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

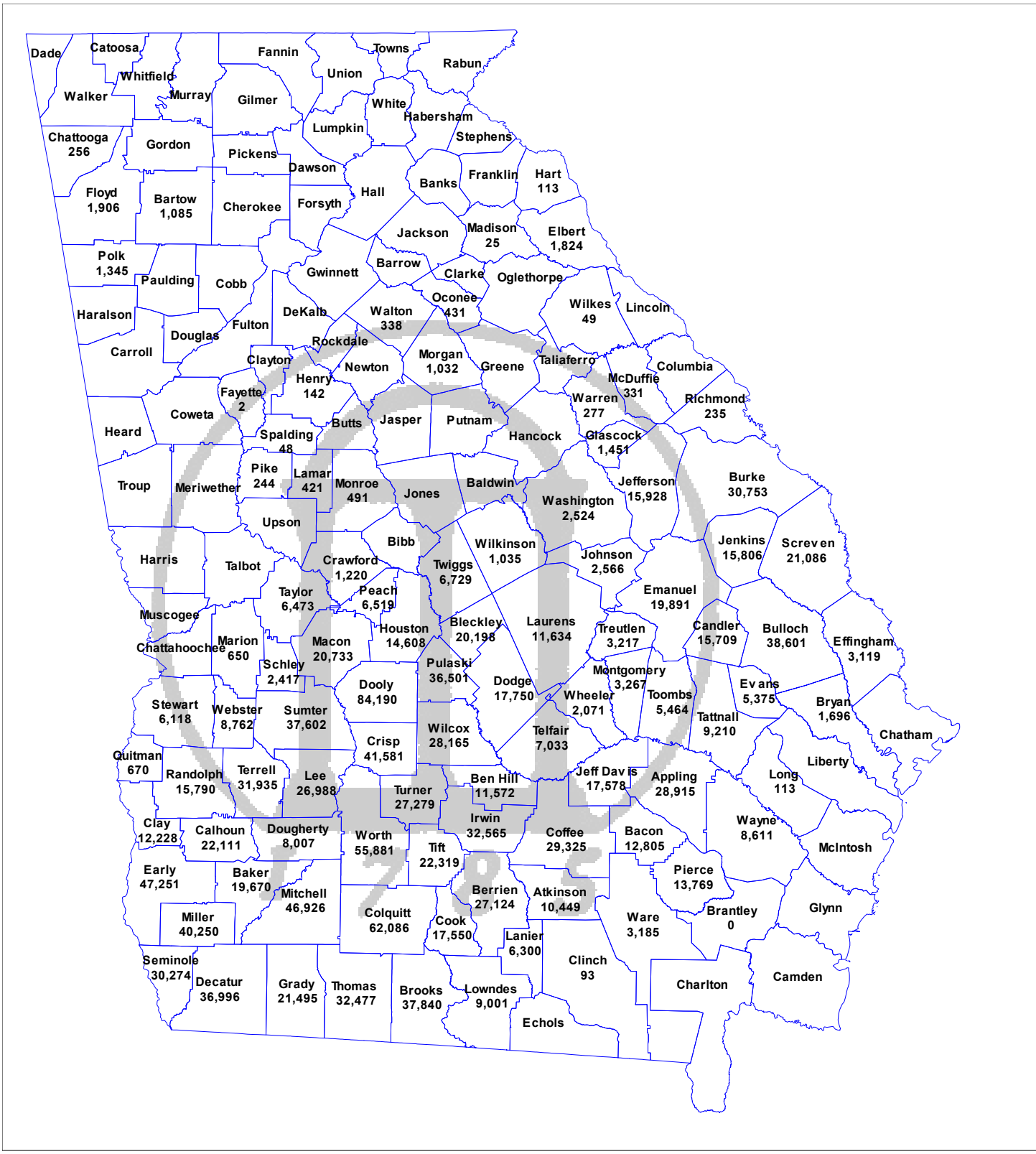
Georgia Cotton

June 3, 2004 http://www.griffin.peachnet.edu/caes/cotton

CROP SITUATION. (***Brown***) As of the first of June, most of our crop is planted. A few double crop fields are waiting for grain harvest and lack of moisture has stopped planting in many places. Dry weather has been a significant issue for much of the planting season, but with a general rain in early May and scattered showers in mid-May, much of the crop has had a decent start. We need rain across most of the southern half of the state.

