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Cotton Insects
Thrips

Thrips populations have been low to moderate throughout much of the High Plains, but fairly high west and northwest of Lubbock. However, fields that received heavy rainfall appear to have had their thrips populations temporarily reduced. Cotton that is currently emerging will undoubtedly suffer the greatest influx of thrips. We have found extremely large populations of thrips inhabiting yellow clover, vetch and other flowering weeds that are growing in the ditches and riparian areas. Thrips are also prevalent in the wheat that is drying down.

Cotton that had been treated with Temik in-furrow, or with Cruiser seed treatments have looked good thus far with plenty of moisture to move the insecticide into the root zone; but keep in mind that these products will typically play out 3 to 4 weeks after planting and may need to be followed up with foliar treatments. Additionally, in area experimental tests, cotton seeds that were treated with Avicta Complete Pak (contains Avicta, Cruiser and Dynasty CST) or Aeris (contains thiodicarb, Gaucho Grande, and Trilex) looked similar to Temik and Cruiser in efficacy. Cotton that is currently being replanted may not
benefit much from an in-furrow insecticide or seed treatment for thrips control because by the time these plants emerge, the thrips populations may have often crashed. Once temperatures begin to be consistently warm here on the High Plains, thrips populations have traditionally subsided.

All cotton, regardless of prior treatment, needs to be monitored at least weekly for thrips control determination. Thrips prefer to feed on the underside of the leaves and primarily on the newer growth. Thrips, particularly the immature stages, are somewhat cryptic and like to hide in curled leaves. Thus when scouting for thrips, it is important to tease open curled or folded leaves using a knife or pencil to find the thrips hiding within. One thrips per plant should be used as the treatment level from plant emergence through the first true leaf stage, and the treatment threshold is one thrips per true leaf thereafter until the cotton has 4 to 5 true leaves. If there was a soil applied insecticide or seed treatment used for thrips control, there should be 30% or more immature thrips present to justify a subsequent treatment. The presence of immatures will indicate that colonization is occurring and that the insecticide is playing out. See the Crop Production Guide Series on thrips for more information on thrips management. We have also posted a video on recognizing thrips damage in cotton.

**Lygus**

This year we are seeing many non-prevalent weeds appearing in the High Plains area due to the heavy spring rains. This allows us to sample more weed species than in a more typical spring and early summer. *Lygus* (adults and nymphs), has been plentiful in many of the weed species. We have found large numbers of *Lygus* inhabiting a number of Aster species, vetch, Indian blanket, and evening primrose throughout the High Plains. Sweep net samples have typically picked up 10-20 *Lygus* per 100 sweeps, but will occasionally pick up as many as 60 per 100 sweeps. When the rains stop and many of the weeds start to "dry down", it is possible that *Lygus* bugs could move in fairly large numbers to some cotton fields, although other more preferred hosts may become available. Additionally, *Lygus* is currently numerous in alfalfa. Clyde Crumley, IPM Agent in Gaines County, recently averaged 50 *Lygus* per 100 sweeps in alfalfa. It is questionable whether late planted cotton will be able to compensate for early square loss this year. Thus, early infestations of *Lygus* should not be ignored.
Asters appear to be a favored wild host for *Lygus* DLK.

**Cotton Fleahopper**

Apurba Barman, a graduate research student under the direction of Dr. Megha Parajulee and other state-wide entomologists, has recently begun surveying different weed hosts associated with cotton in an effort to locate the major contributing weed species for the cotton fleahopper. Mr. Barman has sampled numerous weeds in Lubbock County such as horseweed, silverleaf nightshade, Russian thistle, wild mustards, kochia, Texas blueweed and pigweed, but has thus far not found many cotton fleahoppers. However, it is evident that horsemint, a weed with very limited distribution, appears to be a favorable local host.

