

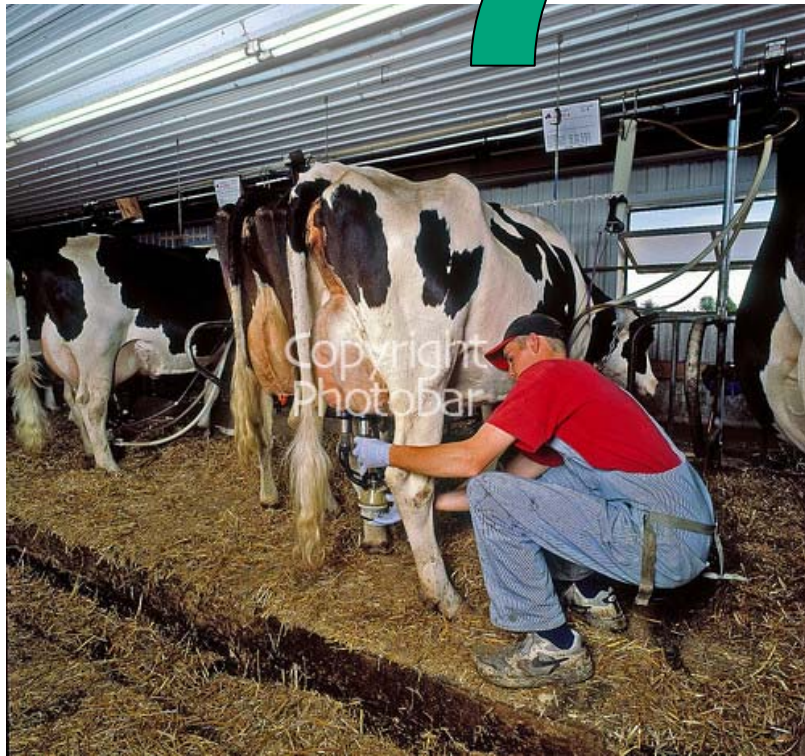
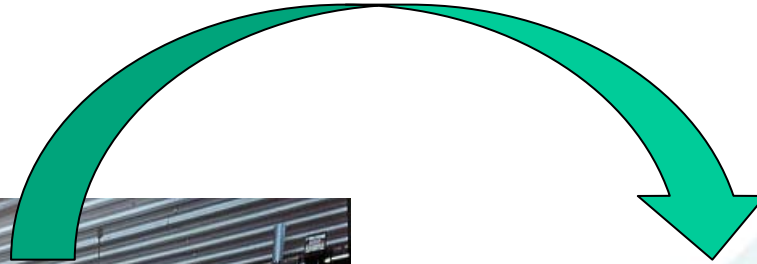
Cows can't talk, but we can listen
(to their rumination)



Doron Bar, Dr.med.vet., PhD
Chief Scientist
SCR Engineers, Israel



The problem of dairy size and modern dairy farming

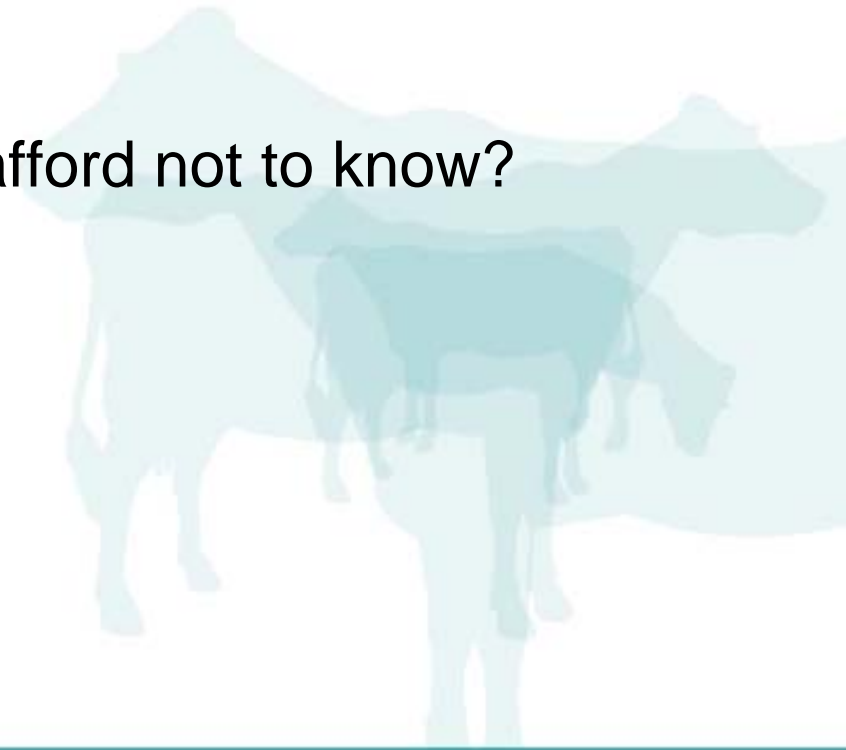


Objective Data- A Key to Management



If you can't measure it, you can't manage it...

