

Summer Success Depends on Hydration

What is Heat Stress?

Heat stress occurs when the Temperature Humidity Index (THI) reaches levels high enough to overwhelm animals' adaptive mechanisms. (See Back) Under heat stress, cattle may experience elevated body temperature, oxidative stress, increased respiration rate, disrupted feed intake, decreased milk yields, acidosis, and reproductive issues.

Keep Cows Cool With Promote® I.C.E.® PLUS

Promote® I.C.E.® PLUS is a proprietary combination of key ingredients that helps cattle better regulate their body temperature during heat stress, keeping cattle cool from the inside out (Figure 1). Additionally, Promote® I.C.E.® PLUS contains plant based compounds that help maintain antioxidant status, supporting animal health.

Heat stress creates losses in animal productivity, which has been shown to cost the U.S. beef and dairy industries an estimated \$1.2 billion annually.¹

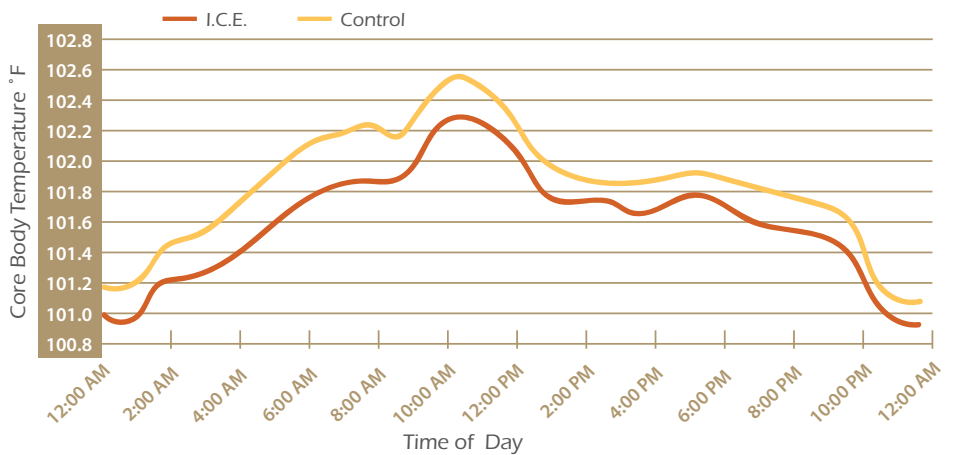
Promote® I.C.E.® PLUS Premix
Designed for production of grain mixes and supplements in the feed mill.

Prod# F111200253

Can be used in dairy & beef rations

FIGURE 1
EFFECT OF PROMOTE® I.C.E.® ON BODY TEMPERATURE OF COWS

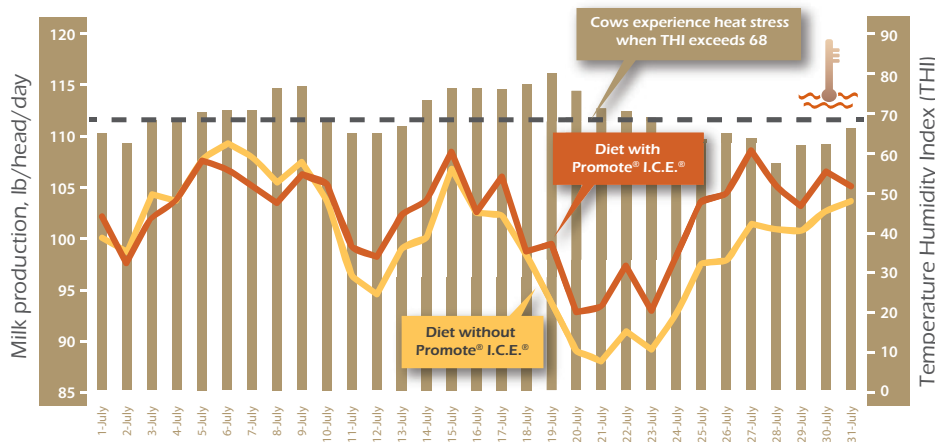
The elements of Promote® I.C.E.® work at the cellular level to help cattle better regulate their body temperature during heat stress.



Source: Provimi Proprietary Data. Brazil I.C.E. Trial (2011).

FIGURE 2
MILK PRODUCTION FOR DAIRY COWS FED DIETS WITH & WITHOUT PROMOTE® I.C.E.®

It is estimated that, as the THI rises above 68, cows begin experiencing heat stress and milk production drops within 48 hours.



Source: Provimi Proprietary Data. Indiana I.C.E. Trial (2013).



¹St. Pierre, et al., Economic losses from heat stress by US livestock industries. (2003) Journal of Dairy Science, 86 (SUPPL. 1), pp. E52-E77

Promote® I.C.E.® PLUS should be added to the diet before conditions of heat stress exist and continued through the hot season until nighttime temperatures are consistently below the heat stress threshold.

		Temperature Humidity Index ²																				
		Heat Stress Threshold	Mild Heat Stress	Moderate Heat Stress	Severe Heat Stress	Extreme Heat Stress																
TEMP		% RELATIVE HUMIDITY																				
°F	°C	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
72	22.0	64	65	65	65	66	66	67	67	67	68	68	69	69	69	70	70	70	71	71	72	72
73	23.0	65	65	66	66	66	67	67	68	68	68	69	69	70	70	71	71	72	72	73	73	74
74	23.5	65	66	66	67	67	67	68	68	69	69	70	70	70	71	71	72	72	73	73	74	74
75	24.0	66	66	67	67	68	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75
76	24.5	66	67	67	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76
77	25.0	67	67	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77
78	25.5	67	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77
79	26.0	67	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78
80	26.5	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78
81	27.0	68	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79
82	28.0	69	69	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79
83	28.5	69	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
84	29.0	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
85	29.5	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80
86	30.0	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81
87	30.5	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81
88	31.0	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82
89	31.5	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82
90	32.0	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82
91	33.0	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83
92	33.5	73	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83
93	34.0	74	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84
94	34.5	74	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84
95	35.0	75	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85
96	35.5	75	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85
97	36.0	76	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86
98	36.5	76	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86
99	37.0	76	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87
100	38.0	77	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87
101	38.5	77	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87
102	39.0	78	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88
103	39.5	78	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88
104	40.0	79	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89
105	40.5	79	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89
106	41.0	80	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90
107	41.5	80	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90
108	42.0	81	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91
109	43.0	81	82	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91
110	43.5	81	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92
111	44.0	82	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92
112	44.5	82	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93
113	45.0	83	84	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93
114	45.5	83	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94
115	46.0	84	85	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94
116	46.5	84	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95
117	47.0	85	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95
118	48.0	85	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96
119	48.5	85	87	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96	97	97
120	49.0	86	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96	97	97

²Chart adapted from Collier, et al., A re-evaluation of the impact of temperature humidity index (THI) and black globe temperature humidity index (BGHI) on milk production in high producing dairy cows. (2009).

Contact your local representative to learn more about Promote® I.C.E.® PLUS for heat stress mitigation.



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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.