Cattle Heat Stress Alert

- Cattle heat stress occurs when high ambient temperature and high relative humidity causes cattle to reach a point where they cannot cool their bodies adequately.
- Temperature Humidity Index (THI) incorporates both environmental temperature and humidity in order to determine a more accurate representation of effective temperature (see figure and table below).
- The USDA Southeast Regional Climate Hub has developed a SERCH LIGHTS alert for Cattle Heat Stress that monitors ARS and NOAA forecasts of daily THI thresholds and sends an email alert when heat stress conditions are possible for your location.

### Animal Type | THI Threshold
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Beef Cattle | 75
Finishing Beef Cattle | 72
Dairy | 70
Dairy Heifers (0 to 1 year) | 77
Dairy Heifers (1 to 2 years) | 72

Source: St.-Pierre et al. 2003

Heat stress impacts on cattle:

- Long-term decreases in milk production and birthing rates in dairy cattle (Klinedinst et al. 1993)
- Reduced dry matter intake, which inherently reduces rate of weight gain
- Pregnancy rates decrease above 70 THI and additionally above 74°F (Amundson et al. 2005)
- Reduced fertility in both female and male cattle (St.-Pierre et al. 2003)

Source.
Visible signs of cattle heat stress (from West 2003):
- Decreased food intake
- Decreased activity
- Seeking shade
- Panting (increased respiratory rate)
- Sweating

Subscribe Today!
Sign up for the SERCH LIGHTS alert to receive emails when heat stress conditions are forecast for your area:
https://www.serch.us/lights/
Alerts come in the morning to give producers time to plan, adapt, and respond

Adaptive management options for reducing heat stress impacts:
- Provide lots of available drinking water, shade, airflow, and remove fly habitats (Kerr 2015)
- Alternating feeding times and sprinkling can help minimize the effects of heat stress (Mader 2003)
- Applying 1/3 gallon of water to a cow’s back every five minutes with fans providing air flow was very effective in decreasing heat stress (Smith et al. 2012)
- Follow weather trends and begin preventative measures before heat waves hit
- Try the ThermalAid app for detecting heat stress
- Consult the free courses available through Animal Agriculture in a Changing Climate

Contact the USDA Southeast Regional Climate Hub for more info:
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References