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Louisiana Crops NEWSLETTER

CORN • COTTON • GRAIN SORGHUM • SOYBEANS • WHEAT

ISSUE HIGHLIGHTS

Corn

➤ We have accumulated fewer DD50s so far this year than last year. *Page 1*

➤ See how to determine corn growth stages. *Page 2*

➤ The growth point on a corn plant starts below the soil, but moves above the surface later. *Page 3*

➤ Silver and gray areas on leaves are no cause for alarm. *Page 4*

Entomology

➤ There have been few issues in seedling corn and soybeans. Also, read how to select foliar insecticides for cotton and what to expect this year with redbanded stink bugs. *Page 4*

Cotton

➤ Poor early-season decisions can lead to a "train wreck." *Page 7*

➤ Our advice on nitrogen rates for cotton. *Page 9*

Growing season cool so far

BY DAN FROMME

The 2018 corn growing season has been a cool one compared to 2017. Since March 15, we have been running about 200 DD50s fewer than what we accumulated in 2017 for the same period (**Figure 1**).

Calculations of DD50s are based on the modified growing degree formula: the average daily temperature minus 50 degrees Fahrenheit.

The ceiling for the daily maximum temperature is 86 degrees. The daily minimum temperature can be no lower than 50 degrees. §

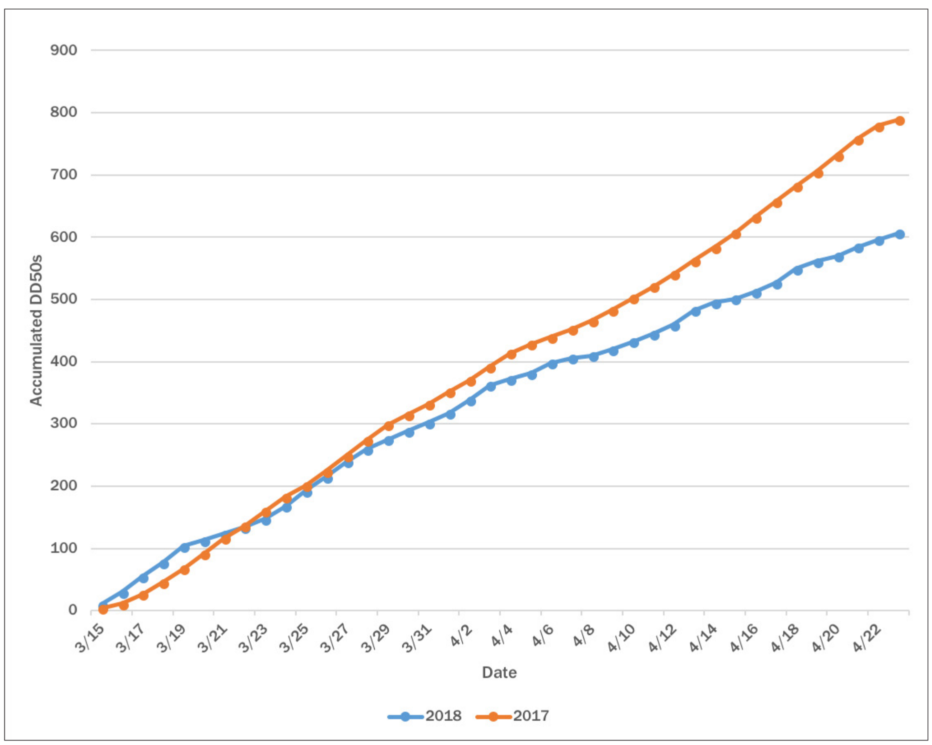


Figure 1. Accumulated DD50s for corn in Alexandria, Louisiana, from March 15 to April 22.

