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IN THIS ISSUE

NEWSLETTER CONTRIBUTORS

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COTTON AGRONOMY

An excellent crop still remains on the stalk as fruit shedding that started last week nears completion. The rains received mid last week sure did help the moisture situation over a lot of acres as peak water demands of cotton remained high. The earlier high fruit retention as the result of favorable weather and lack of significant insect feeding has loaded plants up. But all of this fruit load cannot be brought to harvest regardless of what we do and especially with our limited irrigation capabilities. This high fruit load combined with cloudy weather last week, cutout and in some cases insufficient irrigation caused this fruit shed we have been seeing the last 10 days. Squares and small bolls are a part of this overall fruit shed. Probably nothing to be concerned about.

Speaking of cutout, with the exception of late planted irrigated fields and dryland fields that received enough recent rainfall to start growing again, most fields have reached physiological cutout. This is the point in which the rate of flowering exceeds the rate of square initiation. This occurs when first position white flowers are 5 or fewer nodes from the uppermost leaf the size of a quarter (NAWF=5). Many fields are in "hard cutout", 1-3 NAWF.

So is it time to irrigate again? The answer is probably yes. The recent rains have allowed us to get caught back up but if you intend to bring your present adjust fruit load to harvest you will need to irrigate again. You don't want to lose what you have worked so hard to gain. Predicted rain showers for Thursday and Friday may or may not appear over your farm. This will be the last time to row water this season. Sprinkler irrigated fields will need several more irrigations but these will be in decreasing amounts. Earlier termination of irrigation activities in pink bollworm infested areas is a practice that reduces the number of potential overwintering pinkies but it can also reduce yield this year as well. This will be a balancing act between pinkie management needs and yield preservation needs. (This column is written by me since Dr. Randy Boman is "out-of-pocket" for most of this week.) **JFL**

COTTON INSECTS

The High Plains crop continues on course for exceptional yields in many instances in the absence of significant insect pressure. So far bollworms and aphids have been pretty much a non-issue. Pinkies are still a problem on non-Bt cotton southwest of Lubbock and Lygus are becoming a problem in more fields, damaging larger squares and small bolls. All in all, it has been a very light insect year.

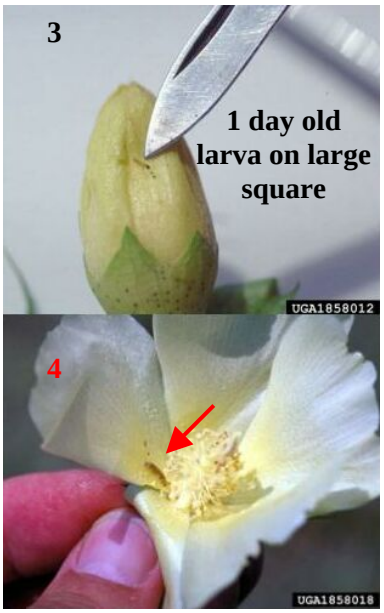
This may change soon if bollworms move into the area from the south. A significant amount of acreage was sprayed in the El Paso area week before last and **reports from San Angelo indicate that the bollworm egg lay is underway there.** If history is a good indicator of what is to come then we can expect a significant increase in bollworm egg laying activity in the coming days. One thing working in our favor on a lot of acreage is that it is in hard cutout and less attractive to egg laying activity and survival of 1-3 day old worms. Once squares are shed, bollworm survival plummets.

A production guide is under development focusing on bollworm management but it won't be ready until later this year. In the mean time let's discuss how to manage bollworms. Eggs can be laid anywhere on the plant although the bulk of them normally are laid in the upper newer growth and squares. Eggs are laid singly, usually on the upper surfaces of shiny new leaves. These eggs are white at first but eventually turn tan in color and finally dark brown to black (the black color is really the head of the worm). These eggs hatch in about 3-4 days and turn dark in color within 24 hours of hatch. All that egg numbers tell you is the potential for an upcoming worm problem, when worms will appear and whether there is an extended egg lay in progress. Since egg survival is generally low, (high temperatures, low humidity and predator effects), probably less than 50% actually produce a worm and of those 1 day old worms, probably less than half will develop past 3 days and cause real damage to potential harvestable fruit.

