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FOCUS on Entomology

For South Plains Agriculture

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IN THIS ISSUE

NEWSLETTER CONTRIBUTOR

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EDITOR'S COMMENTS

IS THAT ALL THERE IS? This is the last issue of FOCUS for the year and my last issue as editor and contributor. The future of FOCUS is up to my successor. I have enjoyed preparing this newsletter each week as the need to gather information gave me the opportunity to interact with producers, consultants, IPM agents, Ag industry and others. Believe me, the information and education process was a two way street. I have watched FOCUS grow from a small local printed newsletter with very little graphics to a regional electronic newsletter with lots of pictures, graphics and of course links to other sources of information.

I am especially appreciative of my contributors from other disciplines and crops. Over the last several years, FOCUS contributors have included Randy Boman, Dana Porter, Peter Dotray, Terry Wheeler, Harold Kaufman, Patrick Porter and Calvin Trostle. My primary contributors this year were Randy, Terry and Calvin. Thanks guys and gals!

But most of all, I am most appreciative of Michelle Coffman, Associate Editor of FOCUS. She made the electronic newsletter possible by providing her skills in formatting, graphics and web link management. Without her, FOCUS would be a second rate newsletter. Thanks Michelle!!

What started out as an entomology only newsletter evolved into an all-encompassing crop management newsletter, as it should have. After all, we have been promoting Integrated Pest Management for years and we all know that really means Integrated Crop Management.

Just for your edification I am going to list the key entomologists that have been involved with FOCUS since its inception in 1965. These include: Don Rummel, Lyndon Almand, Bill Clymer, Bob McIntyre, Pat Morrison and of course myself. These individuals covered 41 years of entomological and cropping history in the west Texas area (mainly High Plains).

It has been a good run but I am ready to move on to other things. Goodbye for now, I've enjoyed immensely my association with everyone of you and even though retiring and moving to Colorado will be a dream come true, I can't begin to tell you how much I have loved Texas, Texans, and especially all of you. I'll be on the job through the end of this year but after that it truly will be goodbye.

COTTON INSECTS

Do you want to spend more money for insect control? Some folks obviously do as planes and ground rigs are still moving across many fields from Amarillo to Midland. While there are many fields that have refused to cutout due to heavy rainfall during the last month, there should be very few of these that can justify insect control. I want to emphasize again that it takes at least 850 Heat Units to make a really

good boll, 750 HU for a so-so boll with reduced fiber and fiber quality. I believe that there are very few situations if any that can capture this many HU from now until a plant killing freeze.

Almost finished

Now we all know by now that a boll is Lygus bug safe once 325-350 HU are accumulated from white flower. This is pretty straightforward. We also should know that aphids can no longer affect yield and therefore control applications should be held for later, if and when aphid infestations threaten open cotton with honeydew, potentially causing sticky cotton or impeding the function of some harvest aid materials.

The big question always revolves around when to stop spraying for worms (bollworms, beet armyworms and fall armyworms). A boll is relatively safe once it collects 350 HU past flower. But it is only safe from 1st and 2nd instar larvae. Once caterpillars reach 3/8 to 1/2" size, they can penetrate older bolls. But by 450 HU, I suspect that bolls are pretty safe from most worm feeding.

The other concern is for cotton that has not cutout and still has 5-8 NAWF. This cotton will still have plenty of squares and small, tender bolls. Even though this fruit won't make harvestable bolls it will provide the early food needed by bollworms and armyworms to become established.

My advice? I would be very hard pressed to spray for any insect now unless their numbers were of biblical proportions and I was way south. The more recent bolls will have lower fiber quality and weight and therefore will have reduced value compared to July or August bolls. But hey---it is your money and your crop. Do what you got to do.

Bollworms have continued to infest cotton from north to south. Some egg lays have remained relatively heavy. But as I have indicated above, I would be hard pressed to spray for these late infestations, with rare exceptions. I certainly would not spray on the basis of eggs or early instars. I would wait until worms are 3/8" long and number between 8,000-10,000 per acre. This should help put the brakes on.

Bollworm moths will soon start laying several eggs on one leaf. I call these lazy moths. Often these eggs do not hatch. I have always thought that this phenomenon was brought about by shorter day lengths, lower temperatures and physiological changes in cotton plants as they mature out their boll load and respond to declining temperatures. But the bottom line is that this often signals the end.

Bollworm egg cluster

There have been a number of complaints about sub par performance of pyrethroids in some areas. Most of the problems appear to be south of Lubbock but some are here and north. All pyrethroids have been implicated, not just the cheap ones or the ones used most or the ones that have been around the longest. So what gives? Does this represent increased resistance levels? It certainly could. We did experience

and document increased resistance levels in vial testing of moths in the south central and south Texas areas earlier this year. To the best of my knowledge, we have not documented increased resistance levels in our area. However, we are not testing moths in all areas of west Texas. In fact, testing covers only a fraction of our acreage. So I can't rule out the possibility. But remember---even if resistance is present, it could be on a field-by-field basis and not community or area wide.

There are other causes of poorer than expected pyrethroid performance. Coverage is always an issue, especially late in the season. Cotton plants are taller and the canopy often closes. Low spray volume, improper or not enough nozzles on ground rigs, and insufficient canopy penetration can all have an impact. Reduced rates are also a factor. Application timing is extremely important. If rains or other delays prevent an application until worms are larger and tucked away in pink blooms, bloom tags, and bolls, don't expect miracles. If these same worms come out several days later and make contact with the pyrethroid deposit, there may not be enough residual left to kill this larger worm. Also realize that pyrethroid performance has declined somewhat over the years from a high of 98-99% to about 90% when applied properly.

