Physiology Update: What is an “adequate” stand?  
*D. Monks and C. Burmester*

Each year there are questions about what the seeding rate should be for cotton and what the lowest population is for maintaining yield potential. While seeding rate is the practical question that producers need to consider to set planters, final stand is the functional answer. With the cost of seed on the rise, many producers are now cutting planting rates to as few as 2 seeds/foot in some of the southern counties. While cotton can perform well when low populations are evenly spaced across the field, seedling disease, soil crusting, and insects can quickly reduce the stand so low that the yield potential is limited. In some rough calculations earlier this winter, it appeared that reducing the seeding rate of a certain stacked gene cotton variety from 3 seeds/foot to 2 seeds/foot would save approximately $5.00 per acre. However, replanting costs, delayed maturity, and the lack of desirable varieties available late in the planting window can cost the producer far more than $5.00.

It is difficult to give a definitive plant population that will maintain yield potential since it can vary with the year, soil texture, environmental conditions, seedling vigor, growing season, etc. Generally, the target is for a final plant stand that ranges from 2 to 3 plants per foot. On a 38-inch row, 2 to 3 plants per foot is equivalent to 27,500 to 41,300 plants per acre. While most of the seed that we have planted this spring in our on-farm trials have had excellent warm and cool germination test results, the only guarantee is for 80% germination. At 80% germination, 2 seeds per foot would result in 1.6 plants per foot and a final stand of 22,000 plants per acre. Information from different states will list varying seeding rates, historically based on soil texture, environmental conditions, and planting dates. Research from the University of Georgia indicated that maximum yields could be reached with a low stand; however, the plants have to be uniformly spaced across the field and seedling vigor and weather conditions adequate for maximum production for each plant. We would not suggest depending on this low population to have a shot at maximum yields.

Northern Alabama cotton producers have historically planted higher cotton seeding rates than the rest of the state due to cool early season planting conditions and soil crusting problems. In 1995, most producers were planting at least 5-6 seeds per foot of row. Now, many farmers are planting between 3-4 seeds per foot on a 38-inch row spacing and
wondering if they can go lower. Some of the decrease in seeding rates has come by planting in a modified hill drop pattern, placing normally three seeds in a three to four inch row length to increase pushing power at emergence. Increased adoption of no-till cotton has also reduced wind damage and allowed for better moisture conservation for stand establishment.

It appears that most Alabama farmers have reduced cotton-seeding rates to the near minimum. Although cotton can compensate for a low population better than most other crops, it does have its limits. In my experience in north Alabama, final cotton populations of less than 2.0 seed per foot (on a 40-inch row) generally have lower yields. There are other considerations such as size of skip and health of remaining plants that also must be made when evaluating an adequate stand.

**North Alabama cotton planting update. C. Burmester**

Generally, planting conditions were adequate in most areas to plant a majority of the north Alabama cotton crop in April. At this time about 80% of the cotton has been planted with about 50% emerged. There have been some cool night temperatures, but they have lasted only one or two nights and should not have a great effect on stands. Presently, cotton in north Alabama appears to be off to a normal start.

The acreage of cotton in north Alabama may be down slightly from expectations due to good planting conditions for corn and an increase in early soybean acreage. With good prices for corn and beans several farmers are using this opportunity to rotate fields with reniform nematode problems.

**Cotton insects: Seedling to first square. R. Smith**

The primary insects to be concerned about during the period of emergence to first square are those that threaten the stand or vigor of the plants. Insects in this group are: thrips, aphids, spider mites, cutworms, grasshoppers, three cornered alfalfa hoppers and a few other more sporadic species. Thrips are the most widespread economic pest of seedling cotton. Their window of damage begins with the first true leaf and continues until the plant has 5 or 6 true leaves, or is more actively growing. When thrips injury is observed on true leaves, it is best to apply foliar controls as soon as possible. In research tests, where timing was evaluated, applications at the 2 true leaf stage was more beneficial than those at the 3 to 5 leaf stage.

Insects, such as cutworms, have to be handled in a preventative mode where infestations are most likely to occur. Reduced tillage carries an increased risk of both cutworm and grasshopper infestations. Grasshoppers are more common in 2004 than 2003, likely due to the drier winter and early spring. Several Extension agents and consultants reported high numbers of immatures in April in fields intended for cotton planting. These immatures can be controlled with a low rate of most any insecticide when a “burn down”
herbicide is being applied. Later in May, after these immatures become adults, controls will be more difficult and the highest labeled rate of most insecticides must be used.

**Herbicide timing critical for cotton.** *M. Patterson*

Much of the cotton acreage for Alabama will be planted when you read this. The vast majority will be in a Roundup Ready variety. You may or may not have put down a preemergence herbicide ahead or at planting. If no grass herbicide (Prowl, trifluralin) was used before planting, then the first glyphosate application should be made in most cases before the 2 leaf cotton stage. This will pick up small grasses and broadleaf weeds that can give your cotton some significant competition if you wait until the cotton has 4 leaves. A preemergence application of fluometuron (Cotoran, etc.), prometryn (Caparol, etc.) or diuron (Karmex, etc.) can also help considering the recent rains we received in many areas of the state. When timely activated, these products can buy you some time to delay the first glyphosate treatment. Although most of us are busy now with planting and other projects, checking fields that were planted a week or two ago for the presence of small weeds can keep you on track with your weed management program and may allow you to use a lower rate of glyphosate.

