The 2007 Farm Bill And The Outlook For U.S. Cotton Producers

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Debate on the 2007 Farm Bill is expected to begin in earnest in the spring of 2007. What will the next farm bill look like is anybody's guess at this point. Having said that, there are a few things we do know that will certainly impact the 2007 Farm Bill. This session will provide the backdrop to the discussions that will begin in 2007 along with some of the factors that will influence the debate as the year progresses.

Over the past two years, the republican led House and Senate agricultural committees and the Secretary of Agriculture held field hearings across country to get feedback on producer desires for the next farm bill. In general, while there was some interest expressed in a completely new approach, the overwhelming feedback was that the 2002 Farm Bill had worked well and should be extended or at least use the 2002 Farm Bill as the structure of the new bill with a few modifications.

While some may point to the switch in Congressional leadership and the stalled WTO negotiations as potentially having the most impact on the direction of the bill, the baseline will likely have the most impact. The baseline is simply the amount of money the authorizing committees (in this case, the house and Senate agricultural committees) will have to spend on programs in a new farm bill.

Without a doubt the switch in Congressional leadership will impact the farm bill as the leadership of the new majority in both the House and Senate have strong interest in enhancing current programs (CSP in the Senate) or creating new ones (Permanent Disaster Funding in the House). However, both Mr. Harkin in the Senate and Mr. Peterson in the House were in significant leadership positions when the 2002 Farm Bill was passed with Mr. Harkin being in the majority on the Senate Agricultural Committee for most of the time the bill was being debated. It wouldn't seem that either will consider the approach taken in the 2002 Farm Bill as inappropriate.

The second major factor that has the potential to impact the new farm bill is the currently stalled WTO Doha Round negotiations. Any movement in these negotiations in early 2007 will likely favor an extension of the current bill as Congress waits to see outcome of the trade talks. Recently, there has been some discussion of a Doha Round minus Ag meaning trade rules for all sectors other than agriculture would be agreed upon. It is not clear whether such a measure would pass the U.S. Congress much less the countries where most of their trade is agricultural trade.

At this point, our work suggests that there will be significantly less money available to spend on commodity programs than there was when the 2002 Farm Bill was being debated. Due to an improved price outlook during the baseline period for most of program commodities, our estimates of the March 2007 baseline indicate very little commodity program expenditures as compared to anytime over the past 5 years. The exceptions to this are cotton and rice that are both expected to see significant expenditures on marketing loans/LDPs and CCPs although rice spending is expected to decline significantly over the baseline period as prices improve.

Our representative farm work indicates that even with significant cotton program expenditures, 12 of 20 representative cotton farms located across the cotton belt are expected experience significant financial difficulties over the near term. This work assumes current policy is extended at least through 2011. The implication of this being any change to current policy that does not spend at least as much on cotton will create even more financial difficulties for cotton producers.

Managing Cotton Diseases In Reduced Tillage Systems

Presented by Dr. Boyd Padgett
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If not properly managed diseases reduce cotton yield and quality. In Louisiana, annual losses ranged from 12.0 to 12.5% from 2003 to 2005. The majority of these losses were due to

seedling diseases and nematodes (root-knot and reniform). Therefore to minimize losses producers need to accurately identify and manage these diseases.

Seedling diseases are among the first concerns a producer must address at planting. A uniform, healthy stand is a key ingredient for maximizing profits and yields. However, seedling disease can interfere with this goal. Seedling disease can be incited by several pathogens. Unfortunately, the control measures implemented will differ depending on what pathogen(s) is/are involved. These factors make seedling disease difficult to manage. Therefore, correct pathogen identification is critical before proper management measures should be implemented.

Seedling Disease Identification

An important aspect of seedling disease management is identifying the pathogen(s) present in problem fields. This will determine which fungicides and cultural practices are implemented. In Louisiana, most seedling diseases are incited by *Rhizoctonia solani*, *Pythium* sp. and *Fusarium* sp.

Rhizoctonia solani ('Rhizoc', 'soreshin', 'damping-off', and 'wirestem') is the predominant pathogen found in Louisiana cotton fields. This pathogen primarily causes post-emergence damping-off. Infected cotton will usually emerge and cotyledons are typically pale green or yellow. Closer examination may reveal stems with a dry, sunken reddish-brown lesion at the soil line that may girdle the plant. As a result, the seedling breaks over at the soil line, and in some cases, roots may have necrotic lesions. Preemergence damping-off is typically not associated with this pathogen, but if occurs is difficult to distinguish from other seed rots. Resistance of cotton seedlings to *Rhizoctonia* increases with age. *Rhizoctonia solani* infects many plant species, develops over a wide range of temperatures (64-91°F) and moisture regimes, and survives on organic matter in the soil.

Pythium, referred to as 'Root rot', is not as prevalent as *Rhizoctonia*, but inflicts serious losses during favorable conditions. This organism infects a wide range of plant species and survives on organic matter. Some *Pythium* species prefer cool temperatures (61-68°F) and wet soils, while other species infect during higher temperatures. Regardless of temperature requirements, excessive moisture is necessary for *Pythium* to develop. Seedling disease caused by this organism is usually most severe in poorlydrained fields.

