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Two Threats to Cotton Production in Georgia: (*Brown*) Cotton once again became “king” of row crops in Georgia in the mid-1990s after spending nearly 80 years in decline. Among the factors critical to the resurgence of cotton were the eradication of the boll weevil and a multi-year period of favorable cotton prices. Over the past several seasons drought has plagued all of Georgia resulting in dismal yields and poor quality. Perhaps the storms of March are a sign that the drought is over. Hopefully. Being optimistic and thinking that we’ll have favorable weather in 2003, one might discount weather as a major obstacle to profitable yield and quality at least for this year. Again, let’s hope so. Two factors that do threaten production are the insecurity of the Farm Security and Rural Investment Act of 2002 and the increasing problem of nematodes.

From the day of its signing into law, the 2002 Farm Bill has been under attack. While market prices have climbed considerably over recent months, a December futures price at 60 cents/lb fails to provide sustainable profits. Improvements in supply/demand fundamentals and a weakening of the U.S. dollar are responsible for the positive move in prices. If the safety net of the Federal program is removed or greatly diminished, cotton would disappear from Georgia and the entire U.S. if prices once again dip to the lows of the past months. In the current economic climate, the Federal Farm program is critical to the immediate and long-term survival of cotton in Georgia and throughout the U.S.

A second threat is one that directly affects production. Nematodes are on the increase. In a survey coordinated by plant pathologist Bob Kemerait, county agents sampled almost 1800 randomly-picked cotton fields across the state in the fall of 2002. Of these fields, 68 percent had root knot nematodes, 5 percent reniform, and 3 percent Columbia lance. Over 25 percent had root knot numbers in excess of the treatment threshold. Compare

the 2002 survey to the 7,656 cotton field samples growers sent to the UGA laboratory in 1998 - only 36 percent had root knot. Clearly, the problem is worsening. We need to take action!

MYA Price and Counter-Cyclical Payments For Cotton: (*Shurley*) The new 2002 farm bill established “counter-cyclical payments” (CP) for program crops including cotton. The purpose of the CP is to provide additional income protection to producers when crop prices are low. The CP is unique in that it is both tied to the market and decoupled from production. Because it is tied to the market, less CP due to rising market prices can be at least partially offset by the higher price received if the crop is produced. Likewise, because it is decoupled from production, the income risk of a less than expected CP is a concern if the crop is not produced.

The counter-cyclical payment (CP) rate is determined by the following formula:

$$CP \text{ Rate (cents/lb)} = 72.4 - 6.67 - \text{higher of } 52.0 \text{ or the MYA Price}$$

The “MYA” is the Marketing Year Weighted Average Price and 52.0 is the Loan Rate for cotton. The CP will be at it’s maximum amount (13.73 cents) if the MYA is equal to or less than the Loan Rate. If the MYA is higher than 52 cents/lb, the CP is reduced. The CP will go to zero when the MYA price is approximately 66 cents (65.73).

Because the CP is dependent on the MYA price and because the CP is reduced when the MYA price is higher than the loan rate, it is important to know how the MYA is calculated and what effects it. Below is the MYA price calculation thus far for the 2002 crop. The MYA price is the sum of each months average price multiplied by the ratio of that month’s marketings as a percentage of the total (cumulative) bales marketed.

2002-2003 Monthly Prices, Marketings, and MYA Price

	Avg Price *	Marketings (1,000 Bales)		MYA Price
		Monthly *	Cumulative	
August	33.00	354		
September	35.20	412		
October	39.00	749		
November	41.90	1,417		
December	42.10	2,380		
January	44.00	1,980	7,292	41.43
February	44.80	N/A		
March				
April				
May				
June				
July				

* SOURCE: USDA-NASS, Agricultural Prices. Based on an expanded sample survey of merchants and buyers.

USDA has forecast that the MYA price will be less than the loan rate for the 2002 crop and has already made 2 partial payments totaling 9.6 cents per pound or 70% of the projected (maximum) CP. The MYA price as of the end of January was 41.43 cents per pound. Prices have continued to increase but the MYA is expected to remain below the loan rate.