Growth stages can help track corn progress

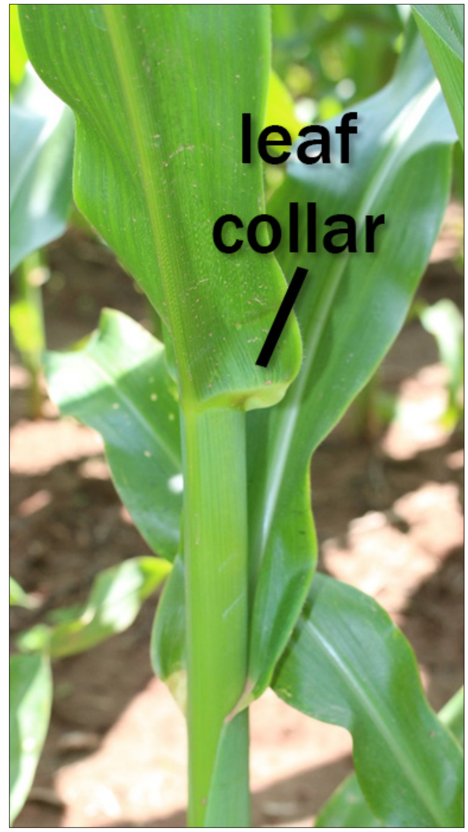
BY DAN FROMME

Vegetative (V) stages are determined by the total number of leaves with visible collars, beginning with the first leaf. A collar is the off-white band at the base of the leaf blade, where it extends away from the stalk (**Figure 1**). Throughout the vegetative stage, a new leaf will appear approximately every three to five days.

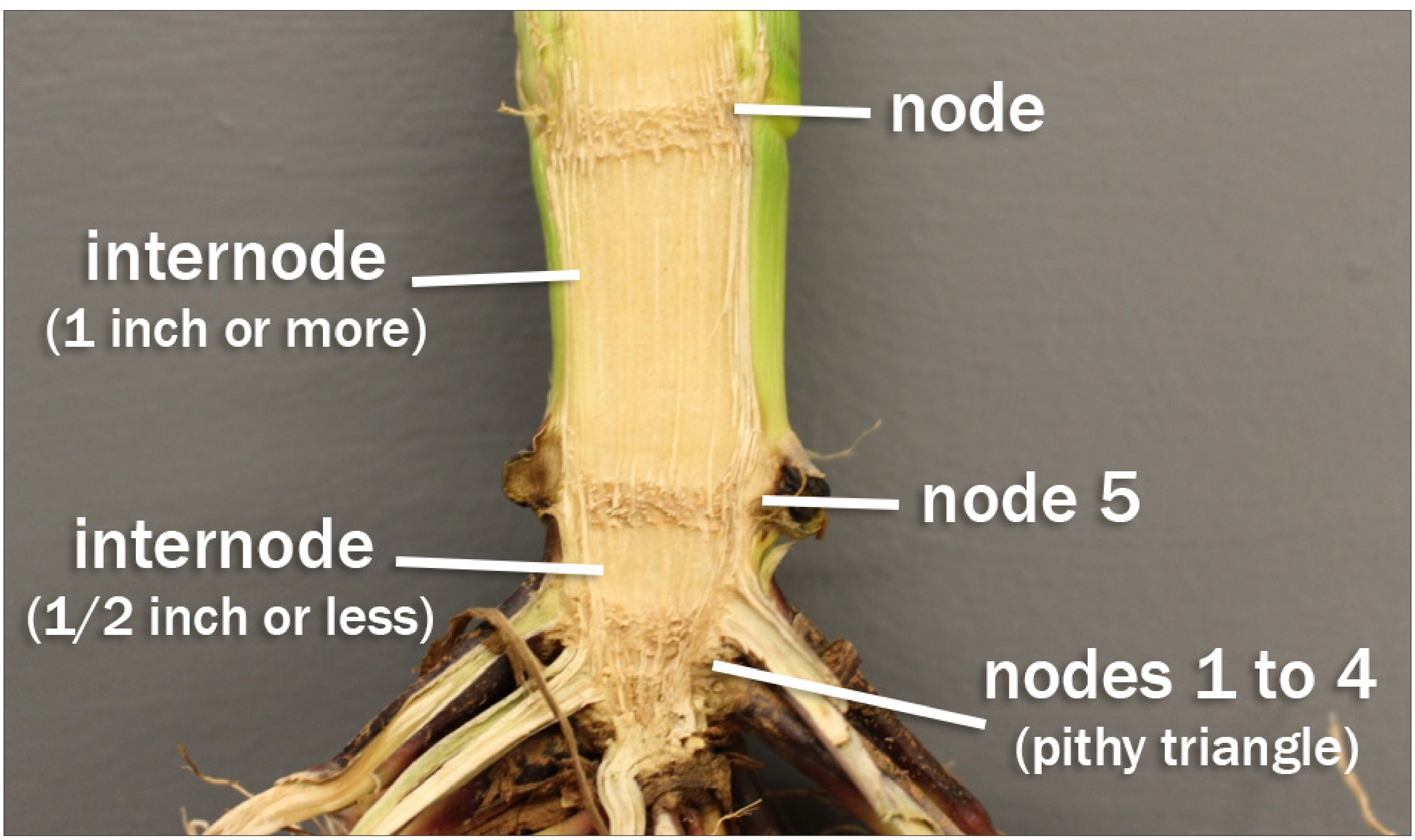
As the season progresses, lower leaves will be lost. These leaves must be included in your leaf count, or development stage will be misidentified. For an accurate assessment of the leaf stage, the stalk must be split lengthwise (**Figure 2**).

