



The University of Georgia

®

CRISP CO. AG NEWSLETTER – March 2010

110 West 13th Avenue, Suite C, Cordele, GA 31015, (229) 276-2612

This Newsletter

This newsletter is emailed to farmers, ag industry and other individuals monthly. Cost of postage will not allow for monthly mailings plus emailed information is much quicker than “snail mail”. If you wish to continue to receive this newsletter each month via email please send me an email to tprice@uga.edu asking to be put on the “Crisp Co Ag Newsletter” list. This newsletter was emailed Friday March 19th.

Topics:

- Bacterial Fruit Blotch in Watermelons (David Langston)
- Wet Soils May Give False High pH Readings (Glenn Harris)
 - Peanut Cultivar Situation (John Beasley)
- Preplant Burndown Options for Peanut (Eric Prostko)
 - How do you identify the “flag leaf”
 - Poultry Litter Fertilizer Questions
- UGA Programs for Controlling Moderate to Severe Populations of Glyphosate Resistance Pigweed in Cotton
 - Upcoming Events

Around the County

We’ve wrapped up our last agriculture production update meeting this month. Your County Extension Office has had several quality agriculture production update meetings that I hope you have attended. We also have cotton, corn, peanut and soybean production guides left over if you need one. There have been a few questions related to pH levels in soil sample reports lately; “Why is this pH so high?” More on this below from Glenn Harris. Also the question of how do you identify “flag leaf” in wheat usually pops up this time each year. Included is a good chart to describe wheat growth stages in Feekes and Zadoks scales. As of this week some watermelons have been planted where it is not too wet to do so. Bacterial Fruit Blotch has been confirmed already as I have learned this morning (*See email from Langston below discussing the disease and control measures*). Rain continues to be a factor in our planting decisions. According to the weather station in Arabi www.georgiaweather.net we’ve had 2.13” since March 1st. With already saturated soils and slow steady rains this keeps soil conditions too wet in a lot of fields. Also about this time each year there are questions related to chicken litter. More information on this as well below. You will also find information related to pigweed herbicide sprays. This is the same information from last month’s newsletter however it doesn’t hurt to re-emphasize these herbicide combinations.

Bacterial Fruit Blotch in Watermelons (email alert from David Langston – UGA Plant Pathologist)

“Yesterday we confirmed bacterial fruit blotch, caused by the bacterium *Acidovorax avenae* subsp. *citrulli* on the pollinizer watermelon 'Escort'. So far we have confirmed disease in three greenhouses with this variety. Generally, once fruit blotch is confirmed, we recommend that ALL the cucurbits in that house be destroyed as it is impossible to determine the extent of the spread of the fruit blotch as symptoms don't always show up on foliage in a timely manner. IF a grower has plants in a greenhouse that fruit blotch was confirmed in, and cannot get more transplants, he can reduce the spread of disease by spraying copper materials weekly or bi-weekly up until fruit set and use Actigard per labeled instructions. Actigard is a plant defense activator that has demonstrated suppression of many bacterial diseases including bacterial fruit blotch. While these remedial controls are recommended for fruit blotch suppression in the field, fruit blotch will still be found on fruit at harvest to some extent. The extent of the damage will be determined by the weather we have this year and the type of irrigation that is used. If hot, wet weather is prevalent for this growing season I predict that fruit blotch infested fields will be nearly unharvestable. If growers with fruit blotch infestations are using a traveling gun to irrigate they will experience more fruit blotch spread and damage than those using a center pivot. Growers using drip irrigation are at the lowest risk for spreading fruit blotch. In general, the prognosis for plants that are grown in houses where fruit blotch is confirmed is sketchy at best, but usually very poor. Growers need to understand the risk they are undertaking in using plants potentially infested with fruit blotch.”

Bacterial Fruit Blotch Images



Wet Soil Samples May Give “False High” pH Readings (Glen Harris)

I don't have to tell you that it has been a wet fall and winter...which has caused everyone to get behind on taking soil samples. It's tempting to get impatient and take more samples than you should under these conditions. Two potential problems with doing this are 1) you might not get a good representative sample, because really wet areas (including where there is standing water!) have to be avoided, and 2) if the laboratory you are using uses the “water” method of measuring pH, you could get pH readings that are higher than they really should be. In fact, these “false highs” could be off as much as 0.5 units, for example they may read 6.5 when they really are a 6.0.

