

Introducing ...



# KetoMonitor™

Measure Ketosis Prevalence in Your Herd

## A convenient, cost-effective way to monitor ketosis using monthly DHI test-day milk samples.

*Developed by UW-Madison Department of Dairy Science and School of Veterinary Medicine*

*Brought to you exclusively by AgSource*

### Is Ketosis Robbing You of Profits?

Research shows that ketosis (clinical and subclinical) affects 40 to 60% of dairy cows at an average cost of \$289 per case. Cows with ketosis produce less milk, are less likely to conceive at first service, are more likely to develop a displaced abomasum, and are more likely to be culled from the herd. Ketosis is a costly disease, but it can be managed if monitored.



Most ketosis detection involves testing individual fresh cows weekly using a blood sample and a Precision Xtra® meter. While milk fat to protein ratios have been used to indicate ketosis problems at the herd level, they are only weakly correlated to blood beta-hydroxybutyrate (BHBA) concentrations on an individual cow basis. The KetoMonitor is unique because it is based on a set of regression models that predict blood BHBA concentration using a DHI milk sample, component data and individual DHI cow data. KetoMonitor estimates ketosis prevalence in the herd on the day of milk test with a high degree of accuracy (91%).

### Onset of Ketosis Differs

Ketosis onset is most common between five and nine days in milk (DIM) and incidence is greater in cows than in first-calf heifers. Given these differences, models were developed specifically for both first-calf heifers and cows. Research and preliminary sampling validated that factors affecting the onset of ketosis also differ among dairy breeds. As a result, a separate KetoMonitor model is currently being developed specifically for Jerseys, with expected completion in May, 2015.

### The KetoMonitor Report:

- Estimates herd ketosis prevalence on the day of milk test
- Guides management and nutrition decisions
- Alerts you when blood testing protocols should be employed
- Flags changes that have had an impact on transition cow health

The ketosis prevalence reported is a snapshot taken on test day. Typically, the incidence, or the actual number of fresh cows with ketosis, is 2 to 2.5 times the prevalence levels found on the report.

### A Multi-Tool Approach to Managing Ketosis

KetoMonitor can be used to evaluate monthly ketosis prevalence and can identify when blood testing should be done. When incidence is greater than 15%, research shows the expense of blood testing every fresh cow twice is justified. However, when herd incidence levels fall below 15%, time and money spent on blood testing can be saved. If herd incidence levels exceed 25%, it is most economical to consider blanket treatment. The economics and practicality of blood testing are different across farms, but the KetoMonitor can play a valuable role in any detection protocol by providing monthly prevalence indicators. The KetoMonitor report tracks levels over a period of 12 months, allowing producers to recognize the impact of seasonal, forage and nutrition, and management changes. Combined with the Transition Cow Index® from the AgSource Fresh Cow Summary, it provides a comprehensive means to monitor and manage transition cows.



DEPARTMENT OF  
**DAIRY SCIENCE**  
University of Wisconsin-Madison



**AgSource**  
**Cooperative Services**  
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School of  
**Veterinary Medicine**  
UNIVERSITY OF WISCONSIN-MADISON

DEC 2014


**KetoMonitor**  
 Measure Ketosis Prevalence in Your Herd

 Herd Code 35999909  
 Test Date 12/30/2014  
 Name MYAGSOURCE DEMO FARM

Ketosis (elevated blood beta-hydroxybutyric acid, or BHBA) is an important fresh cow problem. KetoMonitor analyzes milk samples collected on test day from cows 5 to 20 days in milk for ketones. The milk ketone results and other cow data are combined to predict the cow's blood BHBA. Cows with predicted blood BHBA  $\geq 1.2$  mmol/L are classified as ketotic.

