

**Subject:** Seminole Crop E- News 4-25-08  
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### **Seminole Crop E-News 4-25-08**

Things are heating up and lots is going on, on the farm. Corn herbicide sprays are going on. Sidedressing is going out and fields are being irrigated. Wheat is being watered and is in the critical grain fill stage so we're glad to see lots of sunshine to boost yields and hold down disease. Most wheat has now been sprayed with fungicide. The soil is warming up well and some cotton seed is going in the ground although a cold front is expected next week. The photo shows the Fiveash crew getting some cotton seed in the ground with some technologically advanced planters. It's all in the seed now and seed is high so I think we'll see more precise seed placement and monitoring like this rig will do.

### **Length of Weed Control Offered by the Yellow Herbicide. Dr Stanley Culpepper and Dr Tim Grey UGA Weed Scientists,**

The typical half-life (time period which is required for degradation or breakdown of half the amount of product sprayed) of yellow herbicides ranges from 42 to 45 days. This can be slightly increased if the product is incorporated into the soil and will be greatly reduced if the product sits on the soil surface without incorporation. Degradation of the yellow herbicide through sunlight is relatively minor; however, losses through volatilization and anaerobic conditions can be much more severe. Volatilization can be managed in many situations by incorporation through mechanical practices or by rainfall/irrigation. However, breakdown of these herbicides from anaerobic conditions are more complicated and less manageable. Anaerobic conditions essentially occur when the herbicide sits under standing water. Some data suggest in these anaerobic conditions, breakdown can occur as quickly as 7 days.

### **Understanding the Proper Methods When Applying Valor for Cotton Burndown Dr Culpepper UGA Extension Weed Scientist.**

Valor (up to 2 oz of product per acre) can be applied for cotton burndown as long as the Valor is applied at least two weeks before planting AND a striptill operation is run AFTER SPRAYING THE VALOR BUT BEFORE PLANTING. The striptill operation must incorporate the soil in the seed bed to a depth of 12 inches prior to planting. Growers not

following these recommendations may observe serious cotton injury. In no-till production or in a situation where a grower conducts the striptillage operation first and then makes a Valor application a waiting period of 30 days and at least one inch of rainfall prior to planting is in order.

The striptillage operation is used to reduce the activity of Valor in the seedbed, thereby reducing the potential for cotton injury. By reducing the activity of Valor in the seedbed, growers with glyphosate-resistant Palmer amaranth would need to apply a banded application of another effective pigweed herbicide in the row after planting to prevent glyphosate-resistant Palmer amaranth emergence. Numerous preemergence herbicides with good residual Palmer amaranth control are available; however, we would strongly encourage growers NOT use Reflex preemergence after using a Valor burndown application for resistant management.

**University of Georgia Palmer amaranth Management Recommendations (Culpepper).** Over 1200 laminated handouts on the management of glyphosate-resistant Palmer amaranth in cotton have been distributed to growers this winter. Individuals who did not

receive this information

can obtain a laminated handout through their local county Extension office or by going to the weed science web site at [www.ga.weed.com](http://www.ga.weed.com). Approximately half way down the page there will be a link to these recommendations which can be printed easily.

### **How important are Staple, Reflex and Valor to your farming operation? Dr Stanley**

**Culpepper UGA Extension Weed Scientist** By now, cotton growers are well aware of glyphosate-resistant Palmer amaranth and the impact it is having on Georgia's cotton industry. Surviving the battle against this pest will be a challenge until new technology can be commercialized (at least 2014). Until that time, growers will have to explore many tactics including tillage, cover crops, and rotating herbicide chemistry. Early season herbicides that are critical for the cotton grower include Staple, Dual Magnum and similar products, Reflex, and Valor. Resistance to Dual type products have not been observed so far but resistance to Staple (an ALS inhibitor) and Valor/Reflex (PPO inhibitors) can occur very rapidly.

