

# Kentucky's Livestock Get Early Dose Of Heat Stress

LEXINGTON, KY.

**W**ith above-average temperatures for this time of year, Kentucky's livestock are dealing with heat stress conditions earlier than they usually do. University of Kentucky College of Agriculture meteorologist Tom Priddy said high temperatures are averaging about 90 degrees across the state this week.

"These high temperatures were about 10 degrees warmer than the previous week's highs," he said. "Combined with the moist air from the Gulf of Mexico Kentucky has been experiencing this spring, the end result has been hot and muggy conditions. This has caused livestock heat stress to reach the danger category earlier in the year than normal."

The state has yet to get into an emergency level of livestock heat stress on a wide scale; however, some isolated areas in the west, where the heat has been the greatest, have been close.

Priddy said hotter conditions this early in summer are not unheard of – even last year the state experienced abnormally warm temperatures to end May and then had an above-normal June.

"This June, just like last, is expected to stay above normal temperature-wise," Priddy said. "The short-term outlooks agree with this, showing warmer-than-normal conditions for next week to continue all across the southeastern United States."

Priddy said that the long-term outlook for the end of June through August is the complete opposite with predicted normal temperatures. He bases this prediction on El Nino-like conditions he expects to occur over the summer months, which some models forecast.

"Right now we are in a waning La Nina phase, going into neutral conditions. During an ENSO (El Nino Southern Oscillation) neutral phase over the summer, Kentucky weather tends to be more near its seasonal norms in temperature and precipitation," explained Mike Matthews, UK College of Agriculture staff meteorologist. "Looking to the end of summer and beginning of fall, models are showing equal chances for the development of El Nino or a return to La Nina. Although, the overwhelming amount of models

are forecasting neutral conditions to continue. This means long-term outlooks will be more dependent on other atmospheric oscillations. Unfortunately, this also means less confidence in long-term forecasts."

For Kentucky livestock producers and horse owners, high heat over the summer months can be a big problem. The U.S. Department of Agriculture estimates that over the past 10 years, several heat events in the Midwest have cost the cattle industry alone more than \$75 million.

The UK Agriculture Weather Center has a livestock heat stress index. The index suggests the potential loss or injury in transporting livestock in a danger or emergency heat stress situation, versus transporting animals when there is no heat stress risk.

"The danger level suggests there will be a 25 percent greater chance of loss or injury to the livestock in transit as opposed to when there is no danger from heat," Priddy said. "Emergency level means a 45 percent greater chance of injury or loss in transit. The index we currently use is based solely on the actual air temperature and relative humidity or dew point, much like the heat index. For livestock in transit these two factors are the main elements affecting them."

Priddy went on to say that for livestock in fields, there are other factors at play affecting how warm or cool they feel – most notably, wind and solar radiation.

"With the expansive Mesonet (a network of automated weather stations designed to observe mesoscale meteorological phenomena) across the commonwealth, we here at the UK Ag Weather Center can now use this index to more accurately show heat stress on livestock," Priddy said. "The Mesonet measures relative humidity, temperature, wind speed and solar radiation at over 55 stations across the state. Forecasting maps for this heat index will also be available using forecast values from the National Weather Service. These tools are currently under development."

The current and forecast livestock heat stress is available in the Precision Ag Forecast at <http://weather.uky.edu>. Δ