The University of Tennessee

UT Extension

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605 Airways Boulevard
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IPM NEWSLETTER

Update for Field Crops and Their Pests

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Past newsletters and other information can be found at UTcrops.com

Wheat Production (Chris Main, Cotton and Wheat Specialist; Melvin Newman, Extension Pathologist). Several issues need to be address with wheat production at this time. The most pressing question has been wheat response to flooded conditions. Wheat submerged or subject to standing water will lose yield potential if water persists for longer than 3-4 days. If you look at fields that are not flooded, even intermittent standing in low areas water can have a negative, cumulative effect over time. Also, I would guess that when the water recedes most of the wheat will be covered by silt or sand restricting growth during the most rapid stage of growth (Feeke's scale 5.0-10.5). The best course of action is to realize that, much like last year's freeze, a little patience will pay off. What about nitrogen losses? It is safe to assume that most of the nitrogen you applied will be gone after the flood water recedes. The good news is that with the warm temperatures prior to the flood the wheat had already begun to utilize what was applied. On wheat that appears to be salvageable, consider applying some more nitrogen to get maximum yields. 30 to 60 pounds should be sufficient to finish the crop and not cost too much money. We have plenty of time to decide to keep the wheat, or go to soybeans or cotton. My biggest concern and a good question to ask if considering changing to a different crop, is what wheat herbicides were used? Larry Steckel will have answers to those questions in this newsletter.

Some comments from Melvin Newman (UT Extension Plant Pathologist) concerning flooded wheat and disease control follows. "Wheat that is under flood water at this time will be in question for spraying a fungicide at early heading. If actively growing wheat stays under water (6 to 7 days or longer), changes are that yields will be reduced to the point that foliar fungicides will not be effective. The longer the wheat is under water, and the warmer the temperatures, the less effective a foliar fungicide will be." Some fields are getting low rates of fungicide currently. The University of Tennessee does not have any data to support applying a fungicide that this time. The best recommendation is apply your fungicide at early heading to get disease control when you need it by protecting the seed head.

Another question that keeps coming up is concerning weed control. If you have not controlled weeds in your wheat by now, forget about getting control of them. Most wheat is past the labeled stage of herbicide application and the winter annual weeds are in reproductive stages and will not be controlled easily.

Finally, if your top-dress nitrogen has not been applied yet call in an airplane, make ruts in the field or prepare to plant another crop. Most wheat has started jointing (Feeke's scale 6). This is the beginning of maximum nitrogen uptake. To prevent yield loss, get your top-dress nitrogen out as soon as possible.

Insect Management Considerations (Scott Stewart, IPM Specialsit)

Aphids in Wheat. A number of calls have come in about fields infested with aphids, and I have recommended treatment in a few cases. Forget about prevention of barley yellow dwarf virus. Any significant virus transmission will have already happened. The only genuine concern is preventing direct yield loss caused by aphids removing sap from the plant, which requires a fair number of aphids. We've looked at several fields and are mostly finding low to moderate populations of bird-cherry oat aphids, and we are seeing beneficial insects working on these populations. I normally do not recommend spring-time treatment for aphids unless one of the following conditions applies:

1) Greenbugs (pictured right) are present is significant numbers. Some suggested thresholds are 50, 200 and 300 greenbugs per linear foot for wheat that is less than 6 inches tall, 6-10 inches tall, and 18-20 inches tall, respectively. Most of the wheat is between 6-10 inches tall, and no one has reported numbers approaching 200 greenbugs per foot.
2) Aphids of any kind are causing leaves to die or dry up in several parts of the field. This is not always black and white because lower leaves will naturally senescence and turn yellow. However, if aphids are to blame, more symptoms will be found in aphid hotspots or heavily infested fields.
3) Aphids are causing honeydew to accumulate throughout the field. This is a bit off the books as far as UT's official recommendations go, but I'm being more aggressive with the good wheat prices.

Cutworms in Corn and Cotton. It is not a bad idea to apply a pyrethroid insecticide for cutworm control in corn. This is especially true for no-till fields and those that have had green vegetation present within 2-3 weeks of planting. This would qualify most corn fields in Tennessee, particularly this year when weather has delayed field work. Serious cutworm infestations are a relatively rare problem, but a couple of dollars of Baythroid XL, Karate, Mustang Max, Prolex or another pyrethroid can avoid some replanting or skippy stands. *Note: Ammo and its generic cousins are not labeled for use in corn.* Suggested pyrethroid rates for cutworm control are less than those normally recommended for control of bollworm or most other pests. A Poncho 250 seed treatment can suppress cutworm populations but may not be adequate for moderate to heavy infestations. Recommended insecticides and rates can be found at the following address: http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/InsectBook.htm.

