Texas Cooperative EXTENSION
The Texas A&M University System
http://lubbock.tamu.edu/ipm/AgWeb

FOCUS on Entomology

For South Plains Agriculture

VOLUME XLI, NO. 3 June 21, 2002

IN THIS ISSUE

COTTON INSECTS

There is nothing really new to report this week except that as more fields reach their squaring stage, there will be significantly fewer problems from thrips and the need to track square set and insects that might attempt to steal some squares from you.

The thrips situation has been highly variable this year. Some areas have had them real bad and others nary a problem. Localized heavy rains, high winds and sometimes hail have kept numbers down in some situations. But still there have been reports of some bothersome thrips infestation situations. Where thrips have been a continuous problem, no treatment has resulted in pristine cotton plants. Even the better treatments have produced plants with curled, gnarled, beat-up leaves somewhere on their stalks. Wind and blowing sand have been some reasons for these "ugly" plants. But still, you might expect that a Cruiser seed treatment, 3-5 pounds of Temik per acre or even 2-3 well timed foliar insecticide applications would have produced better results.

3 lbs Temik untreated

So are these failures? In my opinion---no. Erratic environmental conditions have influenced the uptake of these materials and constant pressure from high numbers of thrips have resulted in situations where foliar over sprays are necessary. You still got your monies worth out of your preventative treatments, but maybe not as much as in some other years. Just look at untreated cotton where thrips have been

a problem and tell me your Temik or Cruiser treatment failed you!

I have selected a few treatments out of twelve that are in Monti Vandiver's (Farwell-based IPM agent) and my insecticide screening test for thrips control. This test was planted NE of Farwell on May 11th with triple treated seed of PM2326RR.

Average number of thrips per plant in an insecticide test conducted NE of Farwell, Texas. 2002

Treatment	May 22 13 DAP *** Coty-ledons	May 28 19 DAP 1 true leaf	June 5 27 DAP 2-3 true leaves	June 12 34 DAP 4-5 true leaves
Untreated	1.8	7.8 (60) **	7.5 (60)	10.9 (77)
Cruiser Seed Treatment	0.2	2.2 (14)	5.9 (24)	14.2 (74)
Gaucho Seed Treatment	0.06	5.7 (53)	6.2 (45)	11.6 (78)
Temik 3.5 lbs./A	0.07	1.5 (13)	4.7 (23)	12.2 (59)
Foliar Orthene ET *	1.8	3.7 (46)	3.8 (11)	1.3 (17)

* based on our economic threshold of 1 thrips per true leaf present
** Number in ( ) is present immature thrips.
***DAP = Days After Planting.

The Gaucho seed treatment fell apart almost immediately, but the Cruiser seed treatment and Temik treatment held up for three weeks. I would have treated these two preventative applications with a foliar insecticide on June 5th based on both the total thrips number per plant exceeding the threshold but most importantly with clear indications of successful reproduction (over 20% immatures). The foliar ET treatment needed to be sprayed three times (and it was) to suppress adult thrips numbers and reproduction. All treatment then broke down at 34 days after planting, except the foliar ET, which had been sprayed the previous week and was still protected. We will know the final verdict on which treatment netted the best once we have captured yields at the end of the season.

Remember, as fields begin to square, the likelihood of further damage from thrips infestations is greatly diminished but not entirely eliminated under some circumstances. But generally this is the time to try to preserve natural enemies and build up their numbers for help on controlling later caterpillar and aphid problems. The three most obvious predators I have observed in fields have been the tiny crab spiders, several species of ladybeetles, and minute pirate bugs, both adults and wingless immatures.

Minute Pirate Bug Nymph

Minute Pirate Bug Adult

With more fields beginning to square each day, producers and consultants should turn their attention to scouting for cotton fleahoppers and Lygus bugs. Thus far we have been lucky with most fields have few if any of these square thieves. This could change overnight if they move all of a sudden out of adjacent weed hosts. Generally it takes at least a generation in cotton before there are sufficient numbers available to cause concern. So, no one should get caught with their pants down if they are scouting at least once-a-week.

