



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



# Georgia Cotton

August 9, 2009

[www.ugacotton.com](http://www.ugacotton.com)

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**Reflex .....if want to keep it, then you MUST comment NOW (*Culpepper*)!!!** Recently the EPA determined that all pesticides containing fomesafen (active ingredient of Reflex, Flexstar, and Prefix) are likely to adversely affect a variety of endangered species growing in our state. The effects from the EPA’s analysis suggest that fomesafen may affect and likely adversely affect terrestrial plants as well as some birds, reptiles, amphibians, and small herbivorous mammals.

Proposed regulations include the following: ***No applications of fomesafen within 850 feet for ground and 1,000 feet for aerial applications of certain endangered plants, designated critical habitats, and potentially wetlands and stream riparian zones.***

Now, if we as stewards of the environment cannot manage our spray drift to a significantly shorter distance than 850 feet (your drift should be 20 feet or less) then we need to adjust our application methods and tactics **immediately**. If you are concerned about spray drift then you should contact your local county Extension office for updated information on spray pressure, spray tips, water volume, etc... to limit movement of all pesticide applications.

So, since we are stewards of the environment and fomesafen is critical for agronomic and vegetable production in Georgia, what do you need to do? Well, in my opinion, if you want to be able to utilize any herbicide in the future (Reflex and Command are just the start) it is critical that you comment to the EPA’s findings NOW!

Below are my thoughts to hopefully assist you in the process.

1. You must upload your comment to the website by **August 21**.
2. Start your letter with the date, followed by the address for OPP, and the Docket # as follows:

*August 9, 2009*

*Office of Pesticide Programs (OPP)  
Regulator Public Docket (7502P)  
Environmental Protection Agency  
1200 Pennsylvania Ave., NW.,  
Washington, DC 20460-001*

*Subject: Re-registration of fomesafen (Docket # EPA-HQ-OPP-2006-0239)*

3. In your letter, consider the following:
  - A. Explain why you agree or disagree with the EPA's findings. For example, you use appropriate spray tips, pressures, drift retardant, etc... limiting spray drift.
  - B. Try to estimate the total impact of loss if you have to leave an 850 foot border between the area you spray with fomesafen and any area that could have a endangered species (your woods, streams, etc.). It would be appropriate to compare fomesafen to the next best alternative and the amount of loss that would occur with that alternative.
  - C. Provide examples, such as the impact from glyphosate-resistant Palmer amaranth.
  - D. Do not use profanity or make threats, this will only hurt our movement.
4. Submit your comments to the following web site no later than Aug. 21, 2009.  
<http://www.regulations.gov/search/Regs/home.html#documentDetail?R=09000064809fcd68>
5. After entering the web address, you will be taken to a regulatory.gov website. In the upper right corner click on submit comment. You will be taken to a page to enter your name, affiliation, and your comments. You can either upload a document or type your comments directly into a window provided.
6. **Clomazone** is facing similar restrictions; thus, if clomazone is important to you then follow the same steps as provided above and make your comments.
7. Many of you will think that your comment doesn't matter.....I promise you that from recent experiences with obtaining herbicide and fumigant registrations that your comment is absolutely critical. Your comments give credence to all of the data that the University of Georgia, the Georgia Cotton Commission, and the Georgia Vegetable Commission will provide to the EPA by August 21, 2009.

**Foliar Feeding Guidelines for 2009 (Harris).** Actually, there is not too much new on the foliar feeding front compared to 2008. The basics can still be found in the UGA Cotton Production Guide. We do have a "spread out crop" with some cotton in full bloom (4<sup>th</sup> week) to some just starting to bloom. This can make a big difference on how you approach determining the need for supplemental foliar fertilizer (i.e. do I take a tissue or a petiole sample?). Also, since the price of potash has remained relatively high, I anticipate more potassium deficiencies than normal. In

addition, some of the newer varieties are shorter season which can lead to more potassium deficiencies.

Some major foliar feeding points to remember:

- 1) Foliar feeding is meant to supplement a good soil-based fertilizer program and will not supply all the nutrients on its own. Foliar feeding will not be effective in correcting severe nutrient deficiencies once they occur. Foliar feeding will also not be of much value if more than adequate nutrients are already supplied with the soil-based program
- 2) Nitrogen, potassium and boron are the nutrients most likely to be needed for foliar feeding, especially after bloom and especially during the first 4 weeks of bloom. The micronutrients Mn and Zn can also be foliar fed well, but deficiencies are best caught and corrected before first bloom.
- 3) The need for foliar feeding is best determined by using tissue and/or petiole testing. In the absence of sampling, foliar feeding N should be considered when total N rates are considered marginal or the potential for significant losses has occurred (e.g. significant leaching rains on a deep sand). In the absence of plant sampling, consider foliar feeding K on deep sands and short season varieties, under low soil K or high-yield irrigated conditions, and where a history of K deficiency and leafspot has occurred in the past.
- 4) Urea for N, potassium for K and sodium borate powder (e.g. Solubor) or boric acid liquid (10 % B) for B, are the most economical and proven foliar fertilizers for Georgia cotton. There are plenty of others that will work (and of course some that don't). Just be sure to get the recommended rate of element (N, K or B) and also look at burn potential.
- 5) Leaf tissue (the "blade") samples are best when taken prior to or at bloom and can be used to check all nutrients. **Once cotton has been blooming for more than a week, switch to petiole testing to determine the need for N and K.**
- 6) Petiole (the "leaf stem") testing is best done with a "kit" and sampled frequently during bloom as part of a set program where things like soil moisture and fruit load are also considered. This will give your best recommendations for needing foliar N, K and B.
- 7) Although "spot checking" with petiole sampling is not as good as using a kit, it can still be helpful to get an idea if you need N or K. Like troubleshooting with soil samples or leaf tissue, if you take petiole samples from good and bad areas of a field you can make some comparisons. Below are the sufficiency ranges for N and K for cotton petioles. These are from the UGA lab in Athens. Private lab ranges are likely different.

