

SERA – 14 Progress Report, 2007 Tennessee

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Record high temperatures in March prompted early bud break and growth. Within a 24 to 36 hour period beginning April 4, vineyards suffered a temperature drop of 60 to 65° F. We experienced an advective freeze event lasting four to five days with most areas of the state having five consecutive nights of below freezing temperatures, some as low as 13 to 17° F. Throughout most of this period, daytime temperatures remained low with some areas experiencing up to 30 hours of continuous temperatures below freezing. Wind speeds of 15 to 25 mph were common throughout the event and dewpoints were very low. Some areas did experience a radiation frost on the 5th night, however, damage that had occurred on the previous nights eliminated any thoughts of crop protection.

Depending on the type of grape and cultivar, new shoot extension had reached 6 to 12 inches by the time of the freeze. This growth was destroyed and vine injury ranging from minor to plant death was common.

Recovery of surviving vines was impeded by record high temperatures of record long duration and one of the most severe droughts in recent history. A very small percentage of Tennessee vineyards are irrigated. Plant death as a result of the freeze and subsequent stresses continues to occur. Regrowth of many surviving vines has been poor and the incidence of crown gall has increased dramatically.

The weakened state in which many vines will enter dormancy may result in failure of vines to survive the winter. Where vines do survive, trunk replacement and cordon renewal will be commonplace.

In grafted vines, C-3309 and 101-14 are the most common rootstocks being used. Vine damage and mortality appeared to be greater on 101-14.

Total crop loss in the state is estimated to be at 70%. Muscadines, which constitute about 15% of Tennessee's grape acreage, fared better than most other types of grapes as they were less advanced at the onset of the freeze. The same was true for Cynthiana.

Most of the grape acreage in Tennessee is comprised of American bunch and French-American hybrid cultivars. French-American hybrid cultivars fared better than the American bunch cultivars. However, yields were still greatly reduced due to plant injury. On some vines, a few primary buds survived and set clusters, some secondary buds fruited, some fruit was borne on basal buds and lateral buds bloomed as well. This has provided a special challenge during harvesting. A blanket waiver was granted to the wineries in June as soon as it became apparent that all types and cultivars of grapes would be in short supply within the state.

Interest in grape production and winemaking remains high throughout Tennessee. Two wineries that had been closed due to death of the owners were purchased by interested groups and are being reopened. Two additional wineries were closed as the owners retired and there was now provision for continuity of the business. One new winery has opened in West Tennessee and another is currently under construction.

MKF Research has completed and released a study titled, "Economic Impact of Wine and Grapes in Tennessee 2007." This study shows that 30 bonded wineries are producing 191,000 gallons of wine. Vineyards and wineries account for 1,664 full-time equivalent jobs and the economic impact of the industry to the state is placed at 138.8 million dollars. Tennessee joins nine other states, two regions and the United States in which a similar study has been completed. The surveys are available online at www.mkfresearch.com.