

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 4

April 16, 2009

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

Bookmarks: [Wheat situation](#) [Cotton planting](#) [Insect control & At-planting treatments](#)
 [Weed control](#) [Cotton seedling diseases](#) [Farm management](#)

Resources: Take a look at the *Pick Tennessee Products* website (<http://www.picktproducts.org/>) and particularly the Tennessee Agricultural Enhancement Program (TAEP, <http://www.tennessee.gov/agriculture/enhancement/index.html>). There are some opportunities to cost share some long term investments in farming operations such as on-farm grain storage.

Wheat Situation (Dr. Chris Main, Extension Cotton and Small Grains Specialist)

Most wheat across west Tennessee is in the boot to early seed head emergence. In general wheat planted prior to November 5th 2008 looks much better when compared to wheat planted after November 5th. Keep this in mind when assessing the crop and planning for further inputs for this growing season.

With the abundance of rainfall over the last few weeks consider applying your fungicide as soon as head emergence is noted across the field, in the next 10-14 days or so. We are not seeing many diseases yet, but expect disease to appear with the forecasted warming trend for later next week.

Cotton Planting Considerations (Dr. Chris Main, Extension 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 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 Pak 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 mid-full season varieties by May 12. 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 5 days in 2009 (April 20-May 15). The planting forecast will consider 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 Jackson, Dyersburg, Fayetteville, and Memphis 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.

Cotton Planting Forecast for April 20-25, 2009:

Jackson, TN

Predicted 5-day DD60 accumulation – 14 (Poor)

Dyersburg, TN

Predicted 5-day DD60 accumulation – 16 (Marginal)

Fayetteville, TN

Predicted 5-day DD60 accumulation – 9 (Very poor)

Memphis, TN

Predicted 5-day DD60 accumulation – 20 (Marginal)

Outlook (for all regions) – April 20 is the beginning of our recommended planting window. The forecast is for chance of showers over this weekend and a very poor to marginal accumulation of DD60s over the next 5 days. Most forecast lows drop below 50F for Friday through Tuesday. The good news is that a warming trend is predicted later next week with fewer chances for showers. Keep in mind that these are not the kind of conditions that will result in a full stand 5-7 days. Emergence is expected to be poor and seedling growth is likely to be slow until at least the last week of April. I would consider waiting till Wednesday (4/22) or Thursday (4/23) to begin planting cotton. Most producers will be trying to finish up corn planting, so even waiting until 4/27 to start planting cotton would be acceptable.

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

Insect Control Considerations (Scott Stewart, IPM Specialist)

Wheat. Unless aphid populations are unusually heavy, there is probably little benefit to treating for aphids at this late date. It is common for populations to reach several hundred aphids per foot of row. Relatively severe infestations can sometimes stunt wheat and potentially reduce yields. How do you know if you have a “relatively severe infestation”? Honeydew will accumulate to the point where plants are sticky in most parts of the field (keep in mind that honeydew will wash off after a rain). Also, some leaves on infested plants may wither and die. Once they get rolling, beneficial insects can and often do reduce aphid populations. If spraying is justified, use one of the several effective insecticides recommended in UT’s



[2009 Insect Control Recommendations for Field Crops](#). Dimethoate, Baythroid XL, Prolex, Karate/Warrior and Mustang Max are commonly used with good results. (Pictured: bird cherry-oat aphid)

In a couple of weeks, start watching for true armyworm. The larvae will feed on the foliage. Use a threshold of 6-8 larvae per square foot if wheat is in the milk stage (or less mature). Wheat can tolerate considerably higher populations once it is past the milk stage, and treatment is generally not recommended at this time unless larvae are clipping heads.

