

# Hot & Humid I:

## Cows

Famo Flier

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If you walk into your dairy barn and you can smell burgers grilling and hear steaks sizzling it might be time to look into methods to cool those girls down. As we head into the summer months and the temperature starts rising, we need to consider methods for heat abatement for our cattle. Heat stress not only affects intake, but immune function, growth, fetal development, and rumen health as well. Cattle begin to experience heat stress at about 68°F, but this number can be slightly higher or lower depending on the humidity and the production level of cows. Though we can't control the weather, we can do our best to cool cows in other ways to ensure that they stay healthy and productive.

### Lactation Frustration

A 180 lb man doesn't enjoy being out on a 90°+ day, just imagine being 1400 lbs, covered in hair, pregnant, and carrying a heat-producing fermentation vat in your belly! Summer is a brutal time on the lactating cow; she must endure the rising temperatures all while attempting to maintain milk production and often, a pregnancy. Heat stress will decrease her dry matter intake which in turn decreases her milk production. Overheated cows will breathe heavier and may even pant in efforts to dissipate excess heat; however, this will reduce rumination and swallowing of saliva. A cow's saliva contains buffers that help to stabilize rumen pH, without those buffers the rumen pH can begin to drop leading to sub-acute ruminal acidosis. Heat-stressed cows also suffer from decreased reproductive efficiency and immune function. A cow's internal temperature can begin to rise due to high ambient temperatures. Cornell researchers found that heat-stressed cows stand more and won't lie back down until her core temperature drops to a more normal level. Reduced lying times are linked with reduced milk yield and can result in additional lameness issues. Overall, high ambient temperatures wreak havoc on the cow's body. Taking care of their needs on a hot day will make them more comfortable and help to maintain their productivity.

### Maintain Plus

Maintain Plus is Famo Feed's answer to heat stress. This pelleted supplement is designed to be fed to lactating dairy and beef cattle to sustain hydration during the heat of summer. Maintain plus contains ingredients that help to combat the biggest side effects of heat stress:

- Electrolytes for prevention of dehydration and replacement of minerals lost in sweat
- Yeast culture to support rumen function and microbial health
- Niashure ® for heat abatement

Maintain Plus is designed to be fed at 6 oz/head/day during mild heat stress or 12 oz/head/day during moderate to severe heat stress. Up to 24 oz of Maintain Plus can be fed per head per day for 2 – 3 days before cattle are shipped or newly received. Keep in mind that Maintain Plus should not be fed alone but top-dressed or mixed into other feedstuffs. As always, make sure that plenty of fresh, clean water is available at all times.

## Dry Days of Summer

During their vacation from the milking herd, dry cows still need to be monitored for heat stress. Keeping cows cool for the entire dry period is essential for overall animal health, and especially for udder health. After dry off and before calving, the mammary tissues are redeveloping inside the udder. Heat stress can negatively impact the development of those tissues and cause a decrease in potential milk production in the subsequent lactation. Heat stress in cows can also depress immune function which can leave them susceptible to infections like mastitis. The fetal calf also suffers from the effects of heat stress while in the womb and is typically of lower birth weight, has lower IgG absorption from colostrum, and is overall less thrifty compared to calves born from cooled cows. A University of Florida study reported that calves born to heat-stressed dams weighed 13 lbs less at birth and 28 lbs less at weaning compared to calves born to cooled dams.

## The Cool Down

Below are tips to help cows cope with heat stress.

### Nutritional options:

1. Water is critical for replenishing fluids lost from sweat and respiration. Water intake will increase dramatically on hot days so make sure to have plenty of waterers filled with clean, cool water. Remember that milk is 87% water; make sure your girls stay hydrated so they can keep producing.
2. Feeding yeast and buffers may help with the side-effects of hot weather. As mentioned earlier, acidosis can become more prevalent due to panting. Yeasts and buffers may help to stabilize the rumen environment and improve digestibility.
3. Niacin has been shown to help with heat abatement. It is a vasodilator meaning it causes the blood vessels to expand giving them greater surface area to dissipate heat.
4. Adjust rations to increase the availability of energy and other nutrients as dry matter intakes are decreased when cows experience heat stress.



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### Management options:

1. Fans. Keep fans up and running. Making sure to clean any debris off the fan structure will help it to work more efficiently and better move the air. Also be mindful of fan positioning, the air should be moving over the cows and not just across the top of the barn or directly to the floor.
2. Sprinklers. Spraying cows with water on their backs and flanks help to pull heat from the body and cool the animals faster. Make sure that the water droplets are large enough that the water gets down through their hair coat to their skin. If the droplets are too small and sit on top of the hair they can actually act to insulate the cow causing her to retain heat.
3. Combining a sprinkler system with fans increases the cooling capacity. Also consider running these systems into the night if the temperatures do not cool to below the critical temperatures at which cows experience heat stress.
4. Ventilation. Side curtains on barns should be kept open to maximize air flow through barns. Holding pens are notorious for being areas of stagnant air causing cattle to become hot and restless. If possible, consider tunnel ventilation for this and other areas of the barn. Again, fans are great to keep air moving and should be on and functioning in these areas.