



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



# Georgia Cotton

July 6, 2004

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**CROP SITUATION.** (*Brown*) March and April were extremely dry; a general rain around the first of May helped get us going; and only isolated showers occurred throughout much of May. We were beginning to get dry (and concerned about looming drought) towards the end of May. Early June brought rain and relief, and since then most of the state has received above-average rainfall. Very few spots are dry, some are too wet, but overall, the crop is off to a very strong start. Many have reached bloom. Most have a vigorous, lush canopy. How this crop with rank, large leaves and tall canopy will respond to moisture and temperature stresses remains to be seen.

USDA estimates the 2004 Georgia crop to be 1,330,000 acres.

**FIBER QUALITY ISSUE HAS REACHED A CRISIS IN GEORGIA.** (*Brown and Shurley*) Our reputation has suffered since the late 1990s. Now our pocketbooks may suffer...perhaps severely.

Due to increasing quality concerns, in recent weeks at least four major U.S. textile mills have indicated their intent to either NOT purchase 2004 cotton from Georgia or to do so only with higher than normal quality standards. A prominent merchant stated in a recent public meeting that cotton grown in Georgia ranks last in the U.S. in terms of quality and buyer preference.

What does this mean for Georgia cotton producers? In all likelihood, such a negative stigma will mean a wider basis in cash markets and larger discounts on less than desirable fiber quality. Contracts may be less available and/or bid prices less competitive. To date, merchants and marketing cooperatives are unsure how Georgia cotton will be treated in terms of discounts and

possible segregation. Two-thirds of the U.S. crop is now going to the export market. News travels fast, even globally, and thus quality concerns of US mills may have a ripple effect into foreign markets as well. Moreover, many foreign mills demand higher quality than U.S. mills.

What are the specific quality issues? Reports from mills have been vague but in general, the comment is that our cotton does not run efficiently in the yarn spinning process. While there are hints that the problems may be related to short fiber content and below average fiber length uniformity, there is also the possibility that the deficiencies do not express themselves with HVI data-- the standards used in the USDA classing system. The Georgia Cotton Commission has enlisted a textile consultant to explore these issues with various mills. The goal is to identify specific fiber parameters responsible for the problems so that solutions can be determined. The Southeastern Cotton Ginners Association is also working with gins and certain mills to seek to isolate any problems in handling and processing.

There have been questions about variety selection; specifically, about the impact of DP 555 BG/RR on this overall problem. It occupied about a third of our acreage in 2003 and is twice that in 2004. Obviously, the driving force for this variety is yield. Quality-wise, however, it is not a stellar choice. Although it is superior in length and perhaps micronaire compared to DP 458 BR (the dominant variety of the previous several years), fiber data indicate that DP 555 BG/RR trends lower in terms of length uniformity and higher in short fiber content. Clearly, advancements in yield potential and fiber quality do not necessarily occur together. But is there a stacked gene (BR) variety that offers both? Is there a current transgenic variety that offers exceptional quality? Whether or not we can exclusively choose a variety based on yield with no regard for quality penalties and market discrimination is unknown-- at least until the market "speaks" as to how Georgia cotton will be treated.

In the meantime, how can we help ourselves with the 2004 crop? There are at least three things growers can do over the remainder of the season to maximize quality: (1) Control stink bugs. Stink bugs (and other bugs) feed on seed within young bolls and frequently cause internal rot. Anything that damages seed affects fiber development. Preliminary data show that excessive bug damage significantly reduces almost every measure of fiber quality. (2) Defoliate in a timely fashion. Too often we wait until almost every boll is open before applying harvest aids. With considerations for weather and picker availability, fields should be defoliated at 60 to 70 percent open boll. Most should receive boll openers to expedite leaf drop and harvest readiness. (3) Harvest ASAP. Rapid, timely harvest minimizes weathering. Combined with proper equipment operation, it insures that growers gather the greatest possible yield at the greatest possible quality. On these latter two points there is room for considerable improvement. Timely defoliation and harvest is one big step we can take towards enhancing the quality of Georgia cotton.

