

Developments in robotic milking

ROBOTS are becoming more common as a way of milking cows and improving the farmer's quality of life. Some of the experiences with the early robots were poor due to limited technology and poor design of units.

Many farmers actually took out robots and reverted back to conventional milking or just gave up.

The good news is that we have come a long way in the last decade and have learnt so much more about how to

successfully milk cows with robots so that milk quality and mastitis levels have

improved. It's important that vets understand robots and how they function in relation to mastitis and milk quality. Here are some of the important key points.

Cows must be kept clean

One of the key steps to minimise clinical mastitis is to keep cows, udders and teats as clean as possible. This means having a well-designed housing system where cows can lie down in clean cubicles.

The majority of robots have cows in cubicles which are housed all-year-round. Occasionally, robot cows are kept on straw yards but they become

PETER EDMONDSON reports on progress with the use of robots in milking parlours, their role in spotting potential problems and in detecting and helping to control clinical mastitis



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very difficult to manage as cows can lie anywhere.

Remember, the robot has a set milking routine and can't differentiate between clean and dirty teats – at present! An adequate number of cubicles of the right design and wide passageways which are regularly scraped all help achieve these goals.

Don't overstock robots

Each robot costs about £80,000 to £100,000 and each farmer is keen to

maximise his return on investment. However, the robot will not milk 24 hours a day. It has to be cleaned three times a day.

After milking cows with mastitis, there is extra rinsing to ensure that no antibiotic residues enter the bulk tank. However, you need what is called "idle time". This is the time when the robot is available for milking but not used. You must aim for a minimum of 10% idle time.

If there is adequate idle time, cows will be milked more frequently as there is less queuing, lower cell counts and lower levels of clinical mastitis. This also helps to maximise milk yield. You should see robots empty at various times. Herds that have inadequate levels of idle time tend to have lower milk yields, higher cell counts and more mastitis.

Robots to resolve staffing issues

Robots do not really reduce the number of staff on the farm, they just work differently. With robots, you

have to fetch cows for treatment, carry out lots of checks as you don't see cows in the parlour twice a day and, of course, you have to work with the computer to find out where potential problems lie.

You need high levels of stockmanship and people who are prepared to learn about working computers.

Warning messages

In a conventional parlour it's relatively easy to pick up a cow with clinical mastitis. With robots, you are reliant on the technology detecting these cases. They do this in a variety of ways, including electrical conductivity, light emission through milk, etc.

The systems do err on the side of caution and so there are more warning messages than clinical cases. When you speak to most robot users they tell you that there are between 5-10 warnings for every true case of clinical mastitis. This is something to be expected. Not all warning messages mean trouble.

Administration of treatments

It's easy to administer a tube in the milking parlour. With robots you have to find the cow and administer the treatment in a safe place to cow and human. Some robot systems have a separate crush where they can put the cow. Others just treat in the cubicles – not very safe or hygienic.

Some treat cows in the robot but this can also be very dangerous. Of course, frequency of treatment is a consideration: once a day is far more preferable to twice daily as it reduces stress on the cow and less work for the farm staff.

Fitting robots into existing facilities

Cow flow and environmental

management is key to a successful system. Some try and squeeze in robots without fully considering the true impact of this.

Cow flow is critical. For free access robots, where cows can just walk straight into the robot, you need a five metre area around it. If you have two robots side by side, this needs to be seven metres.

You need to carefully consider if you can fit robots into existing facilities: there have been disaster cases where this has occurred. The best units are well-designed green-field sites.

Milk yield

You need to feed cows very well to make robots perform well. Aim for at least 3x milking by day 21 post-calving. If you don't get three milkings per day then your lactation curve will fall away. This is another reason why you need adequate idle time.

Economics

It costs more to milk through a robot than a conventional system. Everyone agrees on this.

However, the well-managed systems use the time they free up from milking in a conventional parlour to improve management and so increase yield and productivity. As a result, these can be far more profitable systems.

Training

The author has been carrying out one-day seminars, *Robotic Milking & Mastitis Control*, which are tailored for vets to give them the necessary skills to support their existing robot clients and those who are thinking of going down this route.

If you are interested in attending, contact christine.fry@sheptonvet.com for details of the next course.