Can you afford not to know?



The HR-Tag™



- Unique cow motion sensor (three-dimensional acceleration meter).
- Built-in microphone records and analyzes rumination.
- Filters head movements.
- Easy and secure attachment.
- Separate data storage in 2 hour intervals.
- 8 year lifetime with 6 year graduated warranty.

Heatime® - Activity Analysis Operating Principles

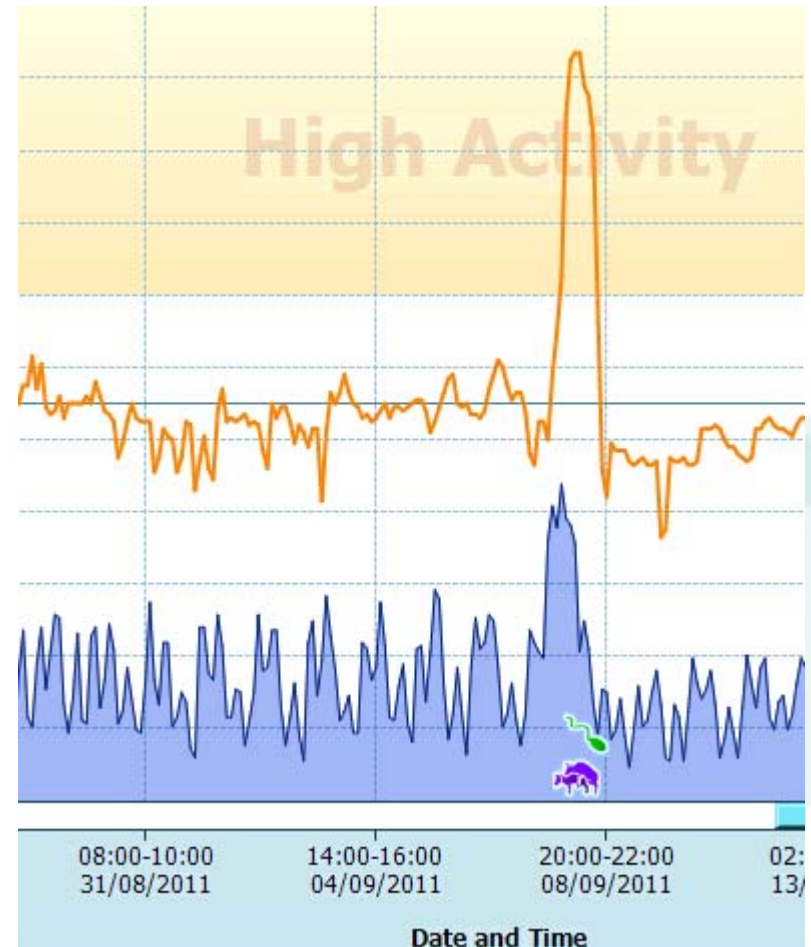
Clear activity peak indication using STD (standard deviation) based algorithm.

Heats determined through the analysis of a minimum of FOUR 2 hour segments.

Variable viewing resolution.

Raw data viewing option.

Graph peak correlates with standing heat.



Heatime® vs. TAI – University of Guelph

Table 1: Cox Proportional Hazards model stratified by herd

Herd	Bred	Pen	N ¹	% ²	Median time to pregnancy (days) and 95% CI	P-value
A	Once	AHD	313	69	151 (124 - 189)	0.52
		TAI	495	49	136 (114 - 162)	
B	Twice	AHD	240	63	119 (105 - 139)	0.02
		TAI	389	72	146 (125 - 174)	
C	Twice	AHD	249	61	99 (87 - 122)	0.08
		TAI	299	55	124 (108 - 147)	

¹Number of breedings within each pen

²Proportion of AI to the assigned protocol

Heatime® detects “real” heats and recommends the correct timing for insemination

University of Wisconsin

- For the 42 cows included in the analysis, 26% (11/42) underwent luteal regression but did not ovulate (2 were detected in estrus by Heatime; HDR=18%), whereas 74% (31/42) regressed their CL and ovulated (28 were detected in estrus by Heatime; HDR=90%).
- We conclude that the Heatime system determined the correct timing of AI for most of the cows that displayed estrus and that treatment with GnRH at the time of AI determined by the Heatime system did not affect fertility in lactating dairy cows.

