The University of Tennessee

UT Extension

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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

Bookmarks: Corn and Soybean Update Corn Weed Control Frozen Wheat Management Cotton Planting Farm Management

Corn Crop Status (Dr. Angela Thompson, Extension Corn and Soybean Specialist)

As our temperatures warm up (finally!) this week it is becoming a little easier for us to make replant decisions in corn. We are now finding more corn that will have to be replanted than thought last week. Some plants that looked like they were recovering on Monday have 'gone backwards' just a few days later. I say replant decisions are easier now, because any corn planted in March or early April should have visible green leaves above ground. **If green tissue is not visible by now, the plants will not recover**. If you pull the dead tissue away and green tissue is not growing, those plants will not recover. We need to make stand counts in enough areas to determine uniformity and quality of stand. Count plants that have mostly green color, appear vigorous not wilted, with new leaves unfurled or loosely wrapped vs tight (Fig. 1 and 2). In a few fields I have checked where dead growth is severely constricting new growth, there doesn't appear to be much energy in emerging leaves to push through. Some of these plants will be delayed in growth and not compete with other plants in the field. Check by tapping or gently pulling leaves. If they separate pretty easily, plant should be fine. If they are tightly wrapped, make up the majority of the stand, and do not improve in a few days time, consider replanting the field --especially where stand is already borderline salvageable.

Figures. 1 & 2. Plant on left side is tightly wrapped and plant on right side is loosely wrapped. There are all degrees of in between so this is another judgement call. If time doesn't improve the unrolling of new leaves, the plant on the left won't contribute to the stand.

It is Not Too Late to Plant Corn

Our normal corn planting window runs from late March though April for the majority of our acres. It is true that earlier planted corn typically has fewer corn borer problems in a heavy insect year, less Gray Leaf Spot and may pollinate when we normally have better moisture conditions. But, yields depend greatly on the rainfall we receive during the summer regardless of planting date and each year is different. Replant corn or plant new acres as needed.

A Word About Soybeans

I know most folks are trying to make wheat and corn replant decisions right now, but we are entering our early soybean planting window if this can fit into your work next week.

Corn Weed Control (Larry Steckel, Extension Weed Specialist)

As the week has progressed it has become evident that what we had hoped would be just a few acres of corn that needed to be replanted has turned into tens of thousands of acres. The questions have come in on what to do with the partial corn stands. One thing for sure is if the old skippy stand is allowed to live it will become highly competitive weeds to the new planting. Tillage can do a pretty good job taking out an old stand but the tillage will need to be aggressive as just a swipe with a field cultivator can leave some plants to re-root. The best herbicide choice to control the old Roundup Ready corn stand is to use a Liberty Link hybrid and treat as needed with Liberty. It will probably take two applications of Liberty to provide complete control of the old corn stand. Due to the shortage of Liberty Link hybrid seed this will not be an option for many acres. The second best option is to burndown the old corn stand when it gets two leaves with 40 ozs/A of Gramoxone Inteon + 3 ozs/A of Sencor. Unfortunately Sencor is in short supply. The next option would be to replace Sencor with 0.5 lbs/A of Lorox or 1 pint/A of Direx. These herbicides are in much better supply and have performed as well as Sencor tankmixed with Gramoxone Inteon controlling old Roundup Ready corn stands. The last option I will mention has very limited research behind it but in theory should provide control though not as consistent as the mixtures previously mentioned. It is 1 pint of atrazine + 40 oz/A Gramoxone Inteon.

Herbicide considerations if replanting with a crop other than corn

Some folks may want to plant soybeans or cotton after a failed corn stand. That is fine **IF** no atrazine or Callisto (Premix Lexar) or acetochlor containing product (Harness Xtra, Degree Xtra, etc) has been applied. If atrazine has been applied only corn or grain sorghum may be replanted. Only corn can be replanted immediately if Callisto or an acetochlor (Harness, Degree, etc) containing product has been applied.

