



Liquid feed supports robotic efficiency

Changing the consistency of concentrates fed through robots can improve automatic-milking-system efficiency and increase milk yield. And UK-based trials have also revealed other benefits.

TEXT PHIL EADES

Feeding molasses blends as a concentrate through milking robots can help to improve milking efficiency. So says ED&F Man's Phil Holder, adding that the ultimate measure of efficiency of robotic milking systems is milk yield per robot per day.

"Robotic milking systems continue to grow in popularity and offer myriad benefits, including reduced reliance on labour and improved animal welfare, as well as increased milk yields," says Dr Holder.

"But whatever the initial motivation to move to an automated milking system, it is essential that robot usage efficiency is optimised to deliver an adequate return on investment," he adds.

Phil Holder:
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 provide more
 than just energy"**



This 'efficiency' is, ultimately, a function of milk yield per cow and visits per cow per day. Cows need to be encouraged to make several visits per day with a minimal number of 'wasted' visits or refusals. Visit frequency is, in turn, affected by factors including robot siting, building design, stocking rate and cow behaviour.

Visit frequency

"Feed also has a major influence on visit frequency, with systems usually based on offering a lower level of TMR and feeding to yield through the robot to encourage cows to visit more often, increasing intakes and milk yields," explains Dr Holder. "Offering different compounds and varying feed formulation have been shown to increase efficiency. And a recent trial has shown that including a high-energy molasses blend, fed through the robot liquid-dosing system, can positively influence both yield and visit frequency across a range of systems," he adds.

Feeding liquid feeds through robots is tried and tested. A survey of UK feed advisers showed that the use of liquid feeds in robots is dominated by high-cost

glycerine-based products, but molasses-based blends specifically formulated for robotic systems can provide a more cost-effective alternative.

Dr Holder says that liquid feeds can provide more than just energy and can help encourage more traffic through the milking robot. One such feed is RoboMol, a high-energy multi-energy source molasses blend that's formulated for use in robotic milking systems to help drive visit frequency and to increase milk yields. Developed in conjunction with nutritionists and producers who milk their herds robotically, it's easy-to-handle viscosity means it will pass easily through any robot filters without causing any problems. Its dry matter comprises more than 40% sugars and its palatability is further improved by the addition of a banana flavouring," says Dr Holder.

Rumen function

"The sugars help to stimulate rumen function and microbial protein production, essential for productive cows, and the inclusion of multiple sources of glucose precursors provides the high levels of energy that are particularly important for fresh calvers and high yielders," he explains, adding that typical feed rates are between 0.5kg and 1kg per day.

Every unit faces different challenges when looking to increase efficiency of robotic milking, and ED&F Man carried out an on-farm study in the UK, which was overseen by Big Sky Technical Consultancy's Sophie Parker-Norman. The results were presented at the recent British Society for Animal Science (BSAS) conference. The trials were carried out on six UK-based units with robotic milking systems. The units reflected the range of robot installations typically found in the UK and a total of 1,300 cows were involved in the trial. Each herd used the product for at least 90 days, generating more than 150,000 data points.

"One of the great strengths of robotic systems is the volume of consistent, real-time data that can be collected," says Dr Parker-Norman. "But it's not just about whether a product 'works' or not. The real value is in asking where it works and why. That's where the insights lie.

"Each trial unit presented different challenges. Some,

for example, were understocked and others were overstocked. Some had excellent rumination and visit numbers, while others struggled with cow traffic and visit frequency. These variances proved critical in understanding where the liquid concentrate feed made the biggest difference," she adds.

Across all units, the average increase in milk yield was around two litres per cow per day, but there were variations between herds in terms of which cows benefited most from the feed.

On units with high stocking rates and low robot visits, the product had the biggest impact on the lower-yielding cows. In this group there was an increase in the number of visits to the robot, improved rumination time, and a rise in overall herd average milk yield. Cows were encouraged to visit the robot more often. Feeding sugars like those found in RoboMol can support rumen health and this, in turn, leads to improved digestion and energy availability. This is particularly important in cows that are underperforming.

Fewer refusals

In trial herds that were already achieving good robot access and rumination time, the liquid feed had the biggest impact on the top performers. There was an increase in eating time and a reduction in refusal numbers, which is when cows go into the robot and are turned away for visiting too soon. "If milking frequency is still adequate, then fewer refusals is a good thing because those cows are the 'time wasters' that drive down robot efficiency," says Dr Parker-Norman.

"The trial shows that in addition to being a sugar source, the liquid feed is also a management tool for robotic systems," she adds. "Depending on a unit's bottlenecks, the liquid feed can work in different ways, either by supporting the top-end cows, or by lifting the bottom end where visit numbers and rumination are limiting yield."

Incorporating this feed, which can be easily fed through any robotic milking system and is available in IBCs or 20-kilogramme drums, will help improve the return on investment (ROI) on the milking system and deliver an ROI of between 2:1 and 4.5:1. |



Liquid feed: robot concentrate is stored in an IBC