Egg development

Egg on dried bloom

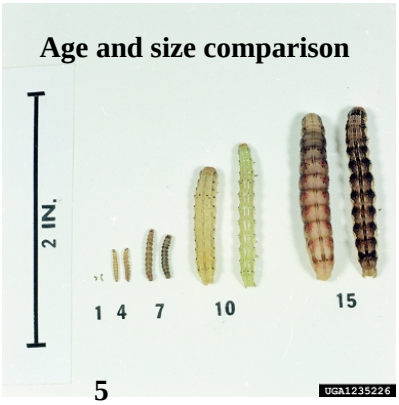
Much of the squares and small bolls fed upon by these very small worms (1/16 – 1/4 inch long) is to squares and bolls that will not contribute to yield. But once these worms gain size, they can then take on increasingly larger and more valuable fruiting forms. Remember that in Bollgard varieties, very few eggs produce worms past 3 days old. I would expect to see less than 10% of the total number of worms found in non-Bollgard fields to survive in Bollgard II fields. That is why you must base treatment decisions in Bollgard fields on worms that are 4 days or older (3/8 inch or larger).



3 day old larva in bloom

When scouting for bollworm management decisions, visually check at least 40 plants per field with these plants scattered across the field to pick up the variation infestation levels we expect to see. Unless large numbers are present, bollworms will be in a clumped distribution pattern. When checking plants, start at the top and work your way down examining all fruiting forms. Open up bracts of squares and bolls, look inside blooms and tear open pink blooms and bloom tags. Watch for eggs while you look for worms. I usually find the smaller worms after I notice a little damage. Flared squares can mean natural shed or older bollworm damage. Break your counts into small (1/16-1/4 inch long-1-3 days old), medium (3/8-1/2 inch long-4-6 days old) and large (5/8-1 1/2 inch long-7-

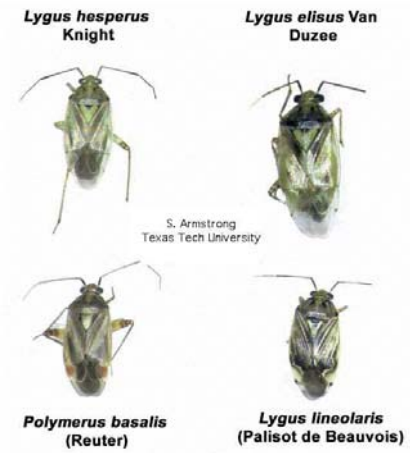
15 days old). You will gain the most in controlling the first two size groups and the least with the large worms. Remember that some of these small worms will die before moving up in size category. This means that if worm counts are right around threshold and represented by very small worms, control is probably not justified.



Take these counts on 40 plants and divide this total by 40 and then multiply this by the number of plants per acre in the field being checked. **My threshold is 10,000 small worms per acre.** The guide says <u>5,000 small worms per acre</u> but this is for inexperienced or half blind individuals. Once worms are 3/8 inch or larger or you are good at finding small worms, move your threshold level up to mine. Once you have 5,000 medium larvae per acre you might consider spraying. No more mortality will occur to these unless you spray. But remember that thresholds are just the starting point for a decision. I may spray at 8,000 per acre in some situations and 15,000 in other situations. There are a lot of variables to consider. Sounds complicated? It can be. That is why hiring a qualified consultant can be a good investment.

Members of the pyrethroid group of insecticides are the most common choices for most producers. These insecticides usually provide the least expensive control and provide fairly long residual activity. Their downside is their long negative impact on beneficial insects and spiders and their propensity to flare aphids. Other choices that don't flare aphids include Tracer, Steward, Denim, Lannate, and Larvin. Better control is obtained by higher spray volumes and better coverage. Three nozzles per row with drops will improve ground applications (8-10 gallons per acre). Aerial applications need to go out at 3 gallons per acre on fields with canopy closure.

There have been more *Lygus* problem fields pop up the last 10 days. Their damage can be evident on the larger squares, blooms and small bolls. Small bolls will have many black, sunken lesions or spots with warts (callus) on the interior boll wall. Lint can be discolored as well. *Lygus* especially like bolls the size of a quarter. "Dirty" blooms, torn blooms, scraped areas on bloom petals and browning of the anthers were all caused by *Lygus* feeding on the developing square, especially once white flower petals become evident. Another telltale sign of square feeding is yellow spots on squares, which is either bug exuviate or bleeding from the square.