Past crop years illustrate that most cotton (about two-thirds) is marketed during the October-February period. A similar pattern appears to be holding for this year also. If and when the MYA is expected to be above the loan rate, the CP will be most effected by price increases during these months. Currently, December 2003 cotton futures prices are approximately 60 cents per pound. Should this price level hold or even increase into harvest time, cash prices would be in the upper 50's and thus it possible that the 2003 CP might be less than the full, maximum amount.

Cotton Burndown Focusing on Cutleaf Eveningprimrose: (*Culpepper* - with a special thanks to *Dr. Alan York of NC State University* for help in preparation of this section.) Hopefully by now, most of our growers realize that cutleaf eveningprimrose is the most trouble-some weed to manage at burndown and this weed requires special consideration for its control. Glyphosate (Roundup materials) or paraquat (Gramoxone Max or Boa) do not offer adequate control of this weed when applied alone (Table 1). The most effective program is a late winter application of 2,4-D followed by either glyphosate or paraquat applied closer to planting. However, our weather has eliminated this program for many of our growers. Now, we have to consider plant back restrictions with 2,4-D and several other herbicides if we add them in the tank with glyphosate or paraquat for improved weed control.

Either glyphosate or paraquat in mixture with 2,4-D (1 pt of 4 lb material) will provide excellent control of primrose (Table 1) as well as most, if not all, of our other common weeds. Plant back restrictions from 2,4-D labels are quite confusing. Many labels suggest we should wait 90 days or until the 2,4-D has dissipated from the soil prior to planting cotton. Research in Georgia and North Carolina has shown that 30 days between application of 2,4-D and cotton planting was acceptable in the 9 trials conducted.

There is at least one 2,4-D product, Barrage HF from Helena Chemical Company, that now requires only 30 days as a plant back restriction to cotton. Unfortunately, this product is an ester formulation of 2,4-D and Georgia growers DO NOT NEED TO APPLY ESTER FORMU-LATIONS OF 2,4-D and should ONLY USE AMINE 2,4-D formulations because of the volatility issues with an ester, especially in vegetable and orchard producing areas. Additionally, several labels do allow application of 2,4-D with an airplane but this is strongly discouraged due to potential liability issues.

Valor or Clarity mixed with glyphosate or Direx mixed with Gramoxone would be alternatives to a 2,4-D program for primrose. These programs likely will not be as effective but are options to consider. If selecting the paraquat plus Direx option, we would suggest increasing the rate of Direx up to at least 0.8 quarts per acre if your soil type allows, see label. See Table 2 plant back restrictions for Valor, Clarity, Direx and other potential burndown herbicides.

Table 1. Primrose response to burndown herbicides. Ratings taken 28 days after treatment.

Glyphosate Mixtures*	Primrose Control	Paraquat Mixtures**	Primrose Control
Roundup alone (0.75 to 1 lb ai)	60 to 70%	Boa alone (2 pt)	55 to 58%
+ Aim (1 oz of 2 EC)	+ 4 to 10%	+ Resource (4 oz)	+ 0 %
+ Harmony Extra (0.5 oz)	+ 4 to 10%	+ Aim (1 oz of 2 EC)	+ 4 to 10 %
+ Resource (4 oz)	+ 6 to 16%	+ Valor (1 to 2 oz)	+ 13 to 16 %
+ Goal (1 pt)	+ 10 to 15%	+ Direx (1 pint)***	+ 20 to 25 %
+ Valor (1-2 oz)	+ 15 to 20%	+ 2,4-D (1 pint)	+ 42 to 45%
+ Clarity (8 oz)	+ 20 to 30%		
+ 2,4-D (1 pint)	+ 30 to 40%		

* Results generated from 6 to 16 trials over the past 4 years.

