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Planting Time has Arrived

Donald J. Boquet, Ph.D

Producers who resisted the temptation to plant cotton in early to mid-April have been rewarded with near ideal planting conditions this week during what is the optimal planting window. Although nighttime temperatures will be in the 50's and low 60's for several more days the soil has warmed above 65 degrees. Daytime highs in the 80's with plenty of sunshine will raise soil temperature high enough to keep it above 65 through the night time hours. Although DD60 accumulation will initially be low, this relates to air temperature only, and the warm soil will accelerate germination and emergence. The predicted DD60 accumulation from April 22 to 26 time period is 75, more than enough for germination, which usually requires 50 DDs to warm the soil above threshold of 65 degrees. As a bonus, there is no rain in the forecast into next week, so cotton planted in the next few days has an excellent chance of establishing a stand before soil compaction from rainfall can occur.

Early Weed Control

Dr. Bill Williams, Ph.D

There are several weed control issues that need some consideration as we begin to plant cotton. Cotton, like all crops, benefits from seedbeds that are free of weeds. Ideally, weeds should be killed 6-8 weeks before planting. Most fields have been "burned-down" for several weeks and are in optimum planting condition. Situations have arisen, however, where fields were either not burned-down in a timely manner or where weeds species were only partially controlled.

The primary concerns have been with henbit, ryegrass and cutleaf evening primrose. The temptation may be to plant and apply glyphosate in Roundup Ready cotton or Ignite in Liberty Link cotton after cotton emerges for control of these weed species. These weeds will serve as host for insects; and even in the absence of insects may reduce cotton yields through early season interference and competition. These weeds can also dry out beds in minimal moisture conditions and interfere with stand establishment. Furthermore, primrose and ryegrass will be very difficult to control postemergence in cotton with glyphosate or Ignite. In fact, it is going to be difficult to control them before planting.

Programs based on paraquat represent the best option for fields planted to cotton within the next 2 weeks. Most of the henbit should be gone by now, if not, paraquat should provide complete control. Paraquat alone will not completely control ryegrass or primrose. The main goal with ryegrass is to limit seed production, especially where you suspect glyphosate resistance. Paraquat will reduce seed production and provide fair to good ryegrass control if it has headed out. Unfortunately, the best products for controlling primrose are no longer an option. Paraquat plus Direx will result in fair to good control of primrose if planting can be delayed 15 days. Mixing Goal 2XL with paraquat will improve primrose control, but some regrowth will occur. Cotton cannot be planted within 7 days of applying Goal 2XL; see label for rainfall and tillage requirements. Mix paraquat with fluometuron when delaying planting is not option.

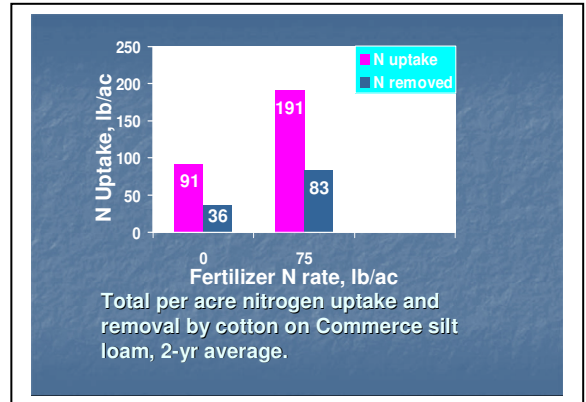
Problems controlling several weeds like browntop millet, teaweed, and pigweeds have led to an increased interest in using residual herbicides. The most popular approach has been to apply Dual Magnum or generic metolachlor with glyphosate and/or to use Direx or Valor at layby. These programs are very effective at controlling most weeds. A good preemergence program should be considered in fields with severe or increasing weed problems, especially pigweed, and/or in fields that will be planted to Liberty Link or non-herbicide tolerant cotton. This is especially true where herbicide resistance is suspected. Metolachlor provides good residual control of most annual grasses and many pigweed species. Staple is effective at controlling teaweed, morningglory species, and most pigweed species when applied preemergence or postemergence. Still, if glyphosate resistance is suspected, relying on Staple alone for pigweed control may lead to Staple resistant pigweed. While, metolachlor and Staple are excellent choices for preemergence weed control in cotton they may be more beneficial postemergence. Fluometuron is another option for preemergence broadleaf weed control and will provide early suppression of many weeds. Pendimethalin can provide good annual grass and pigweed control as well. The best approach from a weed and resistance management standpoint may be to use fluometuron or pendimethalin at planting and include metolachlor and/or Staple in your postemergence programs. The primary objective in resistance management programs is to reduce over reliance on a single herbicide mode of action.