The best time to make a cutworm application is as close to planting as possible. The cheapest way to apply it is as a 7-10 inch band behind the planter. However, if you are burning down within two weeks of planting, the insecticide can be applied with the herbicide. I do not recommend this if you are burning down two or more weeks before planting, especially later in the season as with cotton, because any cutworms present would likely "cycle out" before planting anyhow (and a new infestation could start in the interval between burndown and planting). If your fields have been weed free for 2-3 weeks prior to planting cotton, cutworm infestations are unlikely.

Weed and Herbicide Management (Larry Steckel, Weed Specialist)

Recrop Intervals After Wheat Herbicides. Winter wheat that is or will be under water will likely have to be planted back to another crop. Knowing when and what herbicides were applied to flood damaged wheat is a major consideration on a potential recrop decision. Harmony Extra XP which is

used on most wheat acres in Tennessee has a 45 day plant back restriction to several row crops. Osprey and Axial the herbicides we commonly used to control ryegrass have considerably longer recrop intervals. Below please find the recrop intervals for our commonly used herbicides in wheat:

Herbicide	Grain Sorghum	Corn	Cotton	Soybean
Express	45 days	45 days	45 days	45 days
Harmony Extra SG	45 days	45 days	14 days	45 days
Harmony Extra XP	45 days	45 days	14 days	45 days
Harmony GT	0 days	0 days	45 days	0 days
Osprey	10 months	12 months	90 days	90 days
Axial	120 days	120 days	120 days	120 days


Common Groundsel

Hands down the most common weed that folks wanted identified this spring has been common groundsel. It has yellow blooms and goes to seed like a dandelion. It is a winter annual that apparently had a very good start last fall across West Tennessee. It could be found in some fields last year at this time but was not near as widely prevalent as it is this year. Most folks want to know what will control it prior to planting. A herbicide at this point is not warranted as it is going to seed and will be gone in a couple weeks. With all the hay trucked in from out of state last summer and fall we are likely to see a lot of new weeds in Tennessee this summer.

Corn Premixes. Corn planting really got started this week with most planning to plant next week. Many fields going to corn are still green. Gramoxone Inteon or glyphosate mixed with many of the typical herbicides applied pre (i.e. Atrazine, Bicep) can do a very good job taking out troublesome weeds like horseweed. Below are some thoughts on the more typical corn premixes and three new ones:

- **Bicep (Dual II Magnum + Atrazine)** Rate: 1.6 to 2.6 qts/A
  Positives
  a. Has been used on more corn acres then any other corn premix.
  b. Provides good all around weed control with good crop safety.
  Management Considerations
  a. 2 qts/A rate provides 1.55 lbs ai of atrazine.

- **Harness Xtra 5.6, Degree Xtra, Breakfree ATZ** (Acetochlor + Atrazine) Rate: 1.7 to 3 qts/A for Harness Xtra or 2.9-3.7 for Degree Xtra or 2.2 to 3 qts/A for Breakfree ATZ.
  Positives
  a. The non-encapsulated acetochlor formulations Harness and Breakfree have provided comparable pigweed and grass control to Dual II Magnum.
  b. Degree Xtra is an encapsulated formulation that releases slowly over time. Limited research has shown about a week longer residual control of pigweeds than other acetochlor formulations.
  Management Considerations
  a. 2.1 qts/A rate of Harness Xtra provides 1.3 lbs ai of atrazine or 3.5 qts/A of Degree Xtra provides 1.17 lbs ai of atrazine or 2.5 qts/A of Breakfree provides 1.4 lbs ai of atrazine.

- **Lexar (Dual II Magnum + Callisto + Atrazine)** Rate: 3 qts/A
  Positives
  a. Very good resistance management product with three modes of action for control of many broadleaf weeds.
  b. Callisto can provide good glyphosate-resistant horseweed and pigweed control.
  Management Considerations
  a. 3 qts/A rate of Lexar provides 1.31 lbs ai of atrazine.
  b. 3qts/A of Lexar will provide 5.4 ozs/A of Callisto and is a economic way to buy Callisto.
  c. Cotton may be planted back 10 months after a Callisto application.
  d. Soybeans may be planted back 120 days after a Callisto application.

- **Halex GT (Dual II Magnum + Callisto + Touchdown)** Rate: 3.6 to 4 pts/A
  Positives
  a. Very good resistance management product with three modes of action for control of many broadleaf weeds.
  b. Callisto can provide good glyphosate-resistant horseweed and pigweed control.
  Management Considerations
  a. 3.6 pts/A of Halex GT will provide 3 ozs/A of Callisto and is an economic way to buy Callisto.
  b. Cotton may be planted back 10 months after a Callisto application.
  c. Soybeans may be planted back 120 days after a Callisto application.