**Alabama farmers lead southeast in cotton production.** *B. Goodman*

USDA has begun releasing their weekly Crop Progress Report. As of last week (April 26), Alabama cotton farmers were reported to have planted 28% of the projected state acreage, up from 12% the week before. While this is right on the 99-03 average (by 1%), it is considerably ahead of other southeastern states. Georgia reports 9%, Mississippi 25%, North Carolina 14%, and Tennessee 3%. Of course I guess we count Mississippi and the part of Tennessee that grows the most cotton as part of the Delta. The only states ahead of us were Louisiana, and California and Arizona, and they don’t count. Alabama does have a slight advantage. Not only are we further south than many other states, but we are able to plant cotton in north Alabama very early due to the way those red soils heat up early on. Farmers in North Alabama traditionally plant very early, earlier than most of the rest of the state, and plant more seeds per acre as well. Anyway, regarding the title of this update, I guess you have to take your credits where you can find them, and I’m sure our friends in other states will allow us this small triumph.

At any rate, planting is now well underway. Most areas of the state received much needed rainfall over the week end. Dale and I have helped county agents plant two on-farm variety trials in the past week or so in central Alabama, and have some other plots on the E.V. Smith Experiment Station ready to go. We were up in Shelby county a week ago last Friday with Ricky Colquitt on Phillip Barber’s farm planting the test there. Phillip does a real good job and we always tour this field during the season. We were planting stubble last Tuesday and had good moisture in Elmore County on Sanford Peeples’ place, but Leonard Kuykendall said the conventional tillage farmers had run out of moisture. Conditions were perfect where we were. The tractor didn’t even break down until we were done. Dale was in Coffee County last Thursday, planting another variety trial with Richard Petcher and the Pattersons, and we were in Macon County this
week on Robert Walter’s farm planting a variety test under his center pivot. I’m sure Charlie Burmester in North Alabama and William Birdsong in the Wiregrass would report similar activity. The soil temperature is right, the outlook is warm. I think it’s time to get busy.

We might as well get busy, just to get our minds off this market if nothing else. A look at the chart of December cotton will just remind you how much prices have slipped in the past month or so. Now we have the WTO Brazil fiasco to deal with on top of it all. It’s certainly not very encouraging. I have to point out that although the WTO “leak” resulted in limit down moves, by Friday the market was able to post a gain. Most folks realize that even if the ruling stands it will probably be years before anything substantial happens. With corn and soybeans continued strength (even though they are off a little bit from the highs) we will certainly see the reduction in the final planted acreage numbers when they are released later this month. I hope that helps the cotton market some. The point is that marketing for the 03/04 crop is pretty much winding down and marketing for the 04/05 crop hasn’t really started yet. Time has pretty much run out on the 03/04 crop and there are just too many unknowns about the new crop for a “firm” direction to be “predicted”. At least with regard to the 04/05 crop, there is plenty of time. However, for now, with December futures now down into the low to mid 60’s there is absolutely no incentive to price cotton. It’s just too close to the loan. The only marketing action I would recommend right now is that if you believe, as I and many others do, that cotton is under priced and will return to higher prices, a call option would increase in value as prices rise.

Senator Grassley of Iowa is trying to get payment limitations back into Congress. He wants to open up the farm bill and get some payment limitations put back in. The reason is that he is from the corn belt where farmers are generally smaller and make more per acre. It doesn’t take as many acres of Iowa corn to make an economic unit as it takes of Alabama cotton. For example, the state average yield for corn up there is about 160-170 bushels per acre and their production costs are about the same as ours. A much higher percentage of farmers own the land, so rent is not a big issue. They make about a third more per acre in profit on each acre of corn they grow. It only takes a couple of hundred acres of corn to be a sustainable unit. There are a lot more farmers in Iowa, though, and they grow about 12 million acres of corn a year. There is a lot more to this payment limitations thing than meets the eye, and there is not enough room to discuss it all, but let me point out here that we already have payment limitations. Grassley just wants to lower them. Lowering them would not hurt his farmers. It would hurt some, but not all, of ours. It wouldn’t be “fair”, in my opinion to change the rules in the middle of the game. Again.
### 2004 Cotton Calendar

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<tr>
<td>June 9</td>
<td>Cotton Scout School, Headland (WGREC)</td>
<td>Ron Smith, W. Birdsong</td>
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<td>June 10</td>
<td>Cotton Scout Sch., Autaugaville</td>
<td>Ron Smith, L. Kuykendall</td>
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<td>June 15</td>
<td>Cotton Scout Sch., Belle Mina (TVREC)</td>
<td>Barry Freeman, C. Burmester</td>
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<td>July 20</td>
<td>North Alabama Precision Ag and Commodity</td>
<td>S. Norwood, C. Burmester</td>
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<td>Tour, Servico Gin, Courtland</td>
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<tr>
<td>August 17</td>
<td>South Alabama Precision Ag and Commodity</td>
<td>S. Norwood, W. Birdsong</td>
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<td>Tour, WGREC, Headland</td>
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<tr>
<td>July 29-31</td>
<td>ALFA Commodity Conf., Birmingham</td>
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<td>August 27</td>
<td>East Alabama Cotton Tour</td>
<td>Jeff Clary, CA*</td>
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*CA- county agent.

For more information on cotton scout schools, call Ron Smith (334.844.6394), Barry Freeman (256.353.8702), or Leisha McDaniel (334.844.6394).

There are two websites that you may be interested in visiting:
- Alabama cotton information: [www.alabamacotton.com](http://www.alabamacotton.com)

Reference Number: PSK-5-04, D. Monks and C. Burmester, editors

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Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency and the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply any pesticide, fungicide or herbicide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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