



The Agriculture Review

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Understand and Avoid Heat Stress in Cattle

Understanding and avoiding heat stress in cattle can be a valuable management tool for summertime in Oklahoma. Most areas of Oklahoma have 10 **or more** days each year above 100 degrees and 70 or more days with high temperatures above 90 degrees Fahrenheit. (Source: 1997 Oklahoma Climatological Survey). This means that most cow calf operations will be working cattle on days when heat stress to cattle is likely. Cattle have an upper critical temperature approximately 20 degrees cooler than humans. When humans are uncomfortable at 80 degrees and feel hot at 90 degrees, cattle may well be in the danger zone for extreme heat stress. Humidity is an additional stressor that intensifies the heat by making body heat dissipation more difficult. See the graphic below that illustrates the level of heat stress that cattle endure at varying temperature and humidity readings.

		Temperature Humidity Index (THI)											
		Relative Humidity											
		30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%
T	100°	84	85	86	87	88	90	91	92	93	94	95	97
E	98°	83	84	85	86	87	88	89	90	91	93	94	95
M	96°	81	82	83	85	86	87	88	89	90	91	92	93
P	94°	80	81	82	83	84	85	86	87	88	89	90	91
E	92°	79	80	81	82	83	84	85	85	86	87	88	89
R	90°	78	79	79	80	81	82	83	84	85	86	86	87
A	88°	76	77	78	79	80	81	81	82	83	84	85	86
T	86°	75	76	77	78	78	79	80	81	81	82	83	84
U	84°	74	75	75	76	77	78	78	79	80	80	81	82
R	82°	73	73	74	75	75	76	77	77	78	79	79	80
E	80°	72	72	73	73	74	75	75	76	76	77	78	78
	78°	70	71	71	72	73	73	74	74	75	75	76	76
	76°	69	70	70	71	71	72	72	73	73	74	72	75

THI = Tdbf - (0.55 - (0.55 x (RH / 100))) x (Tdbf - 58)

Normal <74	Alert 75-78	Danger 79-83	Emergency >84
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The **temperature humidity index** is calculated to help producers know when to avoid putting cattle in situations of undue stress and danger. It is extremely helpful in making decisions as to when to "work" cattle such as weaning fall born calves. The weaning process can be stressful enough in pleasant weather, but combined with a high temperature-humidity index can be fatal.

If weaning calls for cattle to be gathered and put through a working chute for immunizations, implanting, dehorning, or other operations, then a few common sense rules should be followed.

- 1) During hot weather, cattle should be worked before 8:00 am, if possible. Certainly all cattle working must be complete by about 10:00 am. While it may seem to make sense to work cattle after sun down, they may need at least 6 hours of night cooling before enough heat is dissipated to cool down from an extremely hot day.
- 2) Cattle that must be handled during hot weather should spend less than 30 minutes in the working facility. Drylot pens and corrals loaded with cattle will have very little if any air movement. Cattle will gain heat constantly while they are in these areas. Therefore a time limit of one-half hour in the confined cattle working area should limit the heat gain and therefore the heat stress.
- 3) Make every effort to see that cool, fresh, water is available to cattle in close confined areas for any length of time. During hot weather conditions cattle will drink more than 1% of their body weight per hour. Producers need to be certain that the water supply lines are capable of keeping up with demand, if working cattle during hot weather.

Hay Directory

The Bryan County Extension Office is now listing hay for sale or hay wanted contacts on our county extension website. The website address is <http://countyext.okstate.edu/bryan/>. People wanting to buy or sell hay can be listed free by contacting us and giving a name and contact information, either e-mail or phone. The e-mail address is clay.jones@okstate.edu. Indicate bale size, hay type and approximate amount for sale or needed to buy. To avoid too much out-of-date information, we will delete listings after 30 days unless you request a listing be extended.

Statewide and out-of-state hay availability listings are posted on the Oklahoma Dept. of Agriculture website at <http://www.oda.state.ok.us/> and the USDA Farm Service Agency website at <http://www.fsa.usda.gov/haynet/default.asp>.

Drought & Risk Management Meeting

Mark your calendar for July 18th. Bryan County Farm Service Agency, Natural Resources Conservation Service and OSU Extension Service will present a program on Drought & Risk Management at 7:00 p.m. at the Bryan County Fairgrounds Community Building. Topics include emergency haying of CRP land, USDA Non-Insured Assistance Program (NAP), drought feeding alternatives, and cost comparison of hay and other feed alternatives during a drought. The public is invited.