On or prior to May 1, growers reported their intended plantings to the Boll Weevil Eradication Program. The tally was 1,395,675 acres (*see map on next page*). Historically, the initial anticipated acreage report is higher than what is actually planted by about 9 percent, so the final number will probably be slightly below 1.3 million acres. It might even be less because of prevailing drought.

The exact amount of each variety planted is not known. The USDA Ag Marketing Service conducts an annual survey of ginners and others, and this report, typically published in August, serves as the best official estimate of percentages devoted to specific varieties. We anticipate that as much as 65 to 70 percent of the 2004 Georgia acreage will be planted in DP 555 BG/RR. Stoneville 5599 BR garnered significant attention because of grower interest in combating nematodes. The level of interest has been somewhat surprising because of the possible occurrence of bronze wilt in this variety. With daytime highs already in the mid-90s and persistent drought, ST 5599 BR will be thoroughly tested in regard to the bronze wilt issue. On the positive side, it has displayed exceptional early seedling vigor.


Dade
Catoosa
Fannin
Towns
Rabun
Whitfield
Union
Walker
Murray
Gilmer
White
Habersham
Lumpkin
Stephens
Chattooga
256
Gordon
Pickens
Dawson
Banks
Franklin
Hart
113
Floyd
1,906
Bartow
1,085
Cherokee
Forsyth
Hall
Jackson
Madison
25
Elbert
1,824
Polk
1,345
Barrow
Gwinnett
Clarke
Oglethorpe
Paulding
Cobb
Oconee
431
Wilkes
49
Lincoln
Haralson
DeKalb
Walton
338
Fulton
Douglas
Rockdale
Carroll
Clayton
Morgan
1,032
Greene
Taliaferro
Columbia
Newton
McDuffie
331
Henry
142
Fayette
2
Warren
277
Richmond
235
Coweta
Butts
Jasper
Putnam
Heard
Spalding
48
Hancock
Glascock
1,451
Pike
244
Lamar
421
Monroe
491
Jones
Baldwin
Jefferson
15,928
Burke
30,753
Troup
Meriwether
Washington
2,524
Upson
Bibb
Wilkinson
1,035
Jenkins
15,806
Screven
21,086
Harris
Talbot
Crawford
1,220
Twiggs
6,729
Johnson
2,566
Taylor
6,473
Peach
6,519
Emanuel
19,891
Muscogee
Houston
14,608
Bleckley
20,198
Laurens
11,634
Treutlen
3,217
Candler
15,709
Bulloch
38,601
Effingham
3,119
Chattahoochee
Marion
650
Macon
20,733
Schley
2,417
Pulaski
36,501
Montgomery
3,267
Evans
5,375
Dooly
84,190
Dodge
17,750
Toombs
5,464
Stewart
6,118
Webster
8,762
Sumter
37,602
Wheeler
2,071
Tattnall
9,210
Bryan
1,696
Wilcox
28,165
Telfair
7,033
Chatham
Crisp
41,581
Quitman
670
Liberty
Randolph
15,790
Terrell
31,935
Lee
26,988
Turner
27,279
Ben Hill
11,572
Jeff Davis
17,578
Appling
28,915
Long
113
Irwin
32,565
Clay
12,228
Calhoun
22,111
Dougherty
8,007
Worth
55,881
Tift
22,319
Coffee
29,325
Bacon
12,805
Wayne
8,611
McIntosh
Early
47,251
Baker
19,670
Mitchell
46,926
Berrien
27,124
Atkinson
10,449
Pierce
13,769
Colquitt
62,086
Cook
17,550
Brantley
0
Glynn
Miller
40,250
Ware
3,185
Lanier
6,300
Seminole
30,274
Clinch
93
Decatur
36,996
Grady
21,495
Thomas
32,477
Brooks
37,840
Lowndes
9,001
Charlton
Camden
Echols

SPRAYER CLEAN OUT. (***Brown***) Sprayer clean out is becoming an increasingly important issue in cotton as we use a variety of pesticides and grow multiple crops on the same farm. In the past, we've seen occasional problems with trace amounts of phenoxy herbicides such as 2,4-D and 2,4-DB. This spring we've seen several problems related to inadequate spray system clean out of Valor, but with the introduction Liberty Link cotton (Ignite herbicide) and with the use of products such as Aim, ET, Gramoxone, and Roundup (glyphosate), injury problems related to inadequate sprayer clean out are bound to increase. This can be a costly mistake.