The grasshopper situation has changed little since last week. There continue to be some fields in need of protection as more hoppers move into cultivated fields. Some localized heavy infestations do exist but these are more the exception than the rule. James Powell (consultant) did use 2 pints of methyl parathion against a grasshopper-problem cotton field and in his words—"smoked them". I would think that a rate as low as one pint may be effective too.

The Texas Boll Weevil Eradication Foundation (TBWEF) program continues on a roll this week catching very few weevils again after 9 weeks of trapping.

Average number of boll weevils per trap accumulated over 9 weeks.

	2002	2001	2000
NWP	0.0002	0.035	0.191
WHP	0.0004	0.041	0.849
PB	0.00012	0.035	0.242
NHP	0.007	-----	-----
SHP	0.003	-----	-----

Acres sprayed this past program week and accumulative acres sprayed to date are:

	Week ending 6/16	Accumulative
NWP	309	309
WHP	392	392
PB	0	0
NHP	8,138	8,196
SHP	23,114	24,666

Based on trap catches and sprayed acreage there are very few weevils flying around out there. If this trend continues, we should be able to eradicate this pest and go under budget. Our constant winds have presented a challenge for the program to treat acres in a timely manner. Also you are reminded to destroy all volunteer cotton in fields that were lost to weather and either left fallow or replanted to another crop. Otherwise the TBWEF will have to spray those fields at a cost to you.

Beet armyworm moth captures in traps run by the TBWEF continue on the low side this week, a trend we have observed this year.

Number of beet armyworms caught per trap for 1 week.

	2002	2001
NWP	9.7	330.4
WHP	20.3	63.2
PB	11.0	24.0
NHP	21.1	-----
SHP	23.4	-----

Most of this acreage is near towns and represents only a few of the many fields in the High Plains area. **JFL**

CORN, SORGHUM AND PEANUT INSECTS

Terry Mize (FMC Corp.) reported that Jay Linley is finding lesser cornstalk borer (LCB) damage to sorghum in Castro County. Fields had up to 10% stand loss. The geographical extent of the infestation is not yet known, but several High Plains crops are at risk.

Host plants of the LCB include peanuts, sorghum, corn, oats, soybeans, beans, peas, peppers, and tomatoes. There are three generations per year, so scouting for this pest should continue throughout the season. And to make matters a little more worrisome, LCB does very well in hot, dry weather. (But populations are reduced with overhead irrigation.)

LCB larvae live in the soil where they construct tunnels from silk intermixed with excrement and soil. The larva leaves the tunnel to feed on stalks at or just beneath the soil surface. New tunnels are constructed (and old ones abandoned) as the larva grows, and scouts often find several tunnels around the base of a plant. Young larvae are yellowish green with reddish pigmentation on the top. Older larvae are an iridescent bluish green to reddish brown with yellow to white stripes on top. There are six instars, the last of which is about 0.7 inches long. Generation time varies, but is around 32 days.

LCB can be a very serious pest of peanuts, especially late-planted peanuts, which are subject to stand reduction. LCB larvae injure mature plants by feeding on pegs, pods, stems, and roots. Pegs are cut off below ground level and developing nuts are hollowed out. Stems and roots are scarred and may be girdled. Peanut fields should be checked weekly. Look for feeding damage at the soil surface, larval tubes, and larvae. The economic threshold for irrigated peanuts is 10 percent infested plants before initial pegging or 15 percent after initial pegging.

Smaller corn or sorghum plants are at relatively greater risk from LCB damage. Larger plants are seldom affected. There are no established thresholds. Insecticides should be thoroughly watered in if applied.

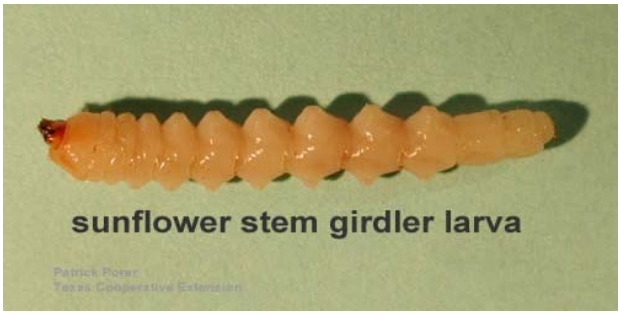
Grasshopper numbers vary widely, but continue to check edges of corn and sorghum fields near CRP, old wheat, pastures, ditches, and corners. Ten or more grasshoppers per square yard can cause economic damage to corn. Early border treatment is best because grasshoppers are tough to kill when they are larger, and they spread out more over time.