Why does wet weather cause pH values to be high? It has to do with salts (or lack of salts) in the soil and how it affects the reading when using a pH meter in the lab. Basically, a pH meter measures the “electrometric potential”, or charge, between a glass electrode and a reference electrode, that is directly related to hydrogen ions. This measurement, which is actually in millivolts is then converted to a pH reading. A “wet” soil sample usually means that salts have been leached out and if the sample is prepared with water, the readings are not as accurate. This problem can actually be overcome by preparing the sample with salt instead of water, which is exactly what the University of Georgia Soil Testing Lab started doing a few years ago. Most other private soils labs in Georgia and throughout the southeastern US are using water (and not salt) to prepare samples. (As an interesting side note, you may have seen an article in a recent Southeast Farm Press magazine that announced the University of Kentucky soils lab has just switched from using the “water” method to the “salt” method.

In order to make this a little more clear, the following excerpt is from a textbook titled “The Nature and Properties of Soil” by Brady and Weil (Fourteenth edition, Prentice Hall, page 373). Interestingly, this section is titled “Take your soil pH with a pinch of salt”!

“In North America, most labs use **pure water** to make the soil suspension used in measuring pH, giving results reported as pH_{water}. Two important drawbacks to this method are that it is sensitive to (1) the soil:water ratio used and (2) small variations in the soluble salt content of soil. For example, fertilizer additions or evaporative salt accumulation can cause pH_{water} readings to differ by as much as 0.5 units even though soil acidity remains constant.

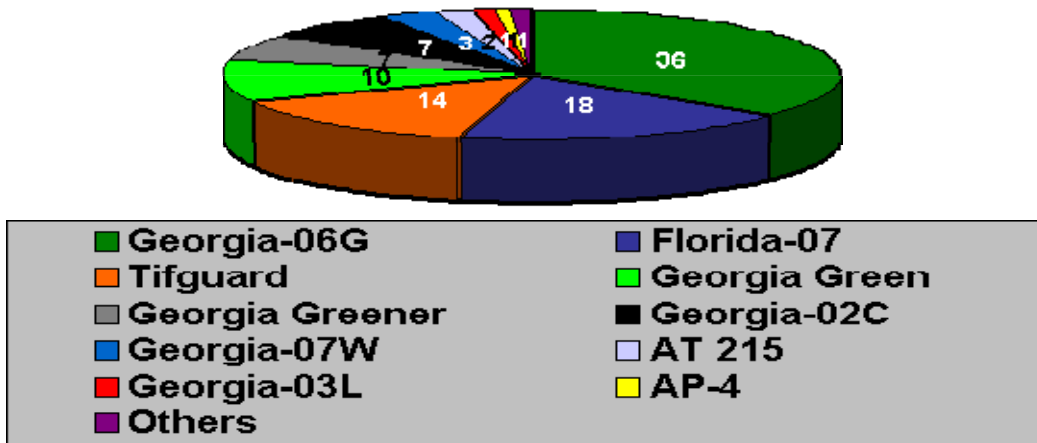
These problems can usually be overcome by a second method using a weak, unbuffered salt solution instead of pure water to make the soil suspension. Most commonly, a **0.01 M CaCl₂ solution** is used to provide a background electrolyte concentration sufficient to minimize variations caused by most salt accumulations or chemical fertilizer applications. The Ca²⁺ ions added in the solution force a portion of the exchange acidity to move into the active pool, giving pH_{CaCl} readings that are typically 0.2 to 0.5 units lower than pH_{water} readings for the same soil. Many soil test labs in Europe and Australia routinely report pH_{CaCl} rather than pH_{water}. “

So is the salt method better? This is a question I get all the time and it depends on what you mean by “better”. As far as being a more accurate measurement of soil pH under conditions like we have right now with wet, leached out samples, the answer would be “yes” ! To be honest, the only problem I have with the salt method is that up to this point, everyone has always used pH_{water} and no one is used to pH_{CaCl} values. In order to reduce some confusion, the UGA soils lab actually estimates what the pH_{water} value would be. This number is based on hundreds of samples that show, on average, the pH_{CaCl} value is 0.6 units less than the pH_{water} value. But if these two methods are perfectly correlated, then why switch? I get this question too and the answer is that they are not perfectly correlated. One example where they are not is, again, with wet, leached out samples.

