Crop Insect Situation Newsletter

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http://msucares.com/newsletters/pests/cis/index.html

Crop Situation: The Weekly Weather and Crop Report for the week ending June 8 showed the corn crop as 29% silked. Ten percent of the cotton crop was squaring at this time, and 16% of the soybean crop had reached the bloom stage. Statewide average temperatures were 2 degrees cooler than normal for the week of June 2 through June 8, but statewide rainfall was 0.66 inches above normal.

Cotton Insect Situation: With roughly 80% of the state's cotton planted to Bt varieties, and boll weevil eradication underway in all areas of the state, tarnished plant bugs are the primary insect of concern in June. But, this is not a pest that will reach damaging levels in every field, every week. Good thorough scouting, supplemented by carefully made square retention counts is the key to successful plant bug management. Treatment is recommended anytime plant bug counts exceed 8 bugs/100 sweeps during the first two weeks of squaring, or 15 bugs/100 sweeps, during the third week of squaring to first bloom. If square retention drops below 80%, these thresholds should be lowered accordingly. Aphids are another pest of concern in June, and populations are already building in some fields. In most years aphid populations build to their highest numbers in late June and then crash, due to the fungal disease, in early July. Actually, it is rare for aphids to cause significant yield loss in cotton. Situations where yield loss is likely to occur include fields where plants are under some other stress and fields in which aphids build to high numbers on relatively young plants. Treatment is recommended when aphid populations average 50 to 100 per leaf and there is no sign of the aphid fungal disease.

Monitoring Percent Square Retention: Making **counts** to determine percent square retention is an important component of cotton insect scouting during the period from first square to early bloom. Information on percent square retention counts can be very useful in making insect management decisions, **provided one does not make the mistake of setting square retention goals excessively high**.

Percent square retention is not something that can be guessed or estimated; it has to be based on actual counts. There are a variety of ways to take percent square retention counts. The basic method is to examine 100 sites where squares should be, count the number of sites where squares are missing (as evidenced by an abscission scar), and subtract this number from 100. For example: if one examines 100 potential square sites and finds 18 missing positions the percent square retention is 82%. Alternatively, one could count the number of squares that are present to get a direct count of square retention, but the number missing is usually the smaller number and thus simpler to count.

At first glance the following information on how to make square retention counts may seem too detailed and time consuming to bother with. However, its really not as complicated as it first sounds, and, once one masters this technique, it is a very time efficient method of getting good information on square retention. Last year we conducted a large field survey in which we used this technique to monitor square retention and timed how long it took to take one sample (check 100 square sites). For the many hundreds of samples involved in the survey, the **average time was only 3 minutes and 15 seconds**.

When making percent square retention counts it is usually best to follow some predetermined pattern as to the number of nodes per plant that will be examined and which square positions on the fruiting branch will be examined. One of the most useful examination patterns for making pre-bloom insect management decisions is to examine only 1st and 2nd position squares from the top five fruiting nodes of the plants, if at least 5 fruiting nodes are present. As Figure 1 illustrates, this would give a total of 8 potential square sites per plant. Therefore in order to check 100 potential square sites one must examine 12 ½ plants (8 x 12.5 = 100). You get the ½ plant by only examining the top 4 square sites on the 13th plant, or you can just round off to 12 or 13 plants.

Figure 1.

As Figure 1 illustrates, there is only one visible square on the uppermost fruiting branch. In reality this square is very small and appears to be part of the terminal (the figure is exaggerated for clarity). However, this square can be seen by grasping the first leaf that is bigger than a 25 cent piece, bending this leaf down slightly, and looking for the square in the axis of this leaf. There is also only one easily visible square at the second fruiting branch below the terminal, but the 3rd, 4th, and 5th branches down bear both a first position square and a second position square. A 3rd position square may also be present on the 4th and 5th nodes, but these are not normally included in the count.

