



## Cotton Regrowth Management

**Favorable growing conditions after cutout can lead to undesirable regrowth in cotton. Harvest aid application that include thidiazuron can help prevent cotton regrowth. Defoliate only what can be harvested within 10 to 14 days after application.**

### Causes

The objective of cotton defoliation is to accelerate the natural senescence of leaves without killing the plant. Once the demands of the boll load are met and the majority of the bolls have opened, the crop can use any remaining resources to vegetatively grow. Factors that can contribute to regrowth include:

- **Warm temperatures.** Continued favorable temperatures can lead to juvenile, vegetative growth.
- **Soil moisture.** Regrowth begins as small tissue, so even small amounts of moisture may induce growth.
- **Light penetration.** The canopy can open up naturally or after the application of a defoliant, leading to light reaching axially buds at the base of each branch, renewing vegetative growth.
- **Fertility.** Any remaining fertility in the soil can support regrowth.
- **Reduction of thidiazuron (TDZ).** Lowering the rate of or omitting TDZ from harvest aid application can increase the incidence of regrowth, especially with favorable environmental conditions.<sup>1</sup>



Figure 1. Regrowth on defoliated cotton.

### Management

There are two objectives related to regrowth that may be required of a harvest aid application: **activity on juvenile growth**, and **regrowth prevention**. See Table 1 for more information. Defoliate only what can be harvested within 10 to 14 days after harvest aid application to reduce the amount of time the crop has for potential regrowth.<sup>2</sup>

Table 1. Use pattern and expected activity for defoliant with regrowth prevention.							
Harvest Aid	Labeled Broadcast Rate	Maximum Use per Season	Estimated Rain Free Period (hours)	Pre-Harvest Interval (days)	Estimated Minimum Temperature	Juvenile Growth	Regrowth Prevention
Thidiazuron SC	1.6-6.4 oz	9.6 oz	24	5	65° F	Excellent	Excellent
Thidiazuron + Diuron	6.4-16 oz	16 oz	12	5	60° F	Excellent	Excellent
Finish® 6 Pro	21-42 oz	42 oz	6	7	60° F	Poor	Fair

Source: Dodds, D.M., Fromme, D., Sandlin, T., Raper, T.B., and Robertson, B. 2018. 2018 Mid-South cotton defoliation guide. MidSouth Cotton Specialists' Working Group. W 373. <http://www.mississippi-crops.com/>.

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## Managing Regrowth with a Limited Supply of TDZ

**Vary Application Rates.** TDZ rates can vary based on weather, regrowth potential, and presence of juvenile tissue at defoliation. Higher temperatures and more juvenile growth will require a higher application rate (3 to 4 oz/A). Lower nighttime temperatures (low 60s) reduce the efficacy of TDZ and regrowth potential.<sup>3</sup>

**Calibrate Sprayers.** Spend time on calibration to prevent over or underapplication of TDZ. Use a minimum spray volume of 5 gallons/A if applied by air or 10 to 20 gallons/A if applied by ground.<sup>4</sup> Harvest aids are generally not mobile within the plant and must contact the potential area of regrowth.<sup>3</sup>

**Prepare to Harvest Quickly.** Only apply as much harvest aid as can be harvested within the next 10 to 14 days.

**Use a Substitute.** A pre-mix of TDZ and diuron may be used in most situations.<sup>3</sup>

### Sources:

<sup>1</sup> Collins, G. and Edmisten, K. 2016. Considerations for cotton defoliation. North Carolina State University Extension. <https://cotton.ces.ncsu.edu/>. <sup>2</sup> Dodds, D.M., Fromme, D., Sandlin, T., Raper, T.B., and Robertson, B. 2018. 2018 Mid-South cotton defoliation guide. MidSouth Cotton Specialists' Working Group. W 373. <http://www.mississippi-crops.com/>. <sup>3</sup> Whitaker, J. and Freeman, M. 2018. Georgia cotton: Thidiazuron supplies possibly short—6 ways to cope at defoliation. <https://agfax.com/>. <sup>4</sup> Whitaker, J. and Collins, G. 2015. Cotton defoliation / Harvest aid options. University of Georgia Extension. <http://extension.uga.edu/>. Web sources verified 10/01/18.

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