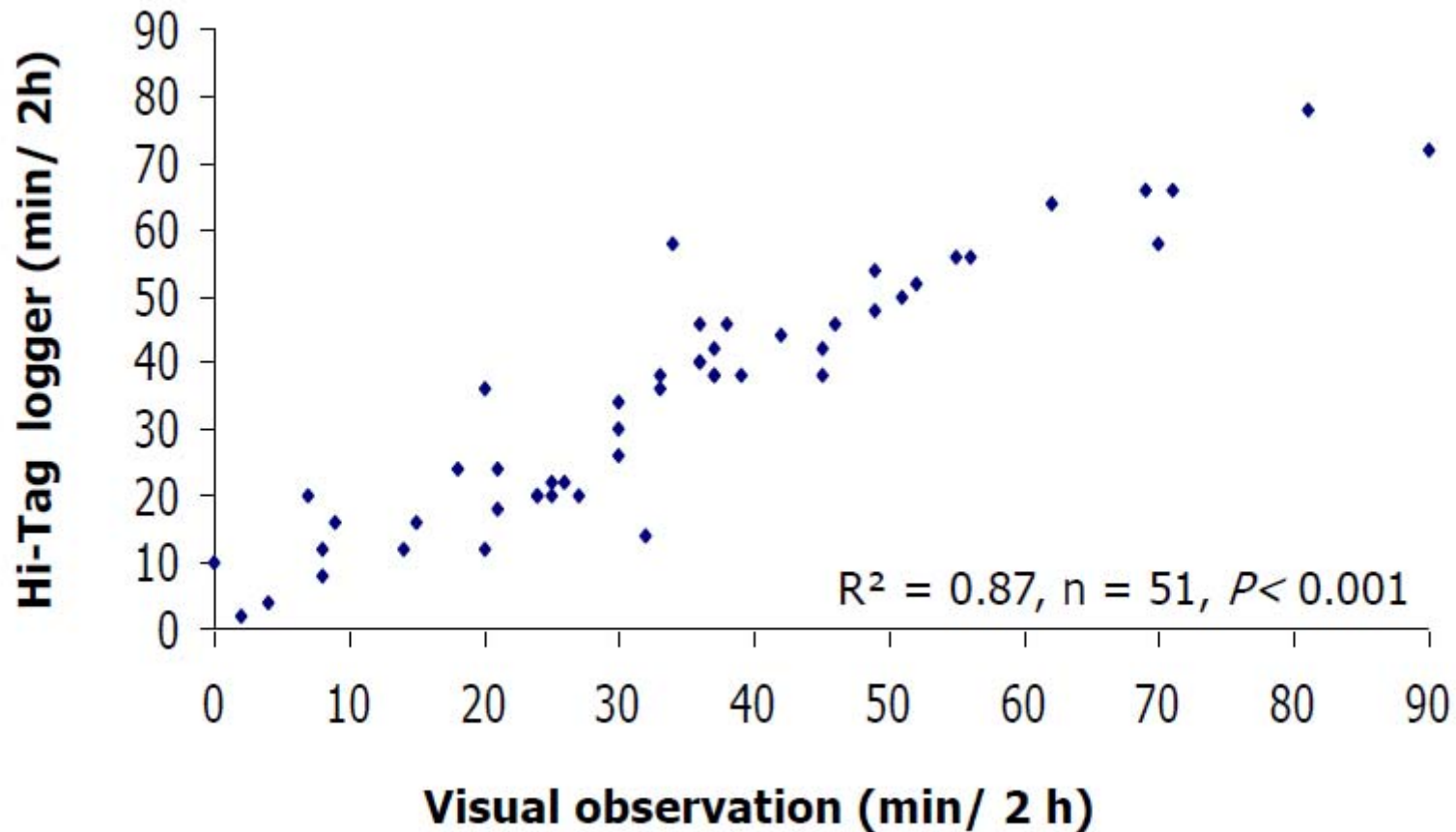
Heatime® With Rumination Monitoring

The Only Comprehensive Cow Status Monitoring Solution in the Market Today



HR Tags- Heatime® With Ruminant Monitoring

It Works!!!



HR Tags- Heatime® With Ruminant Monitoring

Changes in Ruminant Time on Day of Specific Events

Parameter	Dry period		Calving	Heat	Trim Date	Heat stress	mastitis	
	Dry	Close-up						
# cows or # events	75	72	75	199	98	671	45	
Change in ruminant	-43	-66	-255	-75	-39	-20	-63	
SE	1.93	2.50	10.4	6.19	8.77	3.40	12.9	
P	For all parameters, P<0.0001							

*Value represents change in ruminant (LSM), in comparison to the standard lactation value of **478** minutes/day

