



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



# Georgia Cotton

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**Cotton Burndown (*Culpepper*).** Cover crops (or heavy stands of winter weeds) should be killed at least 2 to 3 weeks before planting. This will avoid soil moisture depletion by the cover crop or weeds, allow the soil to warm quicker, and allow time to apply additional burndown herbicides, if needed, to kill streaks that may have been missed during the original application.

*Cutleaf eveningprimrose* has been one of the most common and most difficult weeds to kill in strip-till or no-till fields. The most effective and economical option for cutleaf eveningprimrose is application of 2,4-D alone or mixed with glyphosate at least 30 days before planting. *The ideal and most effective time to apply 2,4-D is late February or early March.* At this time, the suggested rate of application of 2,4-D to control cutleaf eveningprimrose is 6 to 8 fluid ounces of a 3.8 pound per gallon formulation. Use 1.0 to 1.5 pint of a 3.8 pound per gallon formulation for other weeds such as wild radish and use 1.5 to 2.0 pints of a 3.8 pound per gallon formulation for horseweed. Clarity, an option for glyphosate-resistant horseweed will also control cutleaf eveningprimrose although somewhat less effective on primrose than 2,4-D.

Growers are strongly encouraged to incorporate 2,4-D into their no-till or strip-till management programs. Cutleaf eveningprimrose is very difficult to control in emerged cotton. For growers who do not want to put 2,4-D in their sprays, Ignite or a combination of glyphosate plus Valor are options to provide fair control of pre-blooming primrose. If applying Valor, review the label for tank clean out procedures after EACH day of use.

Early control of cutleaf eveningprimrose and other weeds is recommended. However, after cutleaf eveningprimrose has begun blooming, good control can be obtained with a combination of paraquat plus Direx. This combination also is effective on most other winter weeds. Ignite 280 is also effective on cutleaf eveningprimrose under warm conditions but may provide poor control under cool conditions. Also, Ignite will not control immature wild radish.

Extensive research has shown little to no benefit from application of Aim, ET, Goal, Harmony Extra, Harmony GT, or Resource to cutleaf eveningprimrose.

*Wild radish* can also be control by 2,4-D at 1.0 to 1.5 pt/A (of a 3.8 pound per gallon formulation) when applied alone or with 1.0 pt/A when mixed with Roundup. For growers not willing to use 2,4-D, radish can be controlled very effectively by glyphosate plus Harmony Extra or Express when applied at least 14 days prior to planting cotton. Once radish is fully matured (i.e. pod set), Ignite, glyphosate plus Valor, or Gramoxone plus diuron can also be used to provide good to excellent control.

Before applying any herbicide prior to cotton planting review the table below and the respective product labels for uses and plant back restrictions.

*Plant back restrictions and comments for cotton burndown herbicides.*

<i>Burndown Herbicide Choice</i>	<i>Time Interval Before Planting</i>	<i>Special Comments</i>
glyphosate	anytime prior to planting	
glyphosate + 2,4-D or 2,4-D alone	unknown for many brands of 2,4-D; 30 days for Barrage HF and Salvo 5 at proper rates	label suggest cotton can be planted after 2,4-D has dissipated from the soil
glyphosate + Harmony Extra or glyphosate + Express	at least 14 days	
glyphosate + Valor	see article below	
glyphosate + pendimethalin	apply within 15 days of planting	
glyphosate + Goal	at least 30 days	need 3 rainfalls each at least 0.25 inch
paraquat	any time prior to planting	
paraquat + 2,4-D	unknown for many brands of 2,4-D; 30 days for Barrage HF and Salvo 5 at proper rates	label suggest cotton can be planted after 2,4-D has dissipated from the soil
paraquat + Direx	15 to 45 days	
paraquat + Harmony Extra	at least 14 days	
paraquat + Goal	at least 30 days	need 3 rainfalls each at least 0.25 inch

**Understanding the Proper Methods When Applying Valor for Cotton Burndown**

**(Culpepper).** Valor (up to 2 oz of product per acre) can be applied for cotton burndown as long as the Valor is applied at least two weeks before planting AND a strip-till operation is run AFTER SPRAYING THE VALOR BUT BEFORE PLANTING. The strip-till operation must incorporate the soil in the seed bed to a depth of 1-2 inches prior to planting. Growers not following these recommendations may observe serious cotton injury.

In no-till production or in a situation where a grower conducts the strip-tillage operation first and then makes a Valor application a waiting period of 30 days and at least one inch of rainfall prior to planting is in order.

The strip-tillage operation is used to reduce the activity of Valor in the seedbed, thereby reducing the potential for cotton injury. By reducing the activity of Valor in the seedbed, growers with glyphosate-resistant Palmer amaranth would need to apply a banded application of another effective pigweed herbicide in the row after planting to prevent glyphosate-resistant Palmer amaranth emergence. Numerous preemergence herbicides with good residual Palmer amaranth control are available; however, we would strongly encourage growers NOT use Reflex preemergence after using a Valor burndown application for resistant management.

