

Grazing with robots – getting it right

Successful robotic grazing doesn't happen by accident and involves detailed planning around access, track width, strip grazing and well-timed selection gates – all aspects that need consideration before robots are put to work. British Dairying finds out more.

Grazing cows with milking robots is entirely achievable, but only if the system is planned properly before installation. "Infrastructure, cow flow and grazing layout must be defined before robots are commissioned, not after," says Gareth Jones at Robotic Milking Systems.

The starting point is access, and grazing land must be easily reachable from the robot barn without forcing cows across busy yards or frequently used tracks. "The amount of land you require will obviously depend on your herd size and how many hours a day you want to graze," says Gareth.



Gareth Jones says good field access is vital if grazing cows with robots

“It is essential to decide what system to adopt before start-up.”

Cow flow is central to maintaining robot visits, so track design is equally important. Tracks do not have to be excessively wide, but the layout must still allow smooth, uninterrupted movement between barn and paddock. "These tracks only need to be the width of two animals, because the herd will not be moving around en masse as they would with conventional milking."

Strip grazing is essential. "Allocating a measured amount of grass or dry matter (DM) for a set period encourages cows to return to the barn to get milked, as they

go in search of their next break of grass. It's the same principle as a housed, guided, no feed system, which relies on the total mixed ration (TMR) to attract cows through the robots, except in this situation, it is the fresh grass that the herd is seeking," says Gareth.

"However, in most situations concentrates will be fed in the robots, because if you are grazing 24 hours a day, this will be your only opportunity to get additional feed into the cows. But this will not be their sole motivation for returning to the barn."

A well-positioned selection gate is therefore fundamental and should be positioned just outside the robot barn, allowing cows access to grass once

they have been milked. A secondary gate on a timer can then direct cows to different paddocks throughout 24 hours. "The cows quickly get to know when the gate change will take place, which promotes increased activity at these times," he adds.

Grazing with a selection gate that changes twice a day is commonly referred to as an AB system, with cows rotating between two paddocks. "Typically, you can expect 2.4 milkings/day here, with cows grazing up to 500 metres away. Anything more than this distance, the milkings per day will be lower. It will also be necessary to move the electric fence twice a day, to allocate enough grass for the next grazing period."

Boosting visits

Where higher robot visit rates are required, an ABC system may be preferable. "An ABC system allows for a gate change every eight hours, in order to keep cows moving, and will result in more visits to the robot. This requires more labour, as the fences require moving three times in 24 hours. But if you are looking for additional visits with cows out at grass day and night, then this is the best solution. Typically, you can expect up to three milkings/day with this type of system."

For higher-yielding herds, a hybrid approach may be easier to manage. "There is a third option,

which is to buffer feed in the barn for eight hours, combined with two eight-hour grazing blocks. I refer to it as an AB/C system, and in my experience, it is simpler to manage than grazing for 24 hours a day, and is typically suited to higher-yielding herds," says Gareth.

But choosing the right grazing approach is not something that can be left until after installation.

"If you are planning to go robotic and considering grazing, then it is essential to decide what system you are going to adopt before start-up."

The gate is the key

Although relatively inexpensive compared with the cost of the robotic units, the grazing gate is the critical component as it plays a central role in making the system function effectively. "The grazing gate is the key component, and compared to the cost of the robots, it will be a cheap addition. However, its positioning, design and functionality need careful consideration in order to facilitate the system of your choice," he says.

Ideally, cows should remain housed for at least three months after start-up before being turned out. "It will take the first few months before they find their rhythm, but in my experience, cows get better at travelling in year two and three, as they adapt to their new way of life."



Cows will take a few months to get used to the system, but do adapt well



The sorting gate is absolutely key