**Pink Bollworm**

Pink bollworms appear to be lower than previous years in Gaines, Terry and Yoakum counties. Clyde Crumley, IPM Agent in Gaines County, is reporting less than one pink bollworm moth per trap per night, whereas last year at this time some traps were averaging over 15.

**Boll Weevil Eradication**

The boll weevil eradication program is showing good progress and results in the southern and eastern portions of Texas, and although they have been declared as functionally eradicated or suppressed in the western half of Texas, a few weevils have been trapped in the St. Lawerence and Permian Basin eradication zones.

<table>
<thead>
<tr>
<th>Eradication Zone</th>
<th>Weevils per trap per week ending, June 3</th>
<th>Acres treated</th>
</tr>
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<td>2007</td>
<td>2006</td>
</tr>
<tr>
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<tr>
<td>South Texas/Winter Garden</td>
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<td>0.001</td>
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<tr>
<td>Upper Coastal Bend</td>
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<tr>
<td>Southern Blacklands</td>
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<td>0.018</td>
</tr>
<tr>
<td>St. Lawerence</td>
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<td>0.003</td>
</tr>
<tr>
<td>Permian Basin</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Aphids**

Last week many cotton fields in the area had quite a few cotton and cowpea aphids. Some fields were averaging 3-4 aphids per plant with established colonies, but after the heavy rains, these populations have crashed. Aphids can still be found and should be monitored. A few aphids in early-season cotton is not necessarily a bad thing since they tend to attract beneficial species that will help out later in the season; but if the aphid populations bloom, treatment may be justified.

**Saltmarsh Caterpillar**

The plethora of weedy hosts in the ditches and CRP land has resulted in a large crop of saltmarsh caterpillars throughout much of the South Plains. The larva of the saltmarsh caterpillar is hairy and grayish when it hatches, but darkens to a yellow, brownish to almost black color with yellow lines as it grows. Full grown larvae can be
Saltmarsh caterpillars are most common during wet springs and may move into cotton from weedy areas in large numbers. They can quickly defoliate and destroy a stand of seedling cotton. Saltmarsh caterpillars are notably susceptible to Bt, and Bt cotton varieties should exhibit some degree of resistance to saltmarsh caterpillar feeding, especially the Bollgard II and WideStrike varieties. However, some data suggest that Bollgard may not be as effective. Regardless, there is not a lot of data available regarding this pest infesting early-season Bt cotton, so Bt cotton fields should be closely monitored if infested. If feeding is noticeable, treatment maybe justified. Non-Bt varieties will undoubtedly need to be treated when large numbers of saltmarsh caterpillars move into the field. Pyrethroids should be effective, and growers can often focus treatments to the margin of the field adjacent to the pest source.

**False Chinch Bug**

False chinch bugs are occasionally troublesome in cotton grown in the eastern counties of the Texas South Plains, particularly during wet springs. Steven Davis, IPM Agent in Floyd and Crosby counties, reported finding large numbers of false chinch bugs feeding in mustards, primarily flixweed, in ditch banks near cotton fields in Crosby County. Once the mustards begin to dry down, it is not unusual for this pest to move into adjacent cotton. Individual false chinch bugs do little damage, but large populations can severely injure or kill seedling cotton. On warm days, false chinch bugs are easily missed, since they prefer to hide under field debris and clods, so care must be taken to inspect these types of habitats when scouting.

False chinch bugs are about 1/8th inch long, narrow bodied and are brownish gray in color. The immature bugs have inconspicuous red markings on their bodies. Be careful not to confuse false chinch bug with the predacious bi-
geryed bug, which is wider and has a flatter head. Currently, Texas Cooperative Extension has no guidelines for managing false chinch bug in cotton. However, in the past Acephate has proven effective although the pest is not listed on the label. In California, pyrethroids are often used for false chinch bug control in cotton. Usually applications can be relegated to the field margins where the false chinch bugs are migrating into the field.

