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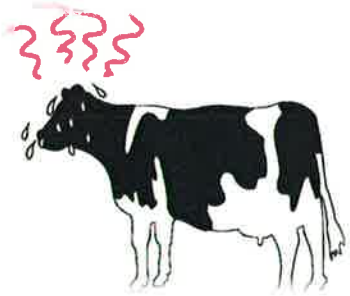
Heat Stress: An Ounce of Prevention worth a Pound of Cure!

As I sat down to start writing the newsletter, after yet another day of poor pregnancy results on farms, I started thinking about how thankful I am that the hot, humid weather was behind us. I think we can all agree that it was a relief to feel the fall air hit us on September 1. So, although it seems like an odd time of year to be writing about the effects and prevention of heat stress, it might be the best time- because in order to decrease the effects for next year, with the way the world is now, we have to plan for it sooner than later to have things ready.



Recognizing heat stress- Is it really such a big deal?

By the time you feel like your barn is hot, your cows are likely already feeling the effects of heat stress. Cows on a day-to-day basis, are high heat producing animals due to the way they digest feed by fermentation in their rumens, and the process required to produce milk. Research has shown mild heat stress can start with temperatures as low as 72°F (22°C) and 50% humidity, with high producers feeling the effects at temperatures even lower than that since they eat more for more production, and therefore naturally generate more heat on their own.

What does Heat Stress do and why?

MILK PRODUCTION: The first obvious effect that we can see when cows are under heat stress, is decreased intakes, which is the largest cause of a decrease in milk production. On average, for every pound of decreased DMI, milk production will decrease about 2lbs when the temperature and humidity is high. An alteration in the rumen function and fermentation abilities as a result of heat stress can also affect digestibility of the feed they are eating, so may not be as efficient milk makers.

REPRODUCTION: Heat stress affects the release of cows' natural hormones, which greatly affects the reproductive ability of that animal. The length and the intensity of a heat are often lessened, making it harder to know when to breed a cow. If she does show a heat, the quality of egg being released may be compromised due to effects on the follicular wave and the growth of follicles. In addition to this, the actual ovulation may be delayed, missing the window of breeding or not ovulate at all, potentially leading to follicular cysts. These issues coupled with the actual environment within the uterus changing due to altered blood flow, can make conception during times of heat stress extremely difficult. There is some research that reports that conception rates in heat stressed cows may be decreased to 10-20%.

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CALVES: Calves can be affected by heat stress throughout their growth and development. Before they are born, if the mother is undergoing heat stress early in gestation, she may lose the fetus. If heat stress occurs late in gestation, a decrease in blood flow to uterus and umbilicus, can cause delays in calf growth before calving, as well as decreased average daily gains post-calving. Calves can also have decreased immune function and may not absorb the antibodies in colostrum as effectively. Coupled with the potential change to the colostrum quality during times of heat stress, calves are at high risk of developing illness at these points of development. As calves develop, heat stress on them also has negative effects. Since they do not have fully functioning rumens, and are a much smaller size, calves are less susceptible to the effects of heat stress, but they still experience it. Dry matter intakes, average daily gains, and feed efficiency all decrease when heifers are raised in times of heat stress, which can affect the future milk production and longevity of these animals.

GENERAL HEALTH
The overall health and welfare of the animals cannot be overlooked here either. In more severe times of heat stress, cows can often be seen laying down, breathing heavier, and look "stressed out". A stressful transition into lactation further diminishes their already weakened immune system, creating more opportunities for disease issues such as mastitis, pneumonia and metritis- and the weather is prime for bacterial growth. Their rumen may not be functioning as it should, and this combined with increased rates of feed spoilage can lead to indigestion, acidosis, and potentially twisted stomachs. The physical problems that arise within the barn should be addressed as well, such as crowding, lack of sufficient water sources for the increased demand, lack of adequate ventilation, and even slips and falls due to increased moisture on the floors.

How do we prepare?