Common sense and the following are key steps to avoiding such problems. Many product labels have specific instructions for sprayer clean up.

Immediately following pesticide application, completely drain the spray system – tanks, lines, strainers, and other screens – of all spray solution. Then rinse the system with clean water. Make sure nozzle bodies and nozzles are also free of obvious residues. Check sagging lines to make sure no residues are left. In some cases, pressure washing internal tank surfaces may break loose caked materials. Much like rinsing a dinner plate immediately after a meal, it is much easier to remove pesticide residues if immediate action is taken. Of all the steps involved in sprayer clean up, immediate drainage and rinsing are the most important.

Flush the entire system with clean water. Running fresh water through the system until the tank water and spray water are clear provides some visible indication of residue removal.

If the pesticide previously applied is particularly troublesome in terms of crop injury, additional clean up steps may be warranted. These typically involve ammonia solutions and/or commercial tank cleaners. There are numerous tank cleaners available but limited comparative information regarding their performance.

Fill the tank with clean water and add household ammonia. The recommended rate is 1 gallon of household ammonia per 100 gallons of spray solution. Circulate and flush the system for several minutes. Some product labels recommend maintaining an ammonia solution in the spray system overnight, followed by thorough rinsing.

Flush the entire system with clean water. These last couple of steps can be repeated to further insure spray system cleanliness.

CROP QUALITY ISSUES. (***Brown***) Fiber quality has become major concern for us in recent years. Growers have lost multiple millions of dollars because of high mic, short staple, and light spotted color grades. Concerns about fiber uniformity and spinning efficiency of Georgia cotton threaten our markets. In March 2004, the UGA Cotton Team and Georgia Cotton Commission hosted a Fiber Quality Seminar at the UGA Tifton Campus to discuss the problem and to explore solutions. In preparation for the meeting and as a result of the dialogue, several ideas have come forth and the following reflects on some of these issues.

1. Variety selection is a key component of fiber quality. Without question, X variety is only so good quality-wise. Under less than ideal growing conditions – in other words, when

drought/heat stress occur, when it rains during harvest season, or when cotton is mistreated in the module or gin – quality deteriorates. Varieties have tendencies, especially as it relates to fiber length, length uniformity, strength, and density/thickness (mic). Over time, across locations, years, and environments, these trends become obvious. There are certain varieties that have lost favor because of high mic and/or short staple. Even under near ideal growing conditions of the 2003 season, over 22 percent of the Georgia crop was short staple (below 34 32nds). This strongly implicates variety as a big player in the fiber length problem.

The dominance of DP 555 BG/RR in our state means that the fiber quality nuances of this variety will have a profound effect on our overall quality performance.

The question, "Are the transgenic varieties the source of our fiber quality problems?" has been hotly debated. The general conclusion is that the introduction of the transgenes per se does not diminish quality but that the initial recurrent parents, the beginning point for the development of Bollgard and Roundup Ready varieties, are not noted for fiber quality. Also, the focus on developing transgenic varieties (gene introduction, back crossing, equivalency evaluation) consumed considerable research capital and time without advancing fiber quality traits.

Also, while consternation about fiber quality has been voiced loudly within the U.S. industry for several years, the problem is one that requires multiple years to solve. Keep in mind that variety development requires at least 7 to 9 generations, and even with nurseries in Central America and other southern hemisphere countries, this means 4 to 5 years minimum. We are seeing better fiber quality in some of the new transgenic offerings.

2. Cultural practices influence fiber quality. Irrigation improves not only lint yield but also fiber quality. However, in extremely hot/dry years, irrigation in south Georgia cannot overcome the negative effects of stress. Our knowledge of water management is increasing.

Seeding rates in much of our state are comparatively low. Does this adversely influence quality? Detailed studies by Dr. Craig Bednarz show little if any effect of reduced plant populations on fiber quality. Higher populations had slightly lower mic.

Proper soil fertility and plant nutrition are important to both yield and quality. The current assumption is that fertilization appropriate for good yields is sufficient for adequate fiber quality, but further research is needed in this important area of crop management.

We hope to use the new micro-gin facility to explore these and other production-related questions. A small improvement in fiber quality in the state and region can result in considerable returns to southeastern cotton growers.

