

Weather Patterns for the 2003 Growing Season

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The most noteworthy weather event in 2003 was the tornado that struck Jackson, Tennessee on May 4. Figure 1 below depicts the severe damage that occurred, especially in downtown Jackson. A warm front stalled over West Tennessee caused an outbreak of severe weather through the middle of May. During this same time, the Chattanooga area experienced serious flooding (Figure 2). Heavy rain fell over a relatively small area, all of which drained into the Tennessee River either slightly above or directly into the city of Chattanooga, TN.



Figure 1: May 4, 2003 tornado damage in Jackson, TN.



Figure 2: May flooding in Chattanooga.

No part of Tennessee experienced drought during the 2003 growing season.

The last spring freeze (32 deg F or less) for most locations was March 31/April 1 (Figure 3). Highland Rim in northern Tennessee experienced another freeze on April 10. Due to southerly flow, Middle Tennessee and Ames Plantation had the greatest number of days with temperatures 90 F or greater (41 and 42 days, respectively). Plateau and Knoxville had the fewest with 2 and 16 days, respectively. In general, 2003 summer temperatures were fairly average.

In general, after the severe weather in early May, rainfall was fairly well distributed throughout the rest of the season. Most locations had only a very few extended periods with little or no rainfall.

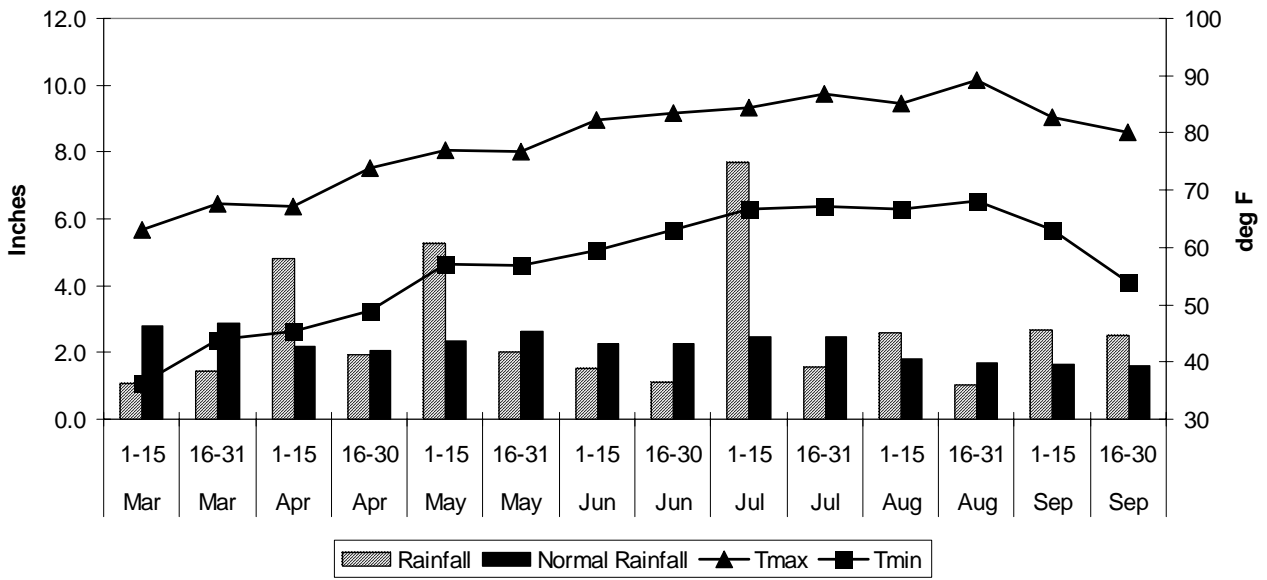
Figure 3. Spring Freeze Dates and Maximum Temperatures 90 F or greater.

