

Managing Late-Planted Cotton

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Traditionally, cotton planting in Tennessee starts near the end of April and continues until mid-May, with the bulk of the cotton planted during the first and second weeks of May. Oftentimes, producers are forced to plant outside of these recognized windows. Although Tennessee has recently experienced longer than normal growing seasons and higher than average DD-60 accumulation, long-term historical data shows that in 50 percent of the last 30 years, a killing freeze could occur during the second and third weeks of October (Table 1). Fortunately, early-maturing varieties, *Bt* cotton for worm control and boll weevil eradication allow for a potentially longer season.

A late-planted cotton crop still has the chance to be productive, but making a good crop requires intensive management, along with some luck. It is imperative to practice earliness management to ensure an early, once-over harvest. Earliness is generally a product of variety selection, planting date, sound fertility practices, favorable early-season temperatures, first fruiting node, fruit retention, plant-growth regulation and environmental factors leading up to maturity. Unfortunately, several of these are out of our hands, but there are several things we can still do to achieve earliness. Following are a few management guidelines to maintain earliness:

- **Fertility**

Match soil type with the correct nitrogen rate. Bottom soils and productive hills that tend to produce large, rank cotton should be fertilized accordingly. Excessive nitrogen (N) promotes rank growth and delays maturity. The University of Tennessee currently recommends 30-60 lb. total N for bottom soils and 60-80 lb. total N for upland soils. Avoid late applications of nitrogen and match rates to “realistic” yield potential. On most soils, yields are not increased by applying more than 80 lb. N per acre, but maturity may be delayed.

- **Herbicide Applications**

Always follow the glyphosate label for over-the-top applications of glyphosate. Keep in mind that the last overtop glyphosate application should be made at the 4th true leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Directed applications of glyphosate and other materials should be directed towards the base of the cotton plant, tak-

ing care to minimize contact of the spray with cotton leaves. Late over-the-top applications and sloppy post-directed applications may result in boll loss, delayed maturity and/or yield loss.

- **Insect Control**

It is recommended that *Bt* varieties be planted. Late-planted cotton is more attractive to lepidopterous pests, and *Bt* cotton will help manage these pests. Also, early fruit retention is the foundation for eliminating the potential for rank growth and preparing the crop for an early harvest. Maintaining early-season fruit retention above 80 percent will suppress excessive vegetative growth and increase the potential for an early crop.

- **Plant Growth Regulation (mepiquat-type PGRs)**

Late-planted cotton often grows more vigorously than an early-planted crop, so a proactive rather than reactive approach to plant growth regulator applications (Pix[®], Pix Plus[®], Pentia[®], Mepex[®], Mepichlor[®], etc.) is needed. It is much easier to control cotton growth with lower application rates when plants are smaller than with higher rates when plants have become rank. Shutting down a vigorous plant is difficult at best and usually expensive. It is important to identify which fields or portions of fields can become rank if favorable conditions exist. Earliness and growth control are enhanced by early application of mepiquat-type PGRs. Lower rate, multiple applications beginning after matchhead square often give good results. However, applications made near bloom are usually safer

because they reduce the risk of prematurely stopping vegetative growth in the event of drought conditions. It is important to remember that low rates are not effective on larger cotton that has become rank. Match the correct rate with the situation at hand; larger cotton will need higher rates. It is difficult to make a PGR recommendation that will cover the needs of all fields, and for that reason, it is important to use a program tailored to the individual field.

- **Defoliation and Boll Opening**

Don't chase phantom bolls, especially on a late-planted crop. Defoliation should be timed with harvest

of the mature bolls in mind. Although a once-over harvest is desirable for a number of reasons, growers should consider a second picking on late-planted cotton to decrease weathering of the most profitable bolls. Bolls set late in the year in the upper portion of the canopy are less likely contribute to overall yield. Addition of an ethephon-based boll opener will increase the percent of the crop picked at first harvest. Keep in mind that ethephon does not promote crop maturity and no amount of ethephon will open small, immature bolls. Ethephon products need at least 50 DD60s to work, and higher rates will be needed under cool temperatures.

Table 1. Date and Probability of a fall freeze by location.

Location	Probability		
	50%	25%	10%
Bolivar	11-Oct	31-Oct	18-Nov
Brownsville	8-Oct	5-Nov	30-Nov
Covington	26-Oct	12-Nov	26-Nov
Jackson	24-Oct	31-Oct	7-Nov
Martin	15-Oct	7-Nov	28-Nov
Memphis	6-Nov	13-Nov	19-Nov
Milan	17-Oct	7-Nov	26-Nov
	13-Oct	4-Nov	25-Nov
Newbern	13-Oct	6-Nov	28-Nov
Samburg	15-Oct	6-Nov	25-Nov
Savannah	20-Oct	10-Nov	29-Nov