3. Pest management is integral to successful crop production. Initial investigations suggest that stink bug control significantly influences fiber length and color. The 2003 season was one of severe bug pressure in some fields – and serious yield losses. Problems of last year will no doubt increase grower vigilance regarding stink bugs.

Do tardy over-the-top or sloppy post directed glyphosate applications on Roundup Ready cotton create fiber quality problems? Dr. Stanley Culpepper and Dr. Craig Bednarz addressed this question at two locations in 2003 and 2004 and saw no fiber quality effects from either. In only one of the four studies did they observe any yield reduction.

4. *Harvest timing and efficiency* are needed areas of improvement. Proper timing of defoliation and harvest are two things we can do better. Delays with either expose cotton to weather risks which can negatively affect quality. In many fields the tendency is to wait too long to terminate the crop. This is especially so in areas where peanut harvest competes with cotton harvest for labor, etc. Yield and quality losses can be significant when rainfall occurs during September through November. Color grades and strength are commonly reduced during rainy harvest seasons. Historically, the latter half of October is the period most likely to be rain-free.

5. Ginning is a key component in the fiber quality equation. Ginning is a harsh but necessary process. There are probably differences among what comes out of various gins. Some of that is influenced by ginning procedures, but it is also determined by what is delivered to the gin, which is affected by weather and by grower management. Can we improve our quality by improving what we do at the gin?

Summary. Quality is indeed a big issue. There are many technical matters associated with the crop, gin, and textile mill. Quality improvements are needed to maintain if not expand our markets, particularly as more and more of the U.S. crop is exported. Quality matters. Granted, premiums for an improved or superior fiber trait are at best captured only sporadically. But we do not want to become what Dr. Mike Watson, Vice President of Fiber Quality Research of Cotton Incorporated, described as those who supply the "bottom feeders."

INSECT SCOUTING A MUST: (*Roberts*) During recent years we have observed a decline in the percent of acres being scouted on a regular basis. This change may have occurred for several reasons:

1) the use of Bt cotton and the reduced threat of a tobacco budworm or corn earworm disaster when this technology is used
2) the good fortune of not sustaining significant yield loss in the absence of scouting
3) prolonged drought and reduced yield potential
4) economic situation (trying to reduce costs)

From an insect pest management standpoint, hiring an experienced scout or consultant is critical for profit maximization. Decisions regarding insect pests are only as good as the information which is available. We must know which insects are present, the stage of development, and their population levels in order to make a good decision regarding insecticide inputs.

All fields, non-Bt and Bt cotton, should be scouted on a regular basis. Non-Bt cotton should be scouted at least every 5 days (two times per week is preferred). Preferably Bt cotton should be scouted at least every 5 days, but once a week is acceptable. Once a week scouting is unacceptable for non-Bt cotton.

The 2003 season demonstrated to many that insects are still a formidable adversary in cotton production. There were many fields that sustained economic loss and near total loss in some situations due to insect pests such as stink bugs. We cannot control the weather, but when we have good growing conditions our goal should be not to allow insects to be a yield limiting factor.

Several scout schools are planned in the coming weeks to provide an introduction to cotton insect scouting. The dates, location, and contact for each are listed below.

June 14, 2004	RDC, Tifton-*Debbie Rutland* (229/386-3424), pre-registration required
June 15, 2004	Jeff Davis Co., Hazelhurst-*Tim Varnedore* (912/375-6648)
June 22, 2004	SE GA Res.& Ed. Center, Midville-*Richard McDaniel* (706/554-2119)

LAYBY PRO LABELED FOR DIRECTED APPLICATION IN COTTON? (***Culpepper***). Layby Pro is essentially a one to one mixture of linuron (Lorox) and diuron (Direx, others) and has provided both postemergence and residual weed control similar to an equivalent (pint for pint) rate of diuron in research trials throughout Georgia.

Early-Season Application: Apply Layby Pro at 1 pt/A as a directed shielded/hooded spray application to cotton at least 6 inches tall and 1.0 to 1.5 pt/A to cotton at least 8 inches tall.

Layby Application: Apply Layby Pro as a directed shielded/hooded spray to cotton a minimum of 15 inches tall using 1.6 pt/A on coarse soils and 2 pt/A on medium soils.