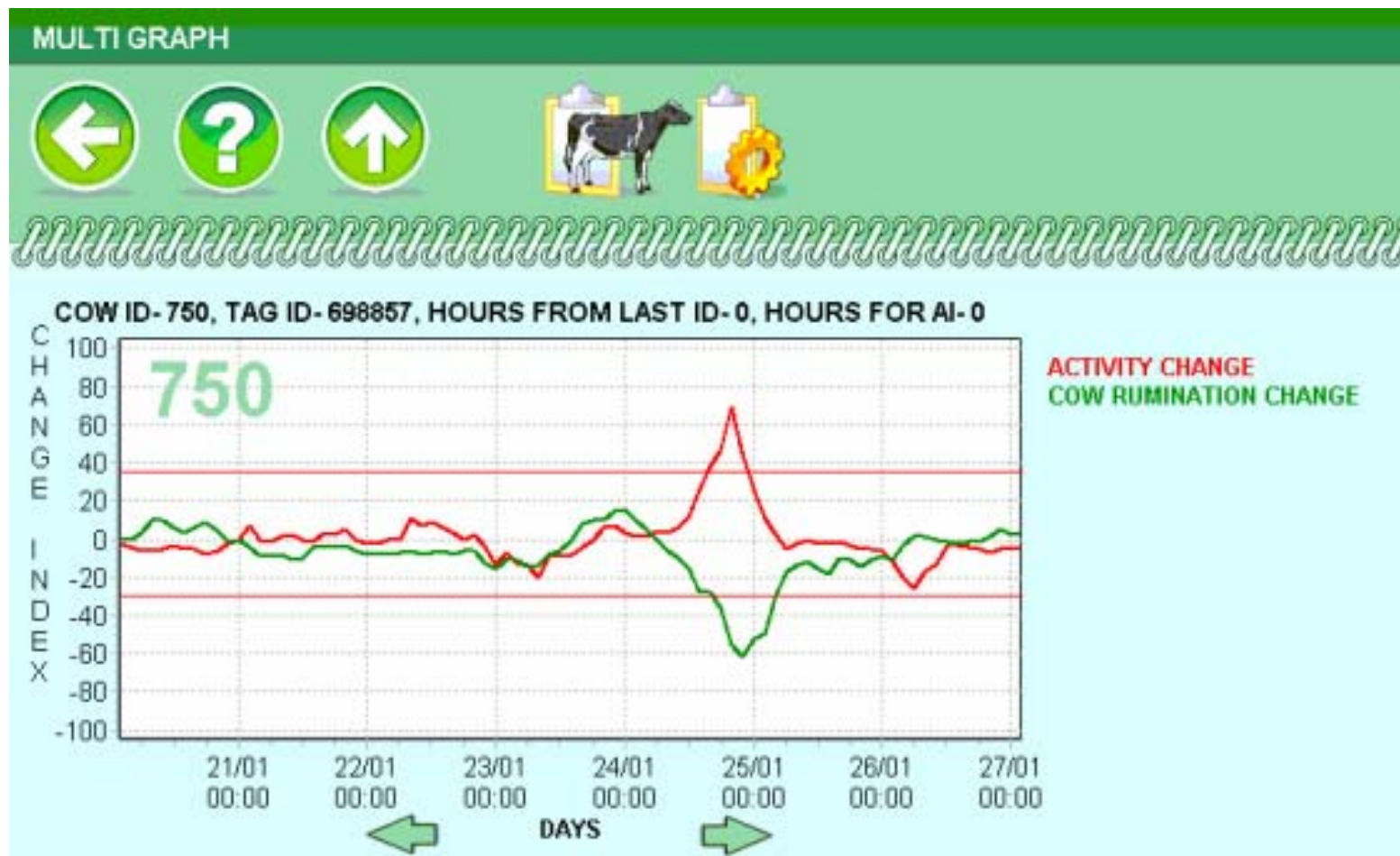
HR Tags- Heatime® With Ruminant Monitoring

Feeding rate decreased in both treatments by 10% after regrouping. Ruminant times also decreased by approximately 9% in both treatments...No changes were observed in daily lying time after regrouping in either treatment...



HR Tags- Heatime® With Ruminations Monitoring

Additional confirmation of a cow in heat.