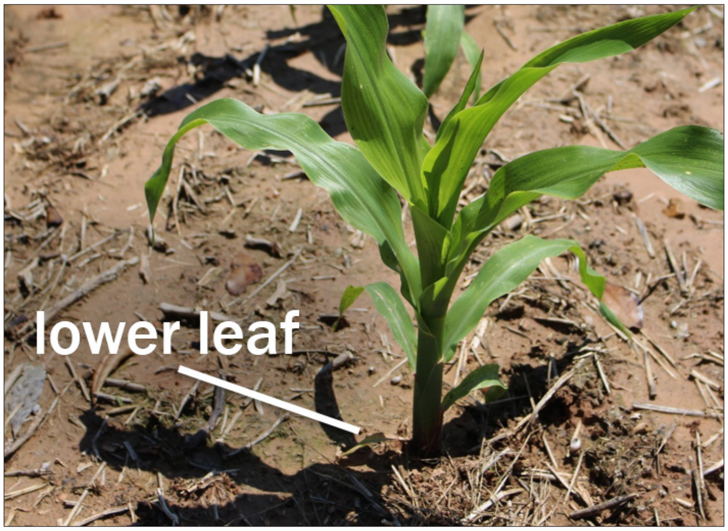
Each leaf will be attached to a single node, and the nodes are visible as lines across the split stalk. The first four nodes are usually indistinguishable within the crown. The fifth node is less than one-quarter inch above the area that contains the first four nodes.

The node corresponding to the uppermost leaf with a visible collar defines the vegetative stage.



At right, **Figure 1** shows a collar, which is the off-white band at the base of the leaf blade. Below, **Figure 2** shows a corn stalk that has been split lengthwise. Splitting the stalk is necessary to accurately assess the leaf stage. LSU AGCENTER PHOTOS





Plants with their first six leaves collared are defined as V6 (**Figure 3**, at left). The lower leaf is now starting to deteriorate and is becoming increasingly harder to locate and count as it starts to break away from the growing stalk and decompose.

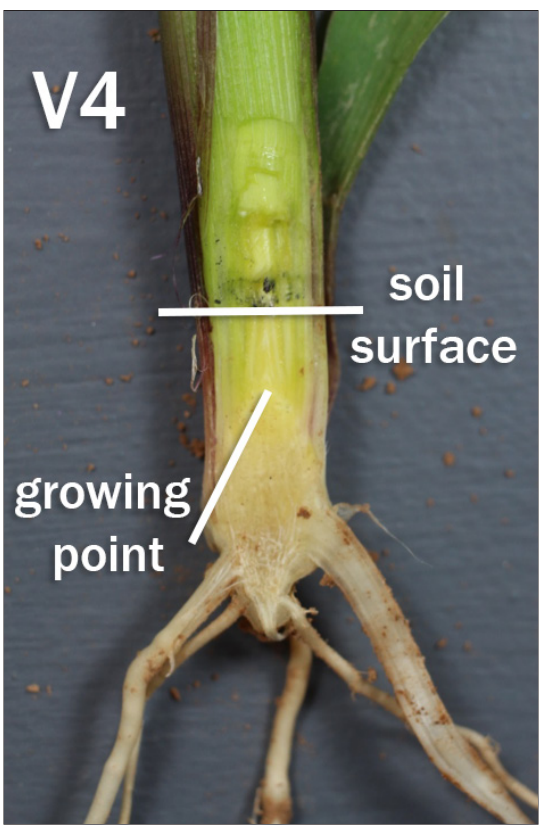
The growing point is now above the ground. Ear shoots and tassel are initiated (visible with magnification). The potential row number or ear girth is determined; however, it is strongly impacted by genetics and can be reduced by stress. §

