







# Take the stress out of summer. Cool technology to weather temperature extremes.

Dairy cattle are healthiest and at optimal performance at 40-70°F heat index. Heat indexes above this range or extreme swings can affect the cow's ability to dissipate heat, suppress their immune system, decrease feed intake and reduce milk production.

For years, ADM has aggressively pursued nutritional solutions for reducing the performance slump caused by summer stress. The unique ingredients of Thermal Care<sup>™</sup> provide a research-tested solution for overcoming the negative effects of extreme temperatures on production and mitigate some of the long-term consequences on animal well-being and gut health. The pillars supporting this technology focus on mitigating the stressors that impact the circulatory, digestive, and immune systems. When paired with a proper diet and management, Thermal Care helps cows cope with high temperatures to be more comfortable and productive through the summer season.

# Performance Payback

Research results and field experience generally suggests the following responses during a heat challenge. For best results, start feeding Thermal Care before heat stress occurs. Production responses vary with the severity of stressors and other nutritional and management factors.

#### **Dairy Cattle**

- Feed intake increase of 1-3 lb/hd/day
- Better milk production response of 2-5 lb/hd/day
- Cows should recover body condition more rapidly
- Somatic cells may decline slightly with no other changes in milk components



## When does heat stress start?

**Humidity is the key.** The chart below, developed by the University of Arizona, helps you quickly determine the level of heat stress in cows. As you can see, the level of stress is a function of both relative humidity and temperature. For example, cows become severely stressed when the temperature reaches 90° and 90% relative humidity. Cows can be in mild stress even when the temperature is as low as 70° and can become stressed even before it feels uncomfortable for you.



# Thermal Care<sup>™</sup>

# Cool technology to weather temperature extremes.

# The research behind Thermal Care.

Research studies have reported that Thermal Care facilitates the animals' ability to cope with the stressors that lead to negative impacts on feed intake, milk production, body condition and growth.<sup>1,2</sup>

#### Decreased body temperature

In controlled thermal chamber trials, body temperatures were lowered 0.6°F in growing steers and 0.5°F in lactating Holstein cows fed Thermal Care compared to controls (Figure 1). These reductions in body temperature help ensure animals spend less time near upper critical temperatures at which feed intake and performance will be severely compromised.



#### Beef

 Cattle consuming Thermal Care gained more weight (0.27 lb/hd/day) while consuming less feed than control cattle (Figure 2).

## Dairy

- Figure 3 shows the lactation performance of Holsteins in university trials and a Florida field study. On the average, under conditions of high heat stress, cows fed Thermal Care consumed 2.2 lb more feed (dry matter basis) and produced 3.3 lb more milk compared to controls.
- In the University of Georgia study, Thermal Care also tended to increase body weight gain when compared with control cows (1.1 vs 0.6 lb/hd/week).

Consult with your ADM professional today to implement a heat abatement strategy to help minimize the performance slump caused by summer stress.







1. Boyd, et al. 2010. *J. Dairy Sci*. Vol. 91, E-Suppl.1. ADM D08301. 2. Skrzypek, et al. 2010. *J. Dairy Sci*. Vol. 93, E-Suppl. 1. ADM D09304.



