

# Evaluation of Cold Tolerant and Conventional Cotton Varieties and Planting Dates at the Tennessee Valley Research and Education Center

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Seed for cotton cultivars currently grown in Alabama require warm soils in order to germinate and develop properly. Soil temperatures must remain above 60F for a period of several days, which normally occurs after early April in much of the state, but can be later. Cold fronts, rain, and heavy mulches used with conservation tillage can delay this even further. Producers planting early run the risk of poor stands due to delayed germination and seedling disease, as well as stunting from chilling injury. If producers were able to plant earlier, soil moisture may be more favorable, cotton would potentially have a longer growing season, would have peak flowering during the longest summer days, and may set bolls before soil moisture supplies are depleted by hot summer weather. For northern areas, this may enable harvest before cold, wet fall weather, and in south Alabama, may allow harvest before the peak of the hurricane season. Recently released “cold-tolerant” cotton varieties are claimed to germinate and grow well at temperatures well below the optimum for currently grown varieties.

## PROCEDURES:

Two varieties each of “cold-tolerant” and “conventional” cotton cultivars were planted at each of three planting dates. One variety of each type was an early maturity and the other full season. Four replications of four 40-inch rows \* 25 foot long plots of each variety were planted on March 26, April 14, and April 23, using conventional tillage.

Fertility and pesticide applications were according to ACES recommendations. Rainfall was plentiful through most of the season, and harvest conditions were generally good.

Plots were defoliated and harvested with a spindle picker when each treatment was mature. One pound grab samples were ginned on a mini-gin for lint quality and turnout, and lint analyzed for quality by HVI at the USDA-AMS lab at Pelham, AL.

## Results

Yield and turnout results are presented in the Table below. Lint yields ranged from 779 to 1171 lb/A. Lint turnout ranged from 40 to 44% (not shown).

**Lint Yields from Cold Tolerant Varieties \* Planting Dates, TVREC, 2003**

		Lint Yield (lb/A)			
		Planting Date			
Variety	Maturity*	Cold Tolerance*	March 26	April 14	April 23
CT 110HQ	Early	Yes	998	929	817
FM 958	Early	NA	1171	939	913
CT 310HQ	Full	Yes	823	878	779
DP 491	Full	NA	919	885	856

\* As listed by seed company

LSD ( $P=0.10$ ) = 103 lb/A

Although initial stands were affected by variety (not shown), good growing conditions allowed poor stands to compensate and yield well. FM 958, a conventional variety, generally performed as well or better than the Cold Tolerant listed varieties. Further testing will be needed to determine if these varieties have the potential to allow earlier planting for producers.