- **Expert (Dual II Magnum + Touchdown + Atrazine)** Rate: 3 qts/A
  Positives
  a. Very good resistance management product with three modes of action for control of many broadleaf weeds.
  b. Callisto can provide good glyphosate-resistant horseweed and pigweed control.
  Management Considerations
  a. 3qts/A of Expert provides 1.6 lbs ai of atrazine and 1.3 lbs ai of metolachlor.

- **Spartan** (Not a Premix) Rate: 2 ozs/A
  Positives
  a. Good residual control of many small seeded broadleaf weeds and morningglories.
  b. Can be tank mixed with atrazine, Dual II Magnum or Sencor to help control grass weeds.
  Management Considerations
  a. Spartan received a 24c in Tennessee with flood prone fields in mind. Spartan can be used Pre or Preplant in corn. Soybeans can be safely planted back after a Spartan application on flood lost corn acres.

Late Season Burndown Options for Soybean

Some fields dried up enough that early burndowns were able to be applied over the last few weeks. Unfortunately that was more the exception than the rule. Horseweed is now growing rapidly in these fields and some I have looked at are 4 to 6" tall. Soil moisture levels are very good in most cases which should help dicamba control the horseweed. Below are some more thoughts on late horseweed burndown:

- **Clarity 8 to 12 ozs/A**
  Management Considerations
  a. Clarity rates **above 8 ozs/A** must be applied at least **28 days before planting plus receive 1" of rainfall** or soybean injury could occur.
  b. Clarity rates of 8 ozs/A can be applied up to 14 days before planting and 1" of rainfall to avoid crop injury.
  c. Use 12 ozs/A Clarity rate if horseweed is 6" tall, soil is dry and the field will not be planted to soybeans for at least 28 days. Plus you need 1" of rainfall.
  d. Be cautious of making overlaps!!

- **Gramoxone Inteon 40 to 48 ozs/A + 0.25% NIS + Sencor 4 ozs/A or Canopy 4 ozs/A or Authority MTZ 14 oz/A**
  Management Considerations
  a. This application can be applied right up to planting.
  b. Gramoxone Inteon rates below 40 ozs/A will not provide as consistent control of horseweed as higher rates.
  c. Recrop back to cotton after an Authority application is 18 months.

- **FirstRate 0.3 to 0.4oz/A + Roundup WM 22oz/A**
  Management Considerations
  a. This application can be applied right up through soybean emergence.
  b. FirstRate will not provide good control of horseweed under cool conditions.
  c. FirstRate performance is very temperature dependent. Works best with highs in the 80s and lows in the 60s.

Corn and Soybean Updates (Angela Thompson, Corn and Soybean Extension Specialist)

With respect to planting corn we seem to be at a standstill right now, but with cooler soil temperatures, wet fields in the western part of the state, and borderline too dry fields in some middle Tennessee counties, a slow start just seems to be our lot this spring. There were a few fields planted this week, but the majority of growers are looking closely at next week after this next batch of rains pass through. No-till corn seed germinates when morning soil temperature at a 2 inch soil depth is at least 50 degrees F for several days in a row. Air temperatures are a poor indicator of what is going on in the soil, especially under high residue situations, since the seed is placed up to 2 inches or more into the ground. We are looking at daytime temperatures of mid 50's to 70 and our soil temperatures are hovering below 60 degrees so emergence of any corn planted now is expected to be slow.

Fertilizer Considerations: With the high cost of fertilizers, it makes sense now more than ever to apply nitrogen material in a way that limits losses between the time seed is planted and when the corn really starts growing. Corn plants do not start utilizing substantial amounts of nitrogen until about the V6 stage, roughly 4 to 6 weeks after planting. We have some flexibility to delay corn nitrogen application from emergence up until about 12 inch corn and still have it available for plant use. It is a standard recommendation to apply up to 30% of nitrogen fertilizer at planting and the bulk of the

material as a sequential or topdress application. In a wet spring (such as this one may turn out to be) delaying nitrogen application to time it with crop use is a good option.

- Both liquid UAN and dry urea are prone to loss with surface applications, especially following recent liming. A urease inhibitor such as Agrotain can help minimize loss up to two weeks. Another urease inhibitor product is being evaluated for more long term protection. Injecting liquid material beneath the soil surface reduces loss as does banding liquid material to limit surface exposure.
- Consider delaying nitrogen applications until corn is 8-10 inches in fields with poor drainage that are frequently wet. Warm soils saturated with water lose nitrogen through a process called denitrification as nitrate nitrogen converts to different gas forms, and in a wet spring these losses can be significant.

