

Calving Ease

July 2008

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Tips for Hot Weather Management

Depending on where your dairy is located this may be a hot weather season for you. It is always challenging to maintain good gains under these weather conditions.

What is “hot” weather for calves?

Thermoneutral conditions for young calves cannot be expressed as one fixed temperature value. They are a range of environmental temperatures. Within this range the calf's heat production or metabolism is approximately constant. The width of this “thermoneutral” zone is estimated as about 18° to 27° F (10°-15° C).

Under environmental conditions within the “comfort” zone, calves do not have to use energy to either warm or cool themselves. The bottom and top of this zone are designated as critical temperatures – lower and upper. The upper critical temperature is not fixed. It changes depending on the calf's age, plane of nutrition, wind velocity and humidity.

However, for practical purposes we can use the range between 75° and 80°F as a guide to predict heat stress conditions for calves. A much more complete guide to heat stress conditions that incorporates humidity called Temperature/Humidity Index is available at http://www.uaex.edu/Other_Areas/publications/PDF/FSA-3040.pdf.

What do calves do to increase their rates of heat loss?

Heat losses occur through radiation, convection, conduction and evaporation. Evaporation losses include water vaporization from both skin and mucous membranes. Therefore, we see calves standing rather than lying down. They seek shade rather than full exposure to the sun. Calves also increase their respiration rates and may even be seen panting when severely heat stressed. Although we cannot observe this change, there may also be an increase the rate of blood flow to the skin. In addition calves may decrease their dry matter intake especially from calf starter grain and increase their water consumption.

What can we do to promote good growth in hot weather?

Provide opportunities for calves to find shelter from direct sun. Just as calves seek out the sun in cold weather, they will go to shade in hot weather. Shelter from the sun (radiant heating) allows calves to radiate heat away.

Provide fresh water. I always dumped water pails and refilled them with fresh water two or more times a day during hot weather. It is reasonable to expect water intake to double as

environmental temperatures go from 60° to 90°. For larger calves drinking more than two gallons of water a day I found it helpful to switch to five-gallon water pails. No matter the feeding frequency or pail size, the essential management decision is to keep water in front of the calves all the time. Not just most of the time but, rather, all the time during hot weather. It is a very poor practice to let calves go without water any appreciable length of time in hot weather. Once severely dehydrated calves are suddenly allowed access to essentially unlimited water they can suffer water intoxication leading to loss of consciousness.

Fresh water also means that the water pails are not covered with green slime. Every dairy and water source probably will have different issues with keeping water pails clean. I had a routine where we replaced one-fifth of the water pails every weekday with clean ones. Those were scrubbed and put out the next day. This kept the water pails quite clean.

Provide fresh grain. Naturally, this means dumping grain pails daily. In order for this not to turn into a huge time-consuming chore, it is best to use some judgment when feeding grain. Many calf care persons use markers of some kind on pens/hutches to signal the “usual” amount of grain each calf eats daily. Following those guides the amount of grain to dump and recycle to older heifers is minimized. Most importantly, changing grain daily should insure that moldy or spoiled grain does not appear in these pails.

Providing fresh grain may also require some management of the grain supply. Ordering smaller loads may be required in hot months in order to prevent off-flavors in calf starter grain.

I tried to get calves switched over to once a day feeding for milk replacer as soon as I could in hot weather. At around four weeks I had the calves up to about two pounds of milk replacer powder per day. Around this time I stepped down the ration from two pounds to one pound of powder daily. This was fed in one feeding. Even in hot weather as long as the calves always had water their grain intake would increase dramatically within a few days of the change. It helped also to check grain at the afternoon feeding since many calves would eat more grain in the cool evening and early morning hours than during the heat of the day.

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