Weed Control in Replanted Corn

Replanted corn fields will need some additional management in most cases in order to obtain good weed control. Given the length of time as well as the rainfall it is not likely that any pre applied herbicide will provide good weed control much past early May. Atrazine can only be applied up to 2.5lbs/A per year if it is split applied. If Bicep was applied Pre and spiked up to 2lbs/A rate of atrazine that only leaves 0.5lb/A that can be applied now. That will not be enough. Callisto would be the best herbicide choice to replace atrazine in these situations. Callisto at 2 ozs/A in research with Roundup in a Roundup Ready system or in conventional corn has provided very good broadspectrum contact and residual weed control.

Weed Control in Salvaged March Corn Plantings

Frozen off corn fields that were fortunate enough to grow back and make a stand will also need additional weed management. Using more atrazine in these fields would be a good choice but may not be possible due to the atrazine limit of 2.5 lbs/A per year. Some have asked about using Clarity or 2,4-D on this corn. I would be cautious using these products over the next week or two on these corn plants recovering from the freeze. In many cases the corn leaves are knotted up and are struggling to unfold properly. Adding a plant growth regulating herbicide now may hamper this recovery process. Also be cautious using Steadfast or Resolve. Corn maturity at the time of the freeze ranged from just emerging to 5 leaf (collar) stage. Therefore we only have about 1 or 2 new leaves on corn to emerge in some fields before we are at or off the label for Resolve or Steadfast. If in doubt on the corn maturity

use herbicides that are less likely to injure mature corn like Callisto (can be applied up to V8 corn) or Dual (can be applied up to 40" tall corn). Other herbicides that can be applied to more mature corn are Roundup on Roundup Ready hybrids (can be applied up to V8 corn) or Liberty on Liberty Link hybrids (can be applied up to V7 corn).

Frozen Wheat Managment – (Chris Main, Cotton and Small Grains Specialist)

Prospects for salvaging the majority of this year's wheat crop are slim at best. The best looking wheat was planted around or after Thanksgiving and was at most in the very early boot stage at the time of the freeze. The further north in the state you go, the more loss is expected. The further south you go the wheat was more mature at the time of the freeze and severe loss is expected. Along Highway 70 is a transition zone where some fields are a complete loss while the neighboring field may be salvaged. This difference is related to variety, planting date, amount and timing of top-dress nitrogen applications.

Damage is easy to find and is a quick way to assess the crop.

1. First look at the overall field appearance. White seed heads equal no seed production. The crop should be uniformly green any yellow tent that you see across the field is a key that stem damage has occurred.

2. Next look for lodging. Brush your hand or foot over the tops of the plants back and forth and look for lodging. If a majority of the plants fall down, the prospects for saving the crop are not good.

2. Examine the joints and stems. If there are soft spots or brown discoloration (picture right) above or below the joints this is the areas were lodging will occur. Also, look for lesions on the stem and swollen stems. These symptoms formed when the tissue froze. The stems are weakened and will lodge in a few weeks.

3. Finally examine the seed head and flower structures. If white awns and reproductive structures are present, these heads are sterile and no seed will be produced. Also, as heads emerge look for white bands on the stem. This is a freeze line and cause lodging of mature heads.

Wheat which exhibits none or very few of the symptoms listed above could possibly be salvaged. Considerations that should be made when accessing these wheat fields are many. Remember that seed from damage wheat we will have a low test weight and very poor germination. However, we need to r remember that come the fall 2007 wheat seed for planting will probably be in short supply. So, if some fields can be salvaged, plan accordingly.

What do we do now?

There are several ways to approach this year's wheat crop. Some questions to ask are: Was wheat crop insured or not and what are the rotation options. Here are some suggestions to help make informed decisions. If you had a contract find out about buy out options or roll it over to 2008. If you had crop insurance make sure that all of your wheat acres are certified then contact your insurance agent to get the claims process started.

