

New Ketosis Testing Service From DHI

Dairy producers and their advisors understand the importance of a successful transition period and early lactation. However, Ketosis continues to be a common problem on many farms.

Studies have estimated the incidence rate of subclinical Ketosis to be in the 30-40% range, and as high as 60-80% in some herds. Subclinical Ketosis results in lower milk production, higher risk of mastitis and metabolic diseases as well as a negative impact on reproduction, all adding up to significant cost.

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For that reason, some herds will monitor the level of Ketosis with the use of on farm tests. The new milk test from DHI now provides another testing option to help monitor the level of subclinical Ketosis in the herd.

The Ketoscreen test uses the regularly collected DHI samples and measures the level of beta-hydroxybutyrate (BHB), a ketone body, which when found in high level is an indication of the risk for Ketosis. Results from the DHI milk test have been shown to correlate well with on farm BHB tests.

As the name implies, the Ketoscreen service is meant to be a herd screening tool that provides an overview and trend of the Ketosis status and risk in the herd. Results can be used to help assess and monitor the dry and early lactation periods, with a focus on prevention and reduction of Ketosis. Without regular measuring, it is impossible to assess where your herd is at and difficult to make improvements.

According to Richard Cantin, Manager of Customer Service for DHI, convenience and affordability will be a key selling point of this new service. "Collecting a blood, urine or milk sample for on farm Ketosis testing is time consuming and inconvenient, which means it often doesn't get done. The fact that the DHI sample can now be used makes it incredibly convenient." He adds, "at 10 cents per sample, Ketoscreen is a very inexpensive way to keep



The Ketoscreen test uses the routine DHI samples through the high speed automated lines, therefore making the service convenient and inexpensive.

an eye on your overall subclinical Ketosis level. That value is hard to beat."

The service is available from DHI starting December 1. For more information, talk to your local DHI representative or contact DHI at 1-800-549-4373.

Subclinical Ketosis Has Hidden Costs

By Todd Duffield, Department of Population Medicine, Ontario Veterinary College, University of Guelph, Ontario, Canada

Ketosis is underrecognized on most farms. It has two forms; clinical (observed) and subclinical (unobserved). However, regardless of category, excess concentrations of ketones (also called hyperketonemia) in early lactation hurts cow health, milk production, and breeding.

Subclinical ketosis is created by an excessive demand for nutrients by the mammary gland to produce high quantities of milk, coupled with an inadequate feed intake to meet that demand. This situation creates a negative energy balance, and the cow responds by mobilizing body fat stores (nonesterified fatty acids or NEFAs). These NEFAs are transported to the liver where they are either used for energy, converted to ketones (beta-hydroxybutyrate, acetoacetate, acetone), or stored in the liver as fat (fatty liver). The process itself is a normal part of early lactation cow physiology. However, cows that have a poor adaptive response to negative energy balance have excess ketone production, excess fat storage in the liver, or both. These are the cows with subclinical ketosis.

The primary risk period for subclinical ketosis is the first two weeks of lactation. Occasionally, herds will have subclinical ketosis issues beyond this time period, but this is not common. There are several tests available to detect subclinical ketosis in either blood, milk, or urine. The gold standard is serum or blood beta-hydroxybutyrate (BHBA) measured at a laboratory.

Early studies from prior to and including 1995 using the gold standard test (lab - BHBA) reported incidence rates approaching 40 percent when measured during the first two months of lactation. More recently, a study conducted across North America in Ontario, New York, Minnesota, California, and Georgia showed the average herd incidence of subclinical ketosis for the first three weeks of lactation was 32 percent with ranges from 3 to 80 percent. This more recent data confirms that subclinical ketosis still is a common problem on most farms.

Several studies have now been conducted that illustrate the costs of subclinical ketosis. Cows with subclinical ketosis in early lactation are at

greater risk of developing displaced abomasum, metritis, clinical ketosis, and mastitis. Those cows produce significantly less milk at first DHI milk test (reductions of 2 to 7 pounds per day), and cows that had subclinical ketosis during the week after calving produced 660 pounds less milk for the full lactation.

Using recent estimates, an average herd of 100 cows would have a 30 percent incidence of subclinical ketosis, and this would cost the farm \$16,425 annually.

Cows with subclinical ketosis also have been shown to have a 40 percent reduction in the first service conception rate and are more likely to be culled during early lactation. Taken together, these costs are substantial. Using recent estimates, an average herd of 100 cows would have a 30 percent incidence of subclinical ketosis, and this would cost the farm \$16,425 annually.

All risk factors for subclinical ketosis relate back to the basic cause . . . dry matter intake and milk production potential. Cows or heifers with greater milk production potential are at a greater risk of subclinical ketosis. Therefore, older cows tend to be at higher risk than first-calf heifers.

Overconditioned cows tend to eat less. Therefore, cows with higher body condition scores before calving (especially above 3.5) are at a much higher risk. The same is true for first-calf heifers.

Herd risk factors include anything that could limit dry matter intake such as overcrowding, frequent mixing of transition cows, too few or too many transition diets, heat stress, limited bunk space, and so forth.

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For more information about how DHI can help you manage your herd for increased profitability, call us today at 1-800-549-4373.