Texas Agricultural Extension Service - District 11

INSECTS AND WEEDS IN FOCUS

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VOL. XXV NO. 4 ENTO/WS April 7, 2000

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COASTAL BEND COTTON INSECT REPORT

Cotton around the Coastal Bend varies in maturity from just being planted all the way up to pinhead square stage. In general, most cotton is at the 4th and 5th true leaf stage. Crop condition is generally very good and it appeared to me that despite cooler temperatures the cotton is still developing rapidly. Soil moisture is still good, but an inch or so of rain after planting is completely finished would be appreciated by just about everybody concerned.

The insect situation appears to be developing as rapidly as the cotton is. This week, throughout the area, we are starting to see and receive reports of some fields that have the potential for aphid explosions. In no case have we actually seen a field thoroughly infested with aphids and needing an insecticide application. However, we are finding some spots within fields where aphids are infesting plants quite heavily. These sort of situations deserve watching because aphids can multiply very quickly and spread throughout the field. Also on the rise this week were thrips, but we believe most cotton is growing fast enough to escape the thrips damage window before damage will occur. Obviously, younger, less mature cotton will be the most susceptible to thrips damage and should be watched very closely. Older, 4-6 true leaf cotton will be on the verge of advancing past the thrips damage window and with continued good growing conditions should do so.

In squaring cotton fields, we are starting to see a few cotton fleahoppers (a high of 4% in Kleberg County). Again, growers will need to be on the lookout for this serious cotton pest as they can reduce yield potential. Read more about fleahoppers in this week's "Pest to Watch For" column.

Finally, it has been reported to us that various caterpillar pests are occurring in higher than normal numbers this season. Reports are coming from both Nueces and San Patricio counties (and other areas north) that much of the cotton at or past the 2nd true leaf stage is being infested (foliage feeding) by loopers, yellow-striped armyworms, and beet armyworms, especially along ditches, brush, and roadsides. Be wary of the potentiality of this worm problem. A rule-of-thumb threshold to use in deciding whether to treat for this situation, at this early stage of growth, would be to randomly pick 100 "key leaves" (the largest plant leaf) and inspect them for leaf feeding damage. If 10-15% of key leaves are damaged you might consider an insecticide application. Be mindful that it might be necessary to spray only the affected field edge.

Pest to Watch For – Cotton Fleahopper - Quite a few fields are reaching the first square and pinhead square stage and growers will need to be on the lookout for the arrival of cotton fleahoppers in these fields from their wild hosts
Adult cotton fleahoppers are about 1/8th of an inch long and a pale, dusty green color and the nymph, or immature stage, is a bright green color, wingless, and moves (runs) very rapidly. Adult and nymphal

fleahoppers suck sap from the tender portions of the cotton plant and small squares (pinhead size and smaller are most susceptible). Squares that are fed upon become "blasted," meaning they brown and fall from the plant. Locating fleahoppers can be quite difficult. Adults can be found throughout the cotton plant, but are most often found near the plant terminal and on the upper surfaces of the uppermost leaves of the plant. The fleahopper nymph, on the other hand, is almost always found within the plant's terminal. To find nymphs you will need to thoroughly dissect the terminal of each plant. Some tips that might help you locate fleahoppers more successfully include:

- Adult fleahoppers will often fly when disturbed or when you allow your shadow to fall over them. Approach the cotton in a direction so that your shadow will not fall across the plants you are going to check and handle those plants gingerly.

- Adult fleahoppers have a pretty distinct flight pattern. When they take off from a plant that has been disturbed, they will most often make a short circle and land on a cotton plant very near the one it just left (usually within 2-3 feet) or just across to the next row. Again, their color contrasts well with the dark soil and are therefore easy to follow. Do follow up what you suspect to be an adult fleahopper so that you don't overestimate their abundance and spray unnecessarily.

- Scout fields for fleahoppers early in the day (say, before 10 a.m.) since adults have the habit of sitting on the edges of leaves at the tops of cotton plants early in day. They're pretty easy to see then because their dusty, green color contrasts well with the dark green of the cotton leaves. Also, if its cool, they will often not fly away as readily.

- For those unfamiliar with locating fleahopper nymphs they can be very difficult to locate. The nymph can be easily confused with an aphid and will often sit motionless even while you dissect the cotton plant's terminal. Sometimes you will have to nudge a suspected nymph with your finger in order to see if it takes off running – if it does, it's a fleahopper nymph; if it doesn't, it's probably an aphid.

Management decisions should be based on the number of cotton fleahoppers present and the maturity of your cotton crop. During the first three weeks of squaring you should consider applying insecticides when you find 15-25 fleahoppers per 100 cotton plant terminals. As the cotton plant increases in size and maturity, more fleahoppers may be tolerated without a yield reduction. The fleahopper damage window closes about a week or so after first bloom and fleahopper control after this time is rarely justified. Be very wary of unnecessarily applying insecticides early in the bloom period because outbreaks of aphids, cotton bollworms, and tobacco budworms may result.

