

IN THIS ISSUE

Cotton Agronomy & Insects

- Timely rains across much of the area
- Spotty bollworm problems persist
- Lygus numbers low in weeds & cotton
- 1st summer generation pink bollworms in southern cotton
- Aphids, beet armyworms and spider mites are non-pests
- Boll weevil eradication watch

NEWSLETTER CONTRIBUTOR

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COTTON AGRONOMY & INSECTS

Million-dollar rain covers much of central and southern High Plains. After moving rapidly through the month of July with virtually no precipitation, our crop finally got a timely rain earlier in the week with amounts ranging from 1.55 inches in Seminole, 0.8 inches in Lamesa, 0.6 inches in Lubbock, 0.11 inches in Muleshoe and a trace in Silverton. More rain would be welcomed but none is forecast in the next week. Earlier planted dryland cotton was starting to stress pretty good and producers were scurrying to keep up with water needs of their irrigated crop. These rains will provide temporary reprieve for the dryland fields and allow irrigated producers to catch up.



Hooded sprayer

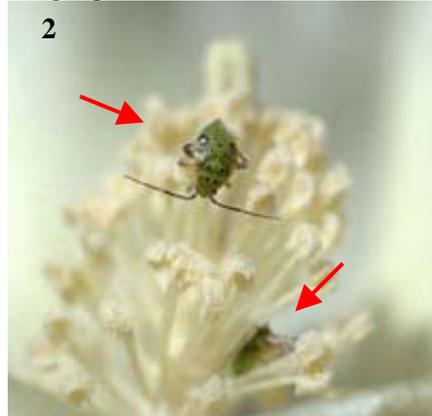
We also had a cold front move through the area dropping our Thursday morning low at Lubbock to 54° F, a record low for that day (previously 57° F). This is below our lower threshold of 60° F used for heat unit calculations and within 5 degrees of when cotton plants shut down, at least temporarily. No harm will come from these cool temperatures other than reducing the number of heat units accumulated for a couple of days.

The cloudy conditions accompanying these rains and cold front could pose a problem with boll shed. Without sufficient sunlight, cotton plants are unable to keep up with the carbohydrate demands of maturing bolls. When this happens, plants shed their youngest bolls in the upper part of their architecture and also in 2nd and 3rd positions out on fruiting branches. Since cloudy conditions were of short duration, this boll shed should not be excessive (I hope).

Much of the earlier planted crop is into peak bloom with fruit retention generally above 80%. Very few of these fields had fleahopper or Lygus bug problems. Later planted cotton certainly was and in a limited number of cases still is vulnerable to square retention problems associated with these two pests. For the most part, fleahopper problems have all but disappeared from sight in the rearview mirror.

The impact of Lygus bugs on this year's crop is still unknown. Up to this point, Lygus have been mostly off the radar screen as far as pest problems. Their main attack of cotton will be potentially in August and September, if at all. Lygus bug numbers are extremely low in weed hosts according to

[surveys](#) conducted through Dr. Megha Parajulee's research program at Lubbock. Weed infestations are averaging less than 10 per 100 sweeps and peaked around May at over 100/100 sweeps at Halfway, about 40/100 sweeps at Lubbock and about 50/100 sweeps in Gaines/Dawson County sites. Cotton infestations at these same sites are extremely low and pose no threat to nearby cotton.



Lygus nymphs on flower

Spotty bollworm infestations continue to infest cotton mainly from Lubbock south. These infestations are the result of a persistent egg lay from the first wave of bollworm activity in the High Plains of Texas. Reports from the Rolling Plains and Far West Texas regions indicate a similar trend. Egg lays have not been heavy enough to produce damaging infestations of caterpillars in almost all cases. Most bollworm larvae failed to survive to the young age of 5 days (1/2 inch size). The earlier cloudy, cool conditions could increase survival and cause a limited number of problems, especially in the later planted, lusher fields.

Those folks that were impatient and decided to spray without allowing sufficient time for heat and natural enemy induced mortality to take place probably spent money unwisely. Likewise, those that sprayed infestations below 10,000 small caterpillars per acre most likely made a management mistake. Most of these earlier infested fields took care of themselves with a sprinkling of fields that fell victim to chronic bollworm



infestations. These are situations when field checks every 3-5 days produce counts of 3,000 to 10,000 small worms over a period of a couple of weeks. If fruit loss reaches unacceptable levels (based on plant mapping, not a subjective eyeball estimate), then sure, a spray decision is probably warranted.

We have yet to see any significant flights of bollworm moths into our area from the south. Nor has any been reported from areas in the Rolling Plains to the east or south of us. This is good news as these flights often are to blame for our August-September bollworm problems. Moths released from our area

corn to the north used to be a big problem but reduced acreage and Bt corn plantings have greatly reduced their impact. Not only can greater numbers of moths arrive in our area from South Texas but they can be more difficult to control with pyrethroids due to increased tolerance developed in response to exposure to pyrethroid applications used against earlier generations.