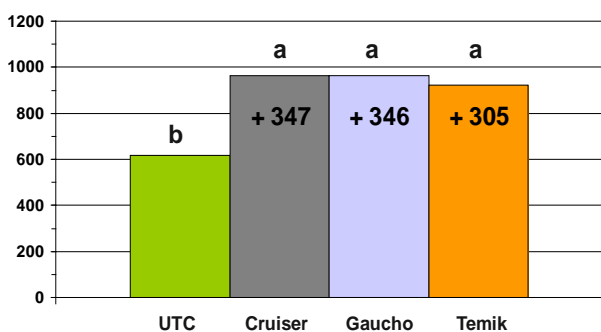
Thrips Control in Cotton. Cotton growers in Tennessee should use a preventative at-planting insecticide, either a seed treatment or Temik. This message has never varied. At-planting treatments can be the difference between getting an acceptable stand vs. replanting, especially if you plant early or the weather turns sour. A foliar-only approach for thrips control is generally not as effective as (or any less expensive) at-planting treatments, and two applications are pretty much the minimum unless growing conditions are very favorable. The standard rate of Temik 15G is 3.5 lb/acre. Temik rates as high as 5 lb/acre are sometimes suggested if nematodes are an issue. Seed treatments include Gaucho Grande (0.375 mg ai/seed) or Cruiser (0.34 mg ai/seed). Aeris and Avicta Complete Pak contain the above rates of Gaucho and Cruiser, respectively. The graphs below show the average yield response in several thrips control experiments. These tests were done in West Tennessee and northern Arkansas.

Summary of Cotton At-planting Insecticide Tests

Thrips Trials - Yield (Lb Lint/Acre)

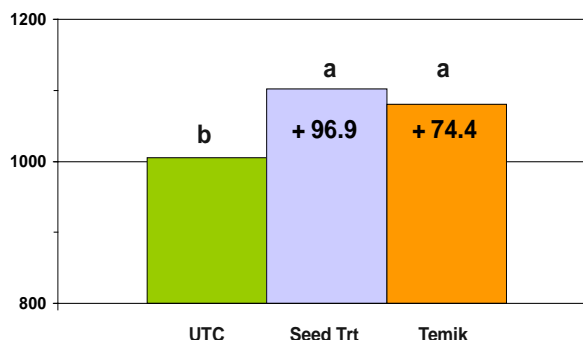
Gary Lentz (UT), 8 Trials from 1998-2002, WTES

N = 1 (1998, 1999, 2001), N = 5 (2002)

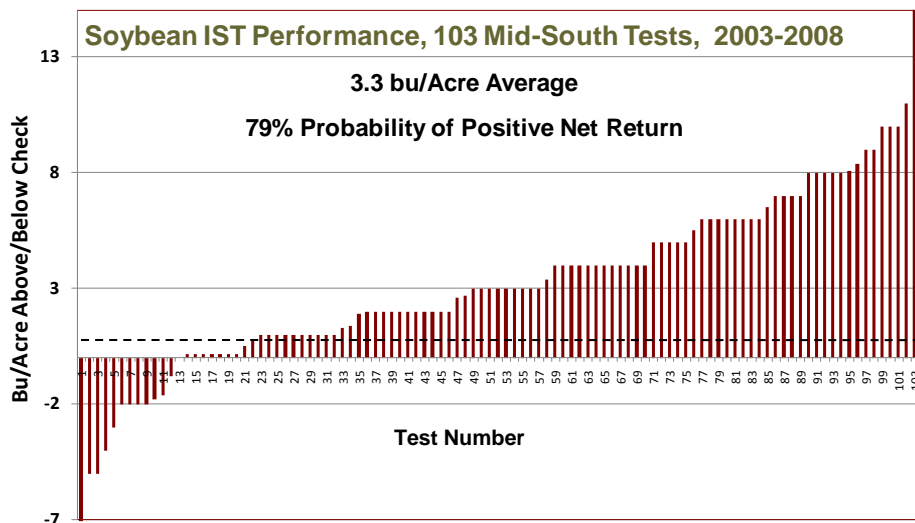


Thrips Trials - Yield (Lb Lint/Acre)

Scott Stewart (UT) and Gus Lorenz (UA)
14 Trials from 2003-2007, WTES and Arkansas



Soybean Insecticide Seed Treatments (IST). I've hit on this topic hard the last couple of years, and the message is that everyone should be using an insecticide seed treatment on some of their acres. I would suggest that most fields planted before May 15 should receive either Cruiser 5F (1.28 oz/100 lb seed) or Gaucho 600F (2.0 – 2.4 oz/100 lb seed). Seed treatments increase seedling vigor and control early season pests such as thrips, bean leaf beetle, grape colaspis, white grubs, wireworms, threecornered alfalfa hopper and other pests. IST can improve stands and help plants grow taller and canopy more quickly, so there may also be benefits related to weed control. These insecticides can also be applied (or come packaged) with fungicide seed treatments. Ample research has shown a consistent yield benefit from using an IST in Tennessee and throughout the Midsouth. The benefit ranges from 0-10 bushels/acre, averaging 2-3 bushels for early planted soybeans in Tennessee. The graph below shows a summary of 103 replicated experiments in the Midsouth, including Tennessee.