Location	Date of last freeze (32 F or below)	No. days \geq 90 F
Knoxville	April 1	16
Plateau	March 31	2
Highland Rim	April 10	27
Middle Tennessee	March 31	41
West Tennessee	March 31	33
Milan	March 31	38
Ames Plantation	March 31	42

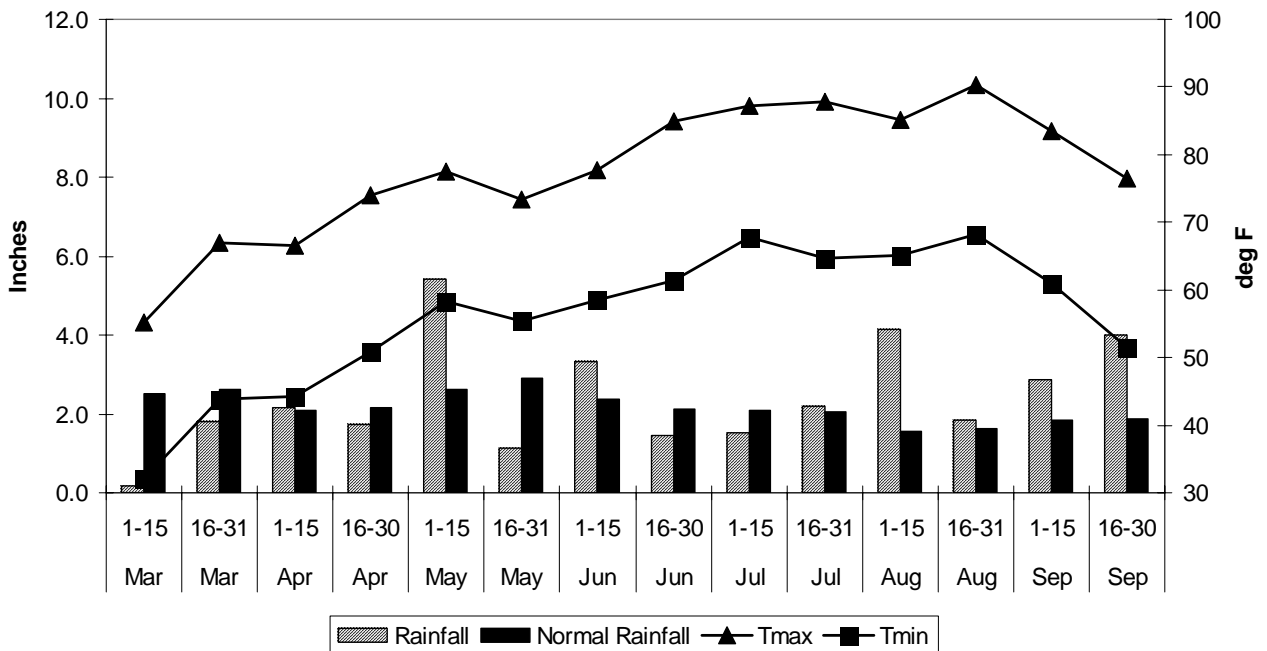
Figure 4. Rainfall characteristics of the 2003 growing season.

Location	Greatest storm rainfall amount in inches (date)	Longest rain-free period <.05 inches in days (date)
Knoxville	4.83 (May 5-8)	11 (Jun 20-30)
Plateau	7.04 (May 5-8)	14 (Aug 15-28)
Highland Rim	4.15 (May 5-8)	12 (Mar 7-18)
Middle Tennessee	5.28 (May 5-8)	9 (Sep 5-13)
West Tennessee	4.68 (May 5-8)	8 (Jul 3-11, Sep 5-13)
Milan	5.15 (May 5-8)	8 (Aug 15-22)
Ames Plantation	7.48 (May 5-8)	9 (Sep 5-13)