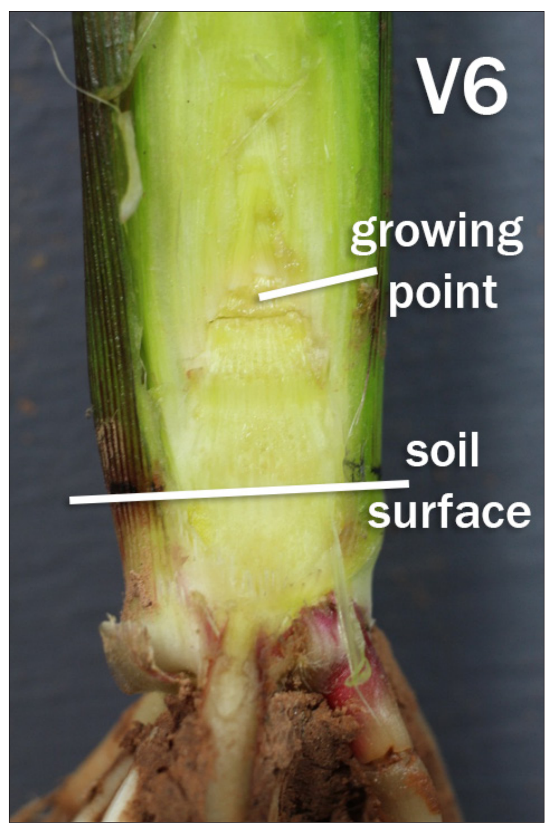
Corn growth point moves above soil at V5, V6

BY DAN FROMME

At the V4 stage and earlier, the growing point of corn is below ground (**Figure 1**, below). The corn plant can tolerate quite a bit of above-ground injury from an event such as frost, hail, wind, cutworm feeding, sand blasting, tire traffic, 32-percent nitrogen solution burn, etc.

However, at the V5 to V6 stages, the stalk internodes begin to elongate and eventually elevate the growing point above the soil surface. At these stages and for the rest of the season, the growing point becomes increasingly exposed and susceptible to above ground damage (**Figure 2**, below). §





Don't worry about silver areas on corn leaves

BY DAN FROMME

Silver and gray areas on corn leaves have been quite common this year (**Figure 1**). This is a result of radiational heat loss from the leaves during cool, calm and clear nights. It might remind you of freezer burn. Also, frost damage does not have to occur for this symptom to be observed.

Figure 1. Leaf tissue damage due to radiational cooling. LSU AGCENTER PHOTO

Rapid heat loss from the earth's surface to the atmosphere, known as radiational cooling, can occur on clear, calm nights with low humidity and temperatures in the low 40s or lower. You will see this damage on portions of the corn leaves that are positioned horizontally, parallel to the night sky.

These silver and dull gray areas of the leaf have never been observed to persist or die, and minor leaf damage is negligible, if any. Continued growth of the corn plant will not be hindered. Unlike frost damage, leaves affected by radiational cooling will not die. §

Entomology news: Foliar insecticide decisions

BY SEBE BROWN

Cotton

In Louisiana and the cotton belt, thrips are considered the No. 1 early-season pest of seedling cotton. Tobacco thrips are the primary species infesting Louisiana cotton, while western flower thrips are often present at lower numbers. With the absence of Aldicarb (although we now have AgLogic, a commercially available Aldicarb replacement) insecticide seed treatments now dominate the early-season cotton insect pest management landscape.

As of 2018, there are only two seed treatment options: acephate and neonicotinoids. Imidacloprid and thiamethoxam are the two most commonly used neonicotinoids, and these treatments are offered alone or in combination with nematicides.

Based on bioassay data generated in the past seven years, the LSU AgCenter does not recommend thiamethoxam alone as a seed treatment for cotton. This is due to the formation of resistance by tobacco thrips. However, imidacloprid is still effective, and when used in conjunction with the insecticide-nematicide thiodicarb (Aeris), it provides very good control of thrips.

If Aeris is not an option, imidacloprid overtreated with acephate (6.4 oz/cwt) is another viable option. Acephate alone will control thrips; however, acephate has a significantly shorter residual than imidacloprid, and the probability of returning with a foliar application is high. Also, if you overtreat cotton seed with acephate, the seed can't be returned.

