

# Robotic feeding cuts fuel and labour costs

Lely's Vector robotic feeding system promises to take livestock automation several steps down the high-tech path. **Oliver Mark** saw the first working UK set-up in action in Northern Ireland

**R**obots and livestock may not sound like obvious bedfellows, but Lely is proving that the two can dovetail together very neatly. Sales of the firm's Astronaut milking robot are healthy – 150 or so units have been sold in the UK and Ireland this year alone.

Its robotic feed pusher and yard scraper are also proving that anything that cuts labour requirements (especially on boring, repetitive jobs) is likely to appeal to cost-conscious stock farmers.

But the arrival of the Vector marks a further step forward in automation. It's also easy to use, says the company – in fact it's all

controlled from a smartphone, using Bluetooth to interact with the control box.

## HOW DOES IT WORK?

### FEED KITCHEN

The key part of the system is what Lely calls the feed kitchen. Vitamins and minerals are stored in bins with electric augers, while up to 16 different roughage ingredients can be split into separate bays on the shed floor.

Each bay is divided into rectangles, so the shed floor effectively looks like an elongated chessboard.

Each of the rectangles can be filled separately with a block cutter



or you can grab silage from the clamp. Straw and hay can be filled loosely. These supplies can last as long as four days, depending on the herd size, weather and quality of the feed.

### LOADING

Filling the Dalek-like tub feeder is done by crane. Various types are available but the most practical is the gantry system. This moves on wheels, so it can make use of existing shed space, provided the floor is level.

Once the control system signals that the tub is ready to be filled, the crane picks out the ingredients to make up a pre-programmed ration.

**A grab automatically picks up silage ready to load it into the machine.**

Up to 16 rations can be prepared on Lely's smartphone app.

Materials that require a lot of mixing, like straw or round-bale silage, are dropped in the tub first. A sensor on the grab detects the highest point of material within the chosen rectangle and takes the crop from there. It can grab as much as 90kg in one bite.

Once the feeder is half full with roughage, the concentrates are added. Up to eight concentrates and minerals are automatically weighed and added to the mix.

According to Lely, the Vector's loading accuracy is almost 98%. That compares well with the 90% accuracy of a conventional system, which is often caused by the roughage part of the ration.

Too much silage dilutes the min-

## John and Pat Rafferty

Tullynacross Farm, Co Armagh, Northern Ireland

\* John Rafferty and his father Pat are the first farm in the UK to have the Lely Vector installed.

With their 40-year-old parlour due for an upgrade, they opted to install the Vector to reduce labour requirement and improve ration accuracy for their 140-cow herd. It works in conjunction with their two Lely Astronaut robotic milking machines.

"We've saved about 250 litres/month on diesel," says John Rafferty. "Now all we use the tractor for is chopping straw and to keep the feed kitchen full."

For this, Mr Rafferty invested in a new Strautmann block cutter. He also erected a new shed to keep the feed in.

"We increased feed intake by 6kg/day just by keeping feed pushed up," he says. "It leaves more time to focus on herd management and is ideal for our indoor-based system."