



Farming Connect Management Exchange

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The Netherlands

Robotic Milking Herds

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The focus of our Management Exchange trip to the Netherlands was to gain insight into the robotic milking of dairy cows, from a practical point of view, with particular focus on the reduction of antibiotic use. We have recently reduced our suckler herd numbers and installed 2 x Fullwood robots at our farm, Blaencwmpridd, currently milking around 85 cows. By the autumn, we hope to be up to 120 milking. Our cows are currently housed during lactation, and we are aiming to calve steadily throughout the year. We are farming a total of 440 acres (178 hectares) and still have a 40 suckler cow herd and a flock of 480 sheep.

We chose the Netherlands to visit as 25% of dairy farms there use robots to milk, compared with 2-3% in the UK. They are also hugely concerned with reducing antibiotic use and have much tighter restrictions regarding drug use and availability generally, for farmers and vets.

This makes them relative 'experts', and we were keen to gain knowledge to hopefully apply at home to increase efficiency and reduce our own antibiotic use.

Our trip involved visiting four farms, all with slightly different systems, but all gave us something slightly different to think about.

Bert and Yolanda

Bert and Yolanda farm 65 hectares and milk around 120 cows (15 dry), giving an average yield of 26Kg/cow/day and average butterfat of 4.58% and protein 3.36%. The cows are housed all year, including during the dry period. They currently milk with 2 x Lely 4 robots, but they are about to replace them with Lely 5s. This is quite unusual as the Lely 4s are only seven years old and it will be costly, but Bert likes to have the most up to date of everything! He is incredibly proud of his farm and cows, which is justified, as the cows were shining and the yard was immaculate.



All buildings are purpose built.

The dry cows are housed in the pens nearest the entrance to the shed. Bert does this intentionally so that they are checked regularly i.e. every time anyone enters the shed. Then, the in-calf heifers are housed next to the robots so that they can be trained to the robots easily, as required. The milking cows are split into 1st and 2nd calvers and then 3rd plus calvers. This reduces competition for feed space and bullying. The cows are on slats, which are cleaned by a pre-programmed robot. They are fed on TMR.



The main cow shed with the dry cows as you walk in. Light, and with good ventilation.



Milking cows with constant feed pushed up. Note the brush which was always in use and helps with cow cleanliness.

Lely 4 robot. Less cow accessibility compared to our Fullwoods, and noisier.



Scraper robot.

Upright milk tank.



In terms of drug usage, the Netherlands are very strict on what farmers are given access to and, therefore, they have very minimal drugs on-farm. They legally have to practice selective dry cow therapy and only have access to Orbenin Extra (which contains the antibiotic Cloxacillin benzathine) and sealants. Cows have to be dried off by a vet, which should mean it is done cleanly and consistently and the vet is in charge of the selectivity. All the farms we visited had a crush for drying off cows. They did not do it in the robots.

If a cow has a clinical case of mastitis, the farmer can treat it themselves and generally use Synulox milking tubes (amoxicillin/clavulanic acid and prednisolone) and injectable NSAID and Duphatrim antibiotic (trimethoprim + sulfadiazine). This was virtually all Bert had in his medicine box, which was pretty consistent with the other farms we visited. If this treatment is unsuccessful, a vet is called to deal with it. Bert had a lame cow whilst we were there, which he intended to get a vet out to inject with an antibiotic. She had already had one treatment.

Milk recording is carried out monthly. The robots take the samples and amongst other things, monitor for IBR and BVD.

The only vaccine Bert uses is Rotavec Corona, for calf health, which a vet has to come and do. All vaccinating has to be done by a vet.

Calves were reared in separate sheds. Initially, they are placed in individual calf pens on wheels. The bull calves are sold at 2-3wks old, not via a mart, but at standard prices for weight, via collection centres. The heifer calves are then grouped and housed on slats. The main issue with the calves is scouring in those first few weeks, hence the use of the Rotavec Corona vaccine in the cows. The individual calf pens on wheels are also excellent as they can be taken outside to clean properly and left in the sun to dry thoroughly, which makes control of cryptosporidium easier, without resorting to drugs.



Calf pens on wheels.



Silage pit sheets covered in sand, not tyres, to reduce areas of stagnant water where mosquitos/gnats/midges breed, to reduce the risk of Bluetongue virus.



New shed built last year for young stock. Note transparent roof and automated shutters.

Farmers in the Netherlands are not only under restrictions when it comes to drug use. For example, they are not allowed to carry out umbilical slurry spreading. It all must be injected. This is to do with reducing impact on the wildlife. To continue with the environmental theme, the Netherlands has also introduced schemes to reduce phosphate production i.e. reducing/restricting dairy cow numbers. Farms cannot increase their cow numbers, based on the numbers they had in October 2016, without having to pay huge amounts of money, which makes expansion uneconomical.