If you want to re-plant your wheat fields to corn or cotton the first thing you must do is check the rotation restrictions on the herbicides that were used on the wheat crop. If rotation to corn or cotton is possible, get your insurance adjuster to the field as soon as possible. They will conduct a stand count and request that you leave a strip of the crop standing for final loss analysis. The strip that is left in the field will need to be managed as though you were growing a wheat crop. This includes spraying a fungicide, insecticide and continuing your irrigation if you had planned to do so. Also the strips need to be protected from herbicide drift from the burndown you will need for a re-plant. If you plan to kill this wheat crop and go to corn or cotton first desiccate the wheat with paraquat (Gramoxone Inteon) at 40 ounces per acre. If you're going to corn you can spike the paraquat with atrazine to help take out the wheat. If you're going to cotton the best plan is to use paraquat by itself and then come back with glyphosate (Roundup) after the crop is established. The next topic is what will be your fertility needs? I suggest getting a nitrate analysis once you get a crop stand. This soil nitrate analysis will give you some idea of how much nitrogen was available in the soil and provide a starting point for side-dress nitrogen application rates.

If you plan on re-planting to soybeans the best advice is to leave the wheat and see what happens. By leaving the wheat it will allow you to have a more accurate estimate of loss from lodging and for missing seed heads with the insurance adjuster. This will help you with any insurance payments you plan to get. You will need to get the insurance adjuster to the field before you harvest the wheat. They will make an estimate of loss at that point in time that. You should be able to harvest and possibly sell some of that wheat. An additional way to recover some cost is by bailing up the wheat straw for mulch. Then go ahead and plant double crop soybeans as was planned following wheat.

If your wheat was not insured these decisions become much more difficult. In my opinion most of the wheat fields and I have looked at are not worth salvaging unless they were planted very late and top dressed very late as well. You may be able to get some seed from these fields. However, it will come from the secondary tillers on the plant. It will take it much longer to mature, at least into the first part of July. This wheat will have a very low test weight and may not even be desirable to sell at an elevator. Furthermore, the dead plant material has the potential to be a host for disease, and will make it much more difficult keep diseases off these secondary heads. Also, what ever you plan to re-plant into these wheat fields, be sure to use a fungicide at planning. Regardless of whether you use an in-furrow liquid fungicide or a seed treatment it help will ensure that the diseases from a decaying wheat crop does not move into the re-plant crop.

Please remember this situation is affecting all producers in Tennessee. My advice is to use common sense in the decision making process. Do what ever makes the best economic sense for your situation and make the best of this bad situation.

Cotton Planting Considerations – (Chris Main, Cotton and Small Grains Specialist)

As we near the beginning of cotton planting season it is only prudent to review some basics of cotton production to help keep us out of trouble.

Seed Quality:

Plant only high quality seed with cool germination percentages close near 60%. In soils that are typically cold and wet (early no-till planting), choose high quality, large seeded varieties. Smaller seeded varieties or average quality seed lots should be planted when soil temperatures are above 70F.

Seed Treatment versus In-furrow Products:

The best advice is to insure your substantial investment in seed with some type of fungicide and insecticide. In-furrow fungicides are strongly recommended for early planting or for fields with a history of seedling disease. Products such as Avicta Complete Pack and Aeris should only be purchased for fields with a **known history** of reniform nematode populations based on actual counts from soil samples.

Seeding Rates:
Calibrate planters for each variety or changes in seed size. Vacuum air planters are extremely accurate only when calibrated correctly. Don't cut seeding rates too close. Planting 3 seeds per foot rarely results in 3 plants per foot. Cutting seeding rates can save money, but remember to aim for a final stand of 3 plants per foot. This population is consistently the highest yielding and easiest to manage. Planting enough seed will save time and costly replanting decisions.

Hill dropping seed can help to ensure stands in soils prone to crusting. Two or three seeds per hill have more pushing power than one seed alone. Dropping 2-4 seeds per hill are typical, but 2-3 is optimum. A spacing of 8-12 inch per hill is optimum, but attempts to reduce seed costs by increasing the distance between hills can stretch to 14-16 inches. Remember as spacing between hills increases, yields may decrease and maturity can be delayed.

