



INSECTS AND WEEDS IN FOCUS

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COASTAL BEND CROP TOUR SCHEDULES

The following dates have been set for crop tours. Please contact appropriate County Extension Agents for specific information about the tours; there may be some counties that will not conduct tours. RDP

COUNTY	DATE
Kleberg 361/595-8566	May 30 - PM
Karnes 830/780-3906	June 1 - AM
Bee 361/362-3281	June 2 - AM
Goliad 361/645-8204	June 2 - PM
Jim Wells 361/668-5705	June 5 - PM
Refugio 361/526-2825	June 6 - AM&PM
San Patricio 361/364-6234	June 7 - PM
Wharton 409/532-3310	June 8 - PM
Nueces 361/767-5223	June 9 - AM/PM
DeWitt 361/275-5132	June 13 - PM
Corpus Christi 361/265-9203	June 14
Victoria 361/575-4581	June 15 - PM
Calhoun 361/552-9747	June 16 - PM
Colorado 409/732-2082	June 19 - PM
Fort Bend 281/342-3034	June 20 - AM
Jackson/Matagorda 361/782-3312	June 20 - PM
Lavaca (tentative) 361/798-2221	June 22 - PM

COTTON INSECT REPORT



Cotton this week around the Coastal Bend ranges in maturity from approximately first square to fields that are starting to bloom heavily. Most of the rain last week was received in the Kleberg County area with reports of from

2 to 5 inches with some serious hail damage occurring in the Brookshire area south of Ricardo. Other parts of the Coastal Bend reported no more than an inch or so of rain. Hence, a timely rain is still needed in most of Nueces and San Patricio Counties.

The region's cotton has now pretty well progressed past the thrips damage window so scouting specifically for thrips is no longer necessary. The aphid situation in the area improved greatly over the past two weeks. This improvement can be attributed to the continuing influx of beneficial insects (lady beetles, pirate bugs, parasitic wasps, etc.), rains that reduced aphid populations in some areas, and a fungus that is reportedly attacking aphid colonies. At this time we believe that spraying for aphids should be postponed for at least 48 hours after reaching potential treatment threshold numbers to allow the aforementioned natural factors to potentially reduce aphid populations. The same situation is occurring in sorghum with greenbugs and yellow sugarcane aphids. Populations increased greatly about a week ago, but have since declined because of beneficial insects and pathogens.

Another reason we are suggesting that producers and consultants refrain from insecticide applications for aphids (unless immediately necessary) is our concern about the impact these widespread applications will have on secondary insect pests as the cotton season progresses. A great majority of this area's cotton fields have been sprayed for aphids this season, many multiple times. Consequently, we are concerned about the potential for beet armyworm (BAW) outbreaks and an earlier than normal occurrence of the cotton bollworm/tobacco budworm complex. Multiple early-season insecticide applications facilitate the development of damaging infestations of these pests by reducing beneficial insect abundance. So far, we are seeing a few BAW "hits" and an occasional bollworm but nothing of concern is actually being found in area fields. However, the stage is set for the possibility of serious worm problems as this season progresses.

At this time we appear to be on the downside of our recent aphid troubles, therefore our attention has turned to the emerging fleahopper situation. On the whole, fleahopper abundance has remained relatively low in most fields, but some fields in Kleberg County did trigger for fleahoppers this week. Where infestations have been located, the numbers have tended to increase very quickly. Scouting suspect fields twice a week is definitely recommended at this time (e.g. if you find 8-10% fleahoppers Monday, you'd be best advised to be back in that field to check fleahoppers again by Friday). On several recent occasions I looked at fields and found 4-10% fleahoppers, only to return 3-4 days later and find 30-40% fleahoppers. An unusual trend we are seeing in the fleahopper infested fields is the occurrence of very minute fleahopper nymphs, but no fleahopper adults. We don't know why.

As we mentioned above worms have not been found in great numbers anywhere, but conditions are good for the worm situation to change rapidly in a negative way.

