



Cotton Harvest Considerations

Delaying harvest for the last few bolls to open can compromise the potential yield of a cotton crop. Timely harvest aid applications and harvest can help maximize potential for cotton yield, fiber quality, and overall net return. Implementing practices to keep moisture away from harvested cotton can help maintain fiber quality until it is delivered to the gin.

Harvest Aid Application

Timely harvest aid applications can help harvest timing and fiber quality preservation. Harvest delays can have an adverse effect on yield and lint quality.

Cotton leaves naturally defoliate at physiological maturity, but leaf abscission does not occur uniformly or prior to mechanical harvest. Harvest aids are used to help accomplish the following:

- Removal of mature and juvenile foliage.
- Improve lint quality by minimizing lint staining and trash.
- Open bolls.
- Suppress regrowth.

Type of defoliant. There are two types of defoliants available to use as harvest aids. The first type has **herbicidal** activity, which increases ethylene production by injuring plant tissue. Ethylene production triggers leaves to drop. Heavy application rates can lead to accelerated leaf death, which can bypass ethylene production, resulting in leaf stick. This is especially true for juvenile leaves. The second type of defoliant has **hormonal** activity, which increases ethylene production in the plant without injury. Hormonal defoliants can be less susceptible to leaf stick than herbicidal defoliants.¹

Application timing. It is important to carefully time defoliant applications because little to no boll maturation occurs after defoliation. There are several methods available to help determine application timing. Traditionally, the firmness of the bolls (uppermost harvestable boll is difficult to cut with a knife), the seed coats (thin, brown), and the percent of open bolls (50-60%) in the field can help determine when to apply a defoliant. Basing application decisions on plant growth can provide a more accurate determination of maturity. Harvest aid applications are recommended after the accumulation of 850 heat units (DD60s) or after 4 to 5 nodes above white flower (NAWF), as the crop is unable to effectively load more bolls after this point. Regardless of the method or combination of methods used, fields should be visually inspected prior to harvest aid application.^{2,3}

Apply defoliants 10 to 14 days before desired harvest date. Application should occur either early in the morning or late in the afternoon when humidity is the highest and with little to no wind. It is best to stagger defoliation to help manage harvest timing and reduce potential yield and quality loss from defoliated cotton weathering in the field. Four days after application, leaves should begin to drop and complete defoliation should occur around ten days post application.²



Figure 1. Plastic wrap on round cotton bales helps protect harvested cotton until ginning.

Corn Harvest Considerations

Crop condition. Thick leaf cuticles in drought-stressed cotton can reduce the efficacy of harvest aids and including a surfactant may be necessary. Rank growth can prevent complete coverage, and two applications may be required. Increasing the application rate is not effective because a higher rate is just as unable to penetrate the canopy as a normal rate.² Select flat-fan or hollow-cone nozzles coupled with a minimum carrier volume of 15 gallons per acre to help maximize canopy coverage.³

Weather During Harvest. Harvest aids are most effective when average temperatures remain above 60 °F. Lower temperatures can slow leaf drop and boll opening. Late applications made in cooler temperatures can increase the potential for quality losses from cool and wet late-season weather.

Delays in defoliation can push back harvest dates and result in significant yield and quality reductions. Fiber length, strength, and color can be affected, resulting in lower lint loan values and net returns per acre. Timely harvest also allows more time for cotton plant residue/stalk destruction. Plant decomposition is an essential part of insect and disease management. For more information refer to the [Agronomic Spotlight - Cotton Harvest Aid Application and Timing](#).

Post Harvest Storage

Seed cotton must be protected from weather until it is ginned. To help protect cotton during storage, cover rectangular modules with a high-quality tarp. Tarps should be checked for any tears or pin holes before use. Round bales should be wrapped with plastic (Figure 1).

Modules and bales should be checked regularly for excess moisture. High moisture content can increase temperatures within the module or bale, potentially reducing lint grade and seed germination. Extreme cases may result in spontaneous combustion. Cotton harvested at ideal moisture content levels should only increase 10 to 15 °F in the first 5 to 7 days of module storage, then level off or decrease in temperature. A 15 to 20 °F temperature increase during the first 5 to 7 days indicates a high moisture content problem and the module should be ginned as soon as possible.³ After the initial daily temperature check, modules should continue to be checked every 3 to 4 days. If at any time during storage a module reaches a temperature of 120 °F, the cotton should be ginned immediately.

Cotton Picker Fire Safety Tips

Cotton pickers are very large, complex, and expensive pieces of equipment. Heat from the unit combined with dry debris and lint can easily cause fire within the unit and in the field. These simple tips can prevent or help in the event of a fire.⁴

- Do not park an idling picker with the exhaust facing a module or bale.
- Be sure the area behind the cab near the transmission is kept free of debris. High temperatures can easily cause a fire to ignite.
- If a fire is suspected, try to move the picker to a nearby area free of combustible material that would allow the fire to spread. Unload all seed cotton immediately.
- Keep two functional ABC fire extinguishers available, one in the cotton picker cab and one within reach from the ground.
- Never enter a basket or chamber if a fire is suspected.
- Always keep a cell phone or farm radio nearby to alert others if a fire occurs.

Sources: ¹Whitaker, J., Culpepper, S., Freeman, M., Harris, G., Kemerait, B., Perry, C., Porter, W., Roberts, P., Shurley, D., and Smith, A. 2017. 2018 Georgia cotton production guide. The University of Georgia Cooperative Extension Service. <http://www.ugacotton.com/>. ²Main, C.L. and Hayes, R.M. 2009. Cotton harvest aids. The University of Tennessee Extension. W225. <http://www.utcrops.com/>. ³Miller, D., Stephenson, D., and Fromme, D. 2015. 2015 Cotton harvest aid guidelines for Louisiana. Louisiana State University Extension. Pub. 3194. <https://www.lsuagcenter.com/>. ⁴Basic safety precautions. Cotton Incorporated. <http://www.cottoninc.com/>. Web sources verified 08/29/18. 140728141300

Performance may vary from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** 140728141300 082918MEC