Agricultural Extension Service
The University of Tennessee

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IPM NEWSLETTER

Update for Field Crops and Their Pests

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

Scout School Reminder: Tuesday, May 20, 9 AM - 2 PM, West Tennessee Experiment Station, Jackson. Lunch will be provided. CEUs and recertification points are being requested for those in attendance.

Cotton

Current Conditions and Concerns (Chism Craig, Assistant Professor)

At the time of the last newsletter, cotton planting had just gotten underway. The latest flush of storms brought most planting to a halt and may have some wondering about what will happen next. The Tennessee Ag-Statistics Service has us at 20% planted, a figure that represents cotton primarily in the southern tier counties, Mississippi River bottom locations and Middle Tennessee. Favorable early season weather had us at 30 and 55% planted at this time in 2002 and 2001, respectively but we are on pace with the five year average. Based on conversations with growers and agri-business personnel, most were waiting until some time after May 1 to get started. For those of you that have planted and have cotton up and or in the ground, here are a few comments. One question that has been asked is about hail damaged cotton. Thankfully, most cotton is still in the bag and much of what has been planted may not have emerged. For cotton that has emerged, check your fields carefully and count the number of plants that have healthy terminals, those with missing terminals and plants that have been broken off below the cotyledonary nodes. The healthy plants should be ok, those with missing terminals can recover but will likely be "crazy cotton" and will need to be managed accordingly and those plants broken off below the cotyledonary nodes will not survive. Once you have made these counts, make a note about how many plants will survive and determine the plant population you desire. Another concern that I have is the cotton planted into freshly tilled soil prior to the heavy rainfall. Large acreage was tilled this year to repair ruts and control marestail. Heavy rains have a tendency to pack these soils and sun tends bake them, forming a thick crust. Cotton has a hard time coming up in this situation and we often see cotton that "breaks its neck". Our only options may be hill dropping to aid in crust busting and using a rotary hoe type implement that is often only marginally successful. I hope we don't have much to replant. Many have concern about cotton that has rotted before emerging. Some are blaming seed quality and/or poor vigor for this problem. Smaller seeded varieties with less vigor may be part of the problem, but most cotton that I have seen has been waterlogged. Warm soil temperature and good soil moisture are key ingredients for germination and emergence but we can't discount the importance of oxygen. Oxygen is need for important metabolic functions for converting nutrients and oil in the seed to sugars and proteins for new root and shoot growth. Bottom soils and

flat areas of rolling hills have accumulated large amounts of water in the last week and cotton in these areas has not had much of a chance.

For those of you that have not planted, don't panic, there is still time provided Mother Nature gives us a break. I do think it may be time to return the full season varieties and go back to planting the early maturing ones more suited to our area. In my opinion, the window has closed for DP 555 BG/RR and ST 5599 BR. One thing that does concern me is that most cotton will be planted in a relatively short period of time. I'm always afraid of putting all of our eggs in one basket. Planting the majority of our acreage in a short period of time to one or two varieties of similar maturity puts us at risk if adverse weather conditions occur during the season. I don't know if we have any other choice at this point, but it would still be wise to try and match varieties to defoliation and harvest schedules.

One final note, we will probably see a good deal of *Ascochyta*, "wet weather blight" on newly emerged cotton after the rain. There is little we can do, and this is generally not a problem if favorable growing conditions exist. The leaf spot is fairly common in Tennessee in wet years and is usually a minor problem, causing little if any yield reduction. The leaf spot is often confused with injury from spray adjuvants early in the season. Severely infected plants will probably survive but may be unproductive and act like weeds. Cool, wet weather is required for development of this disease in cotton. The leaf spot associated with wet weather blight is characterized by a brown or gray spot usually 1 to 4 mm in diameter (it can be larger in severe cases) surrounded by a red halo. If the leaf spot progresses, cotyledons and young leaves may turn brown and die. There are no fungicides labeled for foliar application to cotton in the southeast. All cotton varieties are probably susceptible to wet weather blight.