5 day old larva (1/2")

Patricia V. Pietrantonio, Associate Professor, Insect Toxicology, Physiology and Molecular Biology, Department of Entomology, Texas A&M Univ. has been conducting resistance-monitoring studies across Texas. Results obtained from May and June moth populations from Nueces, Uvalde and

Williamson counties have shown an increase in resistance levels to pyrethroids with the potential for up to 50% escapes in Nueces

County, 10-15% escapes in Uvalde County and 25-30% in Williamson County. These areas were advised to either switch to different non-pyrethroid chemistries or use the high labeled rate of pyrethroids. Hopefully we will not “inherit” these increased resistance problems.

First summer generation pink bollworm caterpillars should start appearing in fields in the Midland and San Angelo areas. So far, surveys for rosetted blooms in Lubbock, Hockley, Cochran and Gaines counties have failed to detect early larval infestations. This survey will continue for the remaining 17 counties in the program over the next 7-10 days. Rosetted blooms are an early indication of pink bollworm larval activity in squares prior to flowering. Their silken threads bond the petals together creating a pinwheel arrangement (rosetting). Based on heat unit accumulations thus far (see Plains Cotton Growers [“Pink Bollworm Information”](#)) I don’t expect to see pink bollworm larval infestations in areas from Gaines County north any earlier than early August.

Traps are catching many fewer moths with overwintered pink bollworm emergence at or approaching 100% in most of the area ([see chart](#)). But with most of our cotton in the bloom stage with bolls present, we must switch to looking for infested bolls and away from trap catch numbers to make spray decisions. The boll infestation threshold is 10-15%. Examine at least 40-50 small bolls per field. This will be a difficult, time consuming task. Infested bolls will not have any visible external damage. Split open each boll looking first at the inside of the carpel



Pink bollworm warts & stained lint

or boll wall. Look for a small wart-like growth and hopefully locate a very small, white to almost clear colored larvae. A hard lens is a must to find small pinkies. Also look for stained lint.

Remember that our insecticide target is not these worms but the moths that lay the eggs that produce future worms. Therefore, spraying at dusk to dawn would be the most effective period. Pyrethroids are generally the materials of choice but Dow’s Lorsban formulation called Lock-On is also supposed to be effective. Thus far very few fields have been sprayed and even fewer with multiple applications. This will change as we move through August and into September. But with increased adoption of Bt cotton varieties and the 5% unsprayed refuge option, I expect sprayed acreage and number of applications per treated field to be down compared to last year.

For more pink bollworm information see [Pink Bollworm Management Tips I](#) in the Crop Production Guide Series of FOCUS and [Pink Bollworm Management In Texas](#).

Other pests have failed to materialize thus far. Sure, we have aphids, a scattering of beet armyworms and some spider mites, as well as a smattering of other very minor potential pests, but no economic problems have developed to date. Increased pyrethroid spraying would change all this so be very judicious in your use of these and other insecticides. We have a pretty good number of natural enemies out there helping us. Let them do their job.



Minute pirate bug adult

These include among others, minute pirate bugs, damsel bugs, various spiders, lady beetles, green lacewings, assassin bugs and big-eyed bugs (see [picture gallery](#)).

Trap catches have continued to drop as weevils move to hostable cotton and the Texas Boll Weevil Eradication Program continues to apply pressure on fields with traps catching the few remaining weevils. Catches were way down in the Permian Basin zone but more were caught in the St. Lawrence zone and a couple more in the Southern High Plains/Caprock zone. But accumulative sprayed acreage is only slightly more than 200,000 for the week ending July 24th (202,914 acres). **JFL**



Average number of boll weevils caught per trap inspection and sprayed acreage through July 24. Number of boll weevils caught for the week ending July 24, 2005.

High Plains Zone	2005	2004	Sprayed acres	Total weevils caught this week
Permian Basin	0.0300	0.0088	149,180	68
Western High Plains	0.0000 1	0.00001	3,420	1
Southern High Plains	0.0000 4	0.0001	14,367	2
Northern High Plains	0	0.00001	0	0
Northwest Plains	0	0	0	0
Panhandle	0	NA	0	0
St. Lawrence	0.3952	NA	35,947	454

For more management information on west Texas cotton insects, including a list of recommended insecticides, go to: [Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2005 \(E-6\)](#) and [Suggested Insecticides for Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2005 \(E-6A\)](#).

COTTON INSECT PHOTO CREDITS

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FOCUS on Entomology newsletter, is published by Texas Cooperative Extension
Route 3, Box 213AA
Lubbock, TX 79403

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