OK, so what is the bottom line? What should I do right now? I would recommend delaying soil sampling as much as possible until you can get a good representative sample. Knowing that we are going to get in a hurry and soils are already leached I would also recommend going back and spot checking soil samples later if the lab you are using is using the pHwater method (basically any other lab besides UGA or University of Kentucky !) and you suspect you have a “false high”. When should you suspect a “false high” ? And this is a key point... use the previous history of pH from each individual field to help determine if you may have a problem. For example, if you did not lime last year and your pH goes from 6.0 to 6.5, you could have a “false high”. By the way, this problem is more prevalent with higher pHs, so the situation where you think you have a 6.0 and you really have a 5.5 should be less likely. Which is good, because in reality that would be the worst case scenario when you thought you didn’t need to lime and then you end up with aluminum toxicity and yield reductions.

Peanut Cultivar Situation (John Beasley)

A major question on many producers’ minds is which of the new cultivars to plant. There is logical reasoning that producers should consider more than one cultivar to plant. There are several excellent cultivars to select from. Most of these new cultivars have been available for only two to three years.



Based on the acreage that was planted in 2009 for seed production for the 2010 crop, Georgia-06G will be the cultivar with the highest seed availability. Florida-07 and Tifguard will be the next two cultivars in regards to seed supply. The pie chart below shows the percent of acreage planted in Georgia, Alabama, and Florida in 2009 to produce seed for 2010 Georgia Green was planted on only 10 percent of the seed production acreage in 2009 indicating that it will be available in limited quantities in 2010. It will be the first time since 1997 that Georgia Green wasn’t the cultivar with the highest percentage of seed for planting. Georgia Greener and Georgia-07W are cultivars that are on the increase. Their seed increase was a year or two behind Georgia-06G, Florida-07, and Tifguard. Based on the above numbers, it looks as if Georgia-06G, Florida-07, and Tifguard will account for approximately 70% of the 2010 seed supply with Georgia-07W, Georgia Greener, Georgia-02C, and Georgia Green accounting for 25% or more of the seed supply. We expect AP-4 and AT 215 to account for 1-2% of the seed supply.

Preplant Burndown Options for Peanut (Eric Prostko)

I have been getting a few calls lately about preplant burndown programs for peanuts. I hope that the message of **STARTING CLEAN** was loud and clear at our winter meetings. Since specialists often mire you down with endless options, I thought it might be a good idea to provide you with my preferred preplant burndown program for peanut.

- 3-4 weeks before planting, apply glyphosate (32 oz/A of 4 lb/gal or 22 oz/A of 5.5 lb/gal) + 2,4-D amine (1 pt/A). Gramoxone Inteon (2.5-3.0 pt/A) could be used instead of glyphosate depending upon weed species and herbicide resistance situation.
- At planting or before peanut emergence **and** if green weeds are present, I would prefer to see our growers apply Gramoxone Inteon (1 pt/A or greater depending upon weed size) to control any escaped or newly emerged weeds. Residual herbicides (Prowl, Dual Magnum, Valor) can be included at this time. Sequence (glyphosate + Dual Magnum) is also labeled for use **before** peanut emergence. Sequence @ 3.0 pt/A is equivalent to 36 oz/A of Generic 4 LB Glyphosate or 24 oz/A of Roundup PowerMax 5.5SL + 19 oz/A of Dual Magnum 7.62EC.
- Grower's who have **morningglory** problems **at planting**, may want to consider adding Aim or ET in the mix for improved control of this weed complex.

Figure 1. Preplant Burndown with Roundup + 2,4-D, 6 DAT.



