

# Improving slurry management pays



Phil Brooke

**Making full use of slurry took on a whole new dimension when Phil Brooke from Nicholson Farm near Leominster took the decision to go organic. Biotalk SlurriNprove is helping get the best from this valuable resource.**

Phil runs a herd of 160 all year calving cows on a robotic milking system with three Merlin M2 robots. The herd averages 9500 litres and has been milked through robots since early 2016 but moved to an organic system in April 2017.

*"We decided to go organic in search of a more stable milk price," Phil explains. "It had an impact on performance with yields falling back, in part as we had to stop growing maize."*

*"The cows graze from late April to October but have free access back to the robots. When grazing the visits per robot drop back from 3.2 to 2.8."*

In the winter they are housed in cubicles over slats and are TMR fed a diet based on grass silage and wholecrop although this year he has added 300 tonnes of organic potatoes to the diet to make up for a

reduced wholecrop tonnage, a consequence of the difficult season.

Since moving to the organic system, Phil has had to revise his slurry management. *"Previously, most of the slurry would have gone onto the maize land but now we need to improve the usage of it as slurry is the key nutrient supply to our grassland."*

*"We need to apply it little and often using an umbilical system with some fields around a mile away. We look to apply the first dressing as soon as the NVZ window opens and follow this up in late March, after first cut and then after every cut. We need it to spread easily and consistently."*

All slurry is stored in a clay lined lagoon which is gravity fed from the cow accommodation. In 2016 there was a considerable build-up of solid material in the lagoon which despite agitation would not mix.



*"It cost us over £2000 to move the build-up and spread it so we decided we had to do something to avoid problems like this in the future."*

Following discussion with local agent Tom Lazenby and John Thomas from Biotalk who applied for the organic certificate for the product, Phil started using Biotalk SlurriNprove in October 2017 with the aim of improving the pumping characteristics in particular.

SlurriNprove is a biological treatment containing a specific blend of enzymes and bacteria which can improve the handling characteristics and nutritive value of slurry.

The enzymes and bacteria help break down some of the fibre fraction in the slurry, and reduce sedimentation of solids so less of a crust forms and the material is easier to handle with less agitation needed.

## Reduced ammonia

The bacteria in SlurriNprove also compete with the normal microflora present in manures and responsible for slurry's pungent odour. They reduce the ammonia production which leads to a more nutrient rich fertiliser with a reduced odour too.

The first dose was added when the lagoon had been emptied and was topped up in January and June. Phil adds the inoculant at the end of the lagoon furthest from the building, giving the bacteria a chance to multiply away from parlour washings.

*"Adding the SlurriNprove has made a big difference to our slurry handling. As we are tight for storage we need to be able to get slurry out quickly and timeliness is essential in an organic system."*

*"We can now agitate the entire lagoon from a single point in just 20 minutes which is saving a lot of time and money. There is far less crusting, the slurry is far more consistent and holds in suspension better. We have been able to improve our timeliness of spreading and so exploit the full potential of slurry."*

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# Yeast plays part in improving performance

## Reducing the incidence of SARA has had a big impact on performance at a family dairy farm in South Wales.

The 320 all year round calving cows at Garreg Farm, Kidwelly run by Anthony Gibbon average 9500 litres on a diet based on grass silage. High yielders are housed all year round while low yielders go out to graze. The TMR is based on grass silage and no other forages are fed.

The focus is on producing high quality grass silage which is made using their own equipment alongside a local contractor to optimise timeliness and allow more silage to be made in a day.

Twelve months ago, Anthony noticed the cows weren't milking as well as expected. The diet was moving through the cows quickly and they were showing signs of SARA. The dung was loose and variable and more cud balls were evident.

## Structural fibre

*"At the time the diet was based on 45kg of silage, 6.2kg of a blend with a maximum of 4kg dairy compound per day fed in the parlour. To try and reduce the problems I added 1.3kg of Nutritionally Improved Straw (NIS) to the TMR to improve structural fibre and slow feed passage. The NIS certainly made a difference."* Anthony comments.