Once one knows where to expect to find squares and establishes a pre-determined pattern for examining plants, percent square retention counts can be made relatively quickly and consistently. Simply choose a plant at random and pull it up so that it can be easily examined. Check each potential square position and count the number of missing positions (Figure 2 shows an example of a plant with 2 missing squares). Keep a running tally of the number of plants examined and the number of missing squares. This can be done on paper by recording the number of missing squares for each plant examined and adding these numbers after the last plant is examined. Or, it can be done mentally by keeping a running tally of the number of plants examined and the cumulative number of missing squares. For example, if the first 3 plants were missing 0, 2, and 3 squares respectively the running count would be: 1 plant and 0 missing squares, 2 plants and 2 missing squares, 3 plants and 5 missing squares, and so on through the last plant in the sample (Caution: don't try to make these counts mentally if someone is trying to talk to you while you are trying to count!). Once the count is completed, simply subtract the number of missing squares from 100 to get the percent square retention. For example, if the final count is 12 ½ plants and 15 missing squares the square retention is 85%.

Note that square retention counts can be made in fields with less than 5 fruiting branches per plant. For example if plants are in the 8th node stage and only have 3 fruiting branches this would give a total of 4 potential square sites per plant, and one would need to check 25 plants in order to examine a total of 100 potential square sites.

Square retention counts can also be made by checking only first position square sites, but obviously in order to examine 100 potential square sites on the top five fruiting branches, one would need to check 20 plants per sample. However, counts based on first and second position fruit have more value for making plant bug treatment decisions than counts based solely on first position fruit.

Regardless of the examination pattern used, one of the most important cautions for making percent square retention counts is to not count a position as having a missing square unless there is a definite abscission scar showing where a square formed and then aborted.

Figure 2.

Corn Corner – Don Parker: At the time of this note, the corn borer trap numbers are low in general because we are between the first and the second generation. Last years data showed 55 days between generations, although this is temperature dependent. I have not seen any corn that has taken damage this year from corn borers. I would caution those in the north delta to watch for European corn borers. They will not necessarily coincide with the southwestern corn borer flights.

Dr. Roger Leonard (LSU) said they were experiencing higher numbers of SWCB this year than last year. Fortunately, our numbers are not as high as last year's numbers. I do expect the numbers to be fairly high for the second generation, and do expect many fields to be treated. We are still about 2 to 3 weeks away from the second-generation flight of Southwestern corn borers.

I would also like to caution those farming near the MS River that LA has experienced high numbers of sugar cane borers. These caterpillars look very similar to SWCB, and feed very similar to SWCB larvae. However, the adults do not have an identified pheromone. Please make sure you scout your fields. I would appreciate being notified if you think you have this pest. I have looked around Natchez and Port Gibson and have not found any problems at this time.

For more info, check out the corn corner at: http://www.msstate.edu/entomology/cornforum

Northeast Counties - Mike Williams: Rains continue to plague field operations, though much of the cotton is beginning to grow some. We have treated Thrips later this year than I can remember, mainly because the cool nights have slowed the crop tremendously. Heavy rainfall is still causing problems for planting operations for some crops, but may be helpful for corn, unless it gets deep. There were no weevils caught in any of our trapper runs this week, but bollworms counts in pheromone traps are up slightly. We are seeing some BAW in traps as well. It might be a `buggy' year!

We received a Section 18 approval on Capture for sweetpotatoes this past week. That's good news – if you need a label for that material and that use, contact us. We will also have the labels available on the forum.

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Extension Cotton Entomology Specialist

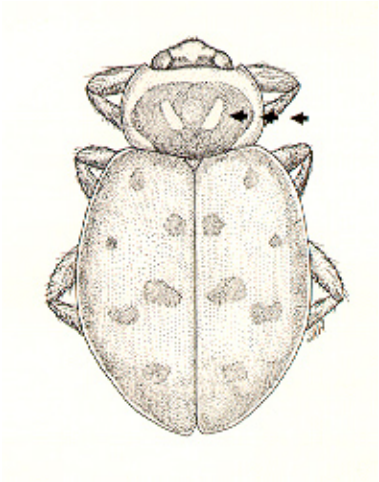
Area Entomology Specialists: Dr. Gordon Andrews
Dr. Mike Williams
Dr. Don Parker

Beneficial Insect of the Week:

Lady Beetles: These are the insects most people first learn to recognize as beneficial insects. There are hundreds of different species of lady beetles, but practically all species share this trait of being predacious as both larvae and adults. One exception is the Mexican Bean Beetle, which is an important pest of soybeans in some regions of the country.

