

WINNING THE BATTLE AGAINST HEAT STRESS



Your nutritional strategy can help your cows beat the heat when on-farm management protocols aren't enough.

Lactating dairy cows are prone to heat stress when the temperature humidity index (THI) rises above 68. A drop in milk production follows within 48 hours. While managing heat stress with on-farm protocols is necessary, nutritional solutions can also help mitigate the effects of heat stress.

Heat Stress Strategies

There are a number of strategies used to combat the effects of heat stress including:



Air Movement. Ensure proper air movement and fan placement when barn temperatures exceed 65° F.



Water Availability. Access to fresh drinking water and timed sprinkler systems over alley ways are crucial to combatting heat stress.



Timely Feedings. To maximize intake, make sure fresh feed is available every evening during cooler nighttime temperatures.



TMR Savers. TMR savers, such as calcium propionate or other propionic acid-based products, can help reduce potential for yeast and mold growth, preserve feed, and enhance bunk life.



Nutritional Solutions. Inclusion of feed additives into current rations can help cows mitigate the physiological effects of heat stress.

Nutritional Solutions for Heat Stress

When looking at nutritional solutions, there are three major classes of feed additives for mitigating heat stress including vasodilators (niacin, capsim), electrolytes (potassium, sodium), and osmolytes. Though all three provide some alleviation to the effects of heat stress, there are some distinct differences between each.

Comparing Three Major Classes of Feed Additives for Mitigating Heat Stress

	Vasodilators	Electrolytes	Osmolytes
How They Work	Vasodilators are a group of compounds that work to dilate, or open, blood vessels, increasing blood flow in the skin and allowing heat to escape.	Electrolytes are substances that help the animal absorb water across tissues, including the intestinal wall.	Osmolytes are compounds that work at the cellular level to maintain cell volume and hydration.
Why They Work	Skin vasodilation naturally occurs in the animal during heat stress, and can be easily enhanced with ingredients.	Electrolytes make up part of the dietary cation-anion difference (DCAD) in diets, and a positive DCAD diet can be fed on an as-needed basis to lactating cows while helping to get water into the animal's system.	Osmolytes prevent cells from becoming dehydrated and help maintain the expression of heat shock proteins. Osmolytes also help with absorption and have been shown to prevent leaky gut syndrome. Osmolytes are especially helpful during close-up dry periods when cattle are commonly placed on negative DCAD diets for the prevention of hypocalcemia.
Things to Consider	Vasodilators are typically not recommended due to their tendency to decrease blood flow to the gastrointestinal tract, which leads to leaky gut syndrome.	Electrolytes only help to maintain hydration and do not positively affect heat shock proteins or prevent leaky gut syndrome.	To achieve optimum responses, osmolytes should be added to diets at least 10 to 14 days prior to the onset of heat stress.

Our Nutritional Recommendations

Provimi recommends increasing energy and protein density of the ration to meet requirements when intake is diminished during heat stress, along with adding Promote® I.C.E.® into your feed strategy. Promote I.C.E. is a proprietary blend of key ingredients that includes an osmolyte and has been shown to help maintain milk production during heat stress. More importantly, cows fed Promote I.C.E. rebound better after the heat stress ends.

Promote I.C.E. should be added to the diet when nighttime temperatures stop dropping below 60° F and should be kept in the ration until summer is over or nighttime temperatures are consistently below 60° F.

For more information on heat abatement strategies and Provimi's nutritional expertise, please contact our team today.

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Promote® is a line of dependable feed additives that are designed to help animal producers enhance performance, uphold animal welfare, and better adapt for tomorrow's consumers.