Mathijs

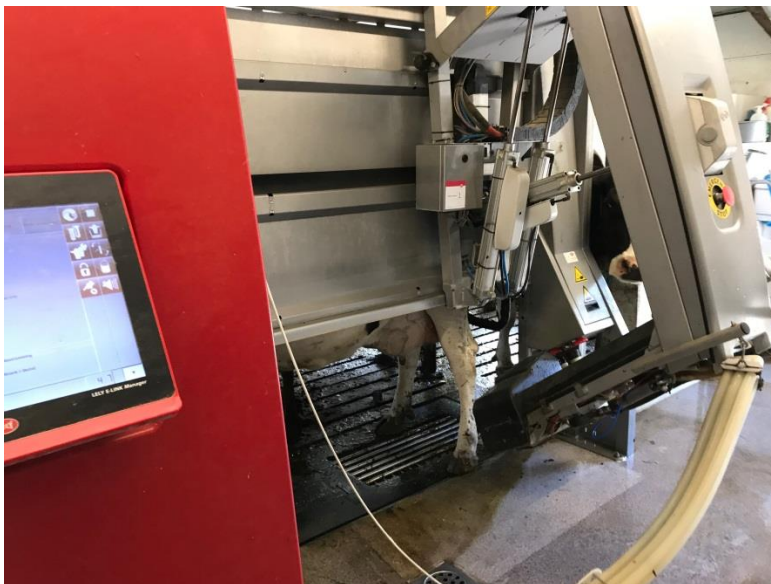
Mathijs milks 135 cows (12 dry) with 2 x Lely 4 robots on around 65 hectares. The cows are allowed out to graze via a gate that reads their ear tags. If they have been milked recently, the gate allows them out. In the afternoon, they are brought back in if they have not returned by themselves. On average, they graze for six hours a day. They average a yield of 38Kg/cow/day.



The gate that lets the cows out to graze.



2 x Lely 4 robots,
clean area.



Cow in a Lely 4.
Poor access.



Tracks required to graze
cows with robots. A
premium is paid for milk if
cows can graze outdoors.
Note the flat land. Not a
hill in sight!

They are currently bunker feeding the cows but are using a contractor at the moment to experiment with TMR. If it goes well, Mathijs intends to invest in a mixer wagon and convert to TMR.



Bunker feeding.

The sheds were fitted with fans, which are to reduce flies and keep the cows cool. Last summer, which was very hot, saw the cows choosing to stay in the cool shed rather than going outside to graze. The sheds have automatic scrapers, which run 12 x daily. The milk tank has a capacity of 30,000L because the milk tanker only comes every three days, which seems to be standard in the Netherlands, and they have to have extra capacity in case there is an issue with collection.



Note high ceilings, transparent areas of roof, fans, making the shed light and airy. Most cows were outside grazing when this picture was taken.



Extra fans installed directly over robots during the hot weather last summer.

The calves were also reared in the individual calf pens on wheels. The bull and heifer calves were kept in separate areas to assist with disease control. The calves were fed milk powder on a rising plain up to 7Kg/calf for two weeks, then down to nothing over a further two weeks and weaned. Hay and protein pellets are provided ad lib. They have automatic calf feeding with transponders to identify which calf is feeding. Mathjis reported very few issues with calves.



Automated calf milk mixer. Maintains consistent milk for the calves.



Transponder collars on each calf to enable automatic feeding.



Calf pens on wheels cleaned and drying in the sunshine.

Mathijs converted to robots from a herring bone conventional twice daily milking system. Interestingly, he said that they had a lot of mastitis issues initially. Last summer also saw them see a lot of E. coli mastitis at calving down, which he felt was due to the dry summer. They called a vet to see them rather than attempting to treat them themselves. As we have already said, selective dry cow therapy has to be used under veterinary guidance.



Note the slats, crush for drying off/foot trimming etc. and lots of clean fresh straw in calving area.

Ankie

Ankie manages this organic farm of 50 hectares, milking 50 Holstein cows (9 dry), alongside 24,000 organic laying chickens. Average yield was 34Kg/cow/day, the highest yielders reaching up to 50Kg/cow/day, with an average butterfat of 4.15%.



High open sided cow shed with plenty of feed space.

They had a SAC robot, which is a single-armed double robot. Basically, there were two boxes but only one milking arm that swung between the two. It worked well; a cow in one box could be prepared while a cow in the other box was milked. The SAC robot arm was much more agile than the arm on the Lely or Fullwood robots.



Single-armed SAC robot with two boxes.

The cows were allowed out via tag reading gates, which stopped them if they were due to milk within the hour. The herdsman collected all cows to come back to the shed in the evening, sometimes earlier if the weather was poor.



Another light and airy shed with slats and sand bedding in cubicles.



The gate to let the cows out to graze.