Cotton fleahopper is one of the most damaging and consistently occurring cotton pests in the Lower Coastal Bend region and their numbers can increase dramatically in a very short time, resulting in the potential to significantly reduce yields. When moderate, but below treatment threshold numbers are detected in your cotton fields, it is advisable to scout that cotton twice per week until fleahopper numbers decline or the treatment threshold is reached. There's not much "play" in the treatment threshold for fleahoppers, so don't hesitate to spray when the treatment threshold is reached. Careful attention to fleahopper abundance in your cotton fields is paramount to good crop pest management. EDB

FURADAN FOR COTTON APHIDS

The issue is complex and I do not have time to go into detail except to state that several Coastal Bend cotton producers (Jimmy Dodson, Craig Shook and others) have spent a great deal of time with Environmental Protection Agency (EPA) personnel over the past week attempting to obtain positive response from them to allow a request for a Section 18 for Furadan. Currently we do not know what requirement will have to be met, if any, when EPA grants the OK for states to apply for the Section 18. The Texas Department of Agriculture is also diligently working on the issue. There is potential that cotton aphid populations could increase to unacceptable levels in some fields although the threat, at this writing, does not appear to be as great as it has been during the past few years. Other products are currently providing an adequate level of control but that situation could change. We desire a response from EPA by April 10 or 11. RDP

COTTON APHID TEST RESULTS

Results of tests conducted in 1995 and 1996 for control of cotton aphids are provided for your information in the following tables. RDP

Table 1. Effect of foliar insecticides on cotton aphid numbers on DPL50 cotton at matchhead square stage, Nueces County, 1995.

Treatment	Rate (oz/acre)	Aphids/5 leaves 3 DAT[a]	6 DAT
Provado 1.6F[b]	1.875	3.7 a	0.7 b
Provado 1.6F + Baythroid 2E[b]	1.875 + 1.92	1.7 a	3.7 b
Bidrin 8E	1.0[c]	10.7 a	2.3 b
Orthene 90S	3.34 [c]	14.7 a	11.3 a
Untreated		32.7 a	7.0 ab

Means within a data column followed by the same letter are not significantly different at the 5% level by ANOVA and LSD.
[a] DAT = days after treatment
[b] Silwet added to the spray mixture at 16 oz/100 gal.
[c] Note: below the minimum labeled rates.

Table 2. Effect of insecticides on cotton aphid numbers on DPL 50 cotton treated just before bloom, Nueces County, 1996.

Treatment (oz/acre)	Number cotton aphids per leaf 3 DAT[a]	6 DAT	14 DAT
Bidrin 8E + Curacron 8E (2 oz + 2 oz)	90.6 a	33.7 a	80.0 a
Bidrin 8E (4 oz)	59.7 ab	31.7 b	23.3 b
Furadan 4F (8 oz)	2.9 b	1.4 c	26.7 b
Untreated	111.0 a	61.8 a	50.0 ab

Means within a data column followed by the same letter are not significantly different at the 5% level by ANOVA and LSD.
[a] DAT = days after treatment.

BEET ARMYWORM INSECTICIDES

In the last newsletter I failed to list Confirm along with Tracer as being effective on young beet armyworm larvae. RDP

COTTON INSECT CONTROL GUIDES

The guides “Managing Cotton Insects in Southern, Eastern and Blackland areas of Texas 2000-2001" (E-5) and “Suggested Insecticides for Managing Cotton Insects in the Southern, Eastern and Blackland Areas of Texas 2000" (E-5A) are available from our office. Please call us for a free copy. The guides can also be obtained on the internet at http://entowww.tamu.edu/extension. Go to List of Publication, by Series (click), then go to E-Series and click. RDP

MONITORING BOLL WEEVILS FOR MALATHION RESISTANCE

The following information was obtained from Roger Haldenby, Plains Cotton Growers. In a proposal to the Texas State Cotton Support Committee of CI, Dr. Patricia Pietrantonio, Assistant Professor and Toxicologist at Texas A&M’s Department of Entomology, outlined a plan to determine boll weevil susceptibility to malathion in the active eradication zones and in those that will soon begin eradication. The project has the support and collaboration of several entomologists. These include Dr. Don Rummel, Texas Ag Experiment Station, Dr. Roy Parker, Texas Ag Extension Service and Dr. Pat Morrison, Texas A&M University. RDP

CHINCH BUG AND FALSE CHINCH BUG ON WHEAT

In early spring, chinch bugs move into small grain fields from bunchgrass where they overwintered. Both young and adult chinch bugs feed on small grains. Very heavily infested plants may be stunted or killed. Infestations are usually confined to small, well-defined spots. When a damaging infestation occurs on the field border, prompt treatment may prevent infestation of the entire field.