**DON'T OVERLOOK CATERPILLAR PESTS IN BT COTTON (*Roberts*)** Bt cotton has proven to be a very good tool for management of caterpillar pests. Bt cotton provides excellent control of tobacco budworm and good control of corn earworm in most situations. However, supplemental insecticide applications are sometimes needed to control corn earworm and armyworms. The only way to know when and if an insecticide is needed on Bt cotton is to scout all fields on a regular basis. Stink bugs are on everyone's radar this year and treatments will be made, some

based on scouting and some on a schedule. Those fields where scheduled sprays are made are likely not being scouted on a regular basis. Stink bug sprays will destroy beneficial insects and increase the likelihood for corn earworm escapes. Again it is important that we scout for all pests and treat only when needed. Corn earworm will typically begin infesting cotton during early to mid July, this is often associated with the dry down of corn. When escape corn earworms occur, they are most often associated with blooms and stuck bloom tags (the middle canopy of the plant). When scouting for corn earworms in Bt cotton, the top 12 inches of the plant should be searched and at least one bloom, one bloom tagged boll (look under and in bloom tag for larvae), and one boll lower in the canopy should also be checked per plant. When examining blooms and bolls also be observant for etching on the inner surface of bracts which is indicative of small fall armyworms. The threshold for corn earworm is 8 larvae 1/4 inch in length or greater are found per 100 plants. Corn earworm larvae which develop to 1/4 inch in length are likely to survive the Bt toxin and damage developing fruit. Pyrethroids provide excellent control of corn earworm and will also provide control of southern green stink bug and suppression of brown stink bug. The threshold for fall armyworm larvae is about 2X that for corn earworm. Fall armyworms should be treated if 10-20 small larvae (< 1/4 inch in length) are found per 100 plants. If detected early, pyrethroids will provide fair control of fall armyworm. Large fall armyworms are difficult to control and tank mixes of pyrethroids with other recommended insecticides for fall armyworm will be needed. There is a small percentage of Bollgard II (two gene Bt cotton) planted this season. Bollgard II is a superior technology compared with Bollgard (single gene Bt cotton). We will all learn more about this technology this year but we do not anticipate many acres of Bollgard II cotton needing treatment for caterpillar pests.

**2004 GEORGIA ACREAGE AND TRENDS.** (*Shurley*) According to USDA's *Acreage* report released on June 30<sup>th</sup>, Georgia farmers increased their cotton acreage by 2.3% this season. Actual plantings were slightly less than USDA's *Planting Intentions* number in March, but still 30,000 acres above last year. This figure is consistent with numbers we have seen from BWEP enrollment.

The expected increase in corn acreage apparently did not materialize but soybean acreage is up by 60,000 acres from last year. This was anticipated. Also, peanut plantings are up 35,000 acres from last year. This too was expected. 2004 plantings are coming off a winter and early spring when most crop prices were very favorable. Markets have since declined for most crops. The numbers reveal that Georgia farmers will and do make shifts in crop mix if price signals are favorable and weather cooperates. But these numbers also reveal, however, that shifts can be relatively minor even when prices are strong. Favorable price support and marketing loan programs for cotton and peanuts combined with agronomic advantages provides stability for these crops.

Georgia cotton producers continue to prefer transgenic (bio-tech) seed varieties. Over 90% of the state's acreage is planted to transgenic varieties. Since 2002, however, the proportion of Bt (insect resistant) acreage has also increased and acreage has shifted away from straight RR (glyphosate resistant) into BR (stacked gene). With any variety and production system, critical factors in profitability include yield, fiber quality, price, production costs, management, and timeliness. All are needed and each is important.

**Georgia, Acres Planted of Principle Row Crops**

	<b>2003</b>	<b>Intentions<sup>1</sup> 2004</b>	<b>Actual<sup>2</sup> 2004</b>	<b>% Change 2004 vs. 2003</b>
Corn	340,000	330,000	330,000	-2.9%
Cotton	1,300,000	1,350,000	1,330,000	2.3%
Peanuts	545,000	565,000	580,000	6.4%
Soybeans	190,000	230,000	250,000	31.6%
Tobacco	27,000	24,000	24,000	-11.1%
Wheat	380,000	330,000	330,000	-13.2%

SOURCE: USDA

1/ *Planting Intentions*, USDA, March 31, 2004.

2/ *Acreage*, USDA, June 30, 2004.