HR Tags- Heatime® With Ruminant Monitoring

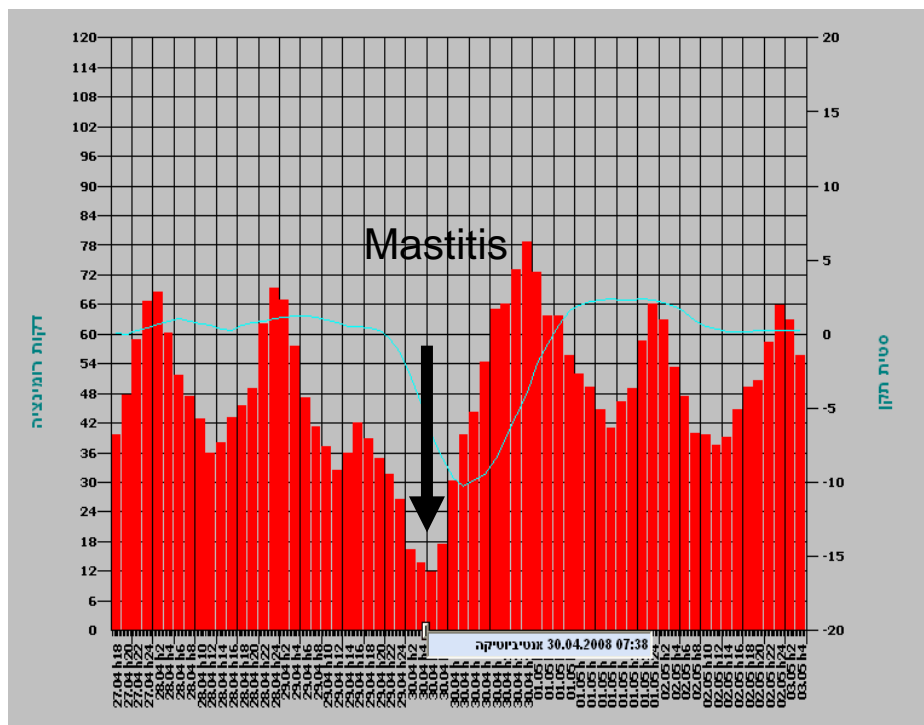
The results of the present study provide a new insight in which rumination time plays a pivotal role in the negative effect of heat stress on DMI and, consequently, on milk production.



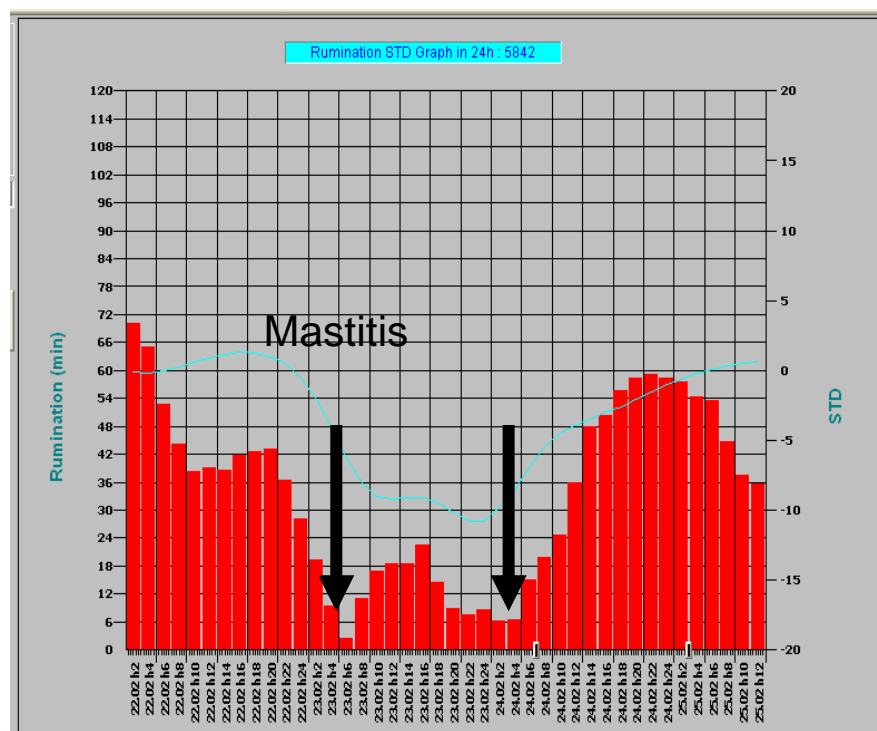
HR Tags- Heatime® With Ruminant Monitoring

Effective monitoring of veterinarian treatment effectiveness.