In-furrow applications of imidacloprid also control thrips well. Four-pound imidacloprid at 9.2 oz/acre or 2-pound material at 19.0 oz/acre provide excellent control of thrips. AgLogic, the generic replacement for Temik, has demonstrated satisfactory control of thrips at the 3.3 and 4 lb/acre rates.

Lastly, foliar rescue treatments also are an option. Foliar treatments should be made when immature thrips are present or when large numbers of adults are present and causing damage. Seedling cotton will typically always have a few adult thrips. The treatment trigger is the presence of immature thrips. The presence of immatures often signifies the insecticide seed treatment has lost its efficacy and reproduction is occurring.

Avoid spraying solely based on plant injury — the damage has already been done. Beware that residual herbicides and sandblasting injury can mirror thrips injury. Also, there currently are no labelled insecticides allowed to be tank-mixed with dicamba.

Insecticide choice depends on a number of factors such as cost, impact on secondary pests and the spectrum of thrips species present. If a foliar thrips treatment is justified, do not wait for a herbicide application, and only spray when necessary to avoid flaring spider mites and aphids.

Considerations when picking foliar insecticides

Dimethoate

✓ Relatively inexpensive, good efficacy at high rates, less likely to flare spider mites and aphids than acephate.

× Less effective on western flower thrips, less effective than acephate or bidrin when applied at lower rates.

Acephate

✓ Relatively inexpensive, effective towards western flower and tobacco thrips.

× May flare spider mites and aphids if present.

Bidrin

✓ Effective, less likely to flare spider mites and aphids than acephate.

× More expensive, less flexibility with applications early season.

Radiant

✓ Effective, least likely to flare spider mites and aphids.

× More expensive, requires adjuvant, more effective on westerns than tobacco thrips.

Intrepid Edge

✓ Effective, unlikely to flare spider mites and aphids. Intrepid Edge is a mix of Radiant and Intrepid. Activity is similar to Radiant.

× Requires the application of two modes of action but only gets the benefit of one.

Soybeans

Insect issues in seedling soybeans have been limited thus far to a few reports of thrips feeding on young beans. Generally, thrips are not a problem in soybeans. Soybeans can tolerate large amounts of thrips injury while not sacrificing yield.

However, there are situations where foliar applications to seedling beans are justified. Beans that are experiencing multiple stressors — including excessively wet or dry conditions, herbicide injury and adverse weather — may warrant an application. Furthermore, if thrips injury is holding back plant growth or causing stand loss and large numbers of thrips are present, an application may be justified.

Overall, applications for thrips in soybeans are rarely needed. More often than not, they are not justified.

Corn

Insect issues in corn have been minor so far. A few fields have had issues with below-ground insects such as wireworms and sugarcane beetles; however, these instances were primarily confined to reduced or no-till fields and fields with late or inadequate burndowns.

Scouting report

Redbanded stink bugs (RBSB) and bollworms are beginning to appear in much of the clover in northeast and central Louisiana. The occurrence of both of these pests should cause alarm. We routinely find adult RBSBs and bollworms in April in north Louisiana. Unlike in 2017, we have not found reproducing populations of RBSBs in clover. The severe cold much of Louisiana experienced in 2018 more than likely caused a significant reduction of RBSB populations. Hopefully soybean producers across the state will benefit.

The indication of lower populations of RBSBs should not make late planting (past May 10) an attractive option unless weather or other issues force late planting. The most effective RBSB control is planting date. Later-planted beans almost always have more insect issues, with RBSB often being the worst.

The occurrence of bollworms in April clover is also something that should not concern producers at this point. Clover is one of the first attractive hosts for bollworm moths, and subsequent spring egg lay is expected. Nonetheless, many of the issues cotton producers faced last year with failing Bt technologies should be anticipated again.

Jeff Gore, an entomologist at Mississippi State University, composed an excellent article on planning for bollworm management in Bt cotton for 2018. I recommend any producers or agriculture professionals planning on growing cotton this year to give it a look.

Here is the link: http://www.mississippi-crops.com/2018/04/24/bollworm-management-in-bt-cotton-things-to-consider-at-planting-time/. §

Avoiding the train wreck of planting dirty

BY SEBE BROWN

The majority of producers in the mid-South region of the United States have reduced the frequency of tillage practices applied to cotton fields compared to that during the 1990s. Conservation tillage production practices have significantly influenced arthropod pest diversity and density. Preventative integrated pest management (IPM) strategies coupled with early detection of problems and reactive treatments are essential components in a profitable cotton production system.