Spider mites (Banks grass mites) are still a developing threat to corn. Those lucky enough to get rain in the liquid form benefited from a slight reduction in the mite threat. Some of the fields I have looked at have high thrips populations. This is good because the thrips are eating mites. Fields should be scouted weekly to determine mite populations. Remember that Comite II applications must go on before large populations build up. And the question on everyone's mind is "will it pay to use Comite?" The answer depends on what the weather and beneficials will do in the coming weeks. Someone once asked Will Rogers for his advice on investing in the stock market. He said it was simple: "Buy a good stock and hold it 'till it goes up. If it don't go up, don't buy it."

Sunflower stem girdler (*Dectes texanus)* adults are emerging. The adult is a small, grey beetle with very long antennae. Early (late March) planted sunflower is at greatest risk, and late-planted (after June 1) sunflower often escapes significant damage. Larvae develop inside the stalk and girdle it before overwintering. There are actually three species that comprise the sunflower girdler complex, but *Dectes* is the biggest perennial problem. *Dectes* frequently infests 20 to 80% of the plants when rotation or deep plowing are not practiced.

Rotation will not necessarily ensure safety from stem girdlers. Fields as far away as three miles from areas where sunflower was grown the previous year experienced economic infestations in 2001. Weeds and non-crop vegetation also serve as alternate hosts. *D.*

texanus hosts include species in the sunflower genus (including wild sunflowers), anoda, cocklebur, soybeans, and ragweed. Presence of these plants may partially eliminate the benefits of crop rotation.



Emergence will continue for about 8 weeks, which makes insecticide applications for this single pest rather impractical. However, because of the high level of damage to some fields last year – even when the adults were found in low numbers – consider an insecticide application if you find the adults in the field. This is especially true for seed production fields. The adults are very difficult to find, so assume that if you find one there are plenty of others around. The normal insecticide applications for sunflower moth will kill girdler adults. Choose a long residual insecticide such as a pyrethroid over shorter residual products. **RPP**

REPLANTING AND LATE PLANTING GRAIN SORGHUM

Replanting grain sorghum after failed cotton involves some risk due to planting after cotton herbicide issues and effectively buster planting. Growers usually know what to do (watch those chemical labels!), so let's discuss agronomics. Primary concerns for replant and late plant sorghum involve: 1) appropriate seeding rate based on planting conditions and soil moisture, both for germination and stored soil moisture, and 2) hybrid maturity and selection.

Seeding rate: Many producers err on the side of planting too much seed per acre. An August, 2001 survey of replanted sorghum fields in Lubbock and Hockley Counties indicated a range of plant populations from 20,000 to 61,000 plants per acre (average 35,000). When translated to seed drop this becomes roughly 26,000 to over 80,000 seeds per acre (average 46,000). Using an approximate average of 16,000 sorghum seed per pound, the result is seeding rates ranging from 1.6 to 5.1 lbs./A (average 2.9, median 2.5 lbs. per acre). With low moisture conditions that continued through the rest of 2001, many if not most of these fields never produced grain. Those fields that had seeding rates below median levels were much more likely to produce grain.

When it comes to dryland sorghum seeding rates the goal is to make a crop, not a mistake. The mistake is too high seeding rates. Producers may need to estimate that seeding rates could possibly be adjusted up if you expect problems from your cotton herbicides, but it appears that many producers are still planting too much seed in spite of that potential risk.

With too many plants per acre, in droughty conditions producers are at risk of inadequate moisture *per plant* during flowering and grain fill to produce grain. In managing risk, know that most grain sorghum hybrids at modest plant populations are able to flex upward to meet the yield potential of favorable conditions. This is less risky agronomically and economically than having a high plant population crop under droughty conditions.