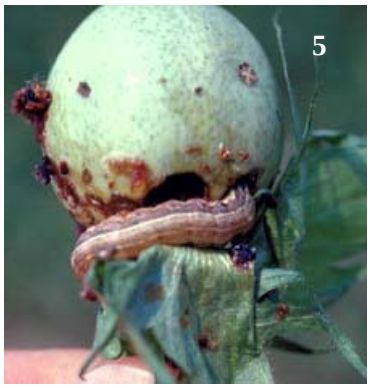
Last but not least, the worms targeted by the pyrethroid application may not be all bollworms. They may include, fall armyworms, beet armyworms and yellow-striped armyworms---all less susceptible to pyrethroids

FAW egg mass

Fall armyworm infestations have fanned out across the High Plains and reached high numbers in a number of fields as far north as Lubbock. Even so, most infestations are in fields we can no longer justify a treatment because of their maturity and lack of susceptible bolls that have a chance of making it to harvest. Many infestations of small larvae are failing to get established as evidenced by the absence of larger worms. For those fields that may still justify treatment, the threshold I have seen has been 2X the bollworm threshold. This would place it at about 20,000 small to medium worms per acre. Larger worms will be more difficult to control regardless of insecticide chemistry.

The bloom-infesting FAW of last week are now in lower bolls but causing less damage than one would see from bollworms. This is why we double the threshold. Egg masses are located in sites similar to that of beet armyworms.

Arkansas has rated insecticide performance for 2005 recommendations on a scale of 1-10 with 10 being the best. They list all the pyrethroids as a 5. I would expect some differences between the various chemistries but have no hard data to back that up. Denim, Steward and Tracer are listed as 9's---but I think this rating is too high and based primarily on beet armyworm data. Curacron and Lannate are rated a 6 and Larvin a 7. Intrepid is rated a 9 but it too probably is more like an 8 in relation to the performance of the other rated insecticides. I am still waiting to hear about earlier application results in the St. Lawrence area.



FAW boll damage

Pink bollworm trap numbers remain elevated (see chart) as moths lay eggs for the final generation of this season. Since bolls are

not safe until 600 HU have accumulated since white flower, protection will need to be continued well past that needed for other insects. This infestation will be the most widespread and damaging of all those so far. It will also produce most of the larvae that will overwinter in our area and seed next year's crop of pinkies. Field monitoring is still advised for all but the most mature fields. Once bolls begin to crack, pink bollworm worries should be over.

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.

Spider mite damaged leaves

Spider mites have surfaced in several fields south of Lubbock in areas where lots of pyrethroid applications have been made in response to worm problems. This is not an insect but can cause discoloration and severe damage to leaves, resulting in premature defoliation. Infestations and damage can also occur on square and boll bracts. Infestations often appear in heavy spots in fields but can eventually spread across the entire field. Dusty field margins are areas of higher risk. Western flower thrips numbers can increase in response to spider mite infestations and even control them.

Spider mite field infestation

Our management guide indicates that control would be warranted once mites begin to cause noticeable leaf damage. Other state's guides are just as evasive in their recommendations. It should be obvious that we do not have a definitive, research-based threshold. Chemicals listed for their control include Zephyr, Kelthane, Curacron and Comite. I have little experience with these critters but did have success with two applications of Curacron about 5 days apart. It took two applications to get the mites present at application and ones from later hatching eggs. Spot treatments can often work were money is an issue with expensive treatments.

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).

Boll weevil trap catches increased in the St. Lawrence, Permian Basin, Western High Plains, and Southern Rolling Plains zones. These infestations are still a reflection of the original problem emanating out of the St. Lawrence zone prior to it joining the eradication effort. Other problem areas in the state include the Lower Rio Grande Valley, South Texas/Winter Garden, Upper Coastal Bend and Northern Blacklands zones. Increases in trap catches in some of these areas are because of the absence of hostable cotton competing with traps as cotton bolls open. The northern High Plains, Northwest Plains and Panhandle zones continue to avoid weevils.

JFL

Average number of boll weevils caught per trap inspection and sprayed acreage through August 28. Number of boll weevils caught for the week ending August 28, 2005.

High Plains Zone	2005	2004	Sprayed acres	Total weevils caught this week
Permian Basin	0.0195	0.0064	189,391	55
Western High Plains	0.00002	0.00001	15,221	1
Southern High Plains	0.00003	0.00003	27,015	0
Northern High Plains	0.00003	0.00001	342	0
Northwest Plains	0	0	0	0
Panhandle	0	NA	0	0
St. Lawrence	0.1913	NA	83,666	714

Average number of boll weevils caught per trap inspection and sprayed acreage through September 4. Number of boll weevils caught for the week ending September 4, 2005.

High Plains Zone	2005	2004	Sprayed acres	Total weevils caught this week
Permian Basin	0.0182	0.0075	209,602	150
Western High Plains	0.00003	0.00001	17,142	6
Southern High Plains	0.00003	0.00003	28,142	1
Northern High Plains	0.00003	0.00001	342	0
Northwest Plains	0	0	0	0
Panhandle	0	NA	0	0
St. Lawrence	0.1821	NA	96,588	2,156

COTTON INSECT PHOTO CREDITS

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