Soil Fertility Issues (Hugh Savoy, Extension Soil Fertility Specialist)

Many growers have questioned the loss of nitrogen from recent weather patterns that left Tennessee soils wet, saturated or even flooded for longer periods of time than usual. Many growers wait until cotton emerges to a stand before the application of nitrogen but those who have applied nitrogen prior to planting often question how much is left and will be available for crop use after significant rainfall. Nitrogen loss from soils is a complex issue involving soil type, drainage, type of fertilizer used, application time and method, and many other such factors. Amount of nitrogen lost is difficult to predict, however consideration of some of the aforementioned factors may help in determining whether further nitrogen fertilization is warranted. Unless there is substantial and long term flooding, nitrogen recently applied as Anhydrous Ammonia sustains minimal loss. Nitrogen applied as urea usually remains in wet, saturated or flooded soils if the application occurred only a day or two prior to the flooding event and substantial internal lateral flow does not occur. Urea that has already been transformed into primarily nitrate nitrogen (3 to 5 days after application if no nitrification or urease inhibitors were used) and nitrogen applied as ammonium nitrate may sustain substantial loss of nitrogen from denitrification after 2 or 3 days of fully saturated conditions. In sandy or loamy soils substantial loss of nitrogen may occur from leaching. In silt loam or silty-clay soils, nitrogen may be leached deeper into the soil but is usually still available to the crop growing on the better drained upland soils.

Insect Considerations (Scott Stewart, Associate Professor)

At the risk of sounding like a broken record, thrips are the primary concern in seedling cotton. If in-furrow thrips treatments (e.g., Temik) or seed treatments (Gaucho, Cruiser) were not used, at least one foliar application is recommended after the cotton has emerged. Two applications will often be necessary, particularly if poor growing conditions occur. The first application should be made shortly after emergence, by the first true-leaf stage. A second application can then be made a week or so later. Many delay these applications, waiting to put them out with their herbicide. Keep in mind that most significant thrips damage starts well before the third true-leaf stage. With the heavy rains, we may have lost some in-furrow insecticides due to leaching. If one or more thrips per plant are being observed on cotton, even if at-planting insecticide treatments were used, a foliar application is generally recommended. Significant savings can be made if foliar applications are made on a band. The following table shows recommended thrips treatments. I've received a number of questions about pyrethroids. Most give decent control of thrips at the labeled rates, but they lack systemic activity and may not perform as consistently. However, they are a good option in fields with both thrips and cutworm infestations.

Recommended foliar treatments for thrips control.

Insecticide	Lbs. Active Ingredient per Acre	Amount Formulation per Acre	Acres Treated per Gal. or Lb. of Dry Product
acephate (Orthene 90S, Bracket 90)	0.18	3.2 ozs.	5
dicrotophos (Bidrin 8)	0.1 - 0.2	1.6 - 3.2 ozs.	80 - 40
dimethoate 4	0.1 - 0.2	4.0 - 8.0 ozs.	32 - 16
methamidophos (Monitor 4)	0.1 - 0.2	3.2 - 6.4 ozs.	40 - 20

Cutworms should be treated when they threaten to reduce the plant population below three plants per row foot. Infestations may be spotty within a field and only require treatment where damage and live cutworms are found. I often recommend an at-planting insecticides if vegetation has not been burned down at least 21 days prior to planting. As with thrips control, banding can save a lot of money, but the band should be no less than 10 inches. The table below shows the rate ranges for insecticides recommended to control cutworms. Pyrethroids are usually the most cost effective insecticides for cutworm control. Several pyrethroids have special labels for even lower use rates. I've not seen much efficacy data on these rates and recommend caution. I'm even less of a fan of these rates when they are applied like in-furrow fungicides (in a 1-2 inch band). This results in some very low rates being used at planting. Although cheap, I strongly suspect these are placebo, feel good treatments. Definitely do not use these low rates when dealing with a known cutworm infestation.

Recommended foliar treatments for cutworm control.

Insecticide	Lbs. Active Ingredient per Acre	Amount Formulation per Acre	Acres Treated per Gal. or Lb. of Dry Product
CUTWORMS			
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
zeta-cypermethrin (Mustang Max 0.8)	0.008 - 0.012	1.28 - 1.92	100 - 66.7
zetamethrin (Fury 1.5)	0.016 - 0.024	1.4 - 2.0 ozs.	94 - 62.5

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Pesticides recommended herein were registered for the prescribed uses when this publication was printed. Should registration be canceled, the University of Tennessee will immediately discontinue its recommendation of the pesticide. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

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