Suggested sorghum seeding rates are influenced by the *available* soil moisture in soils of different textures. Generally, sandy to sandy loam soil can store about 1" of available soil water per foot; a silty loam to clay loam soil can store about 1.5" inches per foot; and a clayey soil can store about 2" per foot. Typically, it takes 6-8" inches of available moisture (rainfall or in the soil) to bring a sorghum crop to the point of grain production, and each additional 1" of water should produce 350-425 lbs. of grain.

For most dryland sorghum production in the Texas South Plains, when soil profile moisture is adequate (>4" of available soil moisture), a good target is 30,000-35,000 seeds/A. If soil moisture is low (2-4"), a seed drop of 25,000-30,000/A is advised. For any condition with poor soil moisture, especially as plantings approach July 1, consider 20,000 seeds/A. For limited irrigation (6-10") with low soil profile moisture conditions, target 40,000-45,000 seeds/A, but if soil moisture is good, consider 50,000-55,000 seeds/A. For full irrigation levels, target 80,000 seeds/A on June 1, but by July consider 100,000-110,000 seeds/A for non-tillering hybrids and 80,000-90,000 seeds/A for tillering hybrids.

Planting dates and sorghum hybrid maturity. In general, Extension suggests the following guidelines as criteria for the last recommended planting dates for sorghum maturity classes in the Lubbock region:

Counties	Medium Maturity	Early Maturity
Parmer, Castro, Bailey	June 20	July 1
Swisher, Lamb, Hale, Floyd, Cochran, Hockley, Lubbock, Crosby, Yoakum, Terry	June 25	July 5
Lynn, Garza, Gaines, Dawson, Borden, Scurry, Andrews, Martin, Howard, Mitchell	June 30	July 10

These suggested dates consider the length of sorghum maturity vs. historical averages for cool fall weather, which can be expected ahead of frost. Although these sorghum maturity classes may be planted later and be successful in many years, these guidelines should help producers understand when risk increases relative to achieving grain yield potential. If you must consider a very late sorghum planting, choose among hybrids that have estimated 'days to maturity' of less than 90 days. Check among seed dealers for suggestions.

Texas Cooperative Extension publishes last recommended planting dates for grain sorghum hybrids in the Texas South Plains. For a copy of the summary prepared in 2001, consult "Recommended last planting dates for grain sorghum hybrids in the Texas South Plains" at http://lubbock.tamu.edu/sorghum/index.html

For limited dryland and irrigated sorghum hybrid yield trial results from Dawson County (1997-99), consult the above internet link. For Lubbock and Halfway sorghum data consult: http://soilcrop.tamu.edu/research/crops/corn-sorghum/croptesting/ This website has information for irrigated grain sorghum from 1997-2001 and dryland from 1997-1999. **CT**

TEXAS COTTON MANAGEMENT RESOURCES

Cotton producers, consultants and other involved in the management of cotton have several resources available from the Texas Cooperative Extension to help in many aspects of cotton production. You can call toll-free (888-900-2577) to order any of the publications listed below or obtain an order form on the web at:
http://texaserc.tamu.edu/http://texaserc.tamu.edu/

1) *Texas Cotton Production – Emphasizing Pest Management.* This new publication consolidates cotton information from several disciplines from across the state into

one guide. It combines discussions on soils, irrigation, agronomics, diseases, weeds, insects, fertilizer, weather—covering an entire year's production cycle. This 76-page spiral-bound book costs $15.00.

2) *Field Guide to Predators, Parasites, and Pathogens Attacking Insect and Mite Pests of Cotton.* This handy pocket guide features 48 predators, parasites and diseases that attack common pests of cotton. It contains 96 full color photos of the most common "beneficials" in cotton. Cost is $5.00.
3) *Scouting for Cotton's Six Most Wanted.* This 24-minute videotape discusses the integrated pest management approach to cotton insect pests including basic concepts for monitoring cotton fields. Sections cover thrips, early-season cotton aphids, early- and mid-season boll weevils, mid-season aphids, bollworm/budworms and beet armyworms. Cost is $10.00.
4) *Beneficial Insects: Our Allies in the War Against Cotton Pests.* This 24-minute videotape discusses the role of natural enemies in cotton and details different methods of scouting for natural enemies. Major groups of natural enemies are covered including diseases, parasites and predators. Most of the common beneficials are featured with live shots. Cost is $10.00.
5) In addition to these resources and our web site visit the Department of Entomology website at: http://entowww.tamu.edu/