DLK

Cotton Pests Around the State

Rio Grande Valley (reported by Manda Cattaneo, IPM Agent, Cameron, Hidalgo, and Willacy counties)

Cotton fleaehopper and spider mites have subsided, but cotton aphids have become a problem with some fields averaging over 100 aphids per leaf. There were several reports of control failure with some insecticides. Fortunately, heavy rains have helped reduce aphid populations. Bollworms larvae are ranging from 0 to 10 per 100 plants.

Southern Blacklands (reported by Dale Mott, IPM Agent, Milam and Williamson counties)

Aphids remain light but moderate numbers of spider mites continue to show up in some fields. Cotton fleaehoppers are ranging from 0-8 per 100 plants. Thrips have continued to be relatively high throughout the area, although most fields are beyond the stage where economic damage can occur.

Middle Coastal Bend (reported by Stephen Biles, IPM Agent, Calhoun, Refugio, and Victoria counties)

Cotton fleaehoppers have been increasing and localized areas may require curative action. There have been aphid flare ups, and in many fields beneficial insects have been instrumental in suppressing the population. Where the aphids have required treatment, control failures have been a problem and this has raised a lot of concerns.

St. Lawrence Valley (reported by Warren Muter, IPM Agent, Glasscock, Reagan, and Upton Counties)

Thrips numbers have been moderate in area fields but the rapid growth of the cotton has out paced them for the most part. Saltmarsh caterpillars are common and actively moving, but most of the cotton are Bollgard II varieties and they have not suffered any damage.

Southern Rolling Plains (reported by Richard Minzenmayer, IPM Agent, Runnels and Tom Green counties).

Cotton ranges from still in the bag due to wet field conditions to 4-5 true leaf stage. Thrips damage is evident in fields which were not treated with at planting insecticides. Grasshoppers are numerous in pastures and road ditches and could become a problem as the weeds dry down. There are ample wild hosts for cotton fleaehopper and there is concern that these may pose a significant problem as the weeds dry down.

Bollgard II Refuge Requirements Change

A press release from Monsanto indicates that refuge requirements for Bollgard II have changed. However, the Bollgard and WideStrike refuge requirements have remained UN-CHANGED. What this means for High Plains producers who may be in a replant situation is this: If the producer needs to replant fields, it is possible to replant newer Bollgard II varieties without having to deal with any refuge. In Texas, eligible areas include all counties except the Trans-Pecos counties where pink bollworm eradi-
cation efforts are underway (Brewster, Crane, Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Val Verde, Ward, and Winkler counties). In these counties growers must adhere to the previous refuge rules. Additionally, the northern 10 Panhandle counties of Carson, Dallam, Hansford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts and Sherman counties are still prohibited from planting any Bt-cotton varieties.

Growers planting, Bollgard or WideStrike varieties must still adhere to the respective companies’ technology use agreements excluding the natural refuge option. For more information regarding Bt cotton insect resistance management for these varieties, please refer to the following resistance management product use guides, Bollgard 2007 IRM Guide and Widestrike Product Use Guide.

RKB & DLK

Cotton Agronomy

Overview of Season Thus Far

Over the last few weeks, High Plains producers have struggled to get the cotton crop established. We have encountered significant rainfall, lower than normal daytime high temperatures and damaging thunderstorms. It is apparent that this is most likely one of the most difficult starts to a High Plains crop in my 11 seasons here. Graphs of May and June 5 temperatures indicate that the daily highs are well below normal. In fact Lubbock's May cotton heat unit accumulation was only about 217 DD60s (27% below normal) which is the coolest start since 1997.

Some areas have been slammed by weather events, including Lamb, Bailey, Gaines, Hale, Hockley, Lubbock, Cochran counties. Most of the region has been blanketed by high rainfall amounts. Other areas were probably blasted by hard driving rainfall, hail, and high winds over the last 10 days or so. We even lost some research trials at the Lubbock Center last Saturday night. It is difficult to determine the lost acreage at this time. Compounding the problem is the amount of wind encountered on Wednesday and Thursday. It will take some time to sort out this issue.