After the harvest this fall, while the heat of the summer is still fresh, take a look around your barn for areas of improvement. Every barn is going to have different needs based on its management system, and the tools already in place. Working with your veterinarians and team on your farm, see if there are places you can improve on. I will leave you with some basic thoughts to consider:

Ventilation- how much air exchange can happen in your barn? Is there a way of changing the air velocity by the cows to improve cooling? Are your fans all in good working order, and are they actually positioned in a way to cool the cows? Crouch between two cows when they are laying or standing next to each other in their stall. Can you feel the air movement, or is it pretty hot? Check the direction of the air flow at the cow level. Calf hutches- if you can't stand to sit in it, it is too hot! Lift the back edge of it with a block or tire to allow air movement through.

Water- Are the bowls/troughs at least 3" deep to allow proper drinking? are there two water areas in each group to allow easier access to water sources? Is the water flow to the bowls/troughs working properly? Is the capacity big enough to handle a big demand of water at once (after milking)?

Feed- How often are you feeding your cows? Dry cows? Heifers? Consider increasing the frequency to decrease the amount of time feed is left and potentially spoiling. Are you decreasing feed amounts when intakes go down? This may also help prevent feed from getting too hot before it is consumed.

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Space- Is there enough space in each group, including heifers, lactating, dry cow and calving pens? Are calves being moved out of hutches before they outgrow them? If pasturing, is there an area of shade large enough to accommodate all pastured animals?

Additional cooling- Misters and sprinklers- If you have them, are they set at the correct cycle to allow for water evaporation (which is what cools the cows). Are they in good working order? If you don't have them, could this be a good option in your barn?

I know summer feels like a long time away- especially since we are still feeling the effects of this one! But, looking at how things could be improved, and getting equipment ordered before the barns close up for the cold winter months will hopefully allow for a less stressful summer next year!

Meredith Vair, DVM

New Product Release

Zoetis has introduced Draxxin KP as a new combination product for the treatment and prevention of bovine respiratory disease (BRD). Like the original Draxxin, It contains the antibiotic tulathromycine to treat major bacterial pathogens of BRD. In addition, it also contains ketoprofen (medical ingredient of Anafen) as a nonsteroidal anti inflammatory drug to control fever.

Currently only available in 100ml bottles, Heartland Vets will be discontinuing the 100ml size of the original Draxxin and will be offering Draxxin KP in its place. The new product will be offered at the same price as the original.

Please contact one of our veterinarians for more details.

Upcoming stat holidays

The clinic will be closed Thanksgiving Weekend October 9 to October 11. As always, veterinarians will be available 24-7 for emergency service. The Saturday fee schedule will remain unchanged from non-stat weekends.

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Covid-19 protocols

With the presence of Covid-19 in Ontario, our team is taking additional precautions during our farm visits, as highlighted below, to help mitigate the spread of this disease in our community. We have chosen to continue strict precautions as we move through Ontario's phased reopening. Please be aware that as this pandemic develops, we may have to adjust our procedures in response.

Veterinary farm visits

- Once on farm, we will try to maintain a distance of at least six feet from people wherever practically possible
- Care will be taken to wash and disinfect hands and contacted tools and equipment before re-entering our vehicle
- A mask will be worn whenever practically possible, especially in closed air spaces or when physical distancing is not possible. We would like our clients to do the same while we are on farm.

Technician farm visits

- Techs will continue to assist veterinarians as necessary. The same precautions as above will apply
- Technicians will continue to provide services, such as dehorning, but we ask that no farm personnel are in the immediate vicinity during their visit

Clinic procedures

- Our clinic will remain open, but business hours may be subject to change
- Clients will be met at the door by one of our customer care representatives
- Purchases will be set out at the door
- Laboratory samples will be received at the door

If you have experienced any Covid-like symptoms or have had exposure to someone with symptoms, we urge you to please notify us before your next vet visit so we can take the appropriate precautions.

We thank you for assistance in helping us continue to provide veterinary care while considering the health of yourselves and our staff.

Stay healthy!