Pests to Watch For – Cotton Bollworm and Tobacco Budworm - The cotton bollworm (CBW) and tobacco budworm (TBW) are two of the most serious pests occurring in the Lower Coastal Bend. Both are very similar in appearance, egg laying behavior, and larval feeding habits.

The caterpillars of both pests grow to 1½ inches in length and vary in color from green to pink to brown or black, always with longitudinal stripes and usually black dots along the back and sides running the length of their bodies. Telling them apart in the field is practically impossible, but under a microscope the mandible of the TBW has a distinct ridge or tooth (retinaculum) on its inner side which the CBW's mandible does not possess. Also, the tubercles on the top of the TBW's eighth abdominal segment possess short spines which are not present on the tubercles of the CBW's eighth abdominal segment. These characters can only be used to identify larvae that are beyond the 2nd instar of maturity. Distinguishing between these larvae prior to the 3rd instar is not possible. If you ever want to see these characters under a microscope, please contact me.

The moths of both pests lay their eggs singly, usually on the tops of the uppermost leaves and in the terminal growth (top third of the plant). Moths will sometimes deposit eggs lower in the plant during periods of stress to the cotton plants, high temperatures, and low humidity. The egg is a pearly-white to cream color about half the size of a pinhead. Do not confuse these eggs with the egg of the cabbage looper which are flatter, slightly greenish, and laid on the undersides of leaves. Eggs hatch in 3-4 days turning brown as they near the hatching date. The young larvae tend to feed initially (1-2 days) in the tender terminal foliage on small squares and tender leaves before moving down the plant to attack larger squares and bolls.

Cotton bollworm is usually the predominant larval pest found during most of the growing season. The CBW is also known as the corn earworm when it is found in corn. As corn silks start drying down about this time of the year, bollworm moths will move to cotton to lay their eggs. The TBW usually does not occur in damaging numbers until mid- to late-season. Budworms are significantly more resistant to pyrethroid insecticides than CBW. Consequently, the proportion of TBWs in infestations tends to increase due to selection pressure once pyrethroid insecticides are applied for worm control. Also, aphids and other secondary pests may increase after pyrethroid use.

Finding eggs and small larvae in the terminals of plants may be the first sign of a worm outbreak. Natural mortality factors such as weather and predators frequently control these earliest stages of the CBW/TBW, particularly when the eggs and small larvae are confined to the uppermost third of the plant. Because of this, spraying ovicides for worm eggs is inadvisable. Also, small worms are most exposed and susceptible to insecticides at this time. However, after worms have reached ½ inch in length the effectiveness of natural mortality factors decrease and the larvae move down the plant where they are less exposed and less susceptible to insecticides.

Frequently, examination of the upper most third of the plant (terminal, leaves, stems, squares, blooms, and bolls) for eggs and larvae is all that is needed to make management decisions. However, as larvae mature and under certain climactic conditions the eggs and larvae may be found lower in a plant's canopy. This makes egg and larval detection much more difficult. To find larger larvae whole plant inspection is necessary.

For management decisions when eggs and larvae are only being found in the terminal and uppermost third of the plan use the Terminal/Square Inspection Method. Check the terminals and top third of at least 25 randomly chosen plants per 25 acres for eggs and small larvae. At each site also randomly select and examine 25 one-half grown and larger squares for worm damage. Do not select squares that are obviously damaged or flared. **Insecticide applications may be justified prior to bloom when 15-25% of the green squares are worm damaged. After bloom consider spraying when 8-12 larvae are found per 100 plant terminals and 5-15% of the squares or bolls are worm damages.** If recent or multiple insecticide applications has reduced beneficial insect abundance, fewer worms may be tolerated before economic damage occurs. **If this scenario occurs after first bloom, insecticide applications may be justified when 4-5 worms plus eggs are found per 100 terminals and 5% of the squares and small bolls have been worm damaged.**

There is a lot of “play” in the thresholds for CBW/TBW because many factors in addition to density of larvae determine the need to treat with insecticides. These may include:

- ▶ number of predatory insects and spiders which feed on CBW/TBW
- ▶ number of CBW/TBW eggs found
- ▶ ability of scout to locate small larvae
- ▶ age structure of the infestation
- ▶ stage of crop growth
- ▶ percent fruit set
- ▶ cost of insecticide application
- ▶ duration of infestation
- ▶ type of production system
- ▶ market value of the crop

Research has shown Bt cottons to be very effective against TBW and to a somewhat lesser degree against CBW. However, under heavy infestations, insecticide treatment may be needed for CBW in Bt cottons. Scouting for CBW/TBW in Bt cottons requires whole plant inspections, including squares, white blooms, pink blooms, bloom tags, and bolls. **In Bt cottons treatment must not be triggered by eggs alone because hatching larvae must consume cotton plant material to receive a toxic dose of the Bt endotoxin. Insecticidal treatment in Bt cottons may be justified when 8-12 larvae larger than 1/4 inch per 100 plants are present and 5-15% of the squares or bolls are worm damaged.**

Temik Test Results - We have been overseeing a test conducted with cooperator Darby Salge comparing three rates of Temik soil insecticide and an untreated control. With this season’s early thrips and aphid pressure, a soil insecticide appears to have been well worth the cost at this time. Furthermore, the insect pressure made for a very visually impressive test plot and numerically impressive data set. This test plot is located at the northwest corner of the intersection CR 26 and CR 21 in San Patricio County, just west of Hartzendorf Gin. If you go by to see it, the untreated controls are easily identifiable versus the treated plots, even from several hundred yards away. Below are the numerical results to date in tabular form.

Table 1. Plant population and growth rates in cotton treated with Temik at-planting, Darby and Howard Salge Farm, San Patricio County, TX, 2000.

Treatment	Rate form. oz/1000 row ft	Plants 1000's/A	True leaf stage on 4/27
Temik 15G	2.3	56.7 a	7.0 a
Temik 15G	4.0	54.3 a	7.0 a
Temik 15G	5.8	56.3 a	6.7 ab
Untreated		44.0 a	6.0 b
LSD (P = 0.05)		NS	.763
P > F		.0675	.0541

Means in a column followed by the same letter are not significantly different by ANOVA.

Table 2. Aphid and thrips numbers, and plant damage rating in cotton treated with Temik, Darby and Howard Salge Farm, San Patricio County, TX, 2000.

Treatment	Rate form. oz/1000 row ft.	Aphids/10 plants (4/17) ^a	Aphids/ leaf (4/27)	Thrips/10 plants (4/17) ^a	Plant damage rating ^c
Temik 15G	2.3	24.3 b	19.3 b	2.33 b	1.67 b
Temik 15G	4.0	16.3 b	17.7 b	1.67 b	2.00 b
Temik 15G	5.8	11.3 b	7.7 b	1.00 b	1.33 b
Untreated		749.0 a	120.0 a	16.30 a	5.00 a
LSD (P = 0.05)		362.8	38.25	^b	1.373
P > F		.0058	.0011	.0243	.0021

Means in a column followed by the same letter are not significantly different by ANOVA.

^a Plant growth stage = 2 true leaves

^b The P > F in this column is based on transformed $\sqrt{x + 1}$ data values. It is inappropriate to list LSD values based on transformed data.

^c Plants were in the 6 - 7 true leaf stage on 4/27. Plant damage ratings range from 1 = no damage to 5 = severe stunting and leaf curling. EDB

DENIM FOR BEET ARMYWORM CONTROL

EPA granted a specific exemption under provisions of Section 18 of FIFRA, to the Texas Department of Agriculture for the use of emamectin benzoate (Denim) on cotton to control beet armyworm.

Denim® 0.16EC may be applied using ground or aerial equipment, at a rate of 0.0075 - 0.01 lb. a.i. (6-8 fl. oz. of product) per acre. No more than 3 applications may be made. Applications must be made in a minimum of 5 gallons of finished spray per acre for aerial application and 10 gallons for ground. A 5-day application interval, and a 21-day pre-harvest interval must be observed. Denim may not be applied through any type of irrigation system, and livestock may not be grazed in treated areas. Application is limited to a maximum of 24 oz. product per acre per season. A Restricted Entry Interval (REI) of 48 hours must be observed. RDP

INSECT PESTS TO WATCH FOR IN SORGHUM

Fall armyworms, greenbugs, yellow sugarcane aphids and chinch bugs are currently causing concern and scouting should begin for sorghum midge in Kleberg and Nueces counties.