** Results generated from 2 trials over past 2 years.

*** If applying Direx with paraquat suggest increasing rate up to at least 0.8 qt/A if soil type allows, see label.

Table 2. Plant back restrictions for cotton when applying at burndown.

Burndown Herbicide Choice	Time Interval Before Planting	Special Comments
glyphosate	anytime prior to planting	
glyphosate + 2,4-D or 2,4-D alone	varies by product used	label suggest cotton can be planted after 2,4-D has dissipated from the soil
glyphosate + Harmony Extra	at least 45 days	plant back restriction should be reduced by 2004.
glyphosate + Valor	at least 30 days	normal rainfall needed
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	label suggest cotton can be planted after 2,4-D has dissipated from the soil
paraquat + Direx	15 to 45 days	see label for use rate on your soil
paraquat + Harmony Extra	at least 45 days	plant back restriction should be reduced by 2004
paraquat + Goal	at least 30 days	need 3 rainfalls each at least 0.25 inch

Taking Care of Nematodes Starts Early: (*Kemerait*) Nematodes are hurting many cotton growers in Georgia, whether they know it or not, and we need to do something about it. Based upon the results from a survey of cotton fields conducted this past year and from results from recent on-farm county nematicide trials, nematodes are a serious problem for many cotton growers in the state. Statewide, the southern root-knot nematode appears to infest close to 70% of the fields, based upon survey results. Columbia lance and reniform nematodes are found in a much smaller proportion of the fields, but in some counties infestation may be greater than 30% and 50%, respectively. It is likely that the magnitude of the problem and the losses attributable to nematodes have been significantly underestimated, for obvious reasons. First, as the old saying goes, “Out of sight, out of mind,” we can’t see nematodes like we can weeds and insects. Also, many of the symptoms associated with damage from nematodes can be misidentified as fertility problems, soil pH issues, drought, and herbicide injury. Finally, many of those growers who are aware of their nematode problem haven’t been able to rotate away from cotton and don’t feel that they can afford the expense of a nematicide. As I have said at many production meetings this winter, the question for those with a nematode problem is no longer “Can I afford to treat my nematodes,” but rather “Can I afford to grow cotton WITHOUT treating for nematodes?”

By now, many who grow cotton better recognize the seriousness of the nematode problem. Hopefully, those growers who have not taken steps to manage nematodes because such losses were considered as “inevitable” will consider all options for not only increasing yields, but also reducing nematode populations over the future. A key component for this is a good crop rotation, which reduces the number of consecutive years in which a susceptible crop is planted in a field.

Notes on chemical control of nematodes:

- I. Seed treatments, thrips control, and Temik 15G. Most growers around the state must take steps to control thrips at the beginning of the season (see article in this issue by Dr. Phillip Roberts.) Seed treatments, such as Gaucho and Cruiser, are easy to use and attractive to many growers. However, these treatments will not offer any protection against nematodes. We frequently refer to an at-plant application of Temik 15G at 3.5 lb/A as a “thrips rate”. However, based upon two trials conducted during 2002 in fields infested with root-knot and Columbia lance nematodes, it appears that Temik, even at the “thrips” rate, is better against nematodes than Gaucho or Cruiser. In Colquitt County, there was a 70-lb/A (statistically significant) increase in lint cotton where Temik (3.5 lb/A) was compared to Gaucho. In a trial at Midville, the increase was 45-lb/A lint cotton, (not statistically significant). For this reason, when a grower is planting into a field with potential damage from nematodes, we recommend that he use Temik rather than Cruiser or Gaucho UNLESS he is using Telone II as well. Since the Telone II provides excellent control of nematodes, but no control of thrips, the grower may choose to use Gaucho, Temik, or Cruiser.
- II. Even though Temik at a rate of 3.5 lb/A may be of limited benefit in nematode management, growers should use 5 lb/A, 6 lb/A, or even 7 lb/A Temik 15G for optimum control. Recent trials have shown benefits to applying 5 lb/A of Temik in the furrow at planting, followed by an additional 5 lb/A at side-dress. Problems

with this side-dress application usually revolve around application (it can be made with a Lorsban-type applicator) and then the subsequent necessary incorporation of the material. Bayer CropScience, makers of Temik, is building a few applicators that may be available for growers to use when making this second Temik application.

