



IPM NEWSLETTER

Update for Field Crops and Their Pests

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Cotton Insect Control Guide: <http://www.utextension.utk.edu/pbfiles/pb387.pdf>

Past Newsletters: <http://web.utk.edu/~extepp/ipmnews.htm>

Cotton

Hot Topics (Chism Craig, Assistant Professor)

I sure did pick an interesting year to start as the extension cotton specialist. If anything, this year taught me to never underestimate a cotton crop. Cotton is a crop that can fool us both ways. Cotton that looks like a bank of snow oftentimes lets us down at the gin. On the other hand, this year's crop completely fooled me the other way. Where did it come from? Cotton got off to one of the worst starts in recent years. Extremely high disease pressure and thrips infestations coincided with cool, moist conditions. Much of the cotton in the state suffered from poor growing conditions early, followed by near ideal conditions in June and early July that allowed cotton to "catch up", then we experienced severe drought stress in late July and August. When it finally rained in late August and early September, conditions were perfect for regrowth, which made defoliation difficult. On the bright side, the late rains, along with adequate heat units really helped the later planted cotton. Although yields were surprising, the majority of the state's cotton crop (almost 65%) was discounted for high micronaire. One of the most asked questions asked during the winter months was the cause of our high micronaire problems and how to fix it. This month's newsletter will address several of the key topics discussed at county meetings and at this year's Cotton Focus.

The two most frequently discussed topics include marestail control and variety selection to optimize yield and fiber quality. Glyphosate resistant horseweed or marestail is a problem with which everyone is familiar. Two years ago, many people may have been in denial but by now everyone realizes that the resistance is widespread. Fortunately, the problem can be handled if the proper methods are used. Addition of Clarity or some 2,4-D product into our burndown program has shown excellent activity. Keep in mind that each of these products has plant back restrictions. Some 2,4-D LVE labels allow for planting of sensitive crops like cotton 30 days after application without concern for illegal residues and 90 days after application without crop injury. Research indicates that cotton can be safely planted 30 days after application but as with any product, always follow the label for each specific product. Cotton may be planted 21 days after application of Clarity provided an inch of rainfall has fallen. Remember, the potential for off target injury in the spring is high and care should be taken to minimize drift. Special attention should also be paid to cleanout procedures and if possible, avoid leaving spray solutions in the tank overnight. Because of the plant back restrictions with these products and the lack of at-planting options for marestail control, burndown applications need to be made as soon as conditions allow.

Fiber quality is a hot topic among producers, seed companies, merchants and mills. Tennessee growers were among the most penalized in the Cotton Belt for high micronaire. I'm often asked to offer an opinion as to why so much of our cotton is discounted. Research has shown that micronaire is most influenced by the environment. However, some varieties are more inclined to fall into the discount range than other. Varieties prone to micronaire discounts, and subjected to a high micronaire environment, are likely to incur discounts. PM 1218 BG/RR is the number one planted variety in Tennessee and for good reason. It consistently yields well in variety tests and producer fields. However, PM 1218 BG/RR is often in the discount for micronaire. It's easy to point the finger at variety but keep in mind that the environment also plays a role. In my opinion, the best way to minimize risk is to diversify our variety choices. However, the potential for a short growing season, limits our variety choices. PM 1218 BG/RR will most likely be our most planted variety again in 2003 and there are some things we can do to minimize our risk of high mike with this variety. Choose your planting date carefully. PM 1218 BG/RR may not need to be the variety of choice for our early planting. I am constantly told that as PM 1218 BG/RR was planted later, grades improved. Another, key could be defoliation timing. Overall micronaire can be reduced by earlier defoliation. Keep in mind that defoliating too early may reduce yield along with micronaire, so the timing is critical. Sandy Stewart made an excellent point at this year's Cotton Focus. He stressed that variety selection is a field-by-field decision and that now is the time to think about what cotton you'll need to defoliate first. Variety blending has also been discussed as a means of improving overall fiber quality. It's true that blending may offer some relief but it's only a quick fix to our problem. One year of data in Tennessee suggests that micronaire may be reduced but I don't feel that every acre should be blended. Use it like a new variety....on a limited number of acres.