JFL

NEW INSECTICIDES AND REGISTRATIONS

Several new registrations have occurred since last year for cotton insecticides:

1) Furadan 4F is again available this season under a section 18 for control of aphids in cotton. A maximum of two 8 ounce per acre applications can be made per field with a 27-day pre-harvest interval. There are specific restrictions in order to protect endangered species (see section 18 announcement and label). There are also guidelines provided to minimize problems associated with drift. Closed mixing and loading systems must be used. Posting will be required as well for worker protection. This exemption expires October 31, 2002. EPA, TDA and Texas Cooperative Extension encourage producers to try either Centric or Intruder for aphid control. These new products have been very effective in my tests and should be good alternatives to Bidrin if Furadan is no longer available in the future.
2) FMC and Dow AgroSciences have combined two of their insecticides, bifenthrin (Capture) and spinosid (Tracer) to create a third insecticide known as Double Threat. The purpose of this "merger" was to provide broader spectrum control. In our case, it would control plant bugs, bollworms, thrips, budworms, beet armyworms, fall armyworms and fleahoppers.
3) Aventis (now merged with Bayer to create Bayer CropSciences, released Intruder (formally known as Assail) for control of aphids, whiteflies, plant bugs and fleahoppers in cotton. It is also labeled as an ovicide for bollworm/budworm and whitefly. It has been an excellent aphicide in all my tests.
4) There are potential restrictions for the use of Bidrin in the future if implemented by EPA. One of these would be to eliminate aerial application of Bidrin after 2004.
5) Centric, a Syngenta product, is available as a 40WG formulation this year. Last year it was available only as a 24WG material.
6) Bayer CropSciences has released Trimax 4F this year. It is a new formulation of imidacloprid marketed formally only as Provado 1.6F. **JFL**

MORE PESTICIDE INFORMATION

The new private applicator training manual (B-1648) was released in May. County Extension Agents have received copies of the new manual and the revised Texas Department

of Agriculture (TDA) laws and regulations book. Information concerning pest management and regulatory requirements has been updated. Also, information pertaining to vertebrate pests has been revised. The new manual costs $20, but sensibly, most agent-sponsored training this summer will use the old manual since that is what most people own.

Information on Herbicide Resistant Weeds (from The Chemogram, Texas Cooperative Extension Ag. and Environmental Safety). If you are interested in herbicide resistance, here is a useful resource. An international group of weed scientists has produced an international survey of herbicide-resistant weeds, including 258 biotypes and 156 species (94 dicots and 62 monocots). The data fields can be searched by nomenclature (both common and scientific), location, or herbicide mode of action. You will also find recent publications on herbicide resistance and links to other materials. It is all on the web at www.weedscience.org. **RPP**

2002 COTTON ENTOMOLOGY PROJECTS

We are involved in many cotton entomology projects this year. We include several High Plains IPM agents, Dr. Randy Boman, Jason Jarrell (WTAMU graduate student, Roger Haldenby (PCG) and myself). We are continuing our study at AGCARES looking at how a cotton plant compensates for early square loss. This information will help refine our fleahopper thresholds. We are running the boll weevil GRID trapping program one last time, before most of the weevils are eradicated. We will again attempt to investigate the use of commercial sprinklers as a tool to eliminate sticky cotton contaminated by aphid honeydew. We are continuing our COTMAN studies determining the best time to terminate insecticide applications for bollworms and plant bugs late in the season and when to best apply harvest aids. Another COTMAN project is looking at timing of late season irrigation termination. We are investigating different ground application techniques to optimize coverage with some of the newer insecticides. Several insecticide screening trials are planned including those for thrips, aphid, armyworm, bollworm and plant bug control. This is a short list and does not include all studies. **JFL**

NEWSLETTER CONTRIBUTORS

James F. Leser, Extension Entomologist, Lubbock
Patrick Porter, Extension Entomologist, Lubbock
Calvin Trostle, Extension Agronomist, Lubbock

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

For more information call or e-mail:
806-746-6101 or
m-coffman@tamu.edu

Editor: James F. Leser
Web Site Layout: Michelle Coffman