Effective Treatment

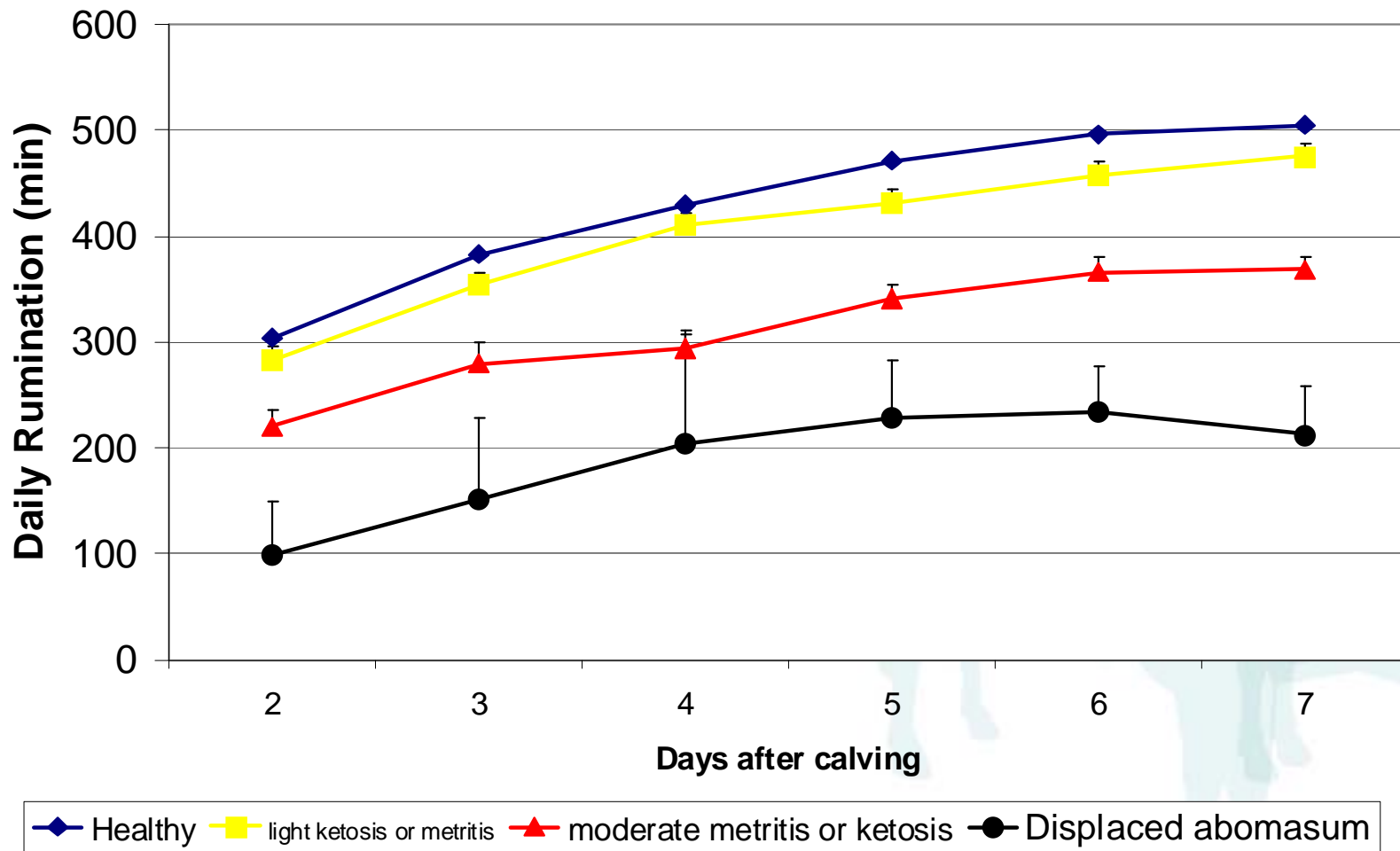


Ineffective Treatment



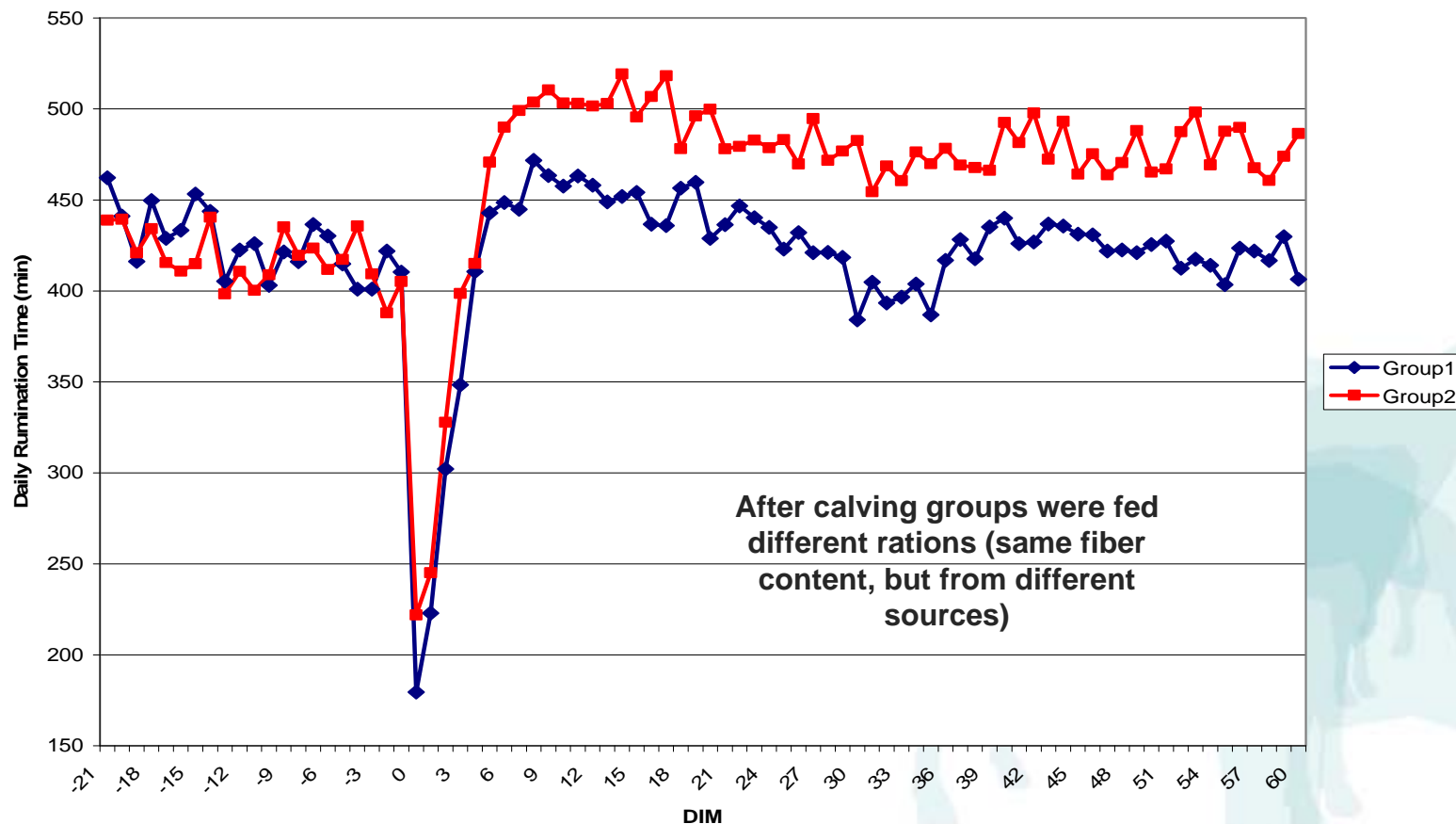
HR Tags- Heatime® With Ruminations Monitoring