Adult false chinch bugs are 1/8-inch long, narrow and dull yellowish-gray. The wing tips are transparent and extend beyond the end of the abdomen. These bugs often migrate in large numbers. Small grains are not preferred hosts. Sometimes, they will suck sap from the stems and heads of small grains, causing poorly filled heads and shriveled grain, but the extent of their damage is not well documented. Before applying insecticides, consider the percentage of the field infested and make sure that these bugs are feeding on the small grain and are not just migrating through the field. RDP

USDA ARS CROP FUNDING

The following information was obtained form “Grain Sorghum Notes”, Vol. 1, No. 9, dated 3/10/00. It is interesting to observe the dollar amounts budgeted by USDA, Agricultural Research Service on a per acre planted basis for each crop (it was the proposed budget for FY 2000). RDP

USDA ARS funding based on planted U.S. acres

Crop	$/acre
Cotton	2.81
Barley	1.25
Oats	0.71
Wheat	0.60
Corn	0.52
Sorghum	0.41

Based on USDA - NASS planted acres

NOTED ENTOMOLOGIST DIES

Edward F. Knipling - best-known for his work to eradicate screwworm flies in Texas – died March17 at his home in Arlington, Va. He was 91 years old. Knipling grew up in Port Lavaca, Texas.

Knipling graduated from Texas A&M University in 1930 with a bachelor's degree in entomology. He also received a master's in entomology from Texas A&M and a doctorate in entomology from Iowa State University. In 1996, he received an honorary doctorate from Texas A&M.

According to Dr. Ray Frisbie, head of the department of entomology, "Dr. Knipling has significantly advanced the world's knowledge of pest management and alleviated some of the most important agricultural pest problems across the globe."

Knipling was director of entomology at the USDA Agricultural Research Service in Beltsville, Md., from 1953-1971 after which he was appointed science advisor to the USDA-ARS administrator. He retired in 1973 after 42 years but had continued to work with ARS as a research collaborator.

Working with colleague R. C. Bushland, Knipling pioneered the sterile male insect technique to suppress insect pests. This technique involves irradiating male insects, then releasing them to mate with wild fertile female insects. However, fertilized eggs are not produced, and the numbers of insects drop dramatically.

Knipling and Bushland first developed the technique to combat screwworm flies, whose flesh-eating maggots parasitize livestock, wildlife and humans. The technique resulted in the eradication of the wild screwworm population in the United States, Mexico and parts of Central America. The screwworm caused $250 million in annual livestock losses in the United States in the 1950s.

According to the USDA, Knipling's method is used worldwide to eradicate outbreaks of other pests such as Mediterranean fruit fly. In Africa, it is used to control the tsetse fly, which spreads sleeping sickness.

Knipling also provided for the theoretical basis for boll weevil eradication in the United States. When put into practice, his theories provided the basis for this insect pest to be eradicated from more than 3 million acres of cotton.

Most significant among Knipling's many honors are the National Medal of Science awarded by President Johnson in 1966, the President's Award for Distinguished Federal Civilian Service, awarded by President Nixon in 1971; the United Nations/Food and Agricultural Organization Recognition Award for Research in 1991; the World Food Prize in 1992; and the Japan Prize in 1995.

Additionally, Knipling was recognized as a Distinguished Alumnus of Texas A&M University in 1992 and was a recipient of the 1995 Texas A&M College of Agriculture and Life Sciences Outstanding Alumni Award. Last year, Knipling donated $100,000 to the Knipling-Bushland Southwest Animal Research Foundation fund for livestock pest control research at Texas A&M.

CONSERVATION TILLAGE FIELD DAY

The 6th Annual Conservation Tillage Field Day will be held April 26 from 8:30 a.m. - 1:00 p.m. at the USDA, ARS Research Farm in the Rio Grande Valley. The farm is on FM88 at Mile 12 north of Weslaco, Texas. Each stop will feature a scientist and producer to present information and answer questions. Topics will include: (1) implementation of conservation tillage, decisions to convert, first steps, (2) costs of making conversions, systems net returns, (3) cover crops, root distribution with tillage, earthworms, (4) fertilizer placement and timing, (5) planters and seed placement in no-till coulters, closing wheels, (6) insect identification and beneficials in conservation tillage, (7) economics of conservation tillage and how to survive in agriculture, (8) hooded sprayers -vs-cultivators, cost savings with no-till, (9) carbon sequesteration and equip programs, (10) cotton stalk, how to remove them with a stalk puller, chemicals and other means, (11) new herbicide products and weed management for conservation tillage. Call (956) 969-4812 for additional information. RDP