texas Department of Agriculture, or your local County Extension office. **CT**

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