Post partum monitoring.



HR Tags- Heatime® With Ruminant Monitoring

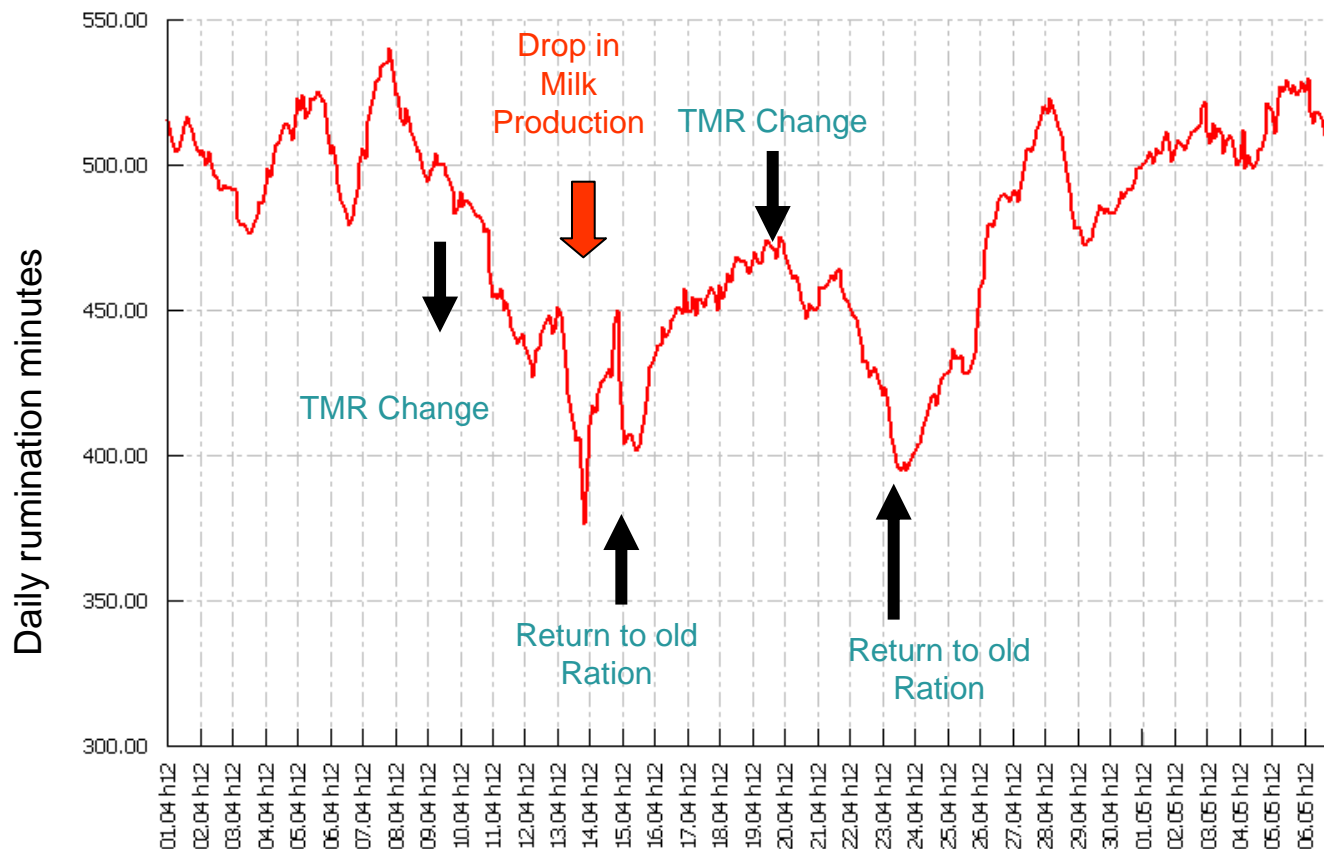
Rumination sensitivity to nutritional changes.