**A Ketosis Prevalences Using 1 Test Day**
**Overall (for cows 5 to 20 DIM)**

Group	Cows Tested	Predicted Ketosis	Ketosis Prevalence	Target
1st Lact	12	0	0%	<5%
2nd+ Lact	15	3	20%	<15%
All Lactations	27	3	11%	<10%

Cows fresh  $\geq 5$  days since last test: 74

96% of fresh cows were tested 5 - 20 DIM

**Early Fresh (for cows 5 to 11 DIM)**

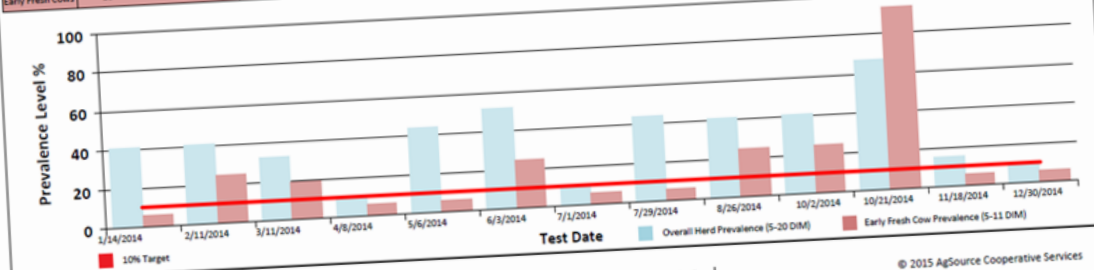
Group	Cows Tested	Predicted Ketosis	Ketosis Prevalence	Target
1st Lact	8	0	0%	<5%
2nd+ Lact	8	1	13%	<15%
All Lactations	16	1	6%	<10%

22% of fresh cows were tested 5 - 11 DIM

**B Overall Ketosis Prevalences (5 to 20 DIM) by Lactation**

**C Overall Ketosis Prevalence (5 to 20 DIM) and Early Fresh Ketosis Prevalence (5 to 11 DIM)**

	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14
Overall Cows	27	27	27	27	27	27	27	27	27	27	27	27
Early Fresh Cows	16	16	16	16	16	16	16	16	16	16	16	16


 Developed by T.L. Chandler, G.R. Oetzel and H.M. White, Dept. of Dairy Science and School of Veterinary Medicine, University of Wisconsin - Madison  
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## The KetoMonitor Report

The KetoMonitor report is quick and easy to read. As mentioned, ketosis behaves differently by age and breed, so prevalence thresholds differ for first calf heifers (<5%), cows (<15%) and overall (<10%), therefore, KetoMonitor charts and graphs the information for both age groups and the herd's overall prevalences separately. In addition, graphs illustrate current test-day information and compare it to the previous 12 months to help spot trends.

KetoMonitor is not intended to identify individual cows for treatment, however the model is remarkably strong for cows tested during the early fresh period (5 to 11 DIM). Cows predicted to have ketosis within that range likely need immediate attention and are listed on the back side of the report along with their pen, lactation number, DIM, days dry and age at first calving, if available.

The KetoMonitor report recognizes different herd sizes. Herds with, on average, more the 20 cows freshening each month will be summarized using fresh cows for a single test day. Herds freshening, on average, 10-20 cows per month will use cows fresh reported spanning

two test days, and herds with less than 10 cows fresh each month will be summarized using fresh cows reported spanning three test days.

Similar to the milk pregnancy and Johne's report, the KetoMonitor report is mailed separately from the test day report package.

## Summary

Ketosis is a costly, but manageable disease. KetoMonitor provides an effective way to monitor herd level prevalence. It offers a new approach to herd level testing and can be used in conjunction with blood testing. KetoMonitor provides an economical option for farms that don't always need to do blood testing, or don't have the labor to do blood testing.

## How Do I Enroll on KetoMonitor?

Contact your local DHI manager or call AgSource Customer Service at **800-236-4995** to enroll. AgSource members who access their DHI information and reports online via MyAgSource™ will find the KetoMonitor report included at no additional charge.


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