Dry cows are grazed with the chickens. This overlap with the poultry means the cows have to be vaccinated against clostridial disease twice yearly. Once a cow calved, she was taken straight to the robot, and her calf was stomach tubed with 4 litres of her colostrum straight away. They continue to give the dam's milk to the calf for four days. This would be difficult with higher numbers of cows but works well here, where they calve all year round and so only have one or two calves to deal with at any one time. All the calves are sold at two weeks old, so they use Belgian Blue semen on the majority of cows, with HF on their best cows to be sold for milking. Due to the phosphate restrictions already discussed, they are unable to increase

the herd size at the moment, so they are not in a position to rear replacements. They are hoping this will change in the future.



Dry cows grazing with the organic laying hens – although very little to graze on! The chicken shed is in the background.

From an organic point of view, there are a lot of restrictions laid out by EU directives, but the Netherlands has further organic ‘rules’, making it even more tricky. A cow cannot have more than three ‘treatments’ in a year if she is to remain organic, which is standard, but in the Netherlands, they are now classing teat sealants used at drying off as a treatment. This has caused issues and has meant lots of organic farmers, including this one, are not using sealants, which has resulted in a massive increase in E. coli mastitis. Farmers are appealing this and hoping it will change in the future.



Pre-programmed scraper robot. Works well in winter, but when the slurry partially dries in the summer, it is not as efficient.

Henri Willig Cheese

Henri Willig Cheese is a very successful company, selling seven million kilos of cheese per year in thirty countries around the world. We visited the original farm, Jacob Hoeve, which is where it all began in 1974. There are now another two dairy herds elsewhere, and the company buys in milk from other farms. This was a very different experience to the personal tours we were given at our previous three farms, as Jacob Hoeve is open to the public and has an on-site cheese factory, restaurant and shop, as well as the 120 jersey cows they milk.

Henri Willig Cheese is well marketed, focusing on happy cows equals great milk and therefore, delicious cheese. They are organic and are very keen on farming alongside wildlife and focus large efforts on pasture quality.

The cows are milked by 2 x Lely 4 robots and are allowed out to graze as much as possible. They can choose when they go out, eat and get milked. When housed, they have an enormous shed with deep litter, automated straw chopper on the roof, which refreshes bedding twice a day, scraper robots, feed pusher robots and transparent sides and roof, making it light and airy. The roof carries rain water into a basin in the basement and used for the cows' drinking water. A hotel for cows. What must be kept in mind is that this is open to the public and is very much part of the Henri Willig Cheese image, so not all decisions will be based on efficiency. However, the cows were extremely content and the system could be run by a single person and although high initial investment, probably fairly sustainable. Their annual milk production was around 6500 litres, and milk fat was 5.8%, which is ideal for cheese making.



Deep litter housing with slats. Open sides with automated shutters, transparent ceiling and scraper robot.



Lely 4 robot.



Automated straw chopper for bedding up.



A Jersey coming in from grazing to be milked.

Conclusion

In conclusion, our Netherlands trip has been an excellent insight into their dairy industry. It is difficult to know at this stage whether we will be able to implement what we have seen back at Blaencwmpridd because we are not dealing with like-for-like. Where we are in West Wales is much higher, steeper, hillier land with a huge amount more rainfall. Blaencwmpridd has 64 inches/year; where we were in the Netherlands receives half of this. However, we could increase our scraper frequency, install brushes, although this may not go down well with RMS, and try drying cows off in the crush. Saying this, the cows are used to their udders being touched etc. by the robot so they tolerate being dried off in the robot well and we have better access to the cows in the Fullwood compared to the Lely robots. We can also make sure the whole area is clean and that the cow has just been milked before drying off. We may try and get our cows grazing out at some point in the future.

What we can take away with us is that the Dutch are managing with fewer amounts and types of antibiotics and still have healthy, productive cows! A lot of this is 'prevention is better than cure' with a huge amount of attention to detail regarding hygiene and biosecurity.

All the herds we visited were closed herds and used AI, so no disease could be brought onto the farm via stock. They all provided visitors with their own protective clothing and footwear, so again, reducing the likelihood of disease coming in on someone's wellington boots.

Calf health was better as they only kept bull calves/non-replacements until a couple of weeks old, so there was generally fewer calves around in better buildings i.e. slats/individual pens, meaning cleanliness was easier, and all farms had automated milk mixers. Generally, all the sheds were purpose built with excellent ventilation and automated shutters if the weather deteriorated. This will do a huge amount in the prevention of disease but has required massive investment by the farmers.

There is no TB in the Netherlands, which is interesting as there is a European badger, but there are no marts so much less mixing of stock. This also means the vets are not constantly TB testing, which means they play a different role on Dutch dairy farms. It seems they are called out a lot more to examine a sick animal, compared to farmers in the UK dealing with a lot of issues themselves and have a lot more control of drug use on the farms i.e. vets dry off and vaccinate the cows. They do see a few displaced abomasums etc. related to feed issues and still a proportion of lame cows.

The key take-home message seems to be attention to detail, consistency and cleanliness.