**Georgia, Cotton Acres Planted By Seed Technology Group<sup>1</sup>**

	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Bt</b>	8%	14%	13%
<b>RR</b>	55%	32%	23%
<b>BR</b>	30%	47%	58%
<b>All Transgenics</b>	<b>93%</b>	<b>93%</b>	<b>94%</b>
<b>Non-Transgenic</b>	<b>7%</b>	<b>7%</b>	<b>6%</b>

1/ *Acreage*, USDA, June 30, 2003 and 2004.

**MORE CONCERNS ABOUT “PIXING” COTTON.** (*Jost*) Despite the years of research and growers experience there still continues to be uncertainty surrounding applying Pix or Pix-like products. Rates and application timings were discussed in the previous newsletter.

Yield – This is probably not the best or most consistent reason to apply these products. As I have stated in the past, research has shown both positive and negative responses as well as no responses.

Manageability – This one is difficult to measure or put a value on. Height and vegetative growth management no doubt make the crop easier to deal with. Insecticides can be applied more effectively. This also holds true for defoliants. A dense canopy of leaves is hard to penetrate, and like most insecticides, defoliants do not translocate throughout the plant.

What is most consistently obtained by a crop managed appropriately with Pix-like products is a more compact plant, which matures earlier than a crop not treated. Georgia is blessed with a long growing season. Thus earliness is generally not considered to be a “real” benefit for Georgia producers. However, what does this earlier, more compact, easier to defoliate and harvest crop mean for quality?

Like Drs. Brown and Shurley indicated above there are really only a couple of things that a producer can do to enhance the quality of their crop. Could proper Pix usage be of a benefit in the quality arena? I don't know if this would have a dramatic impact, but if the crop is set quicker, matures more rapidly timely harvesting may be easier to achieve. The issue still comes down to timeliness. If all the right steps are taken during the season, yet we still wait on the knotty bolls at the top of the plant to mature and open not much will have been gained.

**LITTLE HOPE FOR MID-SEASON NEMATODE SALVAGE (*Kemerait*)** Once the seed is buried in the furrow, the majority of my cotton phone calls through mid-season deal with either seedling disease/poor stands or options for the grower with nematode problems who did not deal with them at planting. Other than re-planting when stands are abysmal, there are not really any helpful options left for seedling disease or nematode problems.

Some growers discover (or admit to) problems with nematodes after emergence but did not put Telone II or Temik 15G out at sufficient rates prior to or at planting. The common hope is that some product can be side-dressed to the cotton to fight off the nematodes and help the crop recover. Most are aware that we have two treatments, Temik 15G (5-6 lb/A) and Vydate C-LV (17.0 fl oz/A), that are applied between the second and eighth true-leaf stages of growth. However, these options are for use when the grower has ALREADY used Telone II or Temik 15G (5-7 lb/A) earlier in the season. There is no research here in Georgia documenting that side-dress applications without prior treatment are effective.

Why wouldn't the grower expect some benefit from use of Temik or Vydate without earlier treatments? There are at least two good answers for this. First, the initial Telone II and Temik 15G nematicide treatments create a nematode-free zone that allows the young cotton plant to get off to a good start. The additional side-dress or “over-the-top” applications of Temik or Vydate potentially extend this period in which the developing root system is under low pressure from nematodes. Growers are advised to make such applications prior to pinhead square in order to avoid pruning roots in the process and to attack while the populations are still very small.

If a grower makes the side-dress applications without the initial treatment, then he is applying the nematicide to a crop that is a) already infected with the parasitic nematodes and b) to a nematode population that is already building from pre-plant levels. Both make achieving success very difficult. In fact, it is unlikely that the Vydate will provide any benefit at all at this point. There

have been anecdotal reports of limited success with use of Temik by desperate growers at sidedress without treating earlier. However this practice should be considered inadequate and avoided.

**FAQS ABOUT FOLIAR FEEDING COTTON (*Harris*)** Here are answers to some frequently asked questions about foliar feeding cotton:

What should I consider foliar feeding ? Nitrogen, potassium and boron all foliar feed well and are the fertilizer nutrients most likely to be needed by cotton as a foliar feed. Manganese and zinc also foliar feed well but are needed less frequently and should only be applied when deficiency is confirmed by tissue testing, preferably before first bloom. Copper deficiencies are extremely rare. Phosphorous, magnesium, calcium and sulfur all do not foliar feed very well and should be taken care of by soil-applied fertilization or liming programs.

