NAVAN VETERINARY SERVICES – JULY 2013 NEWSLETTER

Writing this newsletter, I am reflecting on 3 of the cows I was pregnancy checking at a herd health last week. They were obviously hot as detected on palpation, despite being 10:15 in the morning. It was a reminder that the high humidity levels were experienced late this spring and early summer have a huge impact on heat stress experienced by our dairy cows, even when ambient temperature feels rather comfortable. There are many Temperature-Humidity Index (THI) charts available for dairy cows that show different levels of heat stress, from mild to severe and past severe into life threatening. The principle behind THI is that animals have an increasingly difficult time to cool themselves as relative humidity increases at any given temperature.

Barn temperatures of 25°C (77°F) require only 10-15% relative humidity before cows being to exhibit signs of heat stress. We have seen many days this spring and summer where relative humidity was in the 60-70% range. Relative Humidity can be even higher in the barns where there is a lot of moisture.

Thermal Neutral Zone (TNZ) is a term used to describe the "ideal" environmental temperature for all warm blooded animals where metabolic functions can operate most efficiently. At this ideal TNZ, animals expend very little energy trying to cool off or keep warm. Their normal behavioral postural changes and some low energy physiological responses are all that are required to keep the animals body in this neutral zone.

According to NRC 1981, the upper limit of the TNZ for lactating dairy cows is approximately 21-27°C (70-80°F), although a lot of factors effect this range, including age, breed, dry matter intake etc. Cows have very limited ways to remove excess body heat. Unlike humans, cows have very few active sweat glands. The main way cows lose heat (other than behavioral changes) is through their breath. Hot cows will exhibit open mouth breathing in attempts to get rid of heat.

We all know that hot cows will eat less. This is a survival mechanism, as the rumen is a huge generator of heat. Cows instinctively know to reduce feed intake to help maintain body temperature when overheated. The consequence of reduced dry matter intake in our cows is probably obvious to us all, beyond a drop in milk production. May metabolic problems around calving time including milk fever, retained placenta, ketosis, and metritis can be directly or indirectly related to intake or feed availability issues. Drops in fertility are often seen during the hottest parts of the summer. When we graph either conception rates or pregnancy rates across many farms, the summer dip is always present.

Over the last decade, there has been a lot of attention paid to increasing levels of cow comfort, including tunnel ventilation, positive pressure tube ventilation (not a new concept) in calf barns, sprinklers or misters in feed alleys and holding areas.

The payback for keeping cows cool is a "no brainer". If you are looking for more info on ideal air flow or using misters /sprayers in different areas of your barn, let us know.

There are going to be organized collections of expired/unused pesticides and vet drugs and products in 20 locations across Ontario in the first two weeks of October. We will make more information available as we get it. THEY WILL NOT BE PICKING UP SHARPS!