**Early Season Thrips Control (Roberts).** Thrips are predictable insect pests of seedling cotton in Georgia and other areas of the southeast. Thrips injury results in crinkled distorted true leaves, stunted plants, delays in maturity, and loss of apical dominance and even stand loss in severe cases. Due to the predictability of thrips infestations, most growers utilize a preventive systemic insecticide at planting for thrips control. Use of a recommended systemic insecticide at planting has provided a consistent positive yield response in UGA trials.

At-plant systemic insecticides for thrips include Temik 15G which is applied in-furrow at planting and the seed treatments Cruiser and Gaucho Grande. The seed treatments will typically provide control for about 3 weeks. Temik will provide thrips control for 4+ weeks, residual control is rate dependent.

Thrips infestations are generally higher on April and early May plantings compared with late May and June planting dates. Slow seedling growth associated with cool temperatures or other plant stresses exacerbates thrips injury. A rapidly growing seedling is more tolerant to thrips compared with a stressed seedling. Thrips infestations also tend to be higher in conventional tillage systems compared with reduced tillage systems.

Foliar insecticide applications may be needed to supplement preventive insecticides in some situations. The threshold for seedling thrips is 2-3 per plant, especially if immature or wingless thrips are present at threshold levels. The presence of immature thrips suggests that the preventive insecticide used at planting is not effective. Seedlings are most susceptible to thrips during early stages of development. Treatment for thrips is rarely necessary after plants attain 5 true leaves and are growing vigorously.

**Does size matter? (Changying “Charlie” Li, Andy Knowlton).** Cotton researchers and extension specialists use small research plots to evaluate cotton varieties, irrigation strategies, and various treatments. These small cotton samples can be ginned by the laboratory gin or the UGA Micro Gin. Since the UGA Micro Gin can gin various sizes of cotton samples and usually 30 lbs is the de facto standard, one question remains for researchers: how might the ginning size affect the result? Can I use smaller size cotton samples? In order to answer these questions, we have to look at two parameters that the ginning size may have an effect on, turnout rate and cotton fiber quality.

A study was conducted in 2008 by members of The UGA Cotton Team to address this issue. This study compared 8 different ginning sizes (3, 5, 10, 15, 20, 25, 30, 35 lbs) ginned at the UGA micro gin. Three cotton varieties were selected from UGA cotton farms in Tift County: DPL 167 from the Gibbs Farm, DPL 164 and DPL 141 from the Ponder Farm. Six replicates were used for each ginning size in each variety. Ginning turnout rate was measured by dividing the ginned lint weight by the total seed cotton weight from each cotton sample. As a result, six turnout rates were obtained for each ginning size from each variety. Means and standard deviations were calculated for comparison. Fiber quality was measured by HVI at the USDA Macon classing office. Three primary fiber quality parameters, staple length, strength, and uniformity, were compared. A standard statistical test (ANOVA) was used to compare the mean difference at 95% confidence level.

*Fiber quality comparison:* As shown in Figure 1, no significant differences were found over three quality parameters (uniformity, strength, and staple) in variety DPL 164. It indicates that ginning size does not have an effect on fiber quality, which is in accordance with our intuition. The other two varieties produced the same results and were not shown here.

*Ginning turnout rate comparison.* As demonstrated in Figure 2, statistical test showed no significant differences for ginning sizes from 10 lbs to 35 lbs among 3 varieties. Small ginning sizes (3 and 5 lbs) produced significantly lower gin turnout values as compared to the larger size samples. However, a closer look at the figure reveals that smaller ginning sizes (5 and 10 lbs) had larger variations (as shown by error bars in the figure) as compared to the larger ginning sizes. Although 10-lb sample size yielded a comparable turnout rate with the other higher ginning sizes, it is obviously is not a good choice if a consistent result is desired. On the other hand, from a practical consideration, larger size samples usually process smoother through the gin machine than smaller size samples. Therefore, we suggest that a 20-lb sample should be the bottom line at the UGA Micro Gin.

*Take home message:* If you are mainly concerned about the fiber quality, our study suggests that the ginning size does not have a direct effect on it. If you are interested in the turnout rate of certain varieties or treatments, ginning size certainly has an effect on it. We strongly recommend that you send a cotton sample with minimum 20 lbs to our UGA Micro Gin if you want to obtain accurate, reliable, and consistent results.

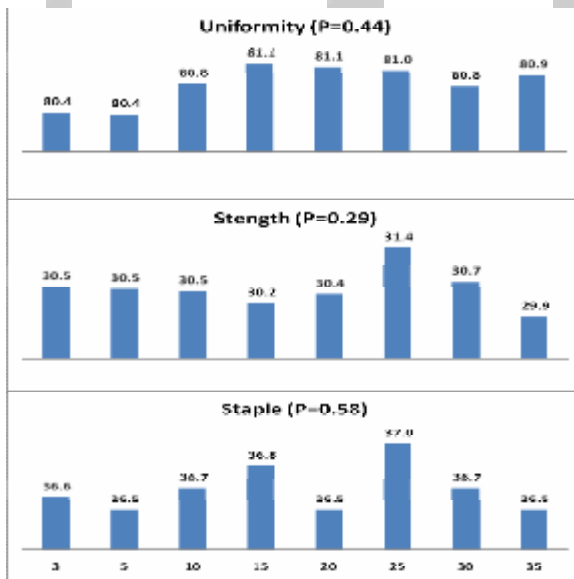


Figure 1. Ginning size effect on fiber quality: uniformity, strength, and staple length (variety DPL164)