How much N, K and B should I foliar feed? Conservative rates to avoid burn, especially when hot and dry, are approximately 5 lb N/a, 5 lb K<sub>2</sub>O/a and 0.25 lb B/a in single applications. Under good soil moisture conditions, the N and K rates can be increased to 10 lb N or K<sub>2</sub>O/ if using at least 10 gal/a water with a ground rig. Remember that a foliar program is suppose to supplement, not replace, a good soil applied fertilizer program.

How often should I foliar feed ? Two or three times should be sufficient in most cases. A foliar feed near first bloom than another 7-10 days later and then maybe another 7-10 days after that is a good general strategy. There is a possibility of burn if no rain or irrigation is received between sprays also.

If I don't sidedress (for example it's been too wet to get in the field) can I make up for it by foliar feeding ? Again, foliar feeding should be supplemental not to replace a soil applied fertilizer program. However, since foliar feeding is more efficient (goes right into the leaf instead of taken up by roots) you can make up substantial ground. Three foliar applications of 10 lb N/a under good soil moisture and growing conditions can go a long way. Even a single application can help tie you over until you can get in with a late sidedress.

What about mixing urea and potassium nitrate ? If you need nitrogen, use urea (solid or liquid). If you need potassium, use potassium nitrate. If you need both you can mix the two but you don't get a whole lot of either. This is fine for maintenance-type applications, however, these are not routinely recommended. The best strategy is to take care of the element you need the most first, then come back again with the other later.

When should I start foliar feeding my cotton ? The demand for N and K is greatest during the first 4 weeks of bloom. It is during this peak bloom time that you will get the most return from Foliar feeding.

How late into the season should I foliar feed ? A lot of growers like to foliar feed late thinking they can "top off" or finish off the top crop of cotton. In reality it is probably more beneficial to

foliar feed during the first 4 weeks of bloom than during weeks 5, 6, 7 and 8. After the 8<sup>th</sup> week of bloom, foliar feeding is no longer recommended.

When is the latest I should sidedress with soil applied fertilizer ? The rule of thumb is after the fourth week of bloom. It is at this point that demand for N and K peaks, the roots start to decline and soil-applied applications may cause excessive or rank vegetative growth with the right conditions. Foliar applications at this time are a great way to supplement your soil-applied fertilizer program without risking rank growth (again remember to watch burning the plant though).

What about foliar feeding drought-stressed or waterlogged cotton ? A crop that is stressed for whatever reason (too wet or too dry) typically does not respond well to foliar feeding. In addition, foliar feeding drought-stressed crops greatly increases the chances of burn. The rule of thumb for cotton is that if the plants are wilted by noon, do not foliar feed. Spraying in the morning and not tank mixing additional materials will also decrease the chance of burn.

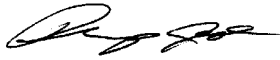
What boron material should I use ? There are numerous boron fertilizer materials currently on the market that perform equally well. Most are either derived from sodium borate or boric acid and come in both granular/powders or liquids. The choice often comes down to convenience of using a liquid vs. a solid powder or price per pound of boron. Nitrogen - Boron combination liquids are also available but are usually lower in % B and are not that much more effective than straight boron materials. To date, based on replicated field research, no boron material has proven to be statistically superior to any other. In other words,.. "pound for pound" boron is boron.

What is CoRoN ? CoRoN, marketed by Helena Chemical Company, stands for "Controlled Release Nitrogen" and is made by combining urea and formaldehyde to make a long chain urea formaldehyde molecule. There are number of different formulations containing different amounts of the longchain urea. The one currently marketed for cotton is actually a 10-0-10 with 0.5 % B. Recent research studies across the cotton belt have shown that it works similar to urea and potassium nitrate. Like with boron materials, convenience and cost should be considered when choosing foliar N and K sources.

**MIDVILLE FIELD DAY (Jost)** Plans are being set in motion for a Cotton and Soybean Field Day to be held at the Southeast Research and Education Center in Midville on Friday August 27, 2004. Registration will be free of charge, however, please let me know if you plan to attend so that proper arrangements can be made for the meal.

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