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MATRIX

Matrix and Heat Stress Observations in Two Central Texas Dairy Farms-Summer 2015

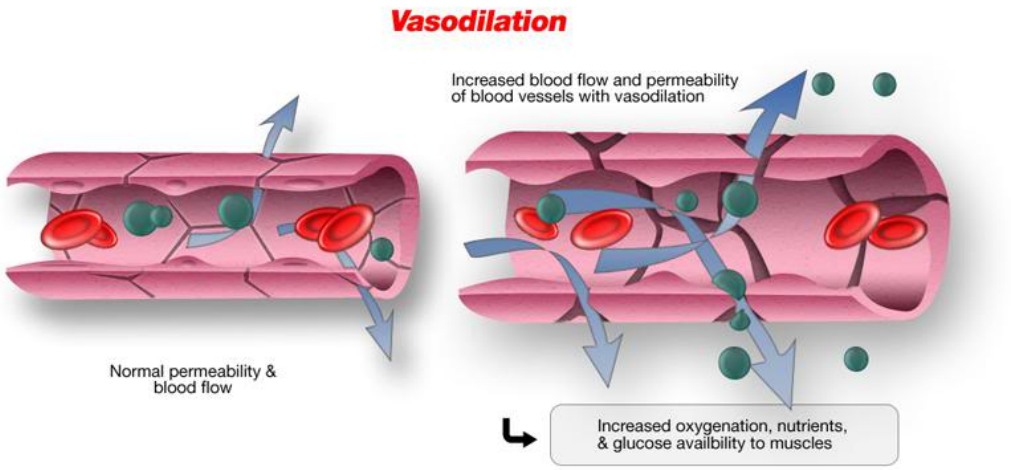
Dr. Jimmy Horner

Lactating Holstein cows in two herds in the Waco, Texas area were observed on July 14, 2015. The herds are located within a few miles of one another and both feed a total mixed ration with common forages and commodity ingredients. The significant difference between the rations fed at the two farms is Dairy A feeds 1 oz. of Matrix per head daily to the entire herd and Dairy B does not feed Matrix. Respiration rates were monitored on a typical hot summer day in central Texas. The ambient temperature was 98°F with 41% humidity and 9 mph wind. All cows observed were in shaded areas. The 28 observed cows at Dairy A (Matrix) averaged 82.1 respirations per minute while the 30 observed cows at Dairy B (no Matrix) averaged 103.2 respirations per minute (see table below). The range of respirations per minute at Dairy A was 56-104 while the range at Dairy B was 88-120. These observations indicate Matrix reduced respiration rates and associated heat load in lactating cows under these conditions by an average of 21.1 respirations per minute or by more than 20%. Although the cows fed Matrix still demonstrated what most would consider mild heat stress, the cows fed the ration without Matrix demonstrated severe heat stress.

Group	No.	Breaths/min	Level of Heat Stress
Dairy A, Matrix	28	82.1	Mild
Dairy B, no Matrix	30	103.2	Severe

Although this data represents observations from a very limited no. of cows and is only a one day snapshot of the degree of heat stress occurring in cows at these two dairy herds in July in central Texas, the magnitude of difference in respiration rates between the herds is dramatic at over 20% and indeed very promising regarding the use of Matrix in heat stress conditions. These observations also warrant further investigation into the potential benefits of feeding Matrix in heat stress conditions and evaluating not only respirations rates, but also rectal temperatures, feed intake and milk yield.

Matrix is a new generation all-natural feed additive which is comprised primarily of carefully selected highly active natural vasodilators and host-specific, beneficial bacterial strains as well as live yeast, enzymes and yucca. Matrix is the culmination of almost 30 years of research and experience in the area of natural vasodilators and their potential benefits in animal agriculture. The mechanism of action associated with viable vasodilating compounds in enhancing blood flow and thereby availability of essential nutrients at the tissue level and an accompanying increased evaporative heat loss should certainly assist in mitigation of heat stress in animals in theory (see figures below). Further study is certainly warranted in the subject area of impacting animal physiology and performance through natural means via use of products such as Matrix.



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