NTC

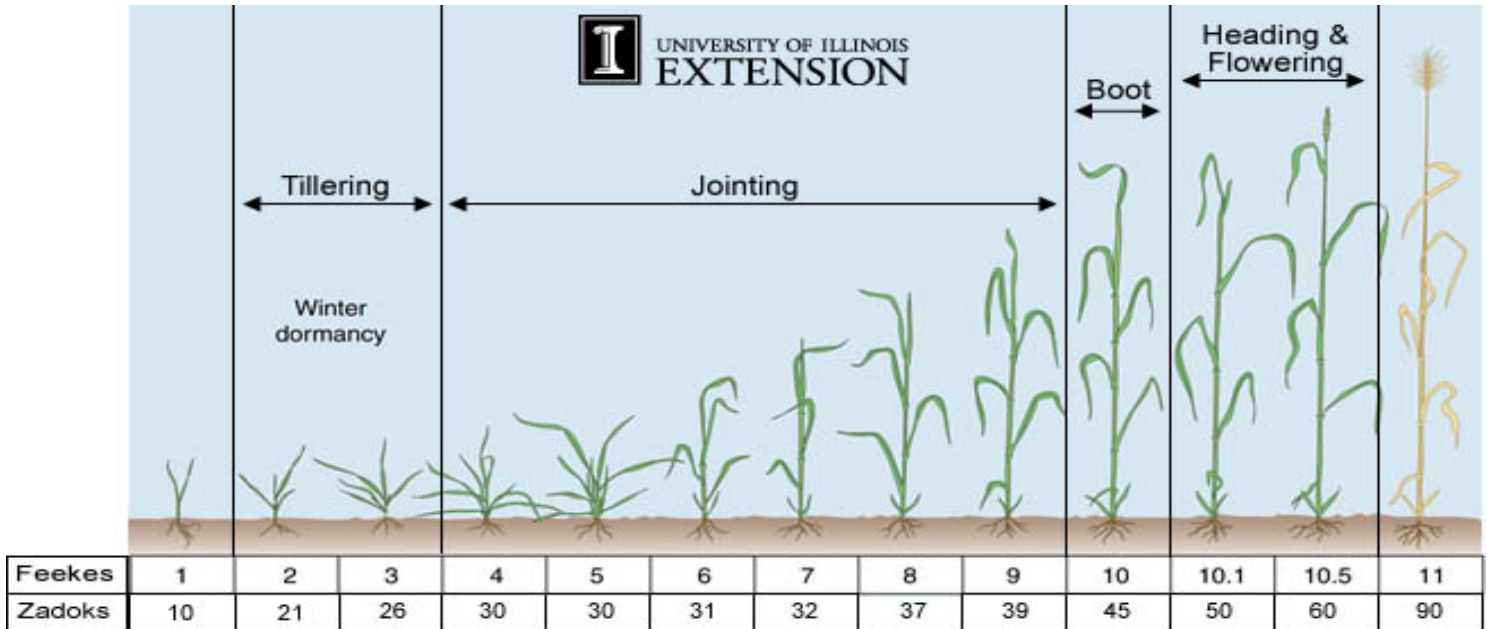


Roundup PowerMax @ 22 oz/A
2,4-D @ 1 pt/A

How do you identify the “flag leaf” in wheat?

This is a question that pops up every year pertaining to wheat. The short and sweet answer is that the flag leaf can be identified by using the following facts:

- 1) The flag leaf usually emerges after at least three nodes are present above the soil’s surface
- 2) The flag leaf is the last leaf on the shoot to emerge before the wheat head emerges.
- 3) To confirm flag leaf emergence, split the leaf sheath above the highest node. If the developing head and no additional leaves are contained inside, then the last leaf emerged was the flag leaf.



Poultry Litter Fertilizer Questions

The value of poultry litter varies however broiler litter has an approximate analysis equivalent to 3-3-2 (%N - % P - % K). based on this average one ton of broiler litter contains 60 lb/A of N, 60 lb/A P and 40 lb/A K. The availability of nitrogen from poultry litter is less predictable that commercial fertilizers. The amount and timing of N released from litter depends on a number of factors, including soil pH, temperature, sand content, and available moisture. As a rule of thumb, 60% (or 36 lb N/ton of litter) is made available for crop uptake during the season if the manure is incorporated into the soil prior to planting. Most of the remaining N in the litter (about 40%) is either lost or “tied up” during the growing season and should not be considered for carry over to the next crop.