Some folks will opt to use a foliar application of a pyrethroid insecticide or Acephate/Orthene instead of a seed treatment. Foliar applications can have some benefit, but keep in mind it will not control below ground pests such as white grubs, grape colaspis larvae and white grubs. Most people wait too long to get the maximum potential benefit from a foliar insecticide application. If you intend to go this route versus an IST, make the application early at the 1st or 2nd leaf stage. In my opinion, if you have to make a special trip to make a foliar application, an IST is just as cheap, easier, and usually more effective.

Weed Control (Larry Steckel, Weed Specialist)

Late Season Burndown Options for Cotton. The call of the last week has been what should my burndown strategy be with planting time upon us? In many cases it is too close to planting to apply dicamba which has been our “go to” glyphosate-resistant horseweed herbicide. However, one must look at the label of the different dicamba products sold as there are some differences. The most notable is that Clarity has a supplemental label that allows cotton to be planted after **14 days and 1 inch of rainfall** once Clarity is applied. All the other generic formulations of dicamba (Banvel, Rifle, Agri Star, etc) have a 21 day and a 1” of rain waiting period before cotton can be planted. Horseweed is now growing rapidly and some plants are 6 to 8” tall. Below are more thoughts on late horseweed burndown:



➤ **Dicamba 8 oz/A + glyphosate 22 oz/A**

Management Considerations

- a. Clarity rates of 8 oz/A can be applied up to 14 days before planting and 1” of rainfall to avoid crop injury.
- b. Generic dicamba products at rates of 8 oz/A can be applied up to 21 days before planting and 1” of rainfall to avoid crop injury.

- c. Remember to use a surfactant (0.25% NIS) with dicamba applied alone or with a glyphosate product that has no or moderate surfactant load.
 - d. Be cautious of making overlaps!!
- **Gramoxone Inteon 40 to 48 oz/A + 0.25% NIS + Caparol 32 oz/A or Cotoran 32 oz/A or Direx 16 oz/A**
Management Considerations
 - a. This application can be applied right up to planting.
 - b. Gramoxone Inteon rates below 40 oz/A will not provide as consistent control of horseweed as higher rates.
 - c. For larger horseweed (>6”) use **48 oz/A** of Gramoxone Inteon.
- **Ignite 29 oz/A + Caparol 32 oz/A or Cotoran 32 oz/A or Direx 16 oz/A**
Management Considerations
 - a. This application can be applied right up to planting.
 - b. Ignite will not provide good control of horseweed under cool conditions.
 - c. Ignite performance is very temperature dependent. Works best with highs in the 80s and lows in the 60s.

Late Season Burndown Options for Soybean

- **Dicamba 8 oz/A**
Management Considerations
 - a. Dicamba rates of 8 oz/A can be applied up to 14 days before planting and 1” of rainfall to avoid crop injury.
 - b. Be cautious of making overlaps!!
- **Gramoxone Inteon 40 to 48 oz/A + 0.25% NIS + Sencor 4 oz/A or Canopy 4 to 6 oz/A or Boundary 20 oz/A or Prefix 32 oz/A.**
Management Considerations
 - a. This application can be applied right up to planting.
 - b. Gramoxone Inteon rates below 40 oz/A will not provide as consistent control of horseweed as higher rates.
 - c. For larger horseweed (>6”) use **48 oz/A** of Gramoxone Inteon.
- **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 is in very short supply this year. It might be better to save the FirstRate for a post application and use Gramoxone Inteon as a burndown.
 - c. FirstRate will not provide good control of horseweed under cool conditions.
 - d. FirstRate performance is temperature dependent. Works best with highs in the 80s and lows in the 60s.