Layby Pro will need to mixed with MSMA or glyphosate (Roundup) for adequate weed control in most of our fields. Direct glyphosate mixtures only to Roundup Ready cotton.

Following a broadcast application of Layby Pro at layby, cotton and corn can be planted the next season but do not plant any other crop for at least one year (according to the label).

Click **HERE** for an updated weed control chart comparing directed herbicide options!

SUPREND LABELED FOR DIRECTED APPLICATION IN COTTON? (***Culpepper***). Suprend is a mixture of Caparol (prometryn) and Envoke (trifloxysulfuron-sodium) and is very effective controlling many broadleaf weeds and nutsedge species. The Suprend label allows directed applications once cotton is at least 6 inches tall. We would encourage the directed application be made to cotton that is at least 10 inches in height.

The use rate per application of Suprend will vary depending on weed species and sizes present but 1.0 to 1.5 lb/A of product per application should be an effective mixture. Add adjuvant according to labeled recommendations. Do not exceed a total of 2.7 lb/A of Suprend per season.

Although Suprend may effectively control very very small grasses when applied alone, mixing it with MSMA will be needed for most of our fields. Suprend may also be mixed with Touchdown (glyphosate) and applied as a directed application in Roundup Ready cotton. Little research has been conducted on the potential for antagonism with Suprend plus glyphosate mixtures by UGA.

Wheat may be planted 3 months after applying Suprend while corn (field, sweet), grain sorghum, peanut, soybean, and tobacco can be planted 7 months after an application.

Click **HERE** for an updated weed control chart comparing directed herbicide options!

VALOR LABELED FOR PRECISION DIRECTED APPLICATION IN COTTON? (***Culpepper***). In Roundup Ready cotton, Valor should be mixed with either glyphosate (Roundup, etc) or MSMA. The cotton should be at least 18 inches tall with a minimum of 4 inches of bark up the cotton stem. It is absolutely critical that the cotton stem be barky as green stems can be "burnt into" if contacted by Valor mixtures. If bark extends four inches up the cotton stem then one should direct no higher than 2 inches.

> **The use of crop oil concentrates, methylated seed oils, organo-silicant surfactants or products containing these ingredients, may result in severe cotton injury and should not be used with Valor mixtures in the cotton crop.**

Research has shown extremely good postemergence weed control when mixing 2 oz/A of Valor with MSMA or 1.0 to 1.5 oz/A of Valor with glyphosate. Glyphosate plus Valor has been more effective than Valor plus MSMA on grasses. Valor will also provide residual weed control for sensitive weed species if rainfall or irrigation occurs shortly after application. Mixing Valor with glyphosate could be antagonistic, but to date, research has shown this occurrence is rare and antagonism actually occurs less with Valor than with many other directed options.

Click **HERE** for an updated weed control chart comparing directed herbicide options!

Tank Issues: There have been tank, hose, and nozzle screen and tip clean out issues with Valor this spring. We would strongly encourage growers using Valor at layby in cotton to use application equipment where the tank and other spray components are permanent fixtures of a directed applicator for cotton (or other tolerant crops) only. If the tank and spray equipment is used only for directed applications in cotton then avoiding crop injury in other crops is feasible. If one must use the tank and/or spray components from a directed applicator in which Valor was directed in cotton, then one must understand the potential risk for injury when using this equipment in sensitive crops and tank clean out procedures must be addressed aggressively.

Cleaning Valor from a spray system is extremely important as noted on the Valor label. The label suggest the following six steps to successfully clean a sprayer that was used to apply Valor.

1. Completely drain the spray tank, rinse sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.

3. Top off tank, add 1 gallon of 3% household ammonia for every 100 gallons of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens, and nozzles for a minimum of 15 minutes.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them in clean water.

Also the label notes that spray equipment must be cleaned EACH DAY following Valor application.

AFTER THE FURROW IS CLOSED: WHAT'S NEXT FOR DISEASE CONTROL IN COTTON? (*Kemerait and Seebold*) As a crop, cotton is remarkably free from diseases, though it is affected frequently by parasitic nematodes. All of the management tools for combating seedling diseases and most for managing nematodes should be in place when the furrow is closed. Once the seed is planted, the grower can only watch as the seedlings emerge and hope that any seedling disease that does occur is not too severe. In cases where seedling disease is a problem, perhaps because of poor crop rotation or environmental conditions at the time of planting, the grower should use caution before deciding to replant. In recent studies conducted by members of the UGA Cotton Team, the costs associated with replanting due to a poor stand were often greater than the value of the cotton yield lost from the original stand. Growers considering replanting a field should consider contacting their county Extension agent before making a final decision.