All this comes on the heels of insurance final planting dates and closing of the late planting period for some counties. There is considerable concern out there in many areas hit by weather events, and crop insurance issues have been on the front burner. For more information on the crop insurance situation, go to the Plains Cotton Growers Website.

I surmised a couple of weeks ago that we were about 30% behind our 5-year average planting progress. Many northern county and higher elevation county producers ended up planting somewhat later than they desired. Southern counties are still planting due to the amount of rainfall obtained across their counties. Although many fields north of Lubbock were planted in early May the lack of heat units due to cold temperatures are resulting in poor growth at this time. During a field inspection tour, we were able to see some early May planted cotton that was remarkably healthy in spite of all of the cool temperatures that were encountered after planting. Seedling roots were very healthy in several fields that had not been damaged by weather events. Several projects planted in producer fields also exhibited good seedling health. With the cool temperatures and possibly more rainfall in the forecast, just how long this will continue is unknown at this time. The good news is that the southern counties which are heavily dryland production have full soil profiles and some time yet to plant before the final planting dates. Lubbock finally reached 90 degrees for the first time this year on June 6 and is expected to do so again on June 7.

Roundup Ready Flex Seed Block Label Changes
I have received notification that Monsanto has recently received supplemental labeling for Roundup Original Max and Roundup Weather Max use on cotton grown in seed blocks. The supplemental label for both Roundup Weather Max and Original Max allows growers to spray Roundup Ready Flex varieties grown for seed production over-the-top (OTT) from emergence up to seven days prior to harvest. Prior to the supplemental approval growers could only spray OTT until first bloom.

Making Replant Decisions

Thunderstorms have wreaked havoc in some areas. Because of this it is important to inspect fields to determine the amount of damage incurred. Replanting decisions vary from producer to producer and many times county to county. Many times, it is important to get a handle on the root health of the plants, stem bruising, etc.

Lost field in Sudan, Texas

Seed companies have replant programs providing full or partial seed replacement. For good information on this, go to the drought relief page of the Plains Cotton Growers website.

Dr. Robert Lemon and I are in the process of developing a new departmental publication utilizing the older publication entitled Making Replant Decisions. That publication has been used for the last several years, but we have updated the text. We are hoping to get the full publication out soon which will include some good photographs. Making Replant Decisions in Cotton - 2007 is available here.

Glyphosate Brands, Monsanto Roundup Rewards and Drought Relief Programs

Many glyphosate herbicide brands are available today (including Roundup WeatherMax, Touchdown, Glyphos, etc). Be careful to check the label to make sure they contain the same active ingredient. Generally, only the salt formulation and surfactants are different. The differences in the efficacy of these materials for weed control are generally very minimal according to various weed scientists.

Producers should consult the information provided by Monsanto relative to using approved Monsanto brand Roundup formulations for burn-down or in-crop applications, as the Roundup Rewards Program may be voided. Contact your local Monsanto representative concerning these issues.

Cotton Physiology Today Newsletter

Dr. Bill Robertson with the National Cotton Council continues to generate excellent publications pertaining to cotton production. The second 2007 newsletter was co-authored by Dr. Bill Robertson, Dr. Craig Bednarz (Texas Tech University and Texas Agricultural Experiment Station), and Dr. Charlie Burmester (Auburn University). Growth and Development - First 60 Days is the title of this publication. This outstanding publication includes discussions of both normal and abnormal development, including some excellent photographs of bizarre square formation. To subscribe to this newsletter, send an email to: CPTNewsletter@cotton.org with a request to be added to the distribution list. RKB
Cotton Disease

There have been several reports of seedling disease over the past two weeks, and we may not be out of the woods yet. Poor stand emergence has been observed in some areas around the region. While *Pythium* spp. can cause seed rot and pre-emergence damping off, the primary cause this season has been attributed to *Rhizoctonia solani*. Infected plants exhibit dark brown, sunken lesions on the hypocotyl. In addition, the fungus can also lead to reduced stands by infecting young seedlings, causing a post-emergence damping-off. Current seed treatments provide adequate levels of protection against seed rot and pre-emergence damping-off; however, seedling disease control may decline over time.

