



CEDAR GROVE VETERINARY SERVICE NEWSLETTER



JULY 2017

HEAT ABATEMENT STRATEGIES FOR THE SUMMER

Summer is already here. For many people that means beaches and vacations. However, for farmers, it is the start of the hardest time of the year for their dairy cattle. Experts estimate that heat stress in dairy cattle causes \$5-6 billion in lost milk production and decreased animal performance in the US each year. To make that more realistic to an individual farm, the average heat stress of a summer (34 days that exceed the THI threshold...more on that later) causes \$53.00 in lost income per cow per year. This

means that a 150-cow herd could lose \$7950 dollars over a summer solely due to heat stress.

Cows are more sensitive to increases in both heat and humidity due to the natural fermentation process occurring in their rumen. This is beneficial in the winter, but detrimental in the summer months. Researchers have used this knowledge to create the temperature-humidity index (THI) for cows to determine when cows would begin to show symptoms of heat stress. Formerly, it was believed that cows began to

DO YOU KNOW YOUR ANTIBIOTICS?

Resflor Gold

Use:

Bovine respiratory disease and pneumonia in **BEEF** and **NON-LACTATING COWS** due to:

- *Mannheimia hemolytica*
- *Pasteurella multocida*
- *Histophilus somni*
- *Mycoplasma bovis*

Control of fever associated with respiratory disease

Dose: 6cc per 100lbs body weight SQ once.

Do not inject more than 10ml per site

Special Notes:

-38-day meat withhold
-This product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows.

Temp °F	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
72	64	65	65	65	66	66	67	67	67	68	68	69	69	69	70	70	70	71	71
74	65	66	66	67	67	67	68	68	69	69	70	70	70	71	71	72	72	73	73
76	66	67	67	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75
78	67	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76
80	68	69	69	70	70	71	72	72	73	74	75	75	76	76	77	78	78	79	79
82	69	69	70	70	71	72	73	73	74	75	75	76	77	77	78	79	79	80	80
84	70	70	71	72	73	73	74	75	75	76	77	78	78	79	80	80	81	82	82
86	71	71	72	73	74	74	75	76	77	78	78	79	80	81	81	82	83	83	84
88	72	72	73	74	75	76	76	77	78	79	80	81	81	82	83	84	84	85	86
90	72	73	74	75	76	77	78	79	79	80	81	82	83	83	84	85	86	87	88
92	73	74	75	76	77	78	79	80	81	82	83	84	85	85	86	87	88	89	90
94	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
96	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93
98	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
100	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
102	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
104	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
106	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
108	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
110	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

- Stress threshold for lactating cows.
- Mild stress for lactating cows.
- Moderate stress for lactating cows.
- Severe stress, life threatening conditions for lactating cows.

Figure adapted from: <http://www.jherdairyfile.com/articles/3712/an-introduction-into-heat-stress-in-dairy-cows/>

experience mild heat stress at 72°F. However, the modern dairy cow with her increased production has led to new research that shows cows begin to show mild heat stress signs at 65°F. Cows experiencing heat stress show higher rectal temperatures, increased respiration rates, decreased feed intake, decreased milk production (volume and components), and other health problems (e.g., decreased reproductive efficiency).

Overall, there are seven strategies to consider when trying to curtail heat stress this summer:

1.) Shade: Shade reduces heat stress by decreasing exposure to solar radiation. Ideally, freestall barns should be orientated east to west to provide maximum shade. It should be noted that cows dissipate more heat via radiation to a night sky than in a freestall barn. Therefore, if possible, high producing cows should be allowed out to a pasture at night.

2.) Ventilation: A good ventilation system should

provide one complete air exchange per minute. This is usually done using fans. Fans should be mounted at an angle to blow over the backs of the cows as they lay in freestalls. Sidewalls should be opened and open ridge vents are ideal. Heat stress is even higher in the milking parlor holding areas and these areas should also have adequate coverage with fans.

3.) Drinking Water: Heat stress increase water intake in cows. Therefore, it is critical to offer plenty of fresh clean drinking water. Cows should also not have to walk more than 50 feet to get water. A rule of thumb is to provide two inches of linear water trough space per cow.

4.) Supplemental Cooling: The use of sprinklers is another strategy to cool cows. Sprinklers can lower air temps through misting the cow's skin. Sprinklers are even more effective when combined with fans.

5.) Feeding Routine: Heat stress is highest when temps are the highest. Therefore, feeding at that time of the day

leads to poor intakes and increases the rate of feed spoilage. If possible, it is best to shift your feeding schedule to cooler times of the day such as early morning or late evening.

6.) Ration Formulation: Heat stress results in decreased dry matter intake. In times of severe heat stress, it may be wise to increase the energy density of the ration without increasing the heat of fermentation. Adding bypass proteins in addition to inert fats can accomplish this goal. The ration potassium level should also be adjusted upward since potassium loss is high due to increased sweating. Always consult a nutritionist before making any changes.

7.) Stocking Density: In times of high heat stress overstocking makes heat stress worse. Therefore, consider reducing stocking densities to 100 percent and provide 30 inches of feed bunk space per cow to encourage dry matter intake.

Reminder: FDA Tetracycline Testing Pilot Program Begins July 1st

Starting July 1st, 1 out of every 15 milk tankers will be tested for tetracycline residues. The biggest concern is the use of tetracycline by foot trimmers since there is not established withdrawal period. Experts say that applying 2 grams or less of tetracycline per lesion for a maximum of two lesions per cow will not cause a violative residue in individual cows. Make sure to talk to your foot trimmer about this and we as a veterinary clinic will try to keep farmers updated as we hear about results of the program.

