

CALVING EASE

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Managing Heat in Hutch Housing

- Hot is not good. Gains drop. Risk of infections goes up.
- Water, water, water. Water intakes double from 70F to 90F.
- Always use “built-in” vents – fix those that will not open properly.
- Raise the rear of hutches to promote air flow.
- Shade over hutches has the highest level of effectiveness in lowering interior hutch air temperatures.

“Hot” is not good.

As the air temperatures in the environment of dairy calves increase above 70°F (21°C) the animals increase their heat-adaptive behaviors. They eat less calf starter grain. Their respiratory rate goes up. They spend more time lying down in the back of the hutch. Taken together these changes increase the amount of nutrients committed to maintenance and decrease the volume of nutrients consumed.

These changes usually result in a drop in daily gains. On one hand, if milk feeding levels are high enough to provide for most of the nutrients for younger calves this decrease probably will be small. And, adequate protein and energy will still be available for rapid development of the young-calf immunity.

One the other hand, if milk feeding levels are minimal (for example, daily feeding of 4 quarts of 20-20 milk replacer) gains may drop to nearly zero. At this very low level the chances of infections (diarrhea, pneumonia) go up significantly.

Decreasing Heat Stress

- Feed water. Make sure that clean water in clean pails is available 24/7. Older calves close to weaning will drink lots of water so either use larger pails or plan on feeding water more than one time per day.
- Always us the “built-in” vents on your hutches. This includes vents both on the rear and top of the hutch.

- Consider using bedding other than long straw. My hutches were set on a crushed stone base. During hot weather I covered this with just enough wood shavings to keep the hutch reasonably dry. Some folks use sawdust during the summer. More than one of my clients uses sand for summer bedding. Compared to straw all of these alternatives have the additional advantage of discouraging growth of flies.
- Raise the rear of hutches enough to allow air to enter along the base of the hutch. How high? I have seen 8 inch blocks used successfully. Remember that the hutch needs to be secured firmly so that it does not “walk away” with the calf.

One key bedding management factor to observe with this strategy is keeping bedding from building up in the rear of the hutch. As the bedding builds up in the gap provided by the block at the rear obviously the air access is cut down. I have seen a number of hutches that were blocked up with the rear opening completely filled with bedding – no air access there at all.

- If the environment is suitable consider sheltering hutches with 80 percent shade cloth suspended about 8 feet or so above the hutches.

Are changes cost-effective?

There are several adaptations that can be made to reduce the effects of heat stress for hutch-housed calves. Will they work in your environment? Are they cost effective? West, in a paper on hot weather management, suggests that we ask these questions:

1. How severe is heat stress in your operation?
2. How long does heat stress exist each year?
3. Does the performance of your calves lag for a significant portion of each year due to hot weather?
4. What is the cost of making heat stress modifications, as well as future costs of operation and maintenance?
5. What is the anticipated return to investment?
6. Are there additional management requirements associated with the changes?

References: J.W. West “New Technologies in Replacement Heifer Nutrition and Management – Managing for Hot Weather.” Proceedings of Professional Dairy Heifer Growers Association, 2001 pp.15-25. M.B. Cattell, “Managing the milk-fed calf in extreme weather conditions.” Proceedings of Professional Dairy Heifer Growers Association, 1999 pp 9-20. J.N. Spain “Effects of Supplemental Shade on Thermoregulatory Response to Calves to Heat Challenge in a Hutch Environment.” Journal of Dairy Science, 79:638-646 (1996). G. H. Stott, et al. “Influence of Environment on Passive Immunity in Calves.” Journal of Dairy Science 59:1306-1311 (1976). “Livestock Heat Stress: Recognition, Response, and Prevention” accessed 12/20/16 <http://cru.cahe.wsu.edu/CEPublications/FS157E/FS157E.pdf> .

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