



The University of Georgia  
**Cooperative Extension**  
College of Agricultural and Environmental Sciences



# Georgia Cotton

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## Early Season Disease and Nematode Report, 2009 (*Kemerait*).

**Situation:** For most cotton growers in Georgia, their cotton crop has been planted within the past four to six weeks. Some growers may not have planted all of their crop yet. Many of the cotton fields have received abundant, if not excessive, rainfall since April. Throughout much of April and May, conditions have been cooler than normal.

**Potential impact:** Based upon the environmental conditions, growers could experience the following effects from diseases and nematodes in a field.

- 1. Increased seedling disease.** Cooler and wetter soil conditions often make seedling diseases caused by *Rhizoctonia solani*, *Pythium* sp., and other pathogens more severe. Abundant soil moisture provides conditions favorable for fungal growth; cooler soils slow the growth and reduce the vigor of the seedlings making them more prone to damage from the pathogens.
  - a. What to look for:** Growers may find poor stands and dying seedlings in their fields. Poor stands may have resulted from seeds and seedlings that rotted before emergence occurred or from young plants killed by disease that have since dried and washed away.
  - b. What may happen:** Some of the plants that have survived seedling diseases may have sustained enough damage that they will never reach their yield potential. Some such plants may be able to survive now when there is ample moisture, but may wither from the stress of hotter and drier conditions later this season.
  - c. Management:** In our seedling disease trials planted in early April, standard fungicide seed treatments have provided good control of “soreshin”; however this has also been a season where many growers opted for additional fungicide treatments to protect their cotton.
- 2. Ascochyta wet weather blight.** Current conditions are perfect for the development of this foliar disease characterized by tan lesions, dark borders, and sprinkled with pepper-like fruiting bodies within the lesions. Although I have observed some wet weather

blight this season on young cotton, thus far it has been of little concern. With the onset of warmer and drier conditions, this disease is likely to fade without any need for concern for control.

- 3. Management of nematodes.** Although parasitic nematodes (like root-knot, reniform, sting, and Columbia lance) are quite active in moist field soils (these pests live in the film of water surrounding soil particles), abundant soil moisture will likely mask their damage. Affected root systems are not under much stress at this time and thus stunting is likely to be masked until stress develops later.

What to look for: Many growers use Temik 15G to manage thrips and nematodes. Excessive rainfall can “wash” the Temik from the root zone and in turn, compromise thrips control and nematode control. Should a grower observe lower than expected control of thrips, sub-par nematode control may follow. To bolster nematode control, growers may consider application of Vydate CLV, 17 fl oz/A, between the 5<sup>th</sup> to 7<sup>th</sup> true-leaf stage or consider a side-dress application of Temik 15G, 5-6 lb/A, prior to pinhead square.

**Herbicide injury more common during 2009! (*Culpepper*)** Because of glyphosate-resistant Palmer amaranth, many growers are using residual at plant herbicides on many more acres than in previous years. These residual at plant herbicides are essential if growers are to survive this resistant pest.

In contrast to last years dry environment, plentiful rainfall in most areas during planting has greatly increased the activity of all herbicides applied. This increased herbicidal activity is a “mixed bag” with great weed control but excessive cotton injury. Regardless of which residual herbicide was applied this season, injury has been widespread and quite common.

Many growers are familiar with injury from diuron (Direx, others) and Cotoran with interveinal chlorosis as noted in Figure 1. Plants are occasionally stunted but most often rapidly grow out of the injury once favorable conditions return. Injury from diuron and Cotoran products has actually been less than expected.

Figure 1. Cotton injury from Cotoran (picture by Pete Dotray)



Cotton injury by **yellow herbicides** applied preemergence this season has been significant and much more common than in previous years. Most cotton producers are aware that a yellow herbicide can cause stubby roots and root pruning during an unfavorable environment; however, injury this season has actually been most often caused by foliar uptake. If cotton emerges during a significant rain event, the yellow herbicide actually is released from the soil into the aqueous solution allowing the cotton plant to actually take the herbicide up foliarly as it pushes through the soil surface. Interestingly, injury is far less in areas where the yellow herbicide is incorporated. Foliar uptake injury from the yellow herbicide leads to “elephant ear” cotyledons followed by terminal node stacking and malformed leaf development (Figure 2). Cotton injured to the level shown in figure 2 will most often not die but it will take at least 2 and sometimes 3 weeks for the cotton to begin normal growth.

Figure 2. Cotton injury from foliar uptake of a yellow herbicide applied preemergence immediately following planting.



**Staple** injury is less obvious than many other at plant residual herbicides. Staple injury in research trials this season has actually been far less than expected. Injury has been noted with a slight reduction in plant growth but no other obvious injury symptoms have occurred. Normal cotton growth occurred once favorable conditions returned.