Upcoming Events:

- **Hay Production School** - April 8 & 9 (click link for more information)

<http://www.caes.uga.edu/commodities/fieldcrops/forages/events/HPS10/HPS10.html>

- **Forestry Meeting – Randolph County Ag Center – Friday March 26th – RSVP by March 24th**

Topics: Genetics; Silviculture Adjustments; Flex Stands; Herbaceous Weed Control.

(Call me if you are interested in attending 276-2612) CFE; Master Timber Harvester and Pesticide Credits Available.)

University of Georgia Programs for Controlling Moderate to Severe Populations of Glyphosate-Resistant Palmer Amaranth in 2010 Cotton

A. Stanley Culpepper, Jeremy Kichler, Lynn Sosnoskie

Glyphosate-resistant Palmer amaranth continues to spread rapidly across Georgia (Figure 1). By 2011, this pest will likely infest all Georgia cotton-producing counties. Major factors influencing this rapid development of resistance include 1) resistance to glyphosate and Staple, 2) heavy seed production (up to 450,000 seeds per female plant in dryland cotton), and 3) spread of resistance by seed (equipment, etc.) and pollen (wind).

Figure 1. Georgia counties confirmed to be infested with glyphosate-resistant Palmer amaranth.

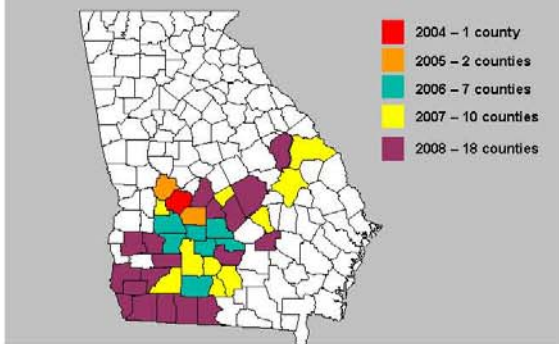
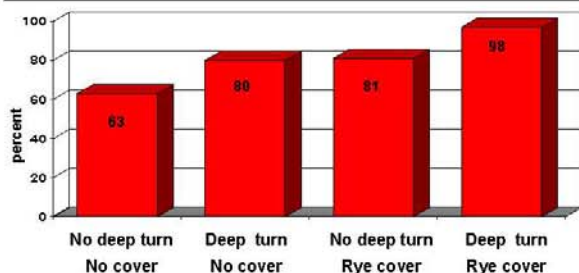


Figure 2. Palmer requires sunlight to emerge!!

Research during 2008 and 2009 determined that Palmer amaranth has three potential weaknesses, including 1) a shallow emergence depth, 2) short seed life in soil, and 3) a significant light requirement needed for germination. Each of these weaknesses can be manipulated to improve control by herbicide systems.

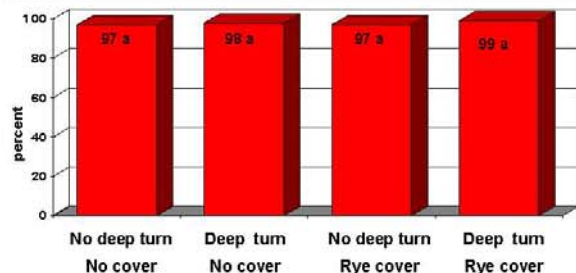
In conservation tillage, heavy residue crops can be used to essentially block sunlight required for Palmer germination (Figure 2) and can greatly improve control (Figure 3). It is critical to note that in strip-tillage production, Palmer amaranth will emerge in the strip if herbicides are not activated in a timely manner by irrigation or rainfall. In conventional tillage, Palmer amaranth control can be improved by deep turning (Figure 3) or using a yellow herbicide preplant incorporated. The adoption of timely Ignite-based programs will improve control regardless of producing cotton in conventional or conservation tillage systems (Figure 4). The most effective herbicide programs are noted in Tables 1 and 2 on back.

Figure 3. GR Palmer amaranth control at harvest with Roundup-based systems. Macon Co., GA 2009.



