

Jody Holthaus, Agent
Meadowlark Extension District
Livestock and Natural Resources

Effects of Temperature and Temperature-Humidity Index on Pregnancy Rate in Beef Cows

Nebraska researchers reviewed ten years of calving records from a spring-calving beef cow herd (Angus/continental crossbreds) in southeast Nebraska to determine the effect of temperature and humidity on pregnancy rates in beef cows. This research suggested that conception rates are lower during summers when it is hot during the breeding season as compared to cooler summers.

These researchers found that for each degree increase in temperature during the first 30 days of the breeding season that pregnancy rate during these 30 days decreased by 1.08%. However, average temperature did not significantly affect pregnancy rate during the entire breeding season (63 day average). It was also reported that if the average temperature-humidity index (THI) was greater than 65 for the first 30 days of the breeding season that pregnancy rate was reduced by 1.6% per unit increase in THI above 65. THI did not affect pregnancy rate over the entire breeding season. These results indicate that beef cows can acclimate to high temperatures and humidity if given enough time with the bull (60 days or more in this data set). These data suggest that a 30 to 45 day breeding season may not allow cows to adjust to high temperatures and humidity thus pregnancy rate may be reduced. In cows with some Brahman influence, the negative impact of heat stress on pregnancy rate should be reduced.

Management steps that producers can take during the breeding season to minimize heat and humidity stress on cow herds include:

- Minimize cattle activity and movement during the breeding season. Nebraska feedlot research shows that moving cattle can increase body temperature by 1 to 1.5°F.
- If cattle must be worked or moved, do it early in the morning when it is cooler.
- Provide plenty of clean water.
- Provide shade or a place for cattle to cool off.
- Control flies to discourage physical activity associated with fighting flies.
- Black cattle are more susceptible to heat stress than lighter colored cattle.