The use of nematicide rates of Temik 15G at planting or fumigating with Telone II prior to planting are effective measures to reduce the impact of nematodes on the present cotton crop. In some fields where damage from nematodes is extreme, growers may want to consider further treatment of the cotton crop with either Temik 15G (5 lb/A) applied between the 2nd and 8th true leaf stage or Vydate C-LV (17.0 fl oz/A) applied between the 5th and 7th true leaf stage. Where additional nematode control is needed (i.e. where nematode populations are high), the 5.0 lb/A application of Temik 15G as a side-dress treatment has been effective in a number of recent trials. A special rig for the correct application of this treatment is likely available through the Bayer CropScience representative in your area. This treatment should not be applied any later than pinhead square in order to 1) maximize protection for the developing root system, and 2) minimize the risk of pruning the developing roots during application. Results when using Vydate C-LV as an ADDITIONAL treatment to at-plant Temik 15G (5 lb/A) have been variable and much less consistent than with a side-dress application of Temik. Vydate C-LV will likely perform better in heavier soils as it may leach too quickly through sandier soils.

Growers who know that nematodes are a problem in their field should be prepared to use nematicides prior to, or at planting, time. However, every year I receive questions from growers who did not treat for nematodes before the furrow was closed who determine soon after emergence that they have made a mistake in omitting the treatment. The obvious question is "What can I do now?" Unfortunately, there is very little that can be done. In extreme cases, the grower may need to replant (see discussion above) and use a nematicide rate of Temik in the process. This is obviously an unpopular choice. While we do not have any data to support the

practice, and do not recommend it as a standard practice, some growers have reported success when side-dressing the cotton with nematicide rate of Temik 15G, even though they failed to put the initial nematicide out at planting. We are testing this treatment in 2004; however growers should be aware that as of now we have little evidence to support the practice.

HARDLOCK OF COTTON (*Kemerait*)
Considerable attention continues to be given to the issue of hardlock of cotton and treatment with the use of Topsin-M (thiophanate methyl). We will continue study of this treatment program in 2004 to corroborate results reported from Florida in 2002. At this point, it is important to remind growers that Topsin-M, or any other formulation of thiophanate methyl, is NOT labeled for use on cotton in Georgia. Also, the results that we obtained in studying this problem in Georgia in 2004 were insufficient to support use of Topsin-M specifically for the control of hardlock. Hopefully, the 2004 season will provide us with more definitive answers. In the mean time, the timely management of stinkbugs appears to be a critical step in the reduction of at least some types of hardlock.

IRRIGATION TIMING. (***Jost***) Last year was wet and irrigation timing and rate was not a big issue, in fact there was cotton that had entirely too much water at this time. This year is shaping up to be a dry one, especially on the east side of the state. Maybe it will evolve into a normal or average year (by the way, what is normal?).

The old theory was we wanted to cotton to stress a little (wilt) before bloom. This is thought to encourage root growth, and help to enable the plant to withstand dry periods later in the year. Research at UGA has shown that once the plant begins to wilt, it has experienced stress on a physiological level for some time previously. Research conducted by Dr. Bednarz has shown that by delaying irrigation until blooming yield was slightly reduced even in the wet year of 2003.

If irrigation is available and the question is should I pull the trigger, I think it is somewhat similar to a replant issue. With replanting, when in doubt… DON'T. With irrigation, when in doubt… DO!

PGR QUESTIONS. (***Jost***) As previously mentioned, it is expected that possibly 70% of Georgia's cotton acreage was planted to DP555BGRR. Last year was extremely wet and we learned that mepiquat (Pentia, Pix, Mepichlor, Mepex etc…) applications made early were much more successful at controlling vegetative growth than later applications. In other words 8 oz/A applied at squaring did much more for controlling height than did monstrous rates applied once the cotton was blooming. What about this year?

2004 is at least starting out on the low rainfall side of normal, where 2003 was most definitely on the high side of normal (again, what is normal?). Should our strategies change? On irrigated fields the early application timing is still a good approach. On non-irrigated fields the issue becomes a little cloudy. Every year the issue arises where mepiquat was applied early and the cotton was stunted and never recovered. This situation is the exception rather than the rule.