Seeding Depth:
Periodically check seeding depth. Many replants could be avoided by planting at the proper depth. Cotton should be planted into moisture but should not exceed 1.5" deep, especially early in the season when frequent rains occur or when planting small seeded varieties.

Risk Management:
It is not too early to plan for in-season and harvest time constraints. The best advice is to match planting dates with variety maturity. I realize that even the most careful planning will fall victim to weather delays, breakdowns. Having several maturities can actually lead to more efficiency as well as spreading risks. Remember to plant full season varieties like ST 5599 BR and DP 555 BG/RR by May 12, you may suffer at the expense of an early frost. Instead of planting 500-750 acres of one variety in 5 days, why not plant the same acreage with two varieties of differing maturity. By doing so, field operations and picking may be spread out enough to allow you to handle the little opportunities that happen along the way. This is much easier said than done, but a little forethought can go a long way during a tough season.

Soil Temperature Effects on Cotton Germination
Soil temperature plays a key role in establishing a uniform stand when planting cotton, especially in April. Planting forecasts routinely consider the 5-day forecast for temperature, expected accumulation of DD60s, rainfall, and potentially drying winds. The missing ingredient is usually soil temperature because it can vary from field to field based on tillage, soil texture, color, surface residue, bed preparation, and moisture. The following general guidelines should be observed when planting cotton

1. Finer textured soils warm slower than coarse textured soils due to greater water holding capacity. Water has a high heat capacity and can act as a thermal buffer to daytime heating.

2. Well-drained soils typically warm faster than poorly drained soils.

3. Raised beds warm faster than flat ground because of greater internal drainage, more surface area exposed to the sun and more aeration. The higher the bed, the faster it will

warm.

4. Dark colored soils warm faster than lighter colored soils because they retain heat from sunlight better.

5. Surface residue (i.e. no-tillage practices) will tend to retain soil moisture and shade the soil surface resulting in slower warming.

Soil temperatures should be at least 68°F at the two inch depth with favorable conditions (accumulation of 25-50 DD60s) forecasted for the next five days. Conditions 2-5 days after planting are critical for stand establishment. Soil temperature will fluctuate daily with sunlight availability, but 65F should be considered a minimum. Soil temperatures below 65F can lead to chilling injury and greater vulnerability to seedling disease pathogens. The key is to measure the soil temperature in the field in which you are considering planting. If you decide to plant early into less than optimal conditions, be sure to use either a seed treatment (fungicide+insecticide) or an in-furrow fungicide and insecticide.

Cotton Planting Forecast

In an effort to aid in making planting decisions, a cotton planting forecast will be offered every 3-4 days in 2007 (April 15-May 30). The planting forecast will consider the predicted temperatures, DD60 accumulation, rainfall, and potential for drying winds on the day in which the forecast is issued. The forecasts will focus on data for Brownsville, Dyersburg, Fayetteville, Memphis, and Milan to cover a wide geographic range of Tennessee cotton production. These are only forecasts and are subject to the inaccuracies associated with trying to predict the weather. This information should be used along with good judgment for making a planting decision.

Predicted DD60 accumulation for five days following planting	Outlook for planting
<10	Very poor
11-15	Poor
16-25	Marginal
25-50	Good
>50	Very good

Cotton Planting Forecast for April 20-24, 2007

Location	DD60 accumulation	Rainfall and Wind	Outlook
Brownsville	41	Chance of scattered T-storms Monday	Good
Dyersburg	42	Isolated T-storms Monday and Tuesday	Good
Fayetteville	25	Isolated T-storms Monday	Marginal
Memphis	53	Isolated T-storms Sunday and Monday	Very Good
Milan	34	Chance of scattered T-storms Monday	Good

Farm Management Update – (Chuck Danehower, Area Specialist – Farm Management)

Producers continue to assess the damage the Easter weekend freeze caused and act accordingly. It appears the damage to the wheat crop is moderate to severe with some complete loss. Unfortunately, it is difficult to have a definite assessment at this time as the crop may have the ability to compensate somewhat for the damage. That leaves producers at the crossroads of *what to do from this point forward*.