Rye 7 foot when killed, rolled, planted.
 Deep turn 12 inch in previous fall.
 Herbicide program: Direx + Reflex + Staple PRE; RJ + Parlay POST, Direx + MSMA at layby.

Figure 4. GR Palmer amaranth control at harvest with Ignite-based systems. Macon Co., GA 2009.



Rye 7 foot when killed, rolled, planted.
 Deep turn 12 inch in previous fall.
 Herbicide program: Direx + Reflex + Staple PRE; Ignite + Parlay POST, Direx + MSMA at layby.



The Georgia Cotton Commission, Cotton Incorporated, and Industry are primary funding sources!

Table 1. Managing Palmer amaranth with Ignite-based programs.¹

Preplant or Preemergence (PRE) ²	Topical (3 inch Palmer)	Layby
Conventional Tillage:		
Reflex or Staple + Prowl PRE	Ignite 29 oz + Dual Magnum ³	Direx + MSMA ⁴
Conservation Tillage:		
Valor preplant; Staple + Prowl PRE or Diuron preplant; Reflex or Staple +Prowl PRE	Ignite 29 oz + Dual Magnum ³	Direx + MSMA ⁴

¹Cotton must be tolerant to Ignite 280 (glufosinate) herbicide at 29 oz/A. Follow all labeled preplant herbicide plant back restrictions.

²The addition of paraquat is needed for all at plant applications if Palmer is emerged at time of application.

³A follow up application of Ignite will be needed if application is not timely or Dual is not activated by rainfall. Staple could be mixed with Ignite in place of Dual if Palmer is larger than 4 inches and not ALS resistant.

⁴Will not control grasses larger than 1 in. If grasses greater than 1 inch are present, a glyphosate mixture will be required.

Table 2. Managing glyphosate-resistant Palmer amaranth in Roundup Ready cotton.¹

Preplant, Preplant Incorporated (PPI), or Preemergence (PRE) ²	Topical (1- 4-leaf cotton)	Layby
Irrigated -Conventional Tillage (Program 1):		
Reflex + Staple + Prowl or diuron PRE	glyphosate + Dual Magnum <i>(no Palmer emerged)</i>	Direx + MSMA ³
Irrigated - Conventional Tillage (Program 2):		
Reflex + Prowl and/or diuron PRE	glyphosate + Staple ⁴ <i>(Palmer 1" or less)</i>	Direx + MSMA ³
Irrigated - Conservation Tillage (Programs 1 and 2):		
Valor preplant; Staple + Prowl + diuron PRE or Diuron preplant; Reflex + Staple + Prowl PRE	glyphosate + Dual Magnum <i>(no Palmer emerged)</i>	Direx + MSMA ³
Irrigated - Conservation Tillage (Programs 3 and 4):		
Valor preplant; Prowl + diuron PRE or Diuron preplant; Reflex + Prowl PRE	glyphosate + Staple ⁴ <i>(Palmer 1" or less)</i>	Direx + MSMA ³
Dryland – Conventional Tillage (Program 1):		
Treflan or Prowl PPI; Reflex + Staple PRE	glyphosate + Dual Magnum <i>(no Palmer emerged)</i>	Direx + MSMA ³
Dryland – Conventional Tillage (Program 2):		
Treflan or Prowl PPI; Reflex PRE	glyphosate + Staple ⁴ <i>(Palmer 1" or less)</i>	Direx + MSMA ³

¹ Follow all labeled preplant herbicide plant back restrictions.

²The addition of paraquat is needed for all at-plant applications if Palmer is emerged at time of application.

³Will not control grasses larger than 1 in. If grasses greater than 1 inch are present, a glyphosate mixture will be required.

⁴Staple will not control ALS-resistant Palmer amaranth.

NOTE: Programs were specifically developed to use only one PPO herbicide (Reflex, Valor) and only 1 ALS herbicide (Staple) application during the season to reduce the potential for the development of PPO herbicide resistance in Palmer amaranth and to minimize further development of ALS-resistant Palmer amaranth. Other programs relying more heavily on these herbicides may provide greater control this season but threaten long term production due to increased resistance.

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Jan. 1, 2010

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J. Scott Angle, Dean and Director

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