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Cotton Update

Dr. Sandy Stewart, Extension Cotton Specialist, LSU AgCenter

With the first cotton in Louisiana likely to be planted in a month or less, it appears that Louisiana's overall cotton acreage will probably increase over last year's 490,000 acres. Depressed corn and soybean prices, the cost of nitrogen fertilizer, Asian soybean rust, and two good-yielding cotton years in a row will be catalysts behind an acreage increase. Most estimates indicate that Louisiana will plant about 575,000 acres of cotton in 2005. Weather and the amount of corn and early beans that are planted will dictate the final number.

Most people have chosen their varieties for 2005 by now. Changes in the fee structure for Roundup Ready and Bollgard technology, increased costs of seed and a general trend favoring the popularity of seed treatments have made planting cotton more expensive than ever. Unfortunately, this trend does not appear to be stopping any time soon. The value of all biotech traits, genetic potential of the variety and crop protection inputs that go in the ground at planting depends on good germination and getting a stand. Factors that affect germination are soil temperature, soil moisture, soil-seed contact, seed quality and weather forecast, to name a few. We will cover several of these in subsequent editions of the Cotton Bulletin.

For now, however, I will continue to emphasize checking the cool germination value of your seed as an indicator of seed quality and seedling

THIS DAY IN HISTORY

March 14, 1794- Eli Whitney received a patent for his cotton gin

vigor. The cool germination test mimics adverse field conditions but does not appear on the bag. Cool germination values can be obtained by calling the dealer who sold the seed or calling the company that markets the seed directly.

There are three main points to consider once a cool germ is obtained. First, the cool germ should be used as management tool if at all possible. When planting multiple lots on the same farm, it is advisable to plant first the highest cool test seed which should produce the most vigorous seedlings, when conditions are likely to be adverse. Second, compare the cool test among seed lots only if they were tested by the same lab. The methodology used to conduct a cool germ test is such that even minor differences in temperature between germination chambers can result in big differences in cool germ values.

Although methods are fairly standard among labs, it is always best to compare results among seed lots that have been tested at the same lab. Most companies will either run their own cool germ tests or use a third-party lab, so this essentially boils down to comparing only within brands. Third, the cool test is of much more value before you plant than when used as a post-mortem diagnostic tool to try to figure out why you did not get a stand. Replants are expensive and time consuming and can sometimes be avoided just by knowing the cool germ value and using it as a management tool when planning what to plant where.

As hard as we try it is impossible to avoid some adverse planting conditions. Using a cool germ value can help as a tool to manage around the inevitable adverse conditions we know will happen. Many other factors go into obtaining an acceptable stand and getting the crop started right. We'll cover some of those in more detail in later issues.

Cotton burndown

Dr. Steve Kelly, Extension Weeds Specialist, LSU AgCenter

If you've been outside lately, you can't help but hear the airplanes buzzing around burning down corn ground. And that means cotton ground is next. We don't have a lot of new burndown herbicides or combinations that we haven't talked about, so I won't rehash all of that. I would like to cover a few topics though: Ignite, spray nozzles and water volume, and glyphosate-resistant mare's tail.

IGNITE Ignite is the newest burndown herbicide we've had available since last spring, but I'm not sure how many people got a good look at it. We didn't have much information on it last year so I'll take this opportunity to tell you about our experience with it. In our demonstration plots south of Monroe last year, Ignite did a very good job on bluegrass, geranium, horseweed (mare's tail) and cutleaf

eveningprimrose. In this demonstration, adding 2,4-D or Clarity really didn't increase weed control. My counterparts in Tennessee are really high on this product for controlling glyphosate-resistant mare's tail, but have run into some difficulty when temperatures dip below 60 degrees for more than three to four days. We may want to wait until our temperatures are a little more stable before using this product.

One thing we do know, however, is that performance of this product depends on water volume. It must be put out in 15 gallons by ground, or in 10 gallons by air. With that said, I'm not sure we'll hear many drift complaints concerning Ignite applied by air.