#### ***ALS inhibitors***

are used essentially in every agronomic crop produced in the state. Several of the more commonly used ALS inhibitors include Staple, Envoke, Cadre, Pursuit, Classic, Accent, Steadfast, Stout, Resolve, Harmony GT, Harmony SG, Harmony Extra, and Osprey. For the typical grower, Staple and/or Envoke applied in cotton and then rotated with Cadre in peanut has caused a large number of populations of Palmer amaranth to develop resistance to these herbicides. Continued over-dependence on these herbicides will eliminate the effectiveness of these products in Georgia, at least in fields with resistant Palmer amaranth (every field??). In fact, we currently have at least one population of Palmer amaranth that is resistant to glyphosate and the ALS inhibitors, thus making this pest impossible to control with any over-the-top herbicide in Roundup Ready cotton. It is essential that growers make intelligent decisions on the use of ALS inhibitors to preserve the usefulness of this chemistry. For example, we would recommend ***no more than two applications of any ALS-inhibiting herbicide during summer agronomic crops over a two-year time period.***

#### ***PPO inhibitors***

will be critical in managing glyphosate-resistant Palmer amaranth. Several PPO inhibiting herbicides exist, but the residual control from Valor and Reflex are critical to cotton production. Similar to the ALS chemistry, resistance to these herbicides can occur and has already occurred with pigweed species in the Midwest. In cotton fields infested with glyphosate- and ALS-resistant Palmer amaranth, these herbicides may be the only hope for harvesting a crop. Thus, it is essential these herbicides are protected by each grower. A cotton grower could potentially use Valor for burndown, Reflex preemergence, and then Valor again at layby. Although this would likely provide excellent Palmer control .....for a year, maybe two.....Palmer amaranth resistance to these herbicides would occur and ***CLEARLY***

cotton production would not be possible in fields with Palmer amaranth resistant to glyphosate, ALS inhibitors, and the PPO herbicides Reflex and Valor. Similar to our recommendations with ALS inhibitors, we think it is critical for growers to make ***no more than two applications of these PPO inhibitors during summer agronomic crops over a two-year time period.*** For more information about protecting the PPO herbicides, visit the following slide at on the UGA Weed Science web-site:

<http://www.cropsoil.uga.edu/weedsci/slides/PAC-08/index.html>

Special thanks are in order to Drs. Alan York and Eric Prostko for their input with this article.

### **Disease and Nematode Management Considerations for Cotton in 2008. Dr Bob Kemerait UGA Extension Plant Pathologist**

When compared to many other crops, cotton is unique in that most of the disease and nematode management decisions for the season are completed as the seed is covered in the furrow. Sure,

growers may decide to use Temik 15G or Vydate CLV for additional nematode control a little later in the season or some may consider use of a foliar fungicide such as Headline after firstbloom for control of foliar diseases. However, applications of fungicides and nematicides that have the greatest potential impact on the crop occur prior to or at the time of planting.

**Seedling Disease:** Losses to seedling diseases are a common occurrence to many cotton growers in Georgia. Most of the seedling disease of cotton in our state seems to be the result of the pathogen *Rhizoctonia solani*. This type of seedling disease is called “soreshin”. Another pathogen, *Pythium* sp., also causes some disease as well resulting in a rootrot of the seedlings.

Although seedling diseases are not uncommon, the severity of these diseases rarely reaches levels where growers must consider replanting the crop or suffer significant yield losses if: 1) the seed is planted in conditions favorable for vigorous germination and growth and 2) the seed has been treated with a commercial “base” fungicide treatment.

Cotton growers have the opportunity to invest in additional infurrow fungicides and additional fungicide seed treatments for the control of seedling disease. Although the use of infurrow fungicides in cotton production in Georgia seems to have declined over the past 10 years, interest in use of additional fungicides, such as Trilex and Dynasty CST, has increased. Additional fungicide seed treatments offer the grower a convenient, easy to use option to increase the level of protection against disease. The most important question for growers is, “Is the extra protection provided by an additional seed treatment or infurrow fungicide worth the cost of the treatment?”

Cotton pathologists from the Cotton Belt generally agree that most cotton growers in most seasons are unlikely to see any additional yield benefit when using additional fungicide seed treatments when planting seed already treated with a commercial “base” treatment. In research studies where researchers try to create seedling disease by planting in poorly rotated fields under cool and wet conditions, we still struggle to document a yield advantage using additional fungicide treatments. However, when researchers create the absolute “worst case scenario” by planting under cool and wet conditions AND adding the *Rhizoctonia* fungus to the soil as we plant, there can be significant stand and yield benefits with additional treatments.