**Reflex** injury has also occurred in many cotton fields. Figure 3 notes typical Reflex injury on cotton. Injury of this nature is usually transient and cotton grows normally. However, more significant injury can occur when heavy rains cause soil treated with Reflex to splash on newly emerging cotton (Figure 4). In most situations, the cotton should recover when a favorable environment returns but growth may be slow for a short period of time. In very severe injury situations, plants where stems are “burnt” and subsequently have lesions may die from seedling disease or other environmental factors such as heavy winds (Figure 5). Injury from **Valor** applied preplant when growers do not follow the appropriate plant back restrictions will appear similar to those noted with Reflex.

Figure 1: Typical Reflex injury.



Figure 2: Occasional severe Reflex injury.



Figure 3: Stem lesion caused by Reflex splash.



It is also worth mentioning that postemergence applications of glyphosate plus metolachlor (Dual products) or Staple have also been causing injury levels greater than normal. This may be a result from “thrippy” cotton or from cloudy weather reducing leaf cuticle thickness. Regardless, avoid spraying these combinations on wet, dewy cotton and avoid adding in additional adjuvants other than what is required by the glyphosate brand selected.

**Report of Activities of the UGA Cotton Micro Gin '08 – '09 Seasons** (*Andy Knowlton and Changying “Charlie” Li*). Believe it or not, we just finished our fifth year of ginning at the UGA Micro Gin in March. The operation of the gin has come a long way in five years. Understandably, there were many start-up problems and challenges during the initial seasons, but most of those problems have been finally resolved due to efforts and support from our stakeholders.

During the past five years since its completion, the UGA Micro Gin has ginned cotton samples from across the cotton belt with 8015 samples, 303 bales, totaling 79,839 lbs of lint (Table 1). In the previous two seasons, the number of samples decreased slightly due to the loss of two researchers. One of the positions has been filled and will be increasing the number of samples as



his program develops. In addition, a new position was hired in the field of post harvest sensor research. This faculty member has worked to evaluate the operation and performance of the UGA Micro Gin. This research, which has been previously published in the Cotton Newsletter, helps to provide a baseline comparison for the performance of the gin. This year we have ginned samples from farms here on the Tifton Campus as well as many other locations across the state, such as Research and Education Centers and cotton producing counties. The type of research consisted of variety trials, chemical treatments, irrigation studies, insect interaction studies, ginning comparison studies, and county agent field trials. In addition to Georgia cotton, samples have been received from Alabama, North and South Carolina, Virginia, Texas, Arizona, Florida, Louisiana and Mississippi. In the '07-'08 season, a study was completed in conjunction with the USDA Spinning Lab in Clemson, SC. The purpose of the study was to evaluate the effects of different lint cleaning methods on the spinning characteristics of the lint. This is hopefully the beginning of a long term relationship with the Spinning Lab. This relationship will broaden the scope of the studies conducted at the Micro Gin to include textile characteristics.

Table 1. Ginning activities at the UGA Micro Gin in five years

Season	# of Tours	# visitors	# Samples Ginned	# Bales	Lbs of Lint
2004	10 – 12		800	64	13824
2005	27	447	2296	105	28914
2006	15	150	1770	56	15675
2007	17	194	1947	43	11768
2008	4	100	1202	35	9658
<b>Total</b>		<b>891</b>	<b>8015</b>	<b>303</b>	<b>79839</b>

Among many challenges facing the Micro Gin, the final step of the rehabilitation to the facility is the addition of office and lab space. This area will house offices for the gin manager and other support staff for the gin and other members of the UGA Cotton Team. The labs will be used for work area pertaining to research. The labs will also be used as meeting rooms for various tours and gatherings held at the UGA Micro Gin Facility. In the past, we have not had restrooms or meeting areas to host functions at the Micro Gin. The repairs and additions listed above will be integral in making the facility more user friendly to tours and other functions.

In addition to being a valuable research tool, the UGA Micro Gin has been a great educational tool as well. The Micro Gin has provided exposure to Georgia cotton by onsite tours with audiences including growers, educators, students, and governmental officials. We are also regular presenters at offsite learning experiences geared to elementary age school children. These presentations include history of cotton as well as production and use of cotton. In November 2007, the Micro Gin hosted the '07 Cotton Ginning Symposium. The Ginning Symposium, a training program led by the USDA Ginning Lab in Stoneville, MS, is for county agents and other academic professionals (non-ginners) from across the entire Cotton Belt. This meeting is used to introduce non-ginners to the basics of ginning as well as current advancements in the industry. We are hopeful that this is the beginning of a regularly scheduled program to be held at the Micro Gin. There are other programs in the works for the near future. These would consist of advanced training for Georgia ginners as well as gin safety topics.

In the past five years, the UGA Micro Gin program has provided an important research and educational service to the UGA Tifton Campus. We look forward to future opportunities to promote the UGA Micro Gin program as well as Georgia cotton in general.

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