- III. Telone II is an outstanding material for managing nematodes in cotton. Growers with fields where nematodes historically cause damage should not be put off by the cost of the material (approximately \$12/gal at 3 gal/A) because Telone is quite effective and very likely to help produce economically significant increases in yield. Growers who use Telone, typically 2 weeks before planting, should note that because it is a fumigant, they must insure that soil is not too wet (due to our recent monsoons) when applications are made. If the soil is too wet when the fumigant is applied, there will not be proper movement of the chemical in the soil.
- IV. A question that I often receive is this. "If I use Telone II or high rates of Temik this season, will I need to use them again in the field next season?" There is an understandable misconception that nematicides will lower nematode populations over the years. This is incorrect. Nematicides lower nematode populations enough in the early part of the season to allow the young cotton plants to get off to a good start and develop an extensive root system. However, by the end of the season, the nematode populations in treated areas have rebounded to levels similar to what they would have been in they were not treated originally.

What if we plant a lot of DP 555 BG/RR and spring is cool and wet? (*Brown*) There are always questions and what ifs in cotton production. How much DP 555 BG/RR we'll

Based on the costs of DP 555 BG/RR seed (\$119.95/bag) and technology fee (\$272.60/bag), per acre costs can be calculated. The technology fee in Georgia assumes a seeding rate of 52,000 seed/A or 3.6 seed/ft on 36-inch rows or 3.8 seed/ft on 38-inch rows. At the indicated seed count and seeding rate, a bag consists of 315,000 seed and plants 6.06 acres. Seed and technology cost are \$19.80/A and \$45/A, respectively, at the target rate.

plant in 2003 remains to be seen. Data and initial experience indicate it is an excellent choice for south Georgia, one that establishes new challenges for yields and has performed well in both irrigated and dryland production. But there is no "silver bullet," there is no single variety that is perfect for every situation, every field.

The ultra small seed size of DP 555 BG/RR – company literature indicates seed counts range from 5,700 to 6,800 seed/lb – suggests that this variety does not have great vigor. Initial studies report vigor ratings similar to DP 458 B/RR, another small seeded variety (counts range from 5,000 to 6,500 seed/lb) noted to be a sluggish, slow starter. So, we should be very careful with DP 555 BG/RR – we should avoid planting it when conditions are marginal. We

should avoid planting it when cool, wet weather persists. Generally, such a variety should not be planted until late April when soil temperatures are usually favorable for rapid germination and emergence. If April and May are abnormally cool, there may be

considerable gnashing of teeth as we look at marginal and poor stands and make difficult replant decisions.

Physiological studies indicate that seed density is the most important factor influencing seed quality as measured by germination and seedling growth. Density is more important than seed size or volume. The commonly reported seed count/lb reflects weight; it only indirectly measures density. With seed of similar size/volume, the heavier or more dense seed (those with fewer seed/lb) should be of higher quality. The published average count of DP 555 BG/RR is 6,300 seed/lb. Thus, research infers (assuming actual size/volume are similar) that seed counts below 6,300 seed/lb might be of better overall quality. **The best measure of quality is a cool test.** Cool tests expose seed to a constant, marginal temperature of 64.4°F and give the most helpful evaluation of seed vigor.

Most reports “on the street” are that available lots of DP 555 BG/RR are in fact 6,000 seed/lb or less. Perhaps that bodes well in terms of quality – we don’t really know. Again, cool test values are the best indicator. It does mean that growers who plant lower count seed may actually pay higher technology fees than if they plant the average count seed. Those whose technology costs exceed \$45/A because of higher seeding rates or lower seed counts have some recourse with the technology provider through rebate programs.

