



The

Cotton Connection

for Hertford County Cotton Producers

Management Strategies for a Successful Harvest

The 2016 growing season has been one for the books to say the least. From a wet spring at planting to a hot and dry August, growers have faced many obstacles. The 2016 cotton crop is quickly winding down and now it's time to be thinking about what steps are necessary for preparing this crop for harvest. Defoliation and harvest aid decisions are often times difficult to make due to the countless factors influencing product selection and rates. Even the most experienced growers and crop advisors may make defoliation errors, if weather or crop conditions change after an application is made.

Principles of Defoliation

It is important to remember that we do not want to kill the cotton plant with our defoliation practices. In reality, we want the cotton plant to remain alive so that we can chemically accelerate the natural senescence process before the plant would do it on its own. Killing the plant would likely cause significant bark issues and discounts in lint quality.

Timing

When growers are making the decision to defoliate cotton, careful consideration must be made with relation to crop maturity, field conditions, and the environment. Cotton fiber quality and yield can be maintained by paying attention to maturity and understanding the growth characteristics of a specific variety. Much of the 2016 crop was planted later than normal, meaning that it will likely be defoliated somewhat later than normal and possibly under cooler conditions. There are several methods that can be used to determine the best time to apply defoliants. It is also important that you choose several locations in a field to determine the readiness to defoliate.

Percent Open Bolls

This is the most widely used method, based on determining the total percentage of open bolls in a field. It is commonly recommended to defoliate when 60% of bolls in a field are open.

Nodes Above Cracked Boll (NACB)

This method focuses on the un-opened portion of the crop. NACB is determined by locating the uppermost first-position boll that is cracked open with visible lint, and counting the number of main-stem nodes to the uppermost harvestable boll. Most recommendations call for a defoliation application at 4 NACB.

Visual Inspection

Growers may choose to determine maturity by visual inspection. Bolls are generally considered mature when they are difficult to cut in a cross-section with a knife, fibers will string out when cut, and seeds have begun to form a brown or black seed coat. There is no substitute for cutting bolls when determining maturity. If you squeeze a boll and it opens, it has about 1 week before it opens.

Product Selection

It is practically impossible to discuss every possible scenario for product selection, application rates, and tank mixes in a single article. A detailed discussion of harvest aid products and recommended rates can be found in the NC Ag Chemicals Manual (<http://content.ces.ncsu.edu/publication/north-carolina-agricultural-chemicals-manual/>) and the 2016 Cotton Information Book (<https://content.ces.ncsu.edu/cotton-information/cotton-defoliation>). Understanding what each of these products do, and determining the need for leaf removal, boll opening, and regrowth prevention on a field-by-field basis with respect to soil moisture and prevailing temperatures will help make the best decisions possible.

Nozzles & Application Volume

Using the correct nozzles and application volume is the most important factor in defoliating cotton, as it applies to every field in every situation. Application volumes of 8 to 10 GPA run a real risk of resulting in inadequate defoliation which necessitates another application. Growers could potentially save themselves a lot of money and minimize the need for multiple applications by taking the time to apply appropriate application volumes, which are no less than 15 GPA and up to 20 GPA. These are the suggested rates for ground rigs. Defoliation using airplanes can be effective at much lower application volumes. Nozzle selection is also important. The smaller the droplet size, the better the coverage and thus defoliation in most cases. A feasible tradeoff to achieving decent coverage while minimizing drift is the use of regular flat fan tips or nozzles that produce a similar droplet size, but ground speed and application volume should be appropriate in order to defoliate successfully.

As we prepare for harvest season, decisions with regards to defoliation will need to be made on a field-by-field basis. By utilizing all of the necessary tools available for making these decisions, we are able to cut down on those costs associated with having to make multiple applications. A successful harvest season is what we are striving for in 2016 and it all starts with defoliation.

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Sincerely,

Joshua Holland
Agricultural Extension Agent

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