With DP555BGRR, an early application is still probably warranted. The application rate of 8 oz/A should be the benchmark, the rate could be lowered somewhat in these non-irrigated fields, but I would caution against going any higher.

The other issue is which mepiquat product to use. There are many out there. There is mepiquat chloride (Pix, Mepex, others), mepiquat pentaborate (Pentia), mepiquat chloride plus kinetin (Mepex Ginout), and mepiquat chloride plus *Bacillus cereus* (Pix Plus). While there are data out there that tout the benefits of one over the other, the real issue is getting mepiquat in the plant. All these products do that.

Another product that has gained some attention is Chaperone. This compound is promoted as a Bt enhancer. Some strikingly positive results with this product have been found in research conducted in Texas and Arkansas. Results in Georgia have not been as positive. This product will be looked at in more detail this year.

SIDEDRESS NITROGEN - TIMING, BURN AND VOLATILIZATION (*Harris*) It's sidedress time again (already). The typical "window" for applying sidedress N on cotton is from first square to first bloom. On dryland or where cotton is not looking good and green (e.g. maybe strip-till where preplant N was tied up by residue) it's better to go earlier than later in the window. For irrigated cotton and where there was plenty of N to keep it good and green longer you can wait later in the window. Remember, the idea is to have preplant N carry you to sidedress and then sidedress carry you the rest of the way through peak bloom. You can always "polish off" the crop with foliar N but it is hard to make up for coming up way short at sidedress.

Which is better, granular or liquid sidedress N ? This is a popular question, to which there is no correct answer. Both dry and liquid fertilizers can work well when used properly. Both can also have disadvantages. For example, granular ammonium nitrate can burn cotton when topdressed under certain conditions. This problem is usually worse on the two rows directly under the center of the spreader truck where more "fines" are distributed. Dry weather and stressed cotton are also contributing factors to this problem. Although the damage can often appear severe, cotton usually grows out of this situation with little yield damage. Liquid nitrogen sidedress can also burn cotton, usually on lower leaves where it splashes or comes in direct contact. This can be more of a problem on younger (i.e. smaller) cotton, although again, the effect is usually both temporary and minimal.

Dry weather usually causes concern over <u>volatilization loss of sidedress N</u> materials. Worst case scenario would be topdressing granular urea in strip till and then having dry conditions for 3 weeks. In this case you may lose up to 30 % of your N. Ammonium nitrate is not subject to volatilization and liquid N solutions are only half urea and since they are applied in a concentrated band they are not as susceptible to volatilization loss. Knifing in liquid N is also largely unnecessary and probably causes more harm by losing soil moisture and pruning roots than it does to save nitrogen.

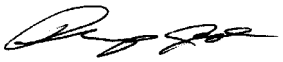
All in all, a lot of this concern is probably unwarranted. . Even under dry conditions, volatilization loss of sidedress N fertilizers is probably <u>less than 5 %</u>. If there is not enough

moisture in a three week period to "wash" the fertilizer in, the yield potential is probably not there either.

Should I add any other nutrients with my sidedress N ? Phosphorous and potassium should have been taken care of at preplant. If you did not add K, it needs to go out with the sidedress. This is easier with granular fertilizer (adding muriate of potash or KMag) than with liquids. If you have not applied at least 10 lb/a of sulfur, now is the time to do it. Sulfur doesn't foliar feed well so sidedressing is your last chance. KMag or ammonium sulfate can be added to granular blends and liquid N with S like 28-0-0-5(S) are readily available and popular. One other element that you might consider adding to sidedress N, especially liquids, is boron. Liquid borons can easily be added to liquid N and supply the B needs of cotton. So if you did not put any preplant B out, and don't plan to foliar feed B (even with early Pix applications) you may want to consider this option.

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

Edited by: **Philip H. Jost**, Extension Agronomist-Cotton & Soybeans



Contributions by:
Steve M. Brown, Extension Agronomist – Cotton
Stanley Culpepper, Extension Weed Scientist - Cotton
Philip H. Jost, Extension Agronomist-Cotton & Soybeans
Bob Kemerait, Extension Plant Pathologist - Cotton
Phillip Roberts, Extension Entomologist – Cotton
Kenny Seebold, Plant Pathologist