Cotton Seed Cost Calculator Now Available: (*Shurley, Jost and Brown*) A cotton seed cost calculator decision aid (Excel spreadsheet) has been developed and is available on the [UGA Cotton Web Page](#) or the [Extension Agriculture and Applied Economics Web Page](#).

At either location, you can view, print, and/or save a PDF file which is the Instructions for the cost calculator program. The instructions has an embedded link in the title “Cotton Seed Cost Calculator”. Clicking on the title, you can then save or download the spreadsheet.

To calculate seed cost, data such as row spacing, seeding rate, seed count, and cost per bag is required to be entered in the spreadsheet. Up to 3 varieties may be compared on a single spreadsheet. Seed cost per acre is a function of row spacing, seeding rate, seed count, and seed and tech fee cost per bag. With planting season ahead, this spreadsheet program should be a timely tool and decision aid for producers.

Thrips Management on Seedling Cotton: (*Roberts*) Thrips are a predictable early season pest of cotton and use of a preventive insecticide at planting is recommended to minimize plant injury. Thrips will infest cotton upon emergence and remain a threat to developing seedlings up to the five leaf stage. Adults and immature thrips feed on tender and unfurled leaves in the terminal causing expanding leaves to be distorted and crinkled. Heavy infestations cause plant stunting, delays in maturity, reduced yield potential, and in severe cases loss of apical dominance and stand loss.

Use of preventive insecticides for thrips control at planting consistently provide positive yield responses. Several options for applying at plant insecticides are available and include in-furrow granules or sprays and seed treatments. Historically, Temik has been the standard for thrips control in Georgia. In addition to providing excellent thrips

control, Temik also has nematicidal activity (see article by Dr. Bob Kemerait in this issue). Other in-furrow granule insecticides for thrips control include Thimet (phorate) and Di-Syston. The potential for seedling injury exists when Thimet (phorate) or Di-Syston are used, especially when used at high rates. Additionally when Thimet (phorate) and Di-Syston are used there is a potential interaction with certain herbicides, refer to and read the label. Orthene as an in-furrow spray may also be used, but few growers are equipped to apply in-furrow sprays. Seed treatments offer convenience at planting and include Orthene, Gaucho, and Cruiser. Orthene treated seed will provide limited thrips control for about 7 days, whereas Gaucho and Cruiser will provide control for about three weeks.

I have received several questions regarding comparison of Temik with other control options, especially the seed treatments Gaucho and Cruiser. Whatever treatment is used, fields should be monitored for thrips and plant injury at least weekly while susceptible to thrips injury. If damaging infestations are found, a foliar insecticide such as Bidrin, dimethoate, or Orthene would be recommended. When compared to other preventive insecticides, Temik provides greater and longer residual control of thrips. Gaucho and Cruiser often provide acceptable control, but tend to be more erratic in performance, especially on April and early May planted cotton. Higher thrips populations during April and early May and slow plant development which causes seedlings to remain vulnerable to thrips attack for a more extended time may explain some of these differences in thrips control. Yields tend to be similar in small plot research trials comparing Temik and the seed treatments. In most cases these research plots are conducted in locations with good rotation and limited nematode populations.

Cotton Scouting School: (*Roberts*) The annual cotton insect scouting school at the RDC in Tifton has been scheduled for Monday June 2, 2003. More information on this school and additional scouting schools held in County offices will be forthcoming.

Updates to Web Page: (*Jost*) The [UGA Cotton Web Page](#) is constantly be updated. From this page the current and past issues of the Cotton Newsletter can be accessed. In addition cotton variety trial data is available for the 2001 and 2002 crop years. Several Power Point presentations can be found by clicking on the "Cotton Team Presentations" link. These presentations can also be downloaded as Power Point files. The 2003 Cotton Production Guide will be posted within the next few days, with the 2002 Research and Extension Report to follow.

Other links of interest that can be accessed from this page include, Georgia Agriculture Statistics Service, National Cotton Council, Pesticide Labels, Environmental Monitoring Network, and addressed and phone numbers of USDA and Extension people working with cotton.

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