Here are the current recommendations for cotton growers considering the use of an additional fungicide to protect against seedling disease:

1. Cotton growers should always try to plant seed with a high cold germination value and under conditions that favor rapid germination and vigorous growth. Fungicides will not increase the germination of the seed, but may help to protect the seedlings that grow slowly.
2. Cotton growers should avoid planting their seed just ahead of an approaching storm that could drop cold rainfall. Irregardless of fungicide treatments, the cold water can severely hamper the germination of the seed and development of the seedling.
3. In our soils and given the typical temperatures of our soils at the time cotton is planted, it is unlikely, based upon research data, that most growers will benefit from any additional fungicide treatments. I am aware that there are many testimonials available from crop consultants and other professionals regarding the positive benefits of the use of additional fungicide seed treatments. It has simply been difficult for researchers to back these reports up based upon our data.
4. Additional seed treatments, such as Dynasty CST and Trilex systems CAN provide benefit to growers as 1) an additional insurance policy against disease if the “worst case” develops and 2) to offer further protection against seedling disease where the seeding rate in the field is dropped to reduce seeding costs.

***Nematodes: Dr Bob Kemeraid, UGA Extension Plant Pathologist*** Successfully managing nematodes in the cotton crop requires that growers practice good crop rotation (which is often difficult with the southern rootknot nematode) and use an appropriate nematicide in fields where the pests have reached damaging levels. The 2008 season is an exciting one for cotton growers for many reasons, one of which being the availability of a number of nematicides for use in their fields. It is critical that growers consider a number of factors when choosing the right nematicide for the right field in order to achieve the desired results. Use of the wrong nematicide in a field will either result in unnecessary expense or inadequate protection, or both.

In deciding on the appropriate nematicide to use in a field, growers should consider the following questions:

1. Based upon soil samples analyzed for nematodes (preferably taken in the fall), how high (or low) are the plantparasitic nematode populations in my field? How does this level compare to the economic threshold levels that I can learn about from my county agent?
2. What has been the recent crop rotation history in my field, especially in 2007? Was my previous crop cotton or one that is also susceptible to the same nematodes, or was it a crop such as peanut that is not susceptible?
3. Is my field irrigated or nonirrigated?  
That is, given a shortage of rainfall, can I use irrigation to take some of the stress off of the crop? (Nematode damage and yield loss is most obvious in times of stress.)
4. What are the prevalent soil types in the field? (Southern rootknot nematodes are more of a problem in lighter, sandier soils than in heavier soils.)
5. How much damage from nematodes (stunting, poor growth, premature cutout, etc.) have I observed in the field in the past?

Today, growers can choose between a fumigant (Telone II), a granular insecticide/nematicide (Temik 15G), a foliar applied insecticide/nematicide (Vydate CLV), and seed treatments nematicides (AVICTA Complete Cotton, AERIS SeedApplied System) and the harpinprotein product NHibit which is reported to reduce the buildup of nematodes in a field.

*Telone II* offers the greatest potential for successful management of nematodes in a field with high populations of plant parasitic nematodes if it is applied effectively. Growers who choose to use Temik 15G, AVICTA Complete Cotton, or AERIS SeedApplied System rather than Telone II in fields with very damaging populations of nematodes potentially sacrifice hundreds of pounds of lint in yield. NOTE: Telone II currently has a 24C label in Georgia to be applied (with caution) at time of planting if so desired by the grower.

*AVICTA Complete Cotton and AERIS SeedApplied System* offer the grower the convenience of a seed treatment in the fight against nematodes on cotton. Researchers at the University of Georgia have had the opportunity to assess AVICTA Complete Cotton in many trials; we have fewer data regarding AERIS SeedApplied System. Growers who select one of these seed treatments should carefully consider the fields in which they are to be used. Nematicide seed treatments may be appropriate where nematode populations are at lower levels; however they will not provide adequate protection at higher populations of nematodes.

*Temik 15G (5 lb/A)* typically provides a cotton crop adequate protection from nematodes at low to moderate populations. In field studies conducted at the University of Georgia, Temik 15G provided better early season control of the southern rootknot nematode than did AVICTA Complete Cotton or AERIS SeedApplied

System. Temik 15G also provided higher profit and lint yields versus products that provided only control of thrips

(Cruiser and Gaucho Grande) than did AVICTA or AERIS over a broad range of nematode levels. From our research trials, there is no doubt that there are situations where AVICTA Complete Cotton produced yields greater than Temik 15G. However, in headtohead comparisons, Temik 15G has a 2to1 advantage over AVICTA in terms of both winning trials and average yield advantage.

In summary, many growers can benefit to use of an appropriate nematicide in their fields. Growers should carefully select the best product for their field, considering needed efficacy, cost, and perceived convenience. Growers should balance the value of convenience versus the cost of a convenient product in the wrong field.

**Call me if I can help.**

**Later,  
Rome**

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