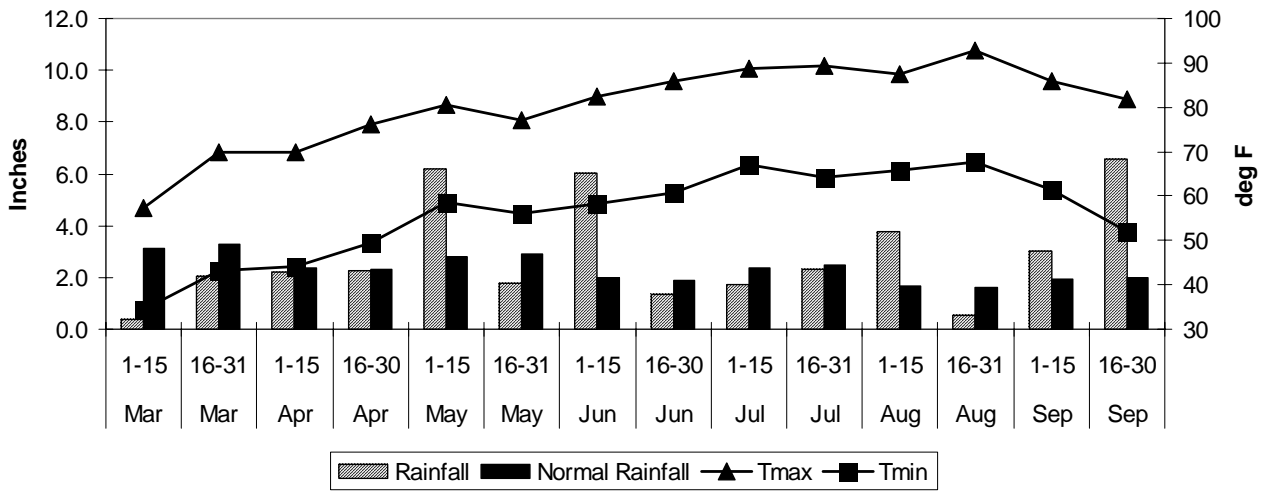
Knoxville Experiment Station



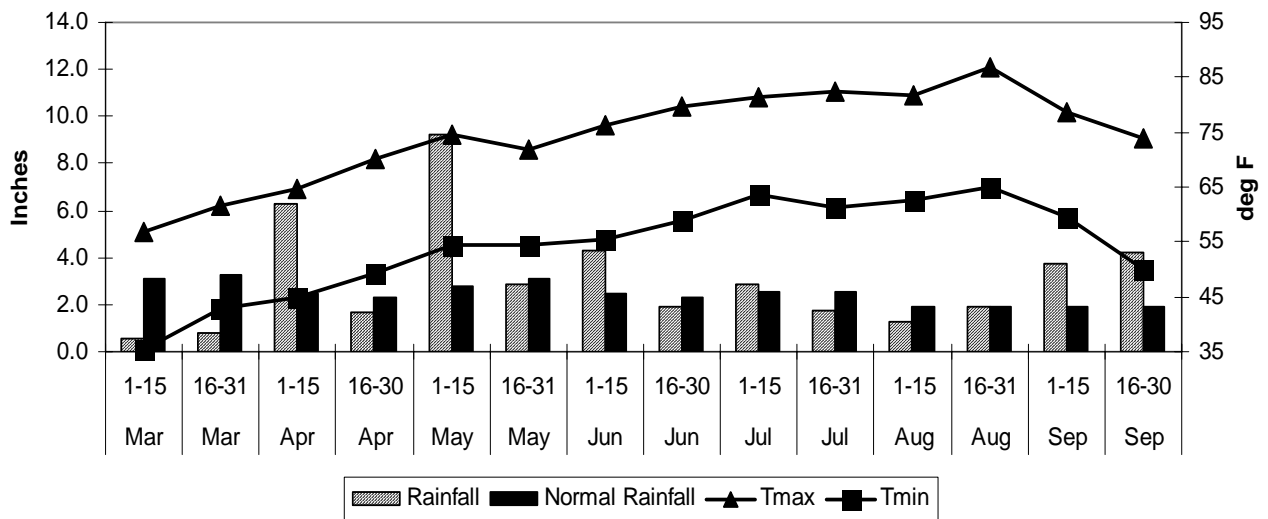
Highland Rim Experiment Station



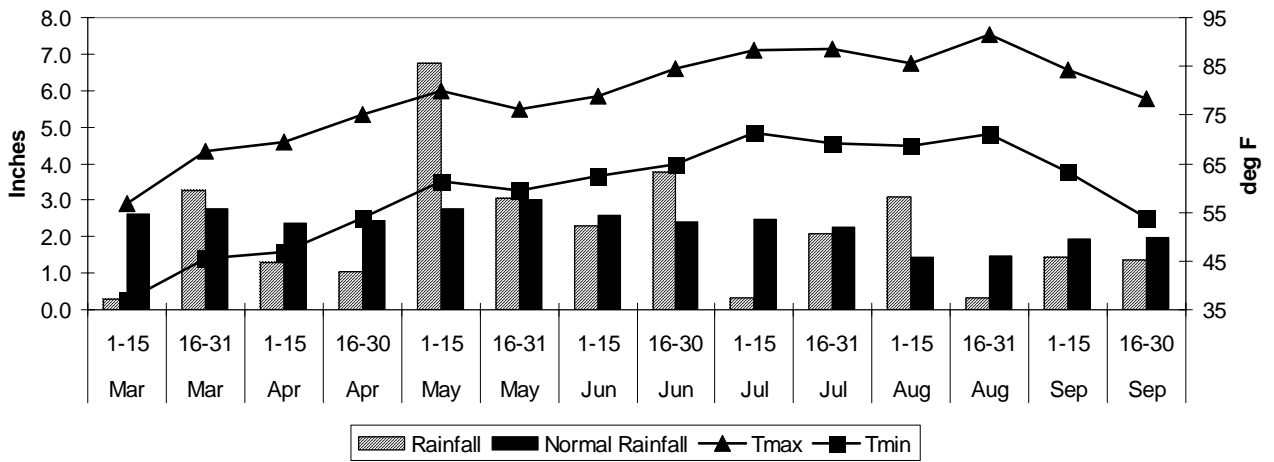
Middle Tennessee Experiment Station



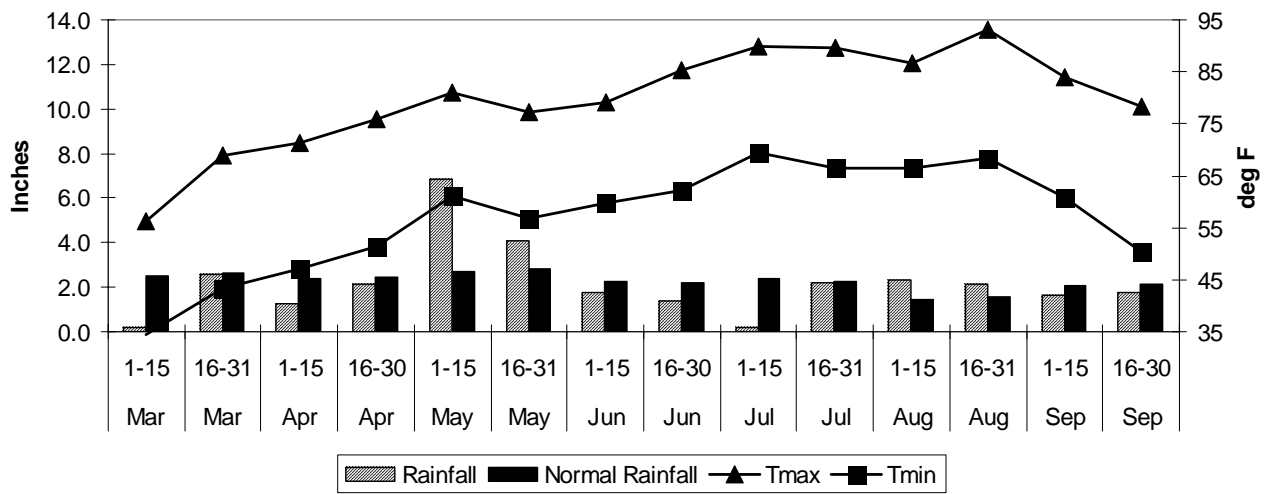
Plateau Experiment Station

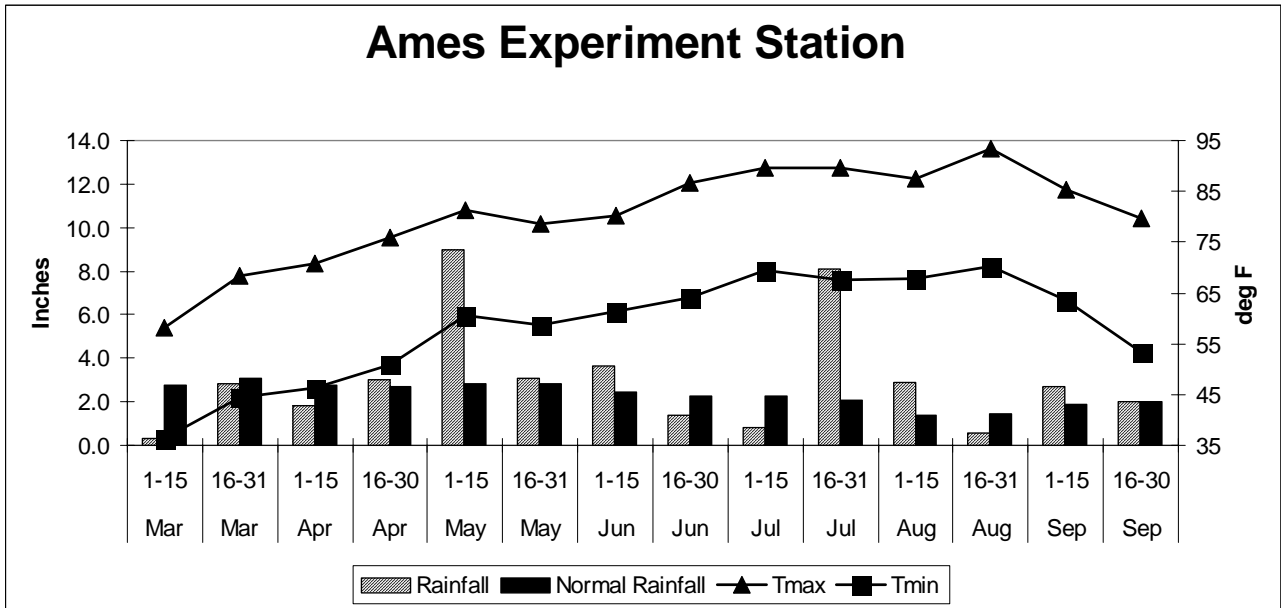


West Tennessee Experiment Station



Milan Experiment Station





As can be seen in previous figures, general rainfall patterns were relatively similar at all 7 experiment stations. In the second part of **March**, rainfall was 2 to 3 times normal at all locations. West Tennessee received 11.1 inches during this 2-week period. **April** was a dry month, except for the last 2 weeks