In an earlier newsletter, to be on the safe side, I suggested that sorghum midge scouting be initiated about May 15. It would still be a good idea but now it

appears that populations may not increase in the two counties until the week of May 21. Heavy sorghum midge numbers are expected by the first week in June.

Currently, some prebooting sorghum fields contain high numbers of fall armyworm (FAW) feeding on foliage. Counts as high as 10 per plant have been recorded. There are also fields where the caterpillars are confined to isolated areas in fields. Seldom have I observed FAW in enough numbers on sorghum to completely defoliate plants as is now the case in scattered fields. Several pyrethroids, Lannate and carbaryl (Sevin) are labeled for this caterpillar. FAW are easier to control on sorghum than corn earworm since they are often more exposed on the leaves.

Complicating the sorghum insect situation are greenbugs and yellow sugarcane aphids. Most of this activity is currently in blooming sorghum fields. The yellow sugarcane aphids are generally declining but exceptions do exist. Likewise, greenbugs may be reaching peak numbers this week. After finding a substantial infestation I would advise waiting 48 hours and make an additional inspection to determine if their numbers are declining (as we have observed in many fields). Beneficial arthropods have been observed destroying aphids.

Plants can tolerate about 30% leaf loss before yield is reduced. Greenbug infestations after sorghum flowering and before hard-dough stage should be controlled before they kill more than two normal-sized leaves on 20% of the plants. Specifically, on boot to heading sorghum, treatment should be considered at the death of one functional leaf (large lower leaf) on 20% of the plants. On heading to hard dough sorghum, the economic threshold is reached when greenbug numbers are sufficient to cause death of two normal-sized leaves on 20% of the plants. The decision to treat should be based on lack of beneficial arthropods, low soil moisture and increasing numbers of greenbugs.

Chemicals for greenbug include Furadan (24C label) which can be used before heads emerge, dimethoate (may cause damage on some hybrids), di-syston, ethyl parathion and Lorsban. RDP

MEXICAN CORN ROOTWORM BEETLES
EMERGING

Producers that grow corn in the same fields for several years in a row are now observing Mexican corn rootworm beetles feeding on leaves and silks. Generally, corn will pollinate before numbers are high enough to prevent pollination. To check for pollination, gently remove the corn shucks to see how many silks have dislodged. This would indicate pollination has taken place. The ear pollinates first in the middle, followed by the base and finally by the tip. About 0.5 inches of silk need to extend beyond the shuck for pollination.

In corn it would also be a good idea to scout for fall armyworm (FAW). In 1995 large fields were completely stripped of foliage by FAW before they were detected. We have seen evidence of increased FAW activity this season. RDP

VALUE ENHANCED GRAIN CONFERENCE

The Texas Corn Producers Board, Texas Grain Sorghum Board and U.S. Grains Council will sponsor the "2000 Value Enhanced Grain Conference" on Wednesday, May 31, 2000 at the Hilton San Antonio Airport Hotel, 611 NW 410 from 8:30 a.m. to 3:00 p.m. The objective is to provide information on the "...inside story on the promises and pitfalls in exporting" grain, especially to Mexico. The conference brochure "The Road to Mexico" and "Are Texas producers losing out on a major export market in Mexico," in my view outlines the purpose for this conference.

The conference fee, \$50.00 per participant, should be sent to the Texas Corn Producers Board, 4205 N. I-27, Lubbock, TX 79403, before May 15. Lunch will be provided. Registration after May 16 will be \$100.00. For questions call 1-800-647-CORN.

It appears to me that this conference will continue to address issues discussed in Corpus Christi by Coastal Bend grain producers at the Texas Grain Improvement Conference in May of 1991 and Grain Sorghum for the 21st Century: Working Together as an Industry Conference held in November of 1997. RDP

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