One last topic that I will address in this newsletter is the planting of medium and full season varieties. Growers are looking at new, high-yielding varieties with discount free fiber quality, more specifically, DP 555 BG/RR and ST 5599 BR. These mid-full season varieties have performed well in both variety tests and on-farm demonstrations. Remember that these varieties are not the early maturing varieties we usually plant and need to be managed accordingly. Another thing to keep in mind is that early planting does not always equal early harvest. Seedling vigor is a major contributor to earliness and DP 555 BG/RR in particular does not have good seedling vigor. Both varieties have excellent yield potential and good fiber quality but also have aggressive growth potential during the season. Judicious use of mepiquat chloride and maintaining early fruit retention will be keys to maintaining some degree of earliness. I would advise planting these varieties on a limited number of acres at first and avoid planting them on good bottomland soils prone to rank growth and flooding. The fit for these varieties may be on some of our thin hills with poor growth potential. Regardless of site selection or management tactics used, an early fall could be extremely detrimental to these varieties. Remember DP 5415 and LA 887?

What will be the outcome this year? Who knows? One thing is for certain, this year like any other, promises to offer something different from the one before. We'll just have to wait and see what happens.

2003 Tennessee Cotton Statistics

% Bt Cotton	84.7
% Roundup Ready Cotton	92.0
% No-Till or Con-Till	76.0
USDA Estimated Yield	729 lbs./a
Total Bales Classed	788,945
Avg. Micronaire	50 (31.5% 50-52, 33.0 % > 53)
Avg. Staple	34.2
Avg. Strength	28.0
Avg. Uniformity	81.6

Insect Considerations (Scott Stewart, Associate Professor)

Let me concentrate on two insect management decisions that may be on your mind.

Cutworm Control: Preventative control of cutworms is inexpensive because most species are susceptible to low rates of pyrethroid insecticides. Pyrethroid insecticides are commonly applied with herbicides at burndown or are applied at-planting, often in a band behind the planter. Reduced-tillage systems increase the chance of cutworm infestations because tillage, especially in the spring, eliminates weed hosts and mechanically kills larvae in the soil. It is very important to remember that damaging cutworm infestations are usually already present in the field at the time of planting. Fields kept free of weeds for three or more weeks prior to planting are unlikely to have significant cutworm infestations. A good, early herbicidal burndown in no-till cotton provides an opportunity to eliminate preventative cutworm applications.

If you intend to make banded insecticide applications behind the planter, don't cut the band width too narrow. It is highly questionable whether 1-2 inch bands are sufficient to control a genuine cutworm infestation. This may be the easiest approach when also applying in-furrow fungicides, but it may also be a waste of money. I suggest 10 inch band widths, which is still very economical. I also suggest avoiding excessively low rates that are labeled for some compounds. Stick within the lower end of the rate ranges shown below. The comments above also apply to managing cutworms in corn, but not all insecticides listed below are labeled for use in corn.

Insecticides recommended for cutworm control in cotton.

Insecticide	Lbs. Active Ingredient per Acre	Amount Formulation per Acre	Acres Treated per Gal. or Lb. of Dry Product
acephate (Orthene 90S, Bracket 90)	0.72	0.80 lbs.	1.25
bifenthrin (Capture 2)	0.04 - 0.10	2.4 - 6.4 ozs.	53.3 - 20
chlorpyrifos (Lorsban 4)	0.75 - 1.0	24 - 32 ozs.	5.3 - 4
cyfluthrin (Baythroid 2)	0.0125 - 0.025	0.8 - 1.6 ozs.	160 - 80
cyhalothrin (Karate 2.08)	0.015 - 0.02	0.96 - 1.28 ozs.	133 - 100
cypermethrin (Ammo 2.5)	0.025 - 0.1	1.3 - 5.0 ozs.	100 - 25
deltamethrin (Decis 1.5)	0.013 - 0.019	1.11 - 1.62	115 - 79
esfenvalerate (Asana XL 0.66)	0.03 - 0.05	5.8 - 9.6 ozs.	22 - 13
thiodicarb (Larvin 3.2)	0.6	24 ozs.	5.3
zetamethrin (Fury 1.5)	0.016 - 0.024	1.4 - 2.0 ozs.	94 - 62.5

Thrips Control in Cotton: Research has clearly shown that thrips control is warranted in Tennessee. In-furrow applications or seed treatments are recommended at planting. For those of you that attended the “Cotton Focus” meeting a few weeks ago, you saw Dr. Gary Lentz (University of Tennessee) do an excellent job of comparing Temik and the new seed treatments (Gaucho and Cruiser). In a nutshell, his data showed that Gaucho and Cruiser seed treatments were comparable to Temik (3.5 lbs/acre) in protecting plants from thrips. Based on multiple tests over a five-year period, yields and maturity for all three treatments were essentially the same, and there were some very impressive yield losses in untreated plots. The data also suggest that Temik has a longer residual effect on thrips than the seed treatments. It may be worth considering using Temik early and switching to seed treatments as planting conditions improve.

