

Reduce Heat Stress even in your Baby Calves!

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Most often, as the temperature climbs we run straight to the barn making sure the fans and sprinklers are all set and ready to go. We know heat stress has dramatic effects on milk production, which affects us immediately in cow health and in the pocketbook.

How often during times of heat stress are you running over to the calf barn or hutches to see what's going on with your calves?

Heat stress in calves will increase dehydration, reduce feed intake and lower the immune system. Most likely the nutrients consumed during this time will go more towards trying to drive off heat from the calf's body rather than using the nutrients to grow. Short term, this could have effects on average daily gain, disease incidence, and morbidity. Long term, this could have effects on breeding size and age at first calving or possibly even death.

Well, the heat is here, so let's see what we can do for our calves to reduce heat stress!

Although there is very little data that tells us when calves actually start experiencing heat stress, calves do start to expend more of their energy to stay cool in temperatures above 78 F. Combine heat and humidity levels, and stress is increased even more.

Important visible signs of heat stress include:

- Reduced movement
- Faster breathing rate
- Open-mouthed panting
- Decreased feed intake
- Increased water consumption

Housing and Ventilation

If calves are housed in hutches outside, open up as many vents as possible to allow airflow through the pen. To allow air to circulate through the hutches, space them 4 feet apart and 10 feet between rows. A common practice is to prop the back edge of the calf hutch up 6-8 inches to allow air flow. Plastic hutches can retain heat and actually make the temperature inside the hutch greater than the outside temperature. Research (Coleman et al., 1996) has shown by providing a shade cloth about 4 feet above the hutch will reduce the inside temperature 3-4 degrees and the calf's body temperature by .5 degree compared to calves with no shade. If calves are housed in a naturally ventilated barn, consider using additional fans or a positive pressure tube system designed for summer ventilation rates. Once temperatures reach 75 F, curtain sidewalls on calf barns should be completely open.

While straw is a gold standard for bedding in winter time for its nesting ability, sand or sawdust will not retain as much heat, making them suitable options for summer. Regardless of bedding choice, a clean and dry resting space is still required.

Nutrition

During times of heat stress, we notice a drop in feed intake while energy requirements for maintenance increase 20-30%, leaving the calf with a depressed immune system and a higher susceptibility to disease and dehydration. This may be a good time to visit with your nutritionist and re-evaluate your milk replacer program and make sure it allows for maintenance and desired growth to be achieved. Increasing feeding frequency from two times per day to three times per day may also aid in consuming energy requirements. Offering smaller amounts of calf starter more frequently through the day will help keep starter fresh and maintain intake.

Fresh, clean water will help prevent dehydration and will reduce stress for those calves close to weaning or those who have recently been weaned. According to USDA Dairy 2007 survey, average age of calves first receiving water was 15.3 days. Calves less than 2 weeks of age are most susceptible to diarrhea and water should be offered in the first week of life.

Healthy calves under heat stress will drink between 6 and 12 quarts of water daily just to maintain normal hydration. Severely sick calves under heat stress sometimes require up to 20 quarts replacing what has been lost. Refer to article [“Recognizing Signs of Calf Dehydration”](#) to provide an early and aggressive use of fluid therapy.

Management

As always when handling animals, but especially during times of heat stress, they should be handled properly and gently. Routines such as vaccinating or dehorning should be done in the cool early morning or later at night.

There are many options to control flies during the hot summer months, and it may take a few different ways to break the life cycle and prevent build-up. Visit with your local industry reps on sprays, baits, additives, and traps that can be used on the dairy. Keeping the area around the calves clean and dry and free of weeds will also aid in fly control.

Heat stress causes immune system depression and it becomes even more important to maintain environmental cleanliness during this time. Warm, damp, soiled areas are the perfect environment for the growth of micro-organisms. Bacteria, parasites, and other harmful micro-organisms can multiply exponentially and grow well in these conditions. Be mindful about keeping all feeding equipment (water and feed buckets, milk mixing equipment, bottles, and nipples) disinfected by using [current recommended protocols for cleaning feeding equipment](#) and [housing](#). When disinfecting housing, make sure all areas have adequate time to dry before re-bedding or putting a new calf into that area.

Newborns are particularly sensitive to environmental pathogens. A naïve immune system, heat stress, and unclean environment spell disaster for a neonate.

There are certain management practices even before the calf is born that will affect how the calf will handle heat stress. Heat stressed dry cows will have depressed intake, and often premature or light birth weight calves. Heat stress during the late gestation period can reduce colostrum quality. Review of colostrum quality is suggested during the summer months to allow successful passive transfer of immunity to the calf.

Having a plan in place to combat heat stress issues in your calves will pay off now and years down the road as she enters the milking string!