Planting Reminders:

- Adjust seeding rate to field conditions and yield potential. A final stand of 28,000 to 32,000 plants fits many of our productive dryland corn fields (Table 1). Higher populations are good fits under irrigation but aren't practical on less productive ground. Consider reducing seeding rates to target final stands of 26,000 plants per acre on wide (36 – 40 inch) rows to minimize plant crowding and stalk development problems.
- Corn should be planted 1.5 to 2 inches deep under most situations.
- Close the furrow to allow uniform germination and keep out herbicides and pests. Remember that wet soils do not close evenly over seed, and shrinkage as soil dries can expose seed in the furrow. It is better to wait for the ground to dry.
- Follow manufacturer recommendations for planting speed. UT data indicates that operating some planters at speeds above 5 mph can increase the amount of skips or doubles which wastes seed and may reduce the uniformity of stand enough to affect yield.
- Seed monitors can detect failures in planter unit operation, but the only way to monitor depth and spacing is to check seed output behind the planter periodically just to make sure you are planting the population as you intended to.

Table 1. PLANT TO PLANT SPACINGS FOR CORN POPULATIONS

Final Stand*	Seeding Rate	20" row	30" row	36" row	38" row
(Plants/Acre)	(Seeds/Acre)	(Inches between kernels in the furrow)			
23,500	26,000	12.1	8.1	6.7	6.4
25,200	28,000	11.2	7.5	6.2	5.9
27,000	30,000	10.5	7.0	5.8	5.5
28,800	32,000	9.8	6.5	5.4	5.2

***Accounts for a 10% stand loss from original population.**

Suggested Guidelines:

-Increase seeding rate by 10% when planting into rough no-till fields or when cool and wet or moisture deficient conditions are present.

Soybean Seed Woes:

Seed shortages in soybean are still of concern as are questions about the quality of our seed supply. A seed germination test is one common measure of quality and is required for all seed sold in the state. Germination is not necessarily indicative of vigor. Growing conditions in 2007 affected germination and vigor of seed produced for sale this year. Soybean seed sold in Tennessee must have a minimum germination of 75% or better. Seed with a germination of 75 to 79% is considered "below standard" germination but is still commercially acceptable. Since germination testing is not an indicator of vigor, some seed companies conduct accelerated aging or "stress" tests on soybean seed. The accelerated aging test involves subjecting seed to short periods of high temperature and humidity followed by optimal conditions for germination. Seeds with low vigor deteriorate under the stressed environment and will germinate in low numbers. Contact your seed company representative or retailer to determine if your seed has been subjected to an accelerated aging test.

- Consider a good broad spectrum fungicide treatment to help protect stand if you are planting lower quality seed.
- Always add a *Bradyrhizobium japonicum* bacteria inoculant seed treatment when planting soybean seed in fields that have not been planted to soybean in the past 3 to 5 years. If the field has a history of poor nodulation, use an inoculant. Check the inoculant label if you are using a different inoculant product this year. Some have caution language about mixing with certain fungicide and insecticide products and directions on how soon to apply before planting.
- Add a molybdenum source either on the seed or as a foliar spray to small (2 trifoliate) beans if soil pH is low and lime hasn't been applied recently. A good source of molybdenum is needed by soil bacteria for proper nitrogen fixation. Note: some newer inoculant products like Optimize may have restrictions about using a moly seed treatment. Check label for use directions.

Farm Management (Chuck Danehower, Area Specialist - Farm Management)

The long awaited Prospective Plantings report will be released on Monday, March 31 at 7:30 a.m. The report can be found at: http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1136. Other web sites such as www.agweb.com and www.farm futures.com will also be covering the report and have some interpretation as how the commodity market will be affected. This is an important report as it will give a glimpse as to the expected acreage of each crop. I expect that there will be some surprises in this report as it looks like there may not be enough acres of corn and soybeans to create a comfortable supply. Cotton acreage will also be affected, and the question is how much cotton acreage will be reduced this year? After the market digests this report, look to planting weather, mainly in the Midwest to influence prices. After that, ideal weather or drought scares will be a factor.

Producers needing assistance making planting decisions should contact their local County Extension office for variety and production information. Soybean seed supply will be tight, and some varieties may not be common around here. However, your County Extension Agent can help you find some data to help you decide to plant it or not. If a desirable variety is not available, producers may have to switch to another crop. If we can help you make cropping decisions, please give us a call. It is not too late to put together a financial plan or a partial budget on your crop.

Wheat producers, who have wheat underwater or think they will have a loss, should contact their crop insurance agent. Do not destroy it without contacting your crop insurance agent.

DISCLAIMER STATEMENT

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label takes precedence over the recommendations found in this publication. 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 which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), The University of Tennessee, The Institute of Agriculture and the University of Tennessee Extension assume no liability resulting from the use of these recommendations.

Scott D. Stewart (editor), Extension Cotton IPM Specialist