Tips on Getting a Good Stand of Cotton (Melvin Newman, UT Extension Plant Pathologist)

Adverse weather at planting time makes it more likely that seedling disease pathogens will infect germinating seed and roots. As a result, the loss from seedling disease can be significant. Of course, we cannot do anything about the weather. However, there are things that can be done now and at planting time to reduce the risk of replanting and yield loss. Knowledge of all the factors that prevent damage from seedling disease can help increase profit. In Tennessee, research and demonstrations have shown an average increase in profit of more than \$100 per acre from the use of seedling disease control methods.

Some practices that producers should do before planting:

- (1) Obtain planting seed with the highest *cold germination* possible. The cold germ test is better than the usual warm germination test for determining the vigor of a seed lot. The cold germination test will vary from year to year depending on the conditions at harvest, but time and money spent on finding the best seed will pay big dividends. Producers should try to get at least 65-75% cold test germination on the seed lot that they will be using. Some cotton varieties may have better seedling vigor than others. The higher the cold germ the better.
- (2) Producers should check the fungicide *seed treatment* already present on the seed that they might be purchasing. In most cases, there is nothing that a producer can do about the fungicides on the seed, but might help the producer decide if there is a need for additional seed treatments (overcoat treatment or hopper-box) or to what degree the producer might use an in-furrow fungicide
- (3) *Soil fertility* can play a big factor in seedling diseases. In general, there will be less damage from seedling disease if the available potash level is high or very high. In addition, acid soil is conducive to more seedling disease. Most agronomists suggest a soil pH of about 6-6.5.
- (4) Cotton *nematodes* can also cause additional stress and induce more seedling disease. Producers should sample their fields just after harvest for the presence of Reniform or Root-knot nematode. If nematodes are found, either rotation with corn or grain sorghum or use of a nematicide should be considered. If nematicides are called for, producers should gear-up ahead of planting time so that the planting operation is not slowed down. Fumigant nematicides require bedding-up and usually a two-week waiting period before planting. Granular nematicides can be applied in-furrow at planting time and are fairly easy to use. A one-year rotation with a non-host crop like corn will reduce Reniform nematodes to a much lower level, but they can build back up in just one season when cotton is planted back.

At planting practices:

- (1) *Soil temperature* at planting time is extremely important. Cotton seeds germinate and grow off much better at 65-68 degrees or higher. Low soil temperatures create conditions that will slow seed germination and seedling emergence, thus extending the vulnerable period for infection. Many soil-borne pathogens are active at lower temperatures.
- (2) *Soil moisture* is almost as important as temperature. When soils are saturated with moisture for prolonged periods, seeds and seedlings are adversely affected. These conditions are ideal for the growth of several soil pathogens. Producers wanting to plant early in cold, wet soil might find themselves in a much worse situation than if they had just waited for better conditions. A favorable 5-day forecast could be of great value when considering a planting date.
- (3) The *disease history* of each field should be evaluated to determine if it has had a stand-establishment problem. Factors such as *soil-type, poor drainage, low soil pH, and low organic matter may cause seedling disease* to be more severe.
- (4) In many cases, the use of a *soil-fungicide* or an additional seed treatment can reduce seedling diseases significantly and improve over-all yield. *Rhizoctonia* is the most common pathogen in most cotton fields but *Pythium* can be a problem when soils are cold and wet. Care should be

taken to choose the right fungicide for the situation. Generally, it is a good practice to use an in-furrow fungicide that will prevent damage from both types of fungi. But, many times as the soils warm up later in the planting season the *Pythium* fungicides can be reduced or completely eliminated from the in-furrow treatment. *Rhizoctonia* on the other hand can hit seedlings under almost any conditions. When producers use a systemic insecticide seed treatment or a granular nematicide, they also need an in-furrow fungicide to protect from diseases and from the possibility of phytotoxicity to the young plants. Seedlings with healthy roots are better able to utilize insecticides and nematicides and can better metabolize soil-applied herbicides.