The decisions to be made still depend on several factors – **1)** Crop insurance, what is my coverage and what procedures do I need to comply with? In most cases, at least a strip will have to be left and maintained to determine yield. Check with your crop insurance agent for coverage levels and procedures. **2)** Check with your grain elevator if wheat is contracted. Elevators I have checked with will allow you to buy out your contract. You will have to pay a cancellation fee – around $.05 - $.10 per bushel. If current futures are higher than when you contracted, you will have to pay the difference. Another alternative, may be to roll your contract to July, 2008 . Currently, July 08 has started trading lower than July 07 so your contract may be reduced by that difference. The spread between 07 & 08 July futures has been changing each day so that difference will depend on the day you roll your contract. Service fees will apply. The disadvantage to rolling to 08 and establishing a contract price is as in any contract is that the price could go higher. Another concern is the availability of seed wheat to be planted this fall. It is difficult to predict at this time, what will be available.

If wheat is kept to harvest, keep in mind that if it is poor quality then discounts will apply. However, keeping your wheat and planting double crop soybeans is still one alternative to consider. Other alternatives are to destroy your crop and plant corn, milo, cotton or soybeans. Let's look at those alternatives first. Certainly, chemical restrictions override any economic decision so that may limit your alternatives. Seed availability for corn and milo may also limit those options. Milo currently has a very wide basis for delivery and may have some delivery problems. Again, check with your elevator. There may be some N available from the wheat crop, but how much and when it may be released is a concern. If corn, milo, or cotton is planted, then tissue sampling for N will be necessary to determine how much additional N is needed. It may be difficult to get a good kill on burndowns applied to the green wheat. This may also cause difficulty in planting and getting a good plant population established. Cotton may be an alternative, but at average yields soybeans appear more profitable. However, if your farm has high yield potential, cotton may be an alternative. For producers who have cattle, hay may be an alternative, but again chemical restrictions may prevent that from being viable.

Every producer's situation is different, but the most viable alternatives appear to be keeping the wheat to harvest then planting soybeans or trying to burndown the existing wheat and plant full season soybeans. Partial budgeting of these alternatives can aid in your decision making. In this type of analyses, we only look at the variable cost (fuel, repairs, & labor) associated with the crop. In considering whether to keep your wheat crop and combine it, you will have to at least cover the variable costs to carry it through to harvest. Unless a fungicide is applied the only additional cost for wheat will be harvest cost and hauling. The variable cost for combining and hauling can range from $12 - $20 acre depending on hauling distance. The UT budgets use $13 acre. If you made 20 bu.(example only) per acre and your net price received after quality discounts was $3.50 bu. then the gross revenue per acre would be $70 and the net revenue after harvest expenses would be $57 ($70 - $13). Double cropped soybeans following the wheat would then have your normal expenses. If you decide not to keep your wheat crop one option would be to apply burndown on your wheat and then plant full season soybeans. The burndown expense would most likely be higher than a normal

situation. In the example in the Table below, I am using 2 quarts of Roundup rather than the 1.6 pints in the UT budgets. The other adjustment made is the consideration that no additional P & K will be needed on the soybean crop.

In the example below, the total revenue for the wheat-soybeans is $288 acre with variable expenses of $85 acre leaving a net return of $203 acre. This compares to a net return of $189 acre with full season soybeans planted into the destroyed wheat. I hope this to be a framework to aid in decision making on the wheat crop. Producers should plug in their own estimates for their farm. For some producers, the severity of the damage has made the decision. If you need assistance in making this decision, contact your local UT Extension office.

Wheat Decision Aid – Should I Keep My Wheat?

Crop	Yield	Price(bu.)	Wheat-Soybeans	Soybeans
Wheat	20	$3.5	$70	
Soybeans	30	$7.25	$218	
Soybeans(Full)	38	$7.25		$276
Total Revenue			$288	$276
Expense - Wheat			$ 13	
Expense - Soybeans			$ 72	$ 87
Total Variable Expenses			$ 85	$ 87
Net Returns Above Variable Expenses			$203	$189

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