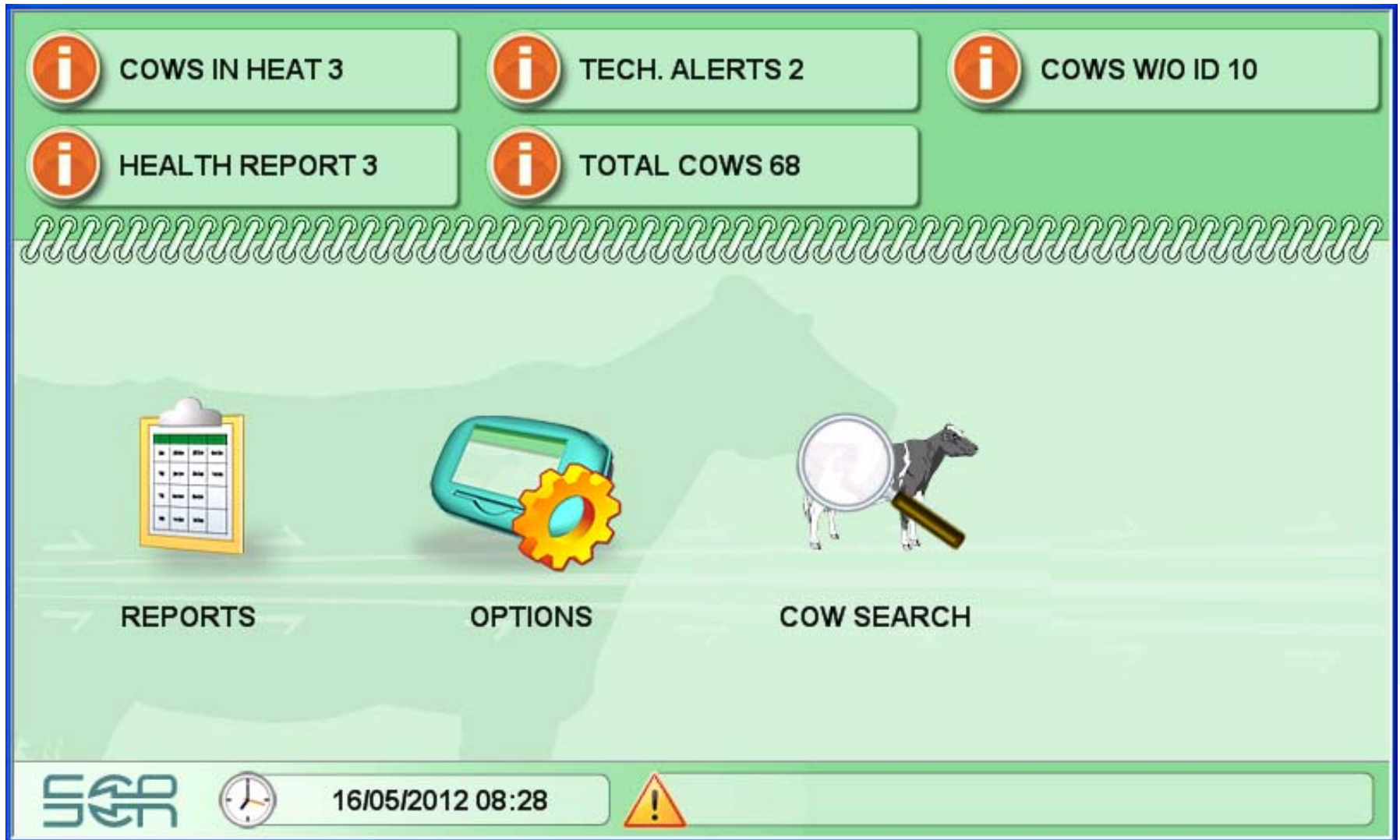
HR Tags- Heatime® With Ruminant Monitoring

Rumination sensitivity to nutritional changes.

Herd Average Daily Rumination



Task oriented User Interface



Summary

- Technology enables the dairy farmer to “feel the pulse” of every cow in the dairy 24/7, independent of herd size
- Rumination is an ideal “wellbeing” indicator because it is the sum of what and how much the cow has eaten, and how well she could rest.