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

Georgia Cotton

August 1, 2003 http://www.griffin.peachnet.edu/caes/cotton

What about Late Season Applications of Pix?	**1**
Maximizing Nematode Control for 2004 Starts Now!	**1**
2003 Nematode Survey	**2**
Foliar Feeding in 2003	**2**
Georgia Cotton Acres Shift Away From Straight Roundup Ready	**3**
Square Shedding	**4**

What about Late Season Applications of Pix? *(Brown)* Last year popular press articles included information based on experiences in Australia promoting late season applications of mepiquat chloride (Pix, etc.) as a means to boost yield. In this case, "late season" refers to at the point of cutout or when nodes above white flower decline to five or less. Suggested rates were 1 to 1.5 pt/A.

We have very little research on the practice, but we have quizzed researchers in Australia about the matter. They indicate they have not observed yield advantages from "pulling up" the crop with late mepiquat treatments. Despite the research, there are a few ardent supporters of the concept in locations in Australia. In our limited investigations here we have not observed yield increases with late season applications.

Keep in mind that a rank, robust plant cannot be "shrunk" with mepiquat. Late applications might reduce what would be 10 to 12 inches to 4 to 5 inches of future growth. Such treatments improve the appearance of the crop by making it darker green and "evening" out the canopy, but it seems that the expense of applications exceeds potential returns.

Maximizing Nematode Control for 2004 Starts Now! *(Bob Kemerait)* Over the past year, the UGA Cotton Team and county Extension agents have devoted a lot of time to issues surrounding damage and yield losses from parasitic nematodes on cotton. There has been some exciting progress in educating growers on the management steps that are needed to effectively control nematodes, though much work remains to be done. While some cotton growers in the state may have tired from hearing about root-knot, reniform, Columbia lance, and sting nematodes, the stark truth is that they remain among the most important obstacles many growers must overcome in order to achieve optimal yields.

Symptoms from damaged root systems are generally less noticeable in wetter years, such as 2003, than in drier years because adequate soil moisture helps the wounded plants to survive. Nevertheless, stunting and characteristically chlorotic foliage have appeared in fields across the state. The most striking examples of damage from nematodes thus far in 2003 have been associated with fields where the threat from these creatures was either unknown or was underrated. Although we are still a month or more from the start of harvest, it is not too early to begin planning for nematode control in 2004. The most effective tool available for growers at this point in the season, in addition to plans for good crop rotation, is to begin sampling for nematodes. Growers with weak or suspect areas in a field should consider pulling "troubleshooting" samples for analysis to determine if nematodes may be all or part of the problem. As we get closer to the end of the season, nematode populations will reach a peak and soil sampling will become important not only from a troubleshooting perspective, but from a predictive aspect as well. Awareness of nematode problems will allow the grower to make better decisions about the need for crop rotation, the type of crop to use in rotations, the need for nematicides, and perhaps the variety of cotton that will be planted. Most growers are extremely busy at harvest and it becomes difficult to sample. However, such efforts are well worth the time and expense.

2003 Nematode Survey. *Cliff Brewer (Nematology Lab, Athens)* and *Bob Kemerait* would like to continue the nematode sampling effort that was initiated in 2002 as the "Nematode Round Up". Maps and random fields will be provided to interested agents beginning in August. Any agent who would like to participate in this continued survey should contact Bob Kemerait at (229) 386-7495 or via e-mail at kemerait@arches.uga.edu.

Foliar Feeding in 2003. *(Harris)* There is a lot of interest in foliar feeding cotton this year – and for good reason. Many growers initially went conservative with fertilizer rates due to past droughts. Then we had leaching rains, "yella cotton" from drowning and now in many places a high yield potential. Foliar feeding is a good way to make up some ground and finish off the crop this year.

The focus on foliar feeding should always be nitrogen, potassium and boron. All three of these elements are leachable in our soils, yet foliar feed well. Sulfur is another mobile element of concern, but unfortunately does not foliar feed well.

For N and K, the conservative foliar application rate recommendation is 5 lb/A of either N or K_2O. This rate is conservative to avoid burn, especially in dry years. With adequate soil moisture this year (almost too adequate in some places), 10 lb/A of either N or K_2O can be recommended with little concern for burn. Of course, the more water you use the better when avoiding burn. The rule of thumb for granular urea or potassium nitrate is 10 lb of material in 10 gal of water sprayed at 10 gal/A gives around 5 lb N or K_2O/A. Another way to look at this is dissolving 1 lb of material in 1 gal of water (this is about all you can get to dissolve anyway) then spraying as much of the solution as you can. Liquid formulations will usually call for ½ gal to 1 gal/A and need to be calculated based on how much N or K is needed. Check the label for nutrient content and weight of the material. A rule of thumb is that most liquid fertilizers weigh around 11 lb/gal.

How much can you foliar feed and how often ? Two or three applications of 10 lb/A of N or K2O should go a long way for catching up or finishing off the crop. Remember that foliar feeding is more efficient than soil applied applications and also will not cause rank growth. It is also best to wait approximately 7 days between foliar applications for both utilization and burn avoidance reasons. Rain or irrigation in between foliar feeding is also good to help avoid burn.

How late is too late to foliar feed boron ? Boron should be applied close to first bloom. However, if none has been applied and the crop is still in peak bloom (first four weeks) it should still be applied. One application of 0.5 lb B/A should be sufficient and should not cause burn. There are numerous boron materials available, especially liquid formulations, so pay attention to the % B in the material and cost.

Some other general foliar feeding guidelines include:

* Switch from soil-applied to foliar feeding after the 3rd week of bloom.
* Use tissue or petiole testing to determine which nutrient(s) you should foliar feed.
* Most foliar fertilizers tank mix well with growth regulators and insecticides.

Georgia Cotton Acres Shift Away From Straight Roundup Ready. (*Shurley*) For 2003, it is estimated that Georgia cotton producers have shifted some acreage from straight Roundup Ready (RR) to Bolgard (Bt) and stacked gene (Bt/RR) technology. The percentage of conventional seed technology has remained the same as last season. USDA's *Acreage* report released on June 30, 2003 estimates that 32% of Georgia's cotton acreage is RR compared to 55% last year. The percentage of Bt/RR cotton increased from 30% last year to 47% this year. The percentage of Bt cotton also increased from 8% last year to 14% this year. Including both RR and Bt/RR, 79% of the state's cotton acreage is planted to Roundup Ready technology compared to 85% last year and 72% in 2001.

Georgia Cotton Acreage, Percentage Planted By Technology 2001-2003

	2001	**2002**	**2003**
Conventional	15	7	7
Bt	13	8	14
RR	43	55	32
Bt/RR	29	30	47

Source: USDA-NASS, *Acreage*, June 2002 and 2003.

Two years of results from "systems trials" conducted by the University of Georgia at Tifton (May, Culpepper, Roberts, and Shurley) suggest that RR varieties yield less than conventional and other technologies. This has also been shown in other UGA OVT's. In 2001 and 2002, Net Returns were lowest with RR. Net Returns were highest with conventional and Bt/RR. If the USDA numbers are accurate, 23% of RR acres in 2002 (not adjusting for slight decline in overall acres planted in 2003) shifted to Bt and Bt/RR in 2003. This would seem to suggest that Georgia producers (just as large shifts were made between 2001 and 2002) are again evaluating the role

and economics of RR and Bt technology. The numbers might also reflect the availability of seed by technology and the demand for newer available varieties.

Two-Year Average Yield and Net Return Per Acre By Technology, UGA Systems Trial 2001-2002

	Yield	Costs [1]	Net Return 2
Conventional	1,028	$97.98	$457.64
Bt	1,039	$109.97	$447.21
RR	951	$98.83	$402.68
Bt/RR	1,056	$110.05	$454.88

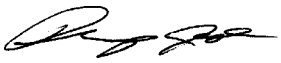
1/ Seed, tech fee if applicable, herbicides, insecticides, and applications costs.

2/ Net return above system costs shown. All other costs the same regardless of system.

Includes price adjustments for fiber quality.

Square Shedding. (*Jost*) Several questions have come of late concerning the shedding of squares located on upper nodes. In the past several years this would have been of major concern since the crop was in poor shape to begin with. Generally, this year this is not the case. Several of the fields I have visited to examine this situation, are in no danger of loosing a crop due to the loss of small squares at this time. Most of these fields have extremely good boll set in the lower and middle parts of the canopy. This heavy boll load is a major carbohydrate sink. Thus the plant is allocating the vast majority of its resources into filling out and maturing out these bolls. With much of the carbohydrate production going to these bolls there are limited resources available to develop upper canopy squares. This is the reason we are seeing some of these squares shed.

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



Contributions by:
Steven M. Brown, Extension Agronomist-Cotton,
Glen Harris, Extension Agronomist-Soils & Fertilizer
Philip H. Jost, Extension Agronomist-Cotton & Soybeans
Bob Kemerait, Extension Plant Pathologist
Cliff Brewer, Plant Pathology Ag Res. Coor. I;
Don Shurley, Extension Economist