One species of lady beetle, the Asian ladybeetle, is considered a pest by many homeowners. This is an introduced species that prefers to forage in trees, although it can be found in row crops as well. This predator has become well established throughout the US. It seems to be especially helpful in controlling aphids in pecans. The problem for homeowners is that overwintering Asian ladybeetles often accumulate in homes in extremely large numbers, creating a significant nuisance problem.

Description: Adults of most of the more common species are oval in overall body shape, yellow to red in color, and often have dark spots on the wing covers. These are the species that everyone recognizes as lady beetles. However, fewer people recognize the larval stage. The larvae are soft bodied and elongate and are sometime described as "alligator shaped". Their bodies are usually dark in color with yellow to red markings. One group of lady beetles that's very common in cotton does not fit this description as either an adult or larva. These are the Scymnus lady beetles. The adults are shaped like other lady beetles, but they are much smaller, about 1/5 as large, and are dark colored with lighter brown markings. Scouts often encounter these when checking terminals but don't realize they are lady beetles. The larvae of these lady beetles are covered with fuzzy white filaments of waxy material and resemble mealy bugs. Larvae, as well as adults, are often seen in association with aphid colonies.



Prey: Lady beetles are heavy feeders as both larvae and adults. In a lab study in a confined situation, adult females of one common species consumed an average of 357 bollworm/budworm eggs or 80 first instar larvae in a 48 hour period. Aphids are the favored prey for many species, but they will also feed on caterpillar eggs and small larvae as well as mites and whiteflies. Adults also feed on pollen and nectar. Lady beetle larvae and adults are abundant in most cotton fields now and are one of the factors that are helping to slow overall population growth of cotton aphids.

Most lady beetles seem to feed preferentially on aphids when these are present. However, when an aphid population crashes due to an outbreak of fungal disease, the lady beetles are forced to pursue other food, such as caterpillar eggs and small larvae. In cotton fields where this occurs, lady beetles often aid greatly in suppressing budworm/bollworm populations for a week or two after the aphid population crashes. The adults may leave then begin to leave the field in search of better food sources, but the wingless larvae do not have this option.

Date: 11 June 2003			Average per Trap per Week		
county	Bollworm	Budworm	BAW	Boll Weevil	SWCB
Adams					0.0
Alcorn					1.0
Attala					0.0
Benton					0.0
Bolivar	1	2	6	0	
Calhoun					0.3
Carroll	28	1	0	0	1.5
Choctaw					0.0
Clay	0	2	3		0.0
Coahoma	11	1.5	3		8.9
Chickasaw	0	1	0		3.8
Grenada	15	1	1	0	
Holmes					0.0
Humphreys	41.5	0.5	3		18.3
Itawamba	0	0	0		1.5
Issaquena					1.0
Lee	2	0	0	0	3.0
Leflore	26.5	1.5	2.5		10.5
Lowndes	5	3	0	0	2.0
Madison	2	1	2	0	2.0
Monroe	4	6	0		2.0
Montgomery					2.5
Newton					0.0
Noxubee	1	2	6	0	1.1
Oktibbeha					1.0
Pontotoc					nr
Prentiss	0	0	0	0	0.0
Quitman					7.0
Scott					1.6
Sharkey					5.0
Sunflower					10.7
Tallahatchie					71.5
Tippah					nr
Tishomingo					1.5
Tunica	1.5	0.5	2	0	
Union					nr
Washington	0	0	0		nr
Webster					2.0
Winston					0.0
Yazoo	22.5	3.5	1.5		
BAW = Beet Armyworm and SWCB = Southwestern cornborer					