

Heat Stress And Reproductive Efficiency

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The breeding season for spring calving cows should be coming to a close in these late summer months. This might seem like a good time to relax concerns for reproductive efficiency. In reality, reproductive efficiency can be significantly altered at this point and result in considerable economic losses. Especially since late embryonic/early fetal development can coincide with extreme heat. Pregnancy failure at this time extends the return to estrus beyond bull removal in a tightly controlled calving season.

Often overlooked is the fact that, in normal situations, fertilization rates approach 100 percent. So, if a normally expected single-service conception rate is 60 to 80 percent, the difference comes from embryonic or fetal wastage. Most of this loss occurs in the first few days of development and the estrous cycle is not extended past the normal 19 to 24 days. For beef cows, relatively little pregnancy loss occurs beyond the normal return to estrous. However, heat stress can increase pregnancy loss well past that point. To compound the problem, spring calves are often weaned and the cows worked at the hottest time of the year.

It is particularly important to remember that cattle have an upper critical temperature that is 20 degrees lower than humans. That means that when humans feel uncomfortable due to heat, cattle can be extremely stressed. Humidity adds to the problem by increasing the heat index and limiting the ability of cattle to dissipate heat. Fescue toxicosis is yet another factor in the Southeast that compounds the problem by limiting body heat dissipation.

When working cattle during the summer months, target days with a forecasted temperature between 80 and 85 degrees F and relative humidity between 30 and 40 percent. Begin working as early in the morning as possible and try to be done by 10 a.m. If there is no other alternative to working cattle during extended periods of extreme heat, schedule the work between the hours of midnight and 8 a.m. Working cattle in the evening can still be stressful because they have not had a chance to dissipate heat and reduce their core body temperature.

Also, remember that heat stress will increase water consumption. Increasing the ambient temperature from 70 to 90 degrees F can double water intake. So, it is important not to neglect the availability of a clean, fresh and cool water supply. Increased water intake leads to increased urine output that depletes mineral stores. Along with the water, make sure a balanced mineral supplement is provided.

Other ways to combat the negative effects of heat stress on reproductive efficiency include changing to a fall calving season or incorporating heat tolerant genetics. However, total pregnancy loss is not the only reproductive concern during heat stress. The efficiency of the placenta can be reduced when heat stress coincides with late gestation, leading to decreased birth weights. More importantly, the seasonal nature of production means that weaning weights for fall calves are more often lower than their spring contemporaries. Altering genetics or the calving season should be considered in relation to how that will impact the value of the end product. Δ

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