Cotton seed infected by *Pythium* usually does not emerge and will exude a toothpaste-like substance when squeezed. *Pythium* has also been implicated in postemergence damping-off. Infected seedlings usually have a water-soaked lesion at the soil line; however, a dry lesion may be present during less favorable conditions.

Fusarium survives in the soil and debris of non-host plants. The epidemiology and biology of this pathogen is not fully understood. Infected seedlings exhibit symptoms similar to those caused by other seedling disease pathogens. Plants are often yellow and stunted and roots may have necrotic lesions. A dark-colored lesion may be present on the hypocotyl. Infections can result in seed rot and plant death.

The best defense against seedling disease is to plant when conditions favor seed germination and seedling establishment. An additional fungicide may be necessary at planting, but the following factors should be considered before application.

Factors Influencing Seedling Disease Development

Tillage Practices: Systems incorporating reduced-tillage practices are at greater risk to seedling disease than conventional-till fields. Soil temperatures warm slower and retain moisture longer in fields where no or reduced-tillage practices are used. These conditions favor seedling disease development

Seed Quality: High-quality seed has a germination percent of at least 80% and a cold germination (cool test) of 60% or higher. Research has demonstrated that seedling disease can be greater and yields lower when poor-quality seed is used. If poor-quality seed must be used, plant when the threat of seedling disease is low (favorable soil temperatures and adequate moisture).

Planting Date / Soil Temperatures: The Louisiana Cooperative Extension Service recommends planting high-quality seed when the soil temperature (4-inch depth) has reached at least 65°F for three consecutive days prior to planting and no approaching cold front or excessive rainfall. The risk of seedling disease usually declines during late April and May. However, this is not always the case; therefore, monitor early morning soil temperatures (4-inch depth).

Field History: Recent research suggests field history is not as significant as soil temperature and moisture in seedling disease development. However, fields with poor drainage (prone

to *Pythium*), high organic matter (reduced-tillage), and/or light soils (prone to *Rhizoctonia*) are candidates for seedling disease.

Seeding Rate: The Louisiana Cooperative Extension Service recommends planting 3 to 6 seed per foot to obtain a plant density of 2 to 4 plants per foot. If seeding rates are reduced to 3 seed per foot or less, an in-furrow fungicide should be considered.

Hopper-box or Seed Applied Fungicides: Hopper-box or seed treatment fungicides offer more protection than standard seed treatments, but are not as protective as an infurrow applied fungicide. There are numerous products available and are popular because they are easy to apply and require little or no calibration. These products are probably most effective when soil temperatures are favorable for planting, but fall below favorable levels for a short period of time (2 to 3 days).

In-furrow Applied Fungicides: In-furrow applied fungicides provide the most protection, but are the most expensive. In general, most in-furrow formulations provide adequate protection. However, liquid formulations provide more options than granules.In-furrow sprays can be tank-mixed to meet specific needs with adjustable rates for each product (ex. high rate product 1 and low rate product 2, etc.).

Nematode Management

Nematodes inflicted 6.5 to 7.5% losses to Louisiana cotton during 2003 to 2005. The two major nematodes affecting cotton are root-knot and reniform. Root-knot nematode is present in about 15 to 20% of Louisiana's cotton fields and 50% of our fields are infested with reniform nematodes. The major practices available for management include crop rotation and chemical nematicides. There is limited genetic resistance to root-knot in commercial cotton varieties, but nothing available for reniform. As with seedling disease, it is critical to identify what species are present in individual fields. This will determine what crop rotation strategies are implemented.

Crop rotation: When possible crop rotation is very effective for reducing nematode populations. Corn is a good choice for reducing populations of reniform, but is not a good choice for root-knot. Populations of root-knot will increase on corn. Some soybean varieties can also be used to reduce both populations, but ONLY a few varieties have resistance to both. Therefore, carefully choose your soybean varieties.

Nematicides: Chemical nematicides remain to be the major management tool when cotton must be planted in fields infested with either nematode. The standard products are applied in-furrow at planting or injected prior to planting. Recently, there have been efforts to apply nematicides to the seed.

Identification / Sampling Procedures

Nematodes are identified using soil / root samples taken when populations are highest. Populations of plant parasitic nematodes are usually highest immediately after harvest. Individual samples should be taken near or in the row to a depth of 6 to 8 inches. Soil samples should contain adequate moisture to sustain nematode populations. **Do not take samples when soil is extremely dry.** Sample from problematic areas if possible.

The number of samples varies depending on the strategy used. Traditional sampling methods involve taking 15 to 20 soil cores (6-8 inches) for every 25 acres. The 15 to 20 cores are uniformly mixed and a representative sample (about 1 pint of soil) is placed in a sample container (i.e. plastic bag).

Another method is to collect a sample from 4.5 to 5 acre grids established using GPS/GIS technology. An individual sample (10-12 cores) is taken from every 4.5 to 5 acre grid in the field. This process is more accurate than sampling from 25 acre blocks, but is very time consuming.

Recent research is providing methods to sample from suspect zones in individual fields. Based on GPS/GIS, soil EC values and nematode populations associated with these values, samples are targeted toward problematic areas. Samples would be taken from areas of the field where nematode populations are most likely to be present. Initial results are very promising. For questions or additional information please contact your local county extension agent.