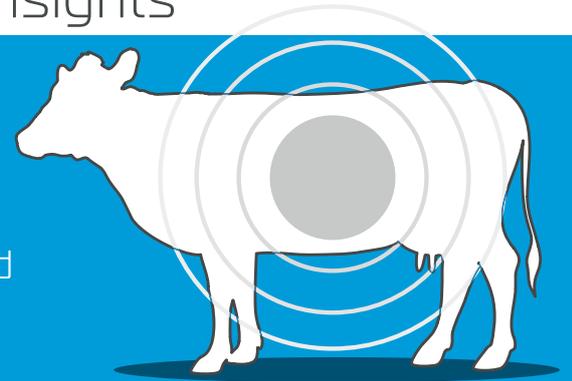


Another Sensible Farm Management Solution, based on AfiMilk's Milk Insights

Sub-Acute Rumen Acidosis (SARA):
detection and making timely feeding adjustments

The only monitoring tool available for balancing and optimizing the rumen environment



Improves herd performance

The costs associated with SARA, in the North American dairy industry, are estimated at \$.5 - 1 billion annually. One SARA event costs a minimum of (US) \$340/ cow / lactation. As a result, a 100-head herd using AfiLab for early awareness and preemptive care may expect to save between \$6,460 and \$8,840 annually. This does not include the savings from preventing complex metabolic events such as laminitis/ lameness (\$100-300 /case) and infectious issues such as peritonitis and liver abscesses. Loss of income caused by SARA is commonly related to reduced milk production, decreased efficiency of production, increased involuntary culling and death rate, which prevents farmers from extracting the herd's genetic potential.

By applying knowledge gained from Afimilk's research, along with models built into AfiFarm software, AfiLab equips herd managers/health supervisors with a special set of tools. These tools assist in decision-making, prevent rumen issues and improve healthcare. Additionally, they minimize losses caused by nutritional imbalances and SARA.

The challenge

To prevent abrupt management changes, farm managers should employ reliable and constant feed monitoring. In the absence of prompt relevant adjustments, SARA will often cause secondary effects such as laminitis and clinical acidosis in some animals, with or without milk fat depression syndrome in the herd.

Factors impeding detection of SARA

1. Absence of specific clinical signs enforce measurements of rumen fluid pH for definite diagnosis of acidosis.
2. Representing reliable measurements requires a rather invasive procedure called rumenocentesis (obtaining fresh rumen fluid, through the flank, using a designated needle).
3. Rumenocentesis is not a practical procedure that can routinely/frequently be applied on farms, to a large number of animals, at different times.
4. Direct rumen fluid pH testing is costly, requires manual labor with professional skills and impairs animal welfare.
5. There is no definite time during the day to effectively measure rumen fluid pH. Each cow/herd has different metabolic patterns that are influenced by feeding and farm management.

Current, on farm, solutions

Attempts to assess herd's metabolic status according to bulk tank milk components data or feed stuff samples are not sensitive enough to represent specific group or affected individual animals. I.e. fail to locate the problem in order to effectively fix it.

Dairy farm managers usually maintain standard herd health procedures based on visual observation of postpartum animals, inspection of behavior and production parameter graphs or daily monitoring of rectal temperature for some time after calving. These actions, while valuable, provide a limited view of an animal's or herd's metabolic status, and frequently result in insufficient detection and care of SARA

AfiLab, first-in-market automatic SARA detection solution

AfiLab offers the advantage of combining highly specific and sensitive parameters (milk fat percentage values and trends) related to SARA with the capability for automatic, continuous monitoring.

This enables updated, ongoing control during lactation for early detection and prompt healthcare to a population of affected cows in contrast to diagnosis based on nonspecific measurements such as milk yield, body temperature, activity, eating and ruminating behavior.

How does AfiLab work?

AfiLab is a photoelectric sensor that measures milk components (fat, protein, lactose and blood) for each cow, during every milking. Detecting SARA is based on daily analysis of fat percentage values and trends, per AfiLab measurements. The outcome: a daily dot graph and "traffic light" to visualize and alert users to groups of cows that need feeding adaptations to deal with SARA. With AfiFarm dairy farm management software, farmers or herd managers can also generate a real-time list of individual cows requiring treatment for acidosis according to farm protocol.

Summary

Continuous automatic monitoring of milk component data enables dairy farmers to minimize abrupt feed management changes, and effectively identify cows needing healthcare. SARA is common on dairy farms due to frequent management and nutrition changes. Any day in early and mid-lactation, 19% to 26% of the herd is affected by SARA, in different times and for varying durations.

AfiLab, which measures fat and protein percentage, every milking and monitors feed changes of the last hours, presents the first practical, reliable market solution for maintaining excellent herd health and improved animal well-being. This enhances performance, thus increasing revenues.

Nutrition Monitoring											
Unbalanced Feeding Ration											
Low Fat		Fat Decrease		Protein Decrease		SARA Suspicion - Day		SARA Suspicion - Session			
Grp.	Number of cows	DIM	Daily Yield	Daily Fat(%)	Daily Fat Deviation(%)	Accumulative Fat Change(%)	Daily Protein(%)	Daily Protein Deviation(%)	Accumulative Protein Change(%)	% of cows with daily low fat	Daily Fat/Protein Ratio
1	103	77	33.96	3.31	-9.52	-11.08	3.39	-4.21	-1.86	0.00	0.98
2	119	296	31.64	3.76	-6.26	-7.19	3.48	-3.76	-0.95	0.00	1.08
3	111	145	42.45	3.37	-6.08	-7.25	3.34	-3.75	-0.83	0.90	1.01
4	109	92	48.44	3.27	-6.56	-7.87	3.29	-3.21	-0.22	0.92	0.99
5	83	214	41.97	3.57	-6.47	-7.64	3.37	-3.94	-0.95	0.00	1.06
60	84	326	33.29	3.69	-6.24	-7.53	3.42	-3.88	-1.18	1.19	1.08
Avg	--	192	--	--	--	--	--	--	--	--	--

