Liquid feed can increase robotic milking efficiency

FEEDING molasses blends as one of the concentrates through a milking robot could improve milking efficiency according to a new report from ED&F Man.

"The ultimate measure of efficiency of robotic milking systems is milk yield per robot per day," said Dr Phil Holder of molassed-based blends specialists ED&F Man.

"This is 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. Visit frequency is affected by robot siting, building design, stocking rate and cow behaviour.

"Feed also has a major influence over visit frequency, with systems usually based on a lower level of TMR and feeding to yield through the robot to encourage cows to visit more often, increasing intakes and milk yields. Offering different compounds and varying feed formulation has been shown to increase efficiency. A new trial has recently demonstrated that including a free-flowing filtered high-energy molasses-based blend as one of the concentrates can positively influence yield and visit frequency across various systems."

A survey of UK feed advisors showed the use of liquid feeds in robots is dominated by high-cost glycerine-based products, but molasses-based blends formulated explicitly for robotic systems can provide a more cost-effective alternative. Dr Holder suggests a liquid feed can provide more than just energy and can help encourage more traffic through the robot.

Robomol is a high-energy, multi-energy source molasses-based liquid blend from ED&F Man specifically formulated for use in robotic milking systems to help drive visit frequency and increase milk yields.

Easy to handle, its tailored viscosity means it will pass easily through any robot filters. A cost-effective source of sugars and carbohydrates containing over 40% sugars in the dry matter, palatability is further improved by adding a banana flavouring.

The sugars help stimulate rumen function and microbial protein production, essential for productive cows. Including multiple sources of glucose precursors provides the high energy levels necessary for fresh calvers and high yielders in particular. Typical feed rates are 25-500g/cow/day.

"Every farm faces different challenges when looking to increase efficiency of robotic milking, and for this reason we carried out a major farm study in the UK overseen by Dr Sophie Parker-Norman, from Big Sky Technical Consultancy."

The six-month trials were conducted on six farms in the UK. The farms reflected the range of robot installations commonly found. In total, there were 1300 cows on the trial, and each herd used the product for at least 90 days, generating over 150,000 data points. Dr Parker-Norman comments that his level of data would have been nearly impossible to gather using traditional methods, and Robomol is the only product supported by independent published trial work.

"One of the great strengths of robotic systems is the volume of consistent, real-time data you can collect," Dr Parker-Norman says. "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 farm on the trial presented different challenges – some were understocked, others overstocked. Some had excellent rumination and visit numbers, while others struggled with cow traffic and visit frequency. These variances proved critical in understanding where RoboMol made the biggest difference."

Across all farms, the average increase in milk yield was around two litres per cow per day, but there were variations between farms regarding which cows benefited from the feed. On farms with high stocking rates and low robot visits, the product had the most significant impact on the lower-yielding cows, where there was an increase in milking numbers, improved rumination time, and a lift in overall herd average milk yield. Cows were encouraged to visit the

Phil Holder

robot more often.

Feeding sugars like those in RoboMol can support a healthier rumen environment, which leads to better digestion and energy availability. This is especially critical in underperforming cows.

In herds on the trial that were already achieving good robot access and rumination time, RoboMol had the biggest effect on the top performers. There was an increase in eating time and a reduction in refusal numbers, which are when cows go into the robot and get refused for visiting too soon. If milking frequency is still adequate, then fewer refusals is a good thing—as those cows are the 'time wasters' that drive down robot efficiency.

"The trial shows that in addition to being a sugar source, Robomol is also a management tool for robotic systems," Dr Parker-Norman continues. "Depending on a farm's bottlenecks, RoboMol can work in different ways, either supporting the top end cows or lifting the bottom end where visit numbers and rumination limit yield.

"Robomol, which can be easily fed through any robotic milking system, is available in IBCs or drums. It will help improve the ROI on the milking system and deliver an ROI of 4.5:1 on the feed itself."