In April this year he took on an independent nutritionist who advised fine-tuning the diet further to improve rumen health. They started to feed Biotalk SC acidease, a combination of rumen specific live yeast and inactive yeast rich in amino acids, B-vitamins and other growth factors for the rumen microflora.

*"SC acidease is formulated to improve rumen pH quickly and consistently,"* comments Gareth Jones, Biotalk Regional

Business Manager in Wales. *"A trial at the University of Vermont showed that feeding the live yeast element alone reduced the time cows spent at low pH by nearly a third compared to cows supplemented with 170 grams/day of bicarbonate. Feed efficiency was also improved by 4.5%."*

## Improving well-being

*"By optimising and stabilising the conditions in the rumen we are improving the feeling of well-being within the cow which has a knock on effect on behavior and how it goes about its daily activities."*

*"For example, regular feed intake is good for rumen function and a Spanish study found that cows supplemented with the live yeast strain in Biotalk SC acidease had a reduction in the time between meals of 30 minutes with a significantly higher average rumen pH."*

The TMR this winter is made up of 45kg grass silage, 5kg blend, 1.5kg molasses, 3kg ground maize and 1.5kg NIS with no more than 4kg in the parlour.

Anthony is pleased with the results so far. *"I am sure rumen passage has slowed down, we aren't seeing any cud balls and dung consistency has improved greatly within groups of cows. Butterfats are higher and more consistent. The cows are less restless and more content. We find more cows are lying down and cuddling. Herd health is better too with cows better on their feet. As I do the foot trimming I soon see any problems."*

## Cows milking better

*"It is difficult to say 100% how much the SC acidease has improved rumen health but it is working well alongside the NIS and the cows are milking better so I don't see any need to consider changing anything,"* he concludes.

Gareth Jones says that with supply issues forcing up the price of sodium bicarbonate, feeding a specially formulated live yeast based product is a more cost effective way to optimise herd performance this winter.

*"While adding bicarb to the diet is seen as a natural solution, it's really just an attempt to treat the symptoms and fails to get to the root cause of rumen pH issues. Biotalk SC acidease is a biological solution that solves the problem of low rumen pH through rumen microflora rebalance; reducing the bacteria that produce lactic acid and stimulating those that consume it."*



Gareth Jones



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# Managing risk in forage production

**2018 was certainly a challenging year for forage production but what can we learn from it to help ensure increased forage production in the future. Biotal Technical Support Lientjie Du Plooy believes the big lesson is to learn to manage risk.**

A combination of a cold wet spring followed by the driest summer since 1975 has certainly put pressure on forage stocks.

A delayed turnout meant carryover stocks were very low across much of the country. Then yields of many forages were impacted by the drought resulting in lower stocks going into the winter.

You can never predict the weather and out-think nature. What you have to do is develop a plan that is flexible, giving you options so



that you can react as the season unfolds to increase the likelihood of hitting your target production levels. This means looking to minimise the risks.

## So how do you do this?

### Set a target for what you need

It may sound obvious but the starting point to hitting your target is knowing how much you need to produce. Calculate how many tonnes of dry matter you need for cows, youngstock and beef. Remember to make an allowance for buffer feeding including any buffer you might need in the first part of spring 2020.



### Plan your crops

Work on your average yields and calculate how much your planned acreages will produce. If you will not produce enough, how can you increase forage output? It might be sensible to increase the maize acreage, perhaps growing maize on

neighbouring rented land to help build stocks. Make sure you choose a maize variety which will mature early and produce a high quality forage in your site class.

What are the options for growing catch crops to provide feed for youngstock? They can provide additional forage in the autumn, spring or both.

### Consider wholecrop as a third forage

No crop provides as much flexibility in a forage system as cereals. If supplies of other forages are good they can be harvested and sold or fed on farm. They can be crimped to provide a more rumen-friendly energy source. Either way, valuable straw is produced as well. But if forage stocks are low they can be cut and conserved as forage, with harvesting date being manipulated to influence the type and quality of feed produced.

