Animal monitoring can:

**Actionable data provided by 24/7 monitoring offer dairy managers peace of mind in knowing they can get ahead of potential challenges to ensure that cows are well-careed for.**

By SHANE ST. CYR*

AIRIES run on data, and every day, producers pour over numbers — whether it’s milk production, 21-day pregnancy rate, dry matter intake, health event incidences, heifer growth rate or many, many others.

While helpful and important, all of these data have one limiting factor in common: They stem from past activity and actions and can provide only a snapshot of what has already happened in the herd.

A growing number of herds have adopted the use of predictive data based on animal monitoring by capturing rumination time. This information gives the operations the ability to be more nimble when fine-tuning their management practices and protocols.

The actionable data provided by 24/7 monitoring offers dairy managers the peace of mind of knowing that they can get ahead of potential challenges to ensure that cows are well-careed for.

“It helps direct people’s energy and helps us better manage our cows on a cow-by-cow and herd-wide basis,” explained Betsy Bullard of Brigeen Farms Inc. in Turner, Maine.

**Rumination’s role**

Rumination monitoring technology features a device for individual animals that monitors rumination 24 hours a day and stores the information in a central location that can be accessed by key personnel to aid in their management tasks and actions.

Most cows spend about eight hours or so (450-550 minutes) ruminating each day; the system helps users track this essential action, which is an extremely reliable predictive indicator of cow health.

For example, it’s not unusual for individual rumination minutes to change in the days leading up to an illness with a need for a management intervention. This time frame is usually long before clinical signs can be seen.

The strong tie between rumination time and cow health means that rumination monitoring can provide an early window for diagnosis — on an animal, group or herd basis — or a means to evaluate management and protocol compliance.

Research has shown that stocking density can have an impact on daily rumination minutes, reducing rumination time by as much as two hours (Bartleheer, 2000). This correlates to a significant reduction in saliva and bicarbonate production, both of which can affect cow health.

Two hours of rumination time is equivalent to 9 gal. of saliva or about 200 g per day of bicarbonate — roughly the recommended daily requirement.

The essential thing to remember is that while the total rumination number should be monitored, the variability in rumination time is key to assessing potential challenges and solutions.

For example, Soriani et al. (2012) clearly demonstrated that cows with reduced rumination before calving maintained that reduced rumination time after calving and suffered a greater frequency of disease than cows with longer rumination times in late pregnancy. Therefore, by monitoring this parameter, dairy owners can rapidly identify those animals that require a management intervention.

**Herd assessments**

Users have quickly found how helpful this technology is for assessing the health and performance of various groups and subgroups within their herds. Each segment requires a different level of management, but it’s not always easy to manage such diversified herds.

Animal monitoring enables users to assess any number of management

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**Associative effects tough to predict**

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**RESEARCHERS at Quality Liquid Feed (P. Dyk, personal communication) were generous in sharing unpublished data from a field trial intended to show how different diets react to the addition of molasses-based QLF Liquid Feed.**

The diets were designed to be iso-caloric and iso-nitrogenous, and practically possible (Table 1). Table 2 shows that the combination of ingredients in diet 4 — reduced levels of high-moisture silage corn, along with whey and QLF Liquid Feed — produced the highest level of MBP, which theoretically should result in higher milk production.

**The Bottom Line**

The nutritional value of feedstuffs is typically evaluated individually and is often taken for granted that modern dairy cattle diets consist of a mixture of ingredients blended in a total mixed ration. There is strong research evidence that the nutritional value of feedstuffs differs when they are combined together (associative effects) and that these interactions cannot be well predicted from the analysis of the individual ingredients.

Several studies support the link between rumen microbial protein yield and milk production. New analytical gas methods, like Fermentorics, that allow producers to proactively measure dietary microbial biomass yield help quantify and manage associative effects resulting from combining various ingredients in rations before the diet is ever offered to the lactating herd.

**References**


Weiss, W.P. 2013. Dietary starch inter-relationships with other nutrients: Interactions between starch and fiber. 28th Discover Conference Summaries.