RoboMol trial

Robocol is supplised in IBC's that are easily connected to the robot

Increased risk of salmonella – vaccination advised

SCOTTISH cattle producers with a history of Salmonellosis in their herds are being encouraged to re-vaccinate stock against infection with Salmonella species bacteria now that the only vaccine available to control the disease is back in stock.

About 40% of GB dairy farms have been exposed to Salmonella, potentially causing serious health issues in affected cattle. Exposure manifests itself in a wide range of different disease signs, including diarrhoea, reduced milk production, poor growth, pneumonia, abortion and even death – but also sub-clinical infection, which can go undetected.

Effective disease prevention and control relies on good biosecurity and vaccination.

"Cattle are commonly infected with three Salmonella serotypes (Salmonella Dublin, Salmonella typhimurium and Salmonella mbandaka). These bacteria can enter a herd easily via contaminated foodstuffs and water, on contaminated equipment, or from infected wildlife and neighbouring cattle," explains Will McCarthy, veterinary director and Galloway Vets based in Dumfries and Galloway

"Salmonella bacteria can also survive in soil for years, water (particularly stagnant) for months and are tolerant to extremes of temperature. This means the potential infection risk factors are always there, regardless of previous disease control practices. And once a herd becomes infected, spread between affected animals, via faecal-oral transmission, becomes an issue."

He added that his team at Galloway Vets have found that in calves, Salmonella can increase susceptibility to other common infections.

"We've often found it to be a 'gateway infection' – opening the door for scours caused by rotavirus, coronavirus, E.coli and cryptosporidium pathogens, as well as abortion and a range of transition diseases in heifers and cows. But if Salmonella can be identified and then controlled in a herd through vaccination – even when there are no clinical symptoms – farmers can reduce the incidence of these other associated diseases," he says.

Mr McCarthy adds that some infected animals go on to become latent carriers and either continually or intermittently shed Salmonella, acting as a constant source of infection for a herd.

Many farmers have had to rely solely on prevention in recent months, which means employing proven biosecurity protocols, as well as isolation and treatment of clinical disease cases under veterinary supervision.

Those who think they have been successful in keeping the disease out may be tempted not to re-vaccinate, but Mr McCarthy stressed that this would be risky and misguided.

"This disease is very difficult to keep out and the threat of infection never goes away – even if you have vaccinated before. It will creep back in at some stage – and if a herd becomes infected with Salmonella Dublin this can cause carrier status – latent or persistent – which means the disease will be very hard to eradicate.

"What's more, Salmonella carriers are difficult to identify and confirm. Three samples over 120 days are recommended, which is costly, and the test is imperfect, which it makes it likely that animals that are not a genuine risk could be culled erroneously.

"We also know that unvaccinated herds that are Salmonella positive have a 6% lower milk yield per cow when compared with Salmonella negative or vaccinated herds."

Vaccination of cattle with Bovilisâ Bovivacâ S induces serological and colostral antibody protection against Salmonella Dublin and Salmonella typhimurium infections. It also reduces Salmonella typhimurium infections as part of an overall herd disease management programme. Vaccination of cattle may also contribute to reducing Salmonella typhimurium contamination of the environment.

According to Dr Kat Baxter-Smith, a veterinary adviser with MSD Animal Health, a dairy farm study in Somerset reported that a clinical outbreak of Salmonellosis costed a 120-cow dairy herd £13,753.875.

"Even a sub-clinical infection could cost a similar-sized herd £12,000 a year – with losses continuing for 10 years after a clinical outbreak4. That's a potential loss of nearly £122,000 over a decade after an outbreak of Salmonellosis.

"When set against this significant potential cost of disease backdrop, for cattle units with a history of infection with Salmonella bacteria, whole herd vaccination against Salmonellosis really is a no-brainer, with the potential to deliver more than a 13x return on investment in vaccine over a decade. Consequently, it's well worth re-vaccinating your herd with Bovilisâ Bovivacâ S," said Dr Baxter-Smith.