If you have infestations of reniform nematode, Temik will be your choice because it suppresses nematode populations, although higher rates should be used. Remember, when growing conditions turn really bad, it may be necessary to overspray any at-planting thrips treatment. Also remember that Temik can injure plants, and in-furrow fungicides are always recommended when Temik is used.

Recommended at-planting treatments for thrips control.

Insecticide	Lbs. Active Ingredient per Acre	Amount Formulation per Acre	Acres Treated per Gal. or Lb. of Dry Product
In-furrow Systemic Granules:			
aldicarb (Temik 15G)	0.525	3.5 lbs.	---
disulfoton (Di-Syston 15G)	0.75 - 1.0	5.0 - 6.7 lbs.	---
In-furrow Systemic Sprays:			
acephate (Orthene 90S, Bracket 90)	0.9 - 1.0	1.0 - 1.1 lbs.	1.0 - 0.9
disulfoton (Di-Syston 8)	0.75 - 1.0	12 - 16 ozs.	10.7 - 7.8
Treated Seed:			
acephate (Orthene 90S, Bracket 90)	25 - 30 ozs. Orthene 90S or Bracket 90 per 100 lbs. seed (2.5 - 3.25 ozs. Orthene 90S or Bracket 90/acre for hopper box)		
imidacloprid (Gaucho 480)	8 ozs. Gaucho 480/100 lbs. seed		
thiamethoxam (Cruiser 5)	7.75 ozs. Cruiser 5FS/100 lbs. seed (rates may vary with seed size to achieve a rate of 0.34 mg thiamethoxam per seed)		

Control Seedling Disease in Cotton (Melvin Newman, Professor)

The 2002 planting season had the worst seedling disease loss in three decades. The need for protection has never been more important for the 2003-planting season. Uneven stands of cotton are usually caused by seed rot, root rot and damping-off. Cool, wet weather can aid the fungi in the soil and cause even more damage. Applying an in-furrow fungicide can protect cotton stands and seed investments. An in-furrow fungicide can go a long way in helping establish a strong and uniform stand of cotton. In a 12-year study conducted at the Milan Experiment Station, in-furrow fungicides increased profits by an average of \$100 per acre per year. There are several recommended fungicides and combination of fungicides that can be used for control of seedling diseases. Trying to “get by” without a good seedling disease program might turn out to be the most expensive decision that a producer can make all season long. Poor stands and replanting are just not a profitable option in Tennessee. So, producers are encouraged to use the best means available to control seedling diseases.

Wheat

by Chism Craig, Assistant Professor

Over the past several days, I have had numerous phone calls regarding this year's winter wheat crop. Most farmers took advantage of the recent break in the clouds to size up their crop and make management decisions. The recurring questions include "Should I keep it or kill it?", "How many plants do I need?", and "If I keep it, how much N do I need and when?". These are all good questions and should probably be answered in the order in which they are asked. However, the first thing to decide is what is your yield goal. The answers to the above questions are directly related to your yield goal. Conversations with several wheat specialists around the area have generally led to the same conclusion. It may be a little too early to give up on this year's wheat crop. We still have some time to make a decent crop. Keep in mind that I said decent. Some of this wheat planted in early December may not have 70+ bushel yield potential and our decisions should reflect the "true" yield potential. Wheat grown in 7-10" rows with 8-10 plants ft² can still make a decent wheat yield provided the stand is uniform and Mother Nature gives us some cooperation. Ideally, wheat stands of 20+ plants ft² would provide 100% yield potential but 8-12 plants ft² could still yield 40 bushels or more "if" we receive good growing conditions. After the decision is made to keep the stand, N fertilization should be made according to realistic yield potential. Generally 60-80 lbs N/ acre is adequate to make 50-60 bushel yield. Those that planted early and have higher yield goals should consider N rates of 90-120 lbs N/acre. Using these higher N rates should always coincide with a sound fungicide program. Once the decision is made to keep the stand, it would then be a good time to consider applying the remainder or your total N. A good shot of nitrogen on later planted wheat will promote tillering and I doubt that we will be able to get in a split application. I really think we should re-evaluate this wheat crop next week after some days of warmer temperatures and sunshine. Wheat has tremendous compensation capacity and could fool us. Don't panic, this wheat crop still has some time if everything goes well from here on out.

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