Before planting

Burndown herbicides typically are applied 30 to 45 days prior to planting the crops. Complete control of all weed species within in the field and on the surrounding field borders is necessary to eliminate alternate host plants of insect pests. Fields should be scouted at the time of planting to ensure the seedbeds are essentially weed-free. The presence of heavy plant residue following burndown applications or any green vegetation on the seedbeds can create a favorable environment for arthropod pests. Incomplete termination of some weed species provides a refuge for insect pests until crop seedlings become available. Even at planting, herbicide application or modified tillage treatment may be warranted to ensure a clean seedbed and remove alternate hosts of arthropod pests.

In addition, heavy residue from previous crops covers the soil surface and mediates soil temperature and moisture levels. This, in turn, increases the probability of insect pests such as bollworms and spider mites successfully over-wintering in those fields. Identifying these problems early provides producers the information necessary to modify their insecticide use strategies at the time of planting.

At-planting and surface-applied insecticide applications should be used to manage cutworms if winter vegetation was not terminated well in advance of planting, if incomplete kill of winter weeds occurred, if any freshly emerged vegetation is observed on the seedbeds at the time of planting or if cutworms are observed in high numbers on plants in the field or along field borders. The most common insecticides used for this application are pyrethroids. The lowest application rates have proven to be effective preventative treatments when applied properly. Producers should apply a broadcast treatment or in a wide band over the seed furrow. Cutworms exist below the soil surface feeding on root tissue and may not be exposed to the insecticide if only part of the seedbed is treated.

At planting

Soil insecticides such as Temik 15G were once the standard treatments applied in the seed furrow to control seed and seedling pests in cotton. However, Gaucho 600FS, Cruiser 5FS and Poncho 600FS have become standard as seed treatments, replacing granular and liquid soil-applied insecticides on considerable acreage. Regardless of the product used, an at-planting insecticide treatment is essential for optimal seedling development. Producers should not reduce seeding rates below recommended levels when using at-planting insecticide treatments. Lower than optimal plant populations cannot consistently tolerate injury from seedling insect pests and recover to produce maximum yields.

Post-emergence

Generally, cotton seed treatments, at existing rates, will exhibit enough residual efficacy for cotton seedlings to develop beyond the susceptible stages to many below- and above-ground insect pests. However, if cotton germination or growth is stalled due to cool weather or residual herbicides, foliar applications may be required to protect seedling cotton to the four-true-leaf growth stage.

For producers using herbicide-tolerant crops, the co-application of foliar insecticides with post-emergence herbicides is a cost-effective practice when controlling above-ground pests. However, there are no rescue treatments for below-ground insect injury, and seedling protection is critical when planting cotton in sub-optimal conditions.

As conservation tillage systems continue to evolve, IPM strategies will need to adapt to address emerging pest issues. Pest managers and producers should scout fields and identify situations that may result in pest problems. These fields should be considered "high risk" and managed with preventative pest management methods. An effective IPM strategy for cotton pests should include weed-free seedbeds well in advance of planting, optimal application dates and rates of cultural practices, and discriminate use of preventative and reactive chemical control strategies for pest problems.

Most IPM recommendations do not recognize general differences in insect management recommendations between conventional and conservation tillage systems. However, to improve the overall success of insect pest management in conservation tillage systems, crop advisers and producers should timely apply broad-spectrum herbicide treatments to control spring vegetation not only within the field but also on field borders. Many of these insect pests are highly mobile and crop advisers should scout field borders and adjacent fields to observe potential refuges for these pests.

Fields should be scouted regularly during the season and treated only as needed based on insect density and changes in plant development. Agronomic practices that enhance rapid seed germination and promote seedling growth should be used to reduce the period of time that plants are susceptible to insect pests.

Chemical control strategies are effective against cotton insect pests, but the application method, product rate, and treatment timing must be adjusted for the requirements of each individual field. Seed treatments and soil-applied insecticides are critical inputs in conservation tillage systems for cotton. Crop advisers and producers should recognize the potential for unidentified pest problems, intensify scouting practices and use all available resources to make an informed decision on the appropriate management strategy.

Southern row crop producers have incorporated significant changes in cotton production systems to decrease input costs and improve profits. These changes can significantly influence arthropod pest diversity and density as well as overall pest status. Conservation tillage systems or components of those systems have widespread acceptance among producers.