Several factors may affect the level of control achieved with seed treatments. First and foremost is treatment selection. Fungicides can essentially be divided into two group’s contact or systemic materials. This designation reflects their impact on disease development. Contact materials protect tissues from infection by a pathogen. In addition to protecting tissues from infection, systemic materials are absorbed by the plant and capable of killing the pathogen after infections occur. Therefore, the potential for post-emergence damping-off is greater for contact fungicides. Examples of contact fungicides include Maxim, Captan, or Thiram, whereas, Baytan, Dynasty, Apron, and Allegiance have systemic activity. Another factor affecting the development of seedling disease is the residual activity of the product(s).

Fungicides used to control seedling disease provide maximum protection for a limited time. The residual activity of fungicides applied on the seed is typically 14 to 21 days after planting, whereas, in-furrow applications may provide extended protection (21 to 28 days after planting). This is due in part to the increased amount of product used in-furrow. In addition, the environmental conditions experienced during this time may potentially impact product availability. We have provided a table that summarizes chemicals for control of cotton seedling diseases.

Pythium or Rhizoctonia symptoms

Stunting caused by black root rot

The cool wet temperatures experienced over the past several weeks have also favored growth of *Thielaviopsis basicola* and development of black root rot. Symptoms of this disease may go unnoticed unless plant roots are examined. Cotton seedlings infected with this fungus will have severe blackening on the root and hypocotyl. As a result infected plants may be severely stunted and develop more slowly than uninfected plants. In instances where tissues below the epidermis appear healthy, root systems may recover; however, in severe cases where tap roots are completely degraded, the production of lateral roots will be required to compensate the dysfunctional root system. Limited seed treatments are available for managing black root rot, and consist of Nu-Flow M, Systhane 40 WP and Baytan 30 Flowable. See the accompanying table for addi-
The 7th annual edition of “2007 Alternative Crop Options After Failed Cotton and Late-Season Crop Planting for the Texas South Plains” is now available from extension agronomist Calvin Trostle. Information for replant options, where to obtain contract price and production information, etc. are compiled for over ten crops. The document is available via county Extension offices, the Lubbock Center, or from the Lubbock Research and Extension Center website at http://lubbock.tamu.edu/cotton/pdf/cropreplantoptions07.pdf

Crop Replant Options Limited When Staple Herbicide is Used

Several producers have learned that Staple use in 2007 or 2006 has severely restricted replant options. Of primary importance, Extension emphasizes the label restriction regarding no grain sorghum the year after Staple is applied. The only immediate option for 2007 production
replanting to another crop if Staple-treated cotton is lost is sulfonylurea tolerant soybean (STS), which has cross-tolerance with Staple. But the South Plains is not really soybean country, and the availability of STS soybeans is problematic, as they likely must be ordered and shipped in from Arkansas or other areas. Express herbicide tolerant sunflower (Pioneer) would also be permissible, but it is not yet labeled and Pioneer reports that no Express sunflowers are available to this region in 2007.

The next near-term rotation crop option after Staple is to plant small grains after 4 months. Aside from small grains, no other crop has a rotation restriction of less than 9-10 months for Texas, and then ONLY if soils have been deep tilled. Staple is not labeled for loamy sand soils (which predominate in much of Terry, Yoakum, Gaines, Dawson, and Martin Counties) or soils with <0.5% organic matter. The high rainfall we have received this year may diminish possible Staple effects from 2006 applications, but there is still a degree of risk here that we cannot quantify.