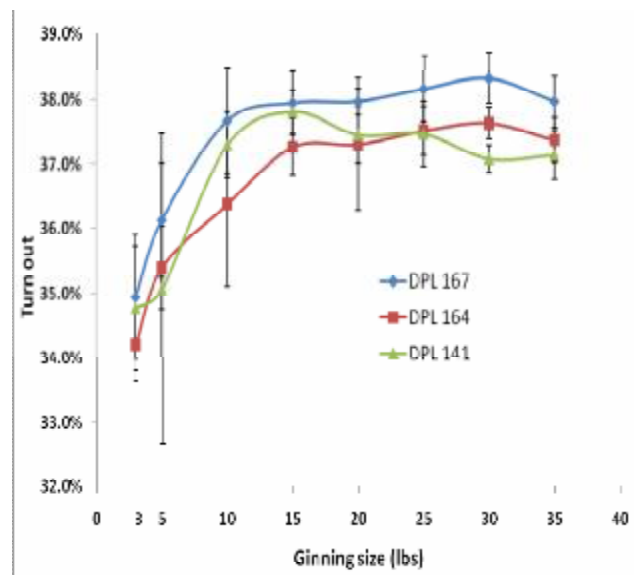


Figure 2. Ginning size effect on gin turnout rate across three varieties

**Telone Shortage Brings Focus to Nematode Management in 2009 (*Kemerait*).** It is likely that the availability of soil fumigant Telone II will be 40 to 60% of what it was in 2008. Production of Telone II is closely tied to the manufacture of plastics often used in the automotive industry. The current slump in the world economy has slowed the demand for new automobiles and thus the production of Telone II.

At 3 gallons per acre, Telone II is an important nematicide for the control of plant parasitic nematodes. In studies at the University of Georgia, Telone II consistently provided improved yield and value over a range of damaging nematode populations. Unfortunately, some growers who have come to rely on the efficacy of Telone II may not be able to treat all of the acreage that could benefit from the use of this product. The shortage of Telone II in 2009 provides the opportunity to refocus on the fundamental measures to control nematodes.

The first step to effectively manage plant parasitic nematodes is to practice good crop rotation. Growers should rotate fields where cotton is planted with crops that are not hosts to reniform nematodes (e.g. corn or peanuts), to Columbia lance nematodes (e.g. peanuts) or southern root-knot nematodes (e.g. peanuts). Where growers must raise a crop like soybeans in a field where cotton is to be planted in the near future, they should consider a variety that has resistance to southern root-knot nematodes to avoid further increase in populations of this pest.

The second step to effectively manage plant parasitic nematodes is to plant a variety that has resistance to the nematodes that may affect the crop in a field. Unfortunately for cotton growers in Georgia, there are currently no nematode-resistant cotton varieties available. However, growers can avoid selecting varieties that seem to be more severely affected by nematodes and choose to grow varieties that seem to have better tolerance to nematodes.

The third step is to manage stress on the cotton field. Plant parasitic nematodes can be thought of as “stress multipliers,” i.e. nematodes cause damage to the roots which magnifies stress from factors such as drought and low soil fertility. Growers can reduce the damage from nematodes by maintaining appropriate soil fertility and minimizing water stress through irrigation and perhaps conservation tillage.

The final step to reduce damage from nematodes is to use an appropriate nematicide. In addition to Telone II, products labeled for the control of nematodes include Temik 15G, Vydate C-LV, AVICTA Complete Cotton, and AERIS Seed-Applied System. To determine the best nematicide to use in a particular field, the grower should consider the results from soil sampling to determine the magnitude of the population of the nematodes in the field.

In fields where Telone II has been used effectively in the past but is not available this season, growers may want to consider use of Temik 15G (5-6 lb/A) in-furrow at planting coupled with a side-dressed application of Temik 15G (5 lb/A) prior to pin-head square. Timing of the second Temik application is critical to avoid unnecessary damage to the root-system. Use of Vydate C-LV (17 fl oz/A) as a foliar application following use of Temik 15G at-planting has been less successful than adoption of a side-dressed application of Temik. If growers are unable, or unwilling, to side-dress Temik on the cotton, the at-plant application of Temik 15G (5-6 lb/A)

offers better control of nematodes where populations are high than do nematicide seed treatments.

Contributions by:

**Stanley Culpepper**, Extension Agronomist – Weed Science

**Bob Kemerait**, Extension Plant Pathology

**Andy Knowlton**, Biological and Agricultural Engineering

**Changying “Charlie” Li**, Biological and Agricultural Engineering

**Phillip Roberts**, Extension Entomology

*Your local County Extension Agent is a source of more information on these subjects.*

Edited by: A. Stanley Culpepper, Extension Agronomist-Weed Science

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