Scott Armstrong, USDA, Weslaco, TX

Lygus numbers remain low in both weed hosts and cotton. Be especially watchful in fields that have nymphs appearing. This generally means establishment and is indicative of a more serious problem. Adult, winged *Lygus* move readily in and out of fields and may or may not feed much or even lay any eggs. There can be plant bugs encountered other than the most

common western tarnished plant bug. We have three species of *Lygus* plus another bug (*Polymerus*) that does not appear to cause undue damage. While adults can be separated as to species, nymphs cannot. Really, it is not important to separate out the three Lygus species from each other. But it is important to avoid lumping in *Polymerus* as well as some other bugs such as the scentless plant bug. Their presence is not important.

Pink bollworms continue to be a problem for some non-Bollgard fields in western Gaines and Yoakum counties. Moth numbers have remained high in traps and infested bolls have become quite common in a few fields. It would appear that in a number of instances, insecticidal control has not been very successful. The Bollgard fields are clean however. Some thing has gone terribly wrong with some fields where preventative treatments failed to stop in-field larval infestations. Because of the increasing problem, and because of issues involving Bollgard refuge requirements, harvest management, trapping, control decisions and insecticidal control strategies; I am putting together a task force later this season to begin to address these issues and seek solutions, both regulatory and producer initiated. We will probably initiate some overwintering pinkie research this fall with the goal of tracking survival and cultural practices that will influence survival. Next week we will be expanding trapping outside of the Gaines, Yoakum and Terry County area and move this trapping program northward and eastward in an attempt to capture fall movement and anticipate the need for expanding Bollgard acreage next year. We also hope that this trapping will give us a "heads up" for any problem fields popping up outside the known pinkie problem area.

Those with pinkie problems need to continue cracking bolls and looking for interior boll wall warts (a callus area). These will always be associated with a pinkie caterpillar. A magnifying lens will be needed especially when worms are 1 day old. Obviously, pinkie warts can be confused with Lygus warts but obviously *Lygus* warts will not have an associated worm. Pinkie warts tend to be larger than *Lygus* warts. Base treatment decisions now on infested bolls (10-15%). We will skip trap catches from Gaines, Yoakum and Terry counties this week as we ran out of Foundation pheromone and tried some old leftover pheromone from the freezer and got very reduced trap catches. These numbers are strongly suspect. **JFL**

BOLL WEEVIL WATCH

Trap catches continue to fall, as crop attractiveness out competes traps for weevils. Even the Permian Basin zone has experienced a significant fall off of weevil numbers. All other High Plains zones have caught no weevils the week ending July 25. Any sprayed acreage in the Western High Plains and Southern High Plains Caprock zones that week were a continuation of treatment protocols used in zones in the maintenance phase of eradication. I did not receive trap catches for the week ending August 1 in time to include in this week's newsletter issue. **JFL**

Average number of boll weevils caught per trap inspection and sprayed acreage through July 25. Number of boll weevils caught for the week ending July 25, 2004.

High Plains Zone	2004	2003	Sprayed acres	Weevils caught the previous week
Permian Basin	0.0088	0.0027	106,619	180
Western High Plains	0.00001	0.0001	2,154	0
Southern High Plains	0.00003	0.00004	12,869	0
Northern High Plains	0.00001	0.0005	1,972	0
Northwest Plains	0	0.00001	0	0
Panhandle	0	NA	0	0

CORN, SORGHUM, PEANUT INSECTS

Spider mites are still building in some cornfields, and several have been sprayed in the Springlake area. Insecticide coverage will be critical, so be sure to use at least five gallons of water per acre for aerial application. It would be a good idea to add dimethoate to any pyrethroid application.

Yellow sugarcane aphids (YSA) are easy to find in some sorghum fields, and outnumber greenbugs in places. We don't have thresholds for YSA after the boot stage, but expect about twice as much damage through toxin injection as from greenbugs. Therefore, the threshold is about half of that used for greenbugs. These aphids are easy to differentiate because the

YSA is more yellow than green (sometimes pale green) and is covered with small spines. The greenbug is greener and has a darker green stripe down the center of the back, and it has no spines. I am not aware of any fields needing to be treated for YSA. We will cover the limited insecticide options later if needed.

Peanut fields are still under a significant disease threat from leaf spot (early and late), *Rhizoctonia*, and *Sclerotini*a. The cloudy, cool weather on August 5 and below average temperatures forecast for the next few days would increase the threat. Photos of all of the pests mentioned above can be found on our pest photo gallery. **PP**

COTTON INSECT PHOTO CREDITS

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