Heat Stress...
Don't Let It Ruin Your Ye

by ***Jimmy Horner***

Stress is continually imposed upon production animals to provide more meat and milk products. To maximize yield, it is imperative to keep animals as comfortable as possible and to maintain feed intake for conversion into meat and milk.

The effects of heat stress have proven to be a great hindrance to the efficiency and productivity of cattle, especially dairy cattle. Dairy cattle are more susceptible to heat stress because of their select inherited ability to ingest vast quantities of dry matter, thus producing greater metabolic heat from rumen fermentation as well as from the process of milk production. During periods of thermal stress, cows voluntarily reduce dry matter intake, thus limiting milk production. Reproduction as well as embryonic development and survival also suffers as a result of thermal stress.

Compared to other animals, cattle cannot dissipate their heat load very effectively. Cattle do not sweat effectively and rely on respiration to cool themselves. A compounding factor on top of climatic conditions is that the fermentation process within the rumen generates additional heat that cattle need to dissipate. Since cattle do not dissipate heat effectively, they accumulate a heat load during the day and dissipate heat at night when it is cooler. During extreme weather conditions with insufficient environmental cooling at night, cattle will accumulate heat that they cannot disperse.

According to Dr. Grant Dewell, veterinary diagnostic and production animal medicine professor at Iowa State University, heavy cattle cannot handle heat stress compared to lighter-weight cattle.

"Increased fat deposition prevents cattle from regulating their heat effectively," he says. "Solar radiation is a critical component that can lead to death loss from heat stress. Typically, proportionally more black hided cattle die during heat other hide colors. Sin on respiration as a m manage heat, respirat is important. Cattle tl severe respiratory dis in the feeding period decreased ability to r heat load."

During times of in stress, cattle feed inta off and cattle become heat stress increases, begin to slobber and rates will increase. Ev cattle will begin to gr In severe heat stress, be open-mouth breat a labored effort. Feed to monitor for heat st

rix®) that has proven
/e in mitigating the
t stress in cattle and
. There is no other
his available, and it's
ıral vasodilators and
:robials (DFM).

dilators

truly represents
next generation
ves. Not only does
animal's entire
circulatory systems
ral means, it is
:ial, resulting in
wth, milk yield,
nt feed intake,
tabolic efficiency,
portantly, a more
ealthy animal. Matrix
ghly concentrated
of isolated natural
(live and naturally
ost-specific strains
acteria, active
hly refined yucca
Aspergillus oryzae,
fighters and
ite control.

ntrated
t extracts

dustry's only all-
ilator feed additive
ecifically enhance
ıd nutrient uptake
atural vasodilators
ı the lining of blood
make them widen
ause of the widened
flows through
and provides
glucose and other
ients at the tissue or

on is one means that
ı use to lose body
ıaintain normal body
It helps the animal
ıt because of the
od flow to the body
elps transfer the
ıt to the skin surface.
and other cattle,
ion is accompanied
ed sweating rate,
urther cool the body.
emperature will, in
growth and muscle
growing animals,
fat deposition and
in finishing cattle,
component yield in

species specific, thereby greatly enhancing their activity in the animal, but also highly concentrated (240 billion CFU's per ounce) and uniquely delivered in an encapsulated form, which increases the actual intestinal uptake of the bacteria.

Competitively speaking, most microbial products on the market today do not contain live, viable, species-specific bacteria and are often completely inactivated after being consumed. For a product to be classified as a "competitive exclusion" culture by FDA (Food and Drug Administration), it must contain beneficial bacteria from the same species as the recipient animal which actually reach the animal's lower gut in order to displace or prevent the colonization of pathogenic bacteria.

Matrix and fescue toxicity issues

The other direct benefit with this product is its activity to lower the incidence of fescue toxicity. Light calf-weaning weights, lower gains, lower milk production and reproductive problems associated with fescue toxicity account for millions of dollars in losses to producers each year. Also referred to as "summer slumps," because symptoms usually occur in warmer months, fescue toxicity causes reduced weight gains, depressed feed intake, elevated respiration rates and reproductive failures. Consumption of fungus (endophyte) infected fescue results in the animal's inability to properly regulate body temperature due to vasoconstriction of peripheral blood vessels.

and nutrient uptake in heat stressed and high-production animals.

The research-proven ingredients in Matrix have been selected based on their ability to improve vasodilation and enhance blood flow and nutrient uptake in heat stressed and high-production animals. Improving blood flow by widening blood vessels allows improved blood flow in heat stressed (from endophyte infection) animals and, in turn, increases growth and muscle deposition in growing animals, intramuscular fat deposition and loin-eye area in finishing cattle. When combined with the DFMs and vasodilator actions of Matrix, cattle are better prepared to perform on fescue pastures. Matrix is a useful tool to help producers unlock the potential of their cattle grazing fescue pastures.

Low cost, big yields

What's really exciting about this new technology is its low cost to implement. It is fed to beef cattle at only 0.5 to 1 oz. per head/day and to dairy cows at 1 oz. to 2 oz. per head/day. Baby calves also benefit at only 0.5 oz. per head/day.

Regardless of the size or composition of your herd, lowering the negative effects caused by heat stress is critical to animal health and survivability. Make sure and look into this feed additive to help make your summer heat stress more manageable and productive. **HW**

Editor's note: *Jimmy Horner earned a Ph.D. in Ruminant Nutrition from Texas A&M University and an M.S. in Animal Science from Oklahoma State University and has been consulting and teaching animal nutrition for more than 30 years. Horner can be contacted at jhorner@protocoltech.net.*