However, several of those practices, including educed tillage and winter cover crops, have also been demonstrated to increase problems with some insect pests. There are numerous insect pests that are capable of injuring cotton across the South, but only a select few are directly affected with a change in tillage systems. Most of these are associated with seed germination and seedling development. There are, however, other pests that can be indirectly affected by conservation tillage production systems and occur as problems later in crop development. These indirect effects are the result of production systems that influence changes in the landscape across an entire farm or farm region.

Fortunately, the impacts of insect pest problems have been minimized with the tools, technologies, and production practices that are now available. The purpose of this report is to identify some common insect pest problems associated with conservation tillage systems for field cotton and propose general IPM strategies to address those problems.

The table on the next page summarizes cotton pest problems common to the mid-South. The ranges of these effects are highly variable and depend on the environment of the local landscape and the production practices applied to individual fields. §

Table 1. Common pest problems in mid-South cotton.

INSECT	EFFECT[a]	DESCRIPTION OF PROBLEMS
Spider mites	0 to +++	Fields to be planted with cotton that contain winter weeds such as henbit are attractive to overwintering adults. Once weeds senesce due to temperature or herbicide application, adults and immatures may migrate to adjacent cotton. Timely vegetation management can reduce the impact of these pests.
Beetles	0 to +	Wireworms may be serious pests of seedlings in fields with heavy crop and winter vegetation residue.
Cutworms	+ to +++	Cutworms can overwinter in no-tillage fields. The adults of some species prefer to lay eggs in fields with dense weeds, winter cover crops or heavy crop residue. As pre-plant vegetation is destroyed, larvae feed on crop seedlings to survive.
Slugs	0 to +++	Winter vegetation and crop residues in wet soil conditions favor slug populations and seedling injury.

[a]"+++" Substantial increase in pests; "+" = Some increase; "0" = No effect; "-" = Decrease in pests.

Carefully decide nitrogen rates in cotton

BY DAN FROMME

Once the cotton stand has been established, nitrogen applications will be made for the upcoming season. Recommended nitrogen rates are 60 to 90 pounds per acre for coarse-textured soils and 90 to 120 pounds per acre for high-clay soils. The lower recommended rates should be used on fields that are following soybeans, corn and legume cover crops as well as fields with a history of excessive stalk growth.

Be careful not to apply more nitrogen than the cotton plant will need. Excessively high nitrogen rates can produce very tall and rank cotton. This increased vegetative growth will hinder reproductive growth and, ultimately, yield. Furthermore, to limit this excessive growth, producers will have to rely heavily on mepiquat chloride applications to control plant height, creating the potential for making the cotton plant harder to defoliate at the end of season. Excessive nitrogen, especially in combination with high amounts of late-season rainfall, can delay maturity, reduce harvesting and ginning percentages, and promote boll shedding and boll rot.

Also, best management practices would suggest making split applications of nitrogen, especially on sandy soils with a high leaching potential and soils with a high saturation potential due to denitrification losses. For split nitrogen applications, one-third to one-half the amount should be applied at planting. The remainder should be applied by early bloom at the latest. §

SOIL TYPE	DRYLAND	IRRIGATED
Clay	90-120	100-120
Clay loam	90-120	100-120
Fine sandy loam	60-90	60-90
Loamy sand	60-90	60-90
Silt clay	90-120	100-120
Silt clay loam	90-120	100-120
Silt loam	60-90	60-90
Very fine sandy loam	60-90	60-90

Table 1. Recommended nitrogen rates for both dryland and irrigated cotton in Louisiana.

LSU AGCENTER SPECIALISTS

SPECIALTY	CROP RESPONSIBILITIES	NAME	PHONE	EMAIL
Corn	Agronomic	Dan Fromme	318-880-8079	DFromme@agcenter.lsu.edu
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Grain sorghum	Agronomic	Dan Fromme	318-880-8079	DFromme@agcenter.lsu.edu
Soybeans	Agronomic	Todd Spivey	919-725-1359	TSpivey@agcenter.lsu.edu
Wheat	Agronomic	Boyd Padgett	318-614-4354	BPadgett@agcenter.lsu.edu
Entomology	Corn, cotton, grain sorghum, soybeans, wheat	Sebe Brown	318-498-1283	SBrown@agcenter.lsu.edu
Weed science	Corn, cotton, grain sorghum, soybeans	Daniel Stephenson	318-308-7225	DStephenson@agcenter.lsu.edu
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