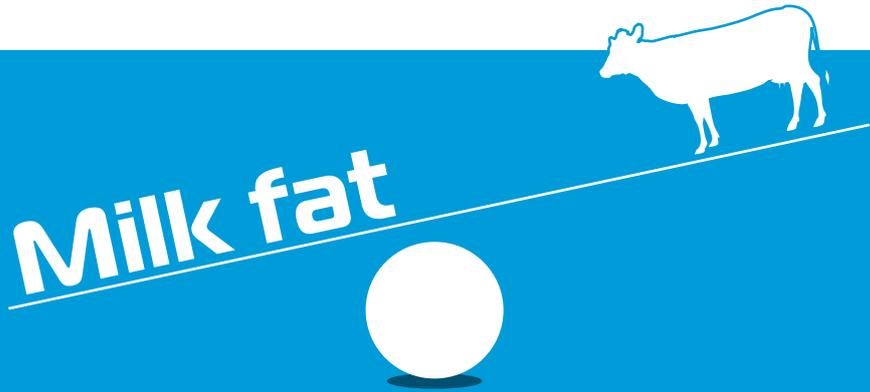


Ketosis: Early detection and treatment

The practical solution for
optimizing herd energy
balance status



Milk fat

Improved herd performance

One ketosis event costs a minimum of \$145 per case. As a result, a farm with a 100-head herd using AfiLab for early diagnosis and preemptive treatment may expect to save between \$3,600 and \$7,200 annually. This does not include the savings from preventing complex events such as displaced abomasum (\$340/case) and infectious diseases such as metritis (\$350/case). Loss of income caused by ketosis is most commonly related to reduced persistency of lactation, poor fertility and high culling rates, impairing the farmers ability to reach his full herd's potential.

By applying the 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 for improved decision-making to prevent and treat energy imbalances in the herd. These tools serve to minimize the loss caused by negative energy balance and ketosis.

The challenge

At the onset of lactation, dairy cows cannot consume as much energy as their state requires, so they must compensate by excessive mobilizing of body fat. This fat mobilization indicates a negative energy balance, which, in the absence of proper treatment, often deteriorates into ketosis.

A number of factors impair accurate detection of negative energy balance and ketosis:

1. Ketone levels in different body fluids increase at different times, most often up to two days before or after the rise in the milk fat-to-protein ratio.
2. There is no definite time during the day to effectively measure ketones. Each cow/herd has different metabolic patterns that are influenced by feeding and farm management.
3. Direct ketone testing is costly, requires manual labor and produces additional stress for postpartum animals.

Current solutions

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

AfiLab, Afimilk's first-in-market automatic ketosis detection solution

The advantage of AfiLab is that it combines **highly specific and sensitive parameters** (milk fat-to-protein ratio) related to ketosis together with the capability for **automatic**, continuous monitoring to enable updated, ongoing control after calving for early detection and prompt treatment of ketotic cows.

This stands in contrast to diagnoses based on nonspecific measurements such as milk yield, body temperature, activity habits and eating behavior, which often show high sensitivity but very low specificity.

How does AfiLab work?

AfiLab is a photoelectric sensor that measures milk components (fat, protein, lactose and blood) in every pulse of milk, for each cow, during every milking.

Detection of ketosis is based on daily analysis of fat-to-protein ratio values, per AfiLab's measurements. The outcome: a daily list of cows (5 to 60 days in milk) to be treated for ketosis. Using AfiFarm dairy management software, farmers or herd managers can generate a real-time list of cows requiring treatment, according to farm's protocol.

Summary

Prolonged post-calving periods in which the fat-to-protein ratio is above normal indicates an excessive body fat mobilization rate and severe negative energy balance for individual animals or groups of cows.

The manner in which cows go through their transition period influences production, fertility and survival in subsequent lactation.

As a result of the high-energy requirements involved in producing milk, many cows (25% to 50% of the herd) are affected by ketosis at different times and for varying durations after calving.

Using AfiLab to measure and monitor the daily fat-to-protein ratio presents the first practical, reliable market solution for optimized herd health, improved animal well-being and improved revenues.