Residual herbicides applied before or after planting can injure cotton under adverse environmental conditions for cotton growth. Soil texture, planting depth, rainfall after herbicide application, rainfall after planting, heavy rainfall at or during cotton emergence and temperature as cotton germinates and emerges are some factors that can affect cotton tolerance to herbicides. Labels should be consulted before using any herbicide. Not all residual herbicides are discussed here. Additional options are listed in the 2009 Louisiana Suggested Weed Management Guide (<http://www.lsuagcenter.com/en/communications/publications/Publications+Catalog/Crops+and+Livestock/Weed+Control/Louisiana+Suggested+Chemical+Weed+Management+Guide.htm>). Contact your parish agent or cotton weed control specialists for additional information.

Nitrogen Rates Donald Boquet, Ph.D

In the next few weeks fertilizer nitrogen (N) will be applied to the emerging cotton crop to ensure adequate N for growth and yield. Nitrogen (N) prices although declining still remain relatively high. Producers should carefully look over the results from Experiment Station N response trials for information on optimal N rates for maximum economic yield. In past years it was not unusual to see fields that had excess N rates applied. Applying excess N not only increases input costs but also has detrimental effects on the crop and increases other management inputs.

Cotton is an efficient user of N; it is a perennial and has an extensive and deep root system (barring hardpans or nematodes) that is very efficient in finding the existing residual and organic N sources in the soil that are free. These free sources will usually supply the majority of the N needed by the cotton crop. Cotton also recycles N within the plant during the growing season. Lower leaves and fruiting forms that fall off from the lower part of the plant turn yellow before aborting because nutrients are reabsorbed back into the plant to be used a second time in new growth. Many studies on Louisiana soils have identified the optimal rates that supply adequate fertilizer N. Surprisingly, regardless of the specific soil type or location, all silt loam soils in Louisiana need only about 75 pounds of applied N per acre for maximum economic yield. This is due to the fact that cotton is an excellent scavenger of soil N, but also to the fact that total N off take is rather low. Research at the Northeast Research Station shows that a cotton crop takes up 190 lb of N per acre but only 27 lb of N per acre is taken off the field for each bale of cotton produced. Cotton following corn, which is most common today, can get by with N applications of 40 to 50 lb per acre. This is because of residual corn N and because of the rotation benefit that creates an overall healthier soil environment for the cotton crop. As the soil's clay content increases, N rates also have to increase, up to as much as 120 lb per acre. In many years of testing, splitting the nitrogen applications has seldom increased cotton yield.



In fact, split applications may be less efficient because the later application needs rain or irrigation to move it into the soil where the roots can pick it up. Sometimes the late applications do not become available until it too late to be of value to the crop. Application of N in foliar sprays seems like a good idea, but unit cost is high and yield responses from foliar-applied N in research trials have been inconsistent.

The particular formulation of fertilizer nitrogen does not affect the efficiency of nitrogen use by the cotton crop. Forms of N that contain urea, however, are subject to volatilization loss if applied on the soil surface. Different sources have different costs, currently 32 cents up to 59 cents per pound. When evaluating the different options for nitrogen forms and application methods, the LSU AgCenter Extension agents, Soil Fertility Specialists and researchers listed below will be a good source of information and advice.

Below is a list of contacts, parish and area field agents and state extension specialists. They are prepared to assist you with any questions or problems you have.

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