- (5) *Hopper-box* or overcoat fungicides are additional seed treatment fungicides that aid in germination and control of some seedling diseases. Many times when planting conditions are favorable and seed quality is good, seed treatments already on the seed or a slurry or dust treatment of a recommended fungicide will do as good as an in-furrow soil treatment. But, when planting early into cool, wet soil or when conditions turn bad, it is always better to go the extra mile and use a full rate of in-furrow fungicide.
- (6) The type of *tillage* also plays an important factor in whether to use an in-furrow fungicide. A no-till, or stale, seedbed has a tendency to be cooler and wetter early in the season than a conventional seedbed. Planting on or near the old cotton stubble may also provide a ready source of plant disease organisms. These suggestions for seedling disease control may sound like a broken record, but producers should remember the rough planting seasons that we have had in some years. A little planning and preparation on the front end of planting can go a long way in producing high yields at harvest. Once the seed is in the ground, there is little a producer can do to prevent seedling diseases. Producers should check with their local county Extension agents for more detailed recommendations. Additional information and recommendations can be found by clicking on www.utcrops.com under [cotton diseases and nematodes](#)).

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

Farm Bill Update- The Farm Service Agency (FSA) recently announced that sign-up for the Average Crop Revenue Election (ACRE) will begin **April 27, 2009** and run until **August 14, 2009**. This new and alternate program to the Direct and Counter-cyclical Payments (DCP) was authorized in the 2008 Farm Bill. Producers are allowed to sign-up for the DCP program now and can come back before August 14 and sign up for ACRE. The ACRE program should be considered carefully as once a producer signs a farm up, that farm will be under ACRE until 2012. If a producer does not sign up, then the current DCP program remains in place. Producers sign up by FSA Farm Serial Number so some farms can be enrolled and others not. There is not enough space to go into detail on ACRE however there are several websites that have detailed information and a decision aid. I will list those below. Producers should not rush to sign up, but gather the necessary information, use the decision aids available and make an informed decision.

What is ACRE? This information from the FSA website *The ACRE alternative provides eligible producers a state-level revenue guarantee, based on the 5-year state Olympic average yield and the 2-year national average price. ACRE payments are made when both state- and farm-level triggers are met. By participating in ACRE, producers elect to forgo counter-cyclical payments, receive a 20-percent reduction in direct payments and a 30-percent reduction in loan rates. ACRE sign-up dates will be announced soon (April 27), or a producer can choose to stay with DCP. A decision to elect ACRE binds the producer to the program through the 2012 crop year, the last crop year covered by the 2008 Farm Bill.*

There are at least two websites I would encourage producers to examine. It would probably be best to have high speed internet access such as a DSL or satellite to view these sites and use the calculation program. If you need assistance, please contact your County Extension office, local Area Specialist – Farm Management Specialist, or myself at 731-635-9551. The first website is the FSA Direct and Counter-cyclical Payment/ACRE at www.fsa.usda.gov/dcp. They have a wealth of information on the ACRE program including ACRE Background Information, ACRE Fact Sheet, ACRE PowerPoint, Preliminary ACRE Program Parameters, ACRE Prices Values, 2009 Benchmark Yield History, FSA Failed Acres, and ACRE Revenue Yield Maps. Producers not familiar with ACRE should review this material.

The second website from the Agricultural & Food Policy Center (AFPC) at Texas A&M University has an on-line decision aid program that can assist producers in making the ACRE determination. The AFPC website is <http://www.afpc.tamu.edu/models/acre/index.php>. Scroll all the way down the page and click on the I Agree to start the decision aid program. I would caution you to be patience as sometimes the website is slow or at least seems slow. Before starting the decision aid program, click on and print out the Input Requirements. The ACRE program is a very involved program which uses national price averages, state yields, and on farm yields by FSA farm serial number when determining payments. This decision aid program also requires similar information. There are values available to assist you, particular with prices. From the AFPC ACRE website - *The 2009-2012 planning horizon is simulated for 500 possible yield and price combinations and calculates the probability that total payments from ACRE (including reduced DP and LDP/MLG) will exceed total payments from DP, CCP and LDP/MLG over the four years and for each year. A risk chart is used to show the full range of possible payments for each program.*

Since there are so many moving parts and future assumptions I don't know if there are any real rules of thumb when deciding on ACRE. I have made a few observations when examining some real examples. With the importance of the cotton loan program in marketing cotton, cotton producers cannot afford to take the 30% reduction in loan rate. Grain and soybean producers with a farm that has a high percentage in cotton base will probably also want to stay in the current DCP program. Grain and soybean producers with grain and soybean program bases should look closely at ACRE. Again, if you need assistance, please contact your Extension office.

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