at Plateau and Highland Rim. Those two locations benefited from the passage of a cold front to the north of Tennessee. All locations had normal to above normal rainfall in **May**, although the distribution was quite variable at Middle Tennessee, Plateau, Highland Rim and Knoxville. Knoxville experienced a 16-day period of no rainfall from May 19 to June 4. **June** rainfall was several inches below normal at all stations. Rainfall picked up at Knoxville, Highland Rim and Plateau in **July**, but was below normal at the other locations. The first two weeks of **August** was particularly dry at Knoxville (0.28 inches), Plateau (0.03 inches), Highland Rim (0.87 inches) and Middle Tennessee (0.47 inches). Ames, West Tennessee, Milan and Middle Tennessee all

reported a 20-day period of no rainfall from Aug 26 – Sep 15. At Highland Rim, the dry period lasted 24 days from Aug 22 to Sep 14. Knoxville experienced a 17-day period of no rainfall during the same period. Therefore, all locations reported much below rainfall for the first half of **September**. Rainfall during the second half of the month was another story. The remnants of Tropical Storm Isidoro pushed through on Sep 26-27, resulting in a deluge and flooding throughout much of our state (see figure below). This rainfall came too late for most crops, and caused significant damage and harvest delays of many crops. The rainfall did benefit late planted soybeans and cotton.