**Grain Sorghum Seeding Rates**

As noted in the last edition of FOCUS, farmer seeding rates for many grain sorghum fields, whether irrigated or dryland, are higher than they need to be. Extension’s base seeding rate for dryland in the Texas South Plains when soil moisture is at its highest is about 30,000-35,000 seeds per acre. A basic sorghum seeding rate calculator is outlined at [http://lubbock.tamu.edu/sorghum/pdf/sorgseedingratecalc07.pdf](http://lubbock.tamu.edu/sorghum/pdf/sorgseedingratecalc07.pdf). These example calculations can be used to determine your seeding rates based on available soil moisture at planting, median 3-month rainfall during growth (set at 6” for all projections), and the anticipated amount of irrigation you will apply. If you would like a Microsoft Excel version in which you can plug your own numbers in, contact Calvin Trostle.

**Sunflower Markets Expand in South Plains**

Sunflower contracting in Texas and elsewhere has become aggressive, particularly for oilseeds, as the industry claws for acres to meet increased domestic U.S. demand. Due to available prices, there appears to be more interest from growers in planting sunflower after other failed crops.

The following text lists information for oilseed sunflower (mainly NuSun mid-oleic oilseed and newer high-oleic oilseed). All oilseed prices have a standard base of 40% oil with a 2-for-1 premium/discount for oil content above/below 40%. For example, if a grower delivers at $16/cwt. with 41% oil, then he is paid at $16.32/cwt.

Red River Commodities (Lubbock, TX, 800.763.9740) contracts any oilseed at ~$16.00/cwt for the Lubbock birdfood plant. There is no penalty/premium for oil content. Delivery is available at Lubbock, Petersburg, Plainview, Muleshoe, and Bushland.

High Plains Oil Seeds, Inc, (in Moore Co., north of Dumas; 806.966.3000) is contracting...
high oleic oilseed sunflowers with a newly opened delivery site in Brownfield offering $17.00/cwt. delivered to Brownfield Seed (806.637.6282), or $18.00/cwt. if delivered to Dumas/Sunray.

Texas A&M has tested high oleic hybrids since 2005. High oleic oil contents have averaged slightly lower than NuSun, but yields have been comparable. Gross receipts due to the high oleic price premium are comparable.

Confectionary sunflower contracting is still available from Red River in Lubbock, priced at $21/10 for differing seed sizes based on grading. Normally, allow at least 4-5% for trash. Current delivery points include Lubbock, Petersburg, Plainview, Muleshoe, and Bushland.

Sunflower production resources for West Texas are available on the web at http://lubbock.tamu.edu/sunflower.

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**Pesticide Update**

Bidrin 8 insecticide recently completed the re-registration process and has a new label. A key change on the "new" label for Bidrin (dicrotophos, AMVAC) is that it cannot be used between pinhead square and first bloom. This will limit use for cotton fleahopper control (product bearing the "old" label may be used during this period). AMVAC is working towards a possible supplemental label to address this situation for cotton fleahopper control in future seasons but it will not be available for the 2007 season. DLK

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**Texas Tech Project Needs Playas**

Dr. Nancy McIntyre at Texas Tech University is looking for some playa lakes on the Southern High Plains were she can continue to survey dragonfly and damselfly species. I have worked with her for many years, and you can trust her. I have attached a brief description of her project, and I would encourage you to contact Dr. McIntyre if you know of any playa lakes that might help her conduct her survey.

This is the same Dr. McIntyre that led the larger black flour beetle project to help the cotton industry with the pest that develops in gin trash. She is a friend of growers on the High Plains, and it would be a good thing to help her if you can.

RPP

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A damselfly

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Useful Web Links

Applied Research Reports (Goldmine)
Texas High Plains ET Network
Irrigation at Lubbock
IPM How-To Videos
Lubbock Center Homepage
Texas Agricultural Experiment Station Home
Texas Cooperative Extension Home
Plains Cotton Growers

County IPM Newsletters

Castro/Lamb
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