



Heat Stress | What about the dry cows?

As the summer continues the heat can take a real toll on cows. Heat depresses dry matter intakes, reduces milk yield and causes increased reproductive problems. Heat abatement in lactating cow pens, ie good airflow with fans and sprinklers, appropriate stocking density, and adequate feed and water access is pretty standard to mitigate heat stress, but what about dry cows?

When standard heat abatement strategies (fans, sprinklers, adequate space, etc.) are utilized for dry cows, they will produce significantly more milk in their next lactation, than a cow without dry cow heat abatement. The dry period is a time of rest and rejuvenation for a cows udder. Cows which are cooled ultimately have greater capacity for mammary cell growth and proliferation. Cooled dry cows also have better immune function, and are able to respond better to vaccines given during the dry period. After calving they also have an increased number of infection fighting cells (neutrophils) which aids their ability to fight disease during the transition period.

In addition to the direct impact on the lactating cow, cooling a cow in her dry period will impact her daughter's productive life.

Heifer calves born to cows that experienced heat stress have decreased birth weights and shorter stature which persists through weaning. A more important difference however, is the impact on the calf's immune system. . Calves born from cooled cows had more circulating antibody- IgG (higher total protein values), due to better ability to absorb these antibodies from the colostrum they're fed. Calves born to cooled cows have better immune function, improving their ability to fight off disease in comparison to their counterparts born from heat stressed cows.

The effects of heat stress on an in utero calf doesn't stop at the weaning, but will go on to affect her lactation records. Heifer calves born to heat stressed dams are less likely than their cooled counterparts to survive their first lactation, have decreased body weights at puberty, and ultimately produce less milk as a mature cow. For example, a heifer calf which underwent 6 weeks of in utero heat stress during the dry period will produce **5 liters/day less milk** than a calf born from a cooled cow.

We all know how important it is to manage heat stress in lactating cows, but it might be time to take a good hard look at your dry cow facilities. Not only will you see benefits in the cows immediate lactation, but her daughter will have a more successful future, as well.

Reference: "Heat Stress Mitigation and Impacts on Dairy Cattle Behavior and Performance (...and her Calf)" – G.E. Dahl (University of Florida, Department of Animal Science)