GLYPHOSATE-RESISTANT MARE'S TAIL While glyphosate-resistant mare's tail (horseweed) has been confirmed in states surrounding Louisiana (Arkansas, Tennessee, Mississippi and others), it has not been officially verified in Louisiana. But, we are watching a field in East Carroll Parish. My counterparts in Arkansas predict that glyphosate-resistant mare's tail will be present as far south as Chicot and possibly Ashland counties this year. If you don't have a map handy, those are the counties bordering East and West Carroll and Morehouse parishes.

Most identified populations exhibit an eight- to 13-fold level of resistance, meaning these resistant biotypes can survive a glyphosate application 13 times the rate that controls a non-glyphosate resistant mare's tail. In Louisiana, few acres receive a burndown herbicide composed strictly of glyphosate, since we have weeds that are very difficult to control with glyphosate alone. These, of course, include Carolina geranium, curly dock and cutleaf evening primrose. Since most of our treated acreage will include a tank-mix herbicide such as 2,4-D or dicamba (Banvel/Clarity), most of the mare's tail present will be controlled by the phenoxy herbicide if there is glyphosate-resistance present; thus, these plants will not go to seed. Through vigilance and tank-mixes with herbicides that will control mare's tail, we should not have great difficulty dealing with glyphosate-resistant mare's tail.

Our neighbors to the north and east are having difficulty controlling glyphosate-resistant mare's tail in cotton because the leaves get burned off; they plant cotton, and the mare's tail greens back up and takes off again. In other words, they think they have killed it but have not. Mare's tail also tends to germinate on into the cotton growing season so there are multiple flushes throughout the year to contend with. In Louisiana, our temperatures force mare's tail to act like a true winter annual. We seldom see germination past the middle to end of May. But, we certainly need to identify any potential resistant populations.

SPRAY NOZZLES AND WATER VOLUME With all of the drift problems we face every year, I thought I'd try to touch on how to combat this problem, at least from a ground rig standpoint. One of the easiest ways to combat drift (besides being aware

of the wind) is to use air induction (AI) nozzles. While several herbicide manufacturers prohibit the use of AI nozzles with their product, they do a wonderful job of reducing off-site spray movement. They do this by mixing air with the spray solution, making bigger droplets. As you might guess, bigger droplets weigh more and tend to move less from their point of application. You might also guess there is a little less coverage of the plant, and you'd be right. But, numerous papers demonstrate that with systemic herbicides like glyphosate, 2,4-D, Clarity, etc., herbicide performance is equal to standard flat fan nozzles at the same spray volume. Some contact herbicides tend to be a little more sensitive to AI nozzles, so consult the product label to determine if that product prohibits their use.

Many producers would like to use one nozzle for everything. That is not necessarily the way to go. We certainly want to prevent herbicide drift without sacrificing performance and I think we can do that very well with AI nozzles. But, insecticide, fungicide and defoliant applications may be another issue altogether. Maybe we can find an ag engineer to contribute to this discussion down the road.

One of our local consultants pointed out that water is the cheapest thing we can put in our tank. I certainly agree and like to point that out at every opportunity. Increasing water volume increases weed coverage and often increases herbicide performance. But, we need to remember a few things. We know that the easiest way to change water volume, with the nozzles and pressure we are currently calibrated to, is to change speed. Changing ground speed proportionally changes water volume. That is, doubling speed, cuts water volume in half, cutting speed in half doubles water volume. Pressure, though, is another critter altogether. To double output with a given nozzle requires a four-fold increase in pressure. As you know, if we increase pressure to the upper limit of a particular nozzle, we often create smaller droplets that tend to drift. My point is to strive to combine every factor to the optimum. Choose nozzles based on desired output, speed and pressure. When these new nozzles first hit the market, they were pretty expensive, but they are very affordable now.

We plan to conduct a burndown demonstration in Ouachita Parish in the next week, weather permitting, to look at herbicide performance with AI vs standard nozzles at different spray volumes. I hope we can include pictures in a future bulletin.