### Follow an Opticut approach to reduce risk with grass

An Opticut system with more frequent cutting during the year can help reduce risk, whatever the season. By adopting a 'silage in a day' system you greatly reduce the time the crop spends on the ground and reduce the risk of rain affecting a significant proportion of your feed. You can also reduce the impact of drought conditions.



### Measure and react early

The sooner you have an idea of how the season is unfolding, the more options you will have to rectify any shortfall. Measure first cut clamps. Are they on target and if not, how great is any shortfall? Then plan to make up the shortfall rather than just hoping that second cuts will be better and make up the difference. Most farmers I talk to would rather have too much forage at the end of the season than too little.

### Don't waste it

Adopt a zero waste philosophy to forage production, ensiling and feedout. For example, the use of the most suitable Biotal crop and condition specific inoculant will help ensure an efficient fermentation and improve stability when the clamps are opened so cutting losses.

Incorporating risk management into your forage making plans will help ensure better quantities of high quality forage for next winter.

### Keep birds out

In areas where starlings are a problem, place a net over the face to protect the silage. Avoid using plastic as it would just create the warm, dark environment where yeasts will proliferate.

Adopting good silage housekeeping this winter will have a considerable payback in reduced wastage, more silage available to feed and will result in lower overall feed costs.



**Csaba Adamik**

cows or any other stock as it can cause contamination of the whole ration and reduce feed intakes and digestibility.

### Keep the face vertical and tight

Move across the whole face as quickly as possible taking thin 30-50cm slices, rather than taking deeper bites. Taking too much at one time just loosens the face, exposing more feed to air which provides the oxygen required by spoilage organisms.

### Sharp knives

Make sure the block cutter or shear grab knives are kept sharp to minimise face disruption. This is particularly important with drier forages.

# Planned production

**Ensuring high quality forage for his 200 head dairy herd is a key objective for Shropshire producer David Higgins, and by reacting during the summer he ensured sufficient stocks for this winter.**

*sugars so we can be sure we will get a good fermentation and this year also paid attention to NDF levels."*

Wholecrop has been a mainstay of the system for over 20 years, with winter wheat averaging 13t/acre. The objective is a quality forage and David adjusts the acreage cut depending on the season.

*"We would usually take 30-40 acres but typically grow 80 acres of cereals per year and would take more for wholecrop if necessary."*

Maize is a relatively new addition to the diet being grown for six years as previously David had thought the farm was too heavy to grow good crops. But selecting an early maturing variety with good vigour means he can get the crop harvested in good conditions.

*"We usually grow 85 acres and work on 18t/acre although we have had yields as high as 20t/acre. We leave an eight inch stubble to reduce soil contamination and leave the high lignin base part of the stem in the field to boost quality."*

*"We need 15t/acre to make money from the crop so choose fields and varieties carefully."*

## Shredlage

This year he has taken some of the maize as shredlage to improve the use of the vegetative part of the plant and hopefully remove straw from the diet.

*"Making enough high-quality forage is vital to us and the combination of Opticut on the grass, careful maize variety selection and balancing tonnages with the flexibility of wholecrop means most years we can achieve that."*

*"This year has been a challenge and to help us ensure enough forage next spring I decided in June that I should drill 45 acres of additional Italians after wheat. I aim to cut it in April, clamp it separately and then follow it with maize. This will give me valuable early stocks."*

*"As well as planning to make enough, we work on minimising waste. All crops are treated with Biotal crop and condition specific inoculants and we sheet all clamps with side sheets and Silostop to keep oxygen out. When the clamps are opened we concentrate on keeping a tight, clean face,"* he explains.



**Lientjie Du Plooy and David Higgins**

The all year round calving herd BentleyFord herd from Lognor are averaging 9000 litres at 4.03% fat and 3.23% protein. The cows are TMR fed with nothing in the parlour. High yielders are housed all year round while late lactation cows will graze from early April until early October.

Working with Hefin Richards from Rumenation, the diet is formulated to deliver M+37 litres and comprises 18kg grass silage, 22kg maize or wholecrop supplemented by a blend, fat and minerals.

Adequate quality forage is therefore central to David's system and he focusses on producing sufficient forage, reacting as the season unfolds.

*"It is a