Week of Bloom	Petiole N03-N (ppm)	Petiole K (%)
1	6,000 - 13,000	3 - 5
2	5,000 - 12,000	2.5 - 4.5
3	3,000 - 10,000	2 - 4

4	2,500 - 8,000	>1.5
5	2,000 - 7,000	>1.5
6	1,000 - 6,000	>1.5
7	500 - 5,000	>1.5
8	250 - 4,000	>1.5
9	<250 - 3,000	>1.5

**Update on Foliar Diseases of Cotton (Kemerait).** Fortunately for growers, the cotton crop in Georgia is typically not affected by many important diseases. Sure, seedling diseases and boll rots can be severe, and plant parasitic nematodes can take a heavy toll on yield. However, unlike vegetables or peanuts, cotton is not affected by too many diseases.

Historically, foliar diseases of cotton have been perceived to be of only minor or of very local importance. For the most part, growers have been able to ignore management of foliar diseases because a) the effect of these diseases on yield seemed minimal (in most cases) and b) there was really little that the grower could spray on the crop to manage them anyway.

The perceived importance of foliar diseases on cotton in Georgia has changed a bit over the past several years. Reasons for the increased awareness of leaf diseases include a) vocal concerns from consultants and county agents in southwestern Georgia about the prevalence of “spots” on leaves, bolls, and bracts, b) the severe outbreaks of *Stemphylium* leaf spot and other foliar diseases in the recent past, and c) the current availability and marketing of fungicides like Headline and Quadris for management of foliar diseases.

There is no doubt that a disease like *Stemphylium* leaf spot can cause rapid and severe defoliation in some fields resulting in significant yield losses for the growers. Other diseases, such as *Cercospora* leaf spot, may also cause similar losses in the worst cases. Fungicides like Headline and Quadris have been shown to effectively control other foliar diseases, such as *Ascochyta* blight and *Areolate* mildew; however such management of diseases has not been followed by a statistically significant increase in yield.

To further complicate the management of foliar diseases, *Stemphylium* blight and *Cercospora* leaf spot are generally the end result of insufficient potassium levels in the leaf tissue, either because the soil levels are too low or because too little potassium reached the leaves with water movement in time of extended dry weather. It is unclear whether or not management of a disease cause by an underlying lack of a nutrient can be effective.

Currently, *Stemphylium* leaf spot has been documented at low to moderate levels in cotton fields across the Coastal Plain of Georgia and *Cercospora* leaf spot has been documented in southwestern Georgia. Our recommendations for these types of diseases are to work to ensure effective potassium levels in the cotton plants as it grows.

In field studies, our use of fungicides to control *Stemphylium* leaf spot and *Cercospora* leaf spot has often led to numeric, but not statistically significant, yield increases which many times are not large enough to cover the cost of the fungicide and the application. There is no doubt that we

still have much to learn about the use of fungicides on cotton and especially the TIMING of the application of the fungicides. In conversations with representatives from BASF, the maker of Headline fungicide, it has been indicated that the 4<sup>th</sup> week after first bloom seems to be an appropriate time to apply 6 fl oz/A to a cotton crop threatened by leaf spot. Our researchers and Cooperative Extension are working to test this recommendation with field trials.



Two muriform spores of the Stemphylium pathogen that results in Stemphylium leaf spot. Photo by Rome Ethredge, Seminole County, July 2009.



Cercospora leaf spot from Dr. Glen Harris' nutrient study at the SunBelt Expo, August, 2009.



Stemphylium leaf spot from Scott Brown's foliar fungicide study in Bay, Georgia, August 2009.

**Cotton & Peanut Research Field Day, September 9, Tifton:** Mark your calendars for the 2<sup>nd</sup> Annual UGA Cotton and Peanut Research Field Day scheduled for September 9, 2009. The tour will begin at 8:30 a.m. and conclude with lunch; a detailed schedule of speakers and stops will be forthcoming. The field day is being sponsored by the Georgia Cotton Commission and the Georgia Peanut Commission. Lunch will be included only for those who register by September 3. To confirm your attendance, contact Debbie Rutland, Department of Entomology at (229) 386-3424.

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*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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