Table 1. Effectiveness of selected herbicides and/or herbicide combinations for controlling winter vegetation¹. For more specific examples, rates and updates, refer to the burndown section for each commodity in the Louisiana Suggested Chemical Weed Control Guide¹.

	Paraquat ¹	Paraquat+Goal 2XL	Paraquat+Harmony Extra	Paraquat+Clarity	Paraquat+2,4-D	Glyphosate	Glyphosate+Goal 2XL/Delta Goal	Glyphosate+Harmony Extra	Glyphosate +Clarity	Glyphosate+2,4-D	Clarity	2,4-D	Glyphosate + Valor	Ignite ¹
Annual bluegrass (2-6")	90	90	90	90	90	90	90	90	90	90	0	0	90	90
Ryegrass ⁶ (6-10")	40	50	50	40	40	70	70	70	70	70	0	0	70	60
Carolina foxtail (2-6")	80	90	80	80	80	90	90	90	80	90	0	0	90	90
Little barley (2-6")	90	90	90	90	90	90	90	90	90	90	0	0	90	90
Buttercups ⁶ (2-6")	90	90	90	90	90	90	90	90	90	90	-	90	90	90
Geranium spp. ⁶ (2-6")	90	90	90	90	90	50	60	80	70	80	50	60	60	90
Chickweeds ⁶ (2-4")	90	90	90	90	90	90	90	90	90	90	30	30	90	90
Curly dock (6-8")	40	50	70	70	70	60	70	90	80	90	80	70	80	80
Cutleaf eveningprimrose (6-10")	40	70	80	80	90	40	60	70	80	90	80	90	60	80
Cutleaf eveningprimrose (2-5")	40	70	80	80	90	50	80	70	80	90	80	90	80	90
Clovers/medics ⁶ (2-6")	60	80	90	80	80	50	70	80	90	90	90	90	-	90
Dandelion (4-6")	80	90	90	90	90	90	90	90	90	90	90	90	90	90
Groundsel (2-4")	70	90	90	90	90	90	90	90	90	90	-	90	90	90
Henbit (6-8")	80	90	90	80	80	70	90	90	80	80	60	50	90	90
Mare's tail (4-10")	50	70	70	60	60	90	90	90	90	90	-	60	90	90
Smartweed spp. ¹ (2-6")	40	70	90	80	60	70	80	90	90	80	80	60	90	
Purslane speedwell (2-4")	70	80	90	80	80	90	90	90	90	90	-	50	90	-
Shepherd's purse (6-10")	90	90	90	90	90	90	90	90	90	90	90	90	90	80
Smallflower bittercress (6-10")	90	90	90	90	90	90	90	90	90	90	70	70	90	-
Swinecress (2-4")	20	30	70	60	60	70	80	90	80	80	70	60	80	90
Legume cover crops (6-8") (vetch and winter peas)	60	80	90	90	90	50	70	80	90	90	90	90	70	90
Virginia pepperweed (4-6")	20	70	70	90	90	90	90	90	90	90	-	30	90	-
Wheat (8-12")	70	80	70	60	60	90	90	90	80	90	0	0	90	70

Table 2. Plant back restrictions (days before planting) for commonly used burndown herbicides.

	Cotton	Corn	Soybeans	Rice	Grain sorghum
Harmony Extra	14	45	45	45	45
Harmony GT	7	0	0	45	45
Goal	8	*	8	*	*
Clarity	21*	Before emergence	14/8oz*	*	15
Valor	30	30	0	30	30
Aim	0	0	0	0	0
2,4-D	30*	Before emergence	15-30	30	15
Ignite	0	0	0	120	70

*Consult label.

**An accumulation of 1 inch of rainfall or irrigation is required.

Below is a list of contacts, both agents and specialists, in Louisiana cotton-producing parishes. They are ready and willing to assist you in any way they can.

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PARISH	AGENT	PHONE	EMAIL
Avoyelles	Earnest Freeman Carlos A. Smith Jr	318-253-7526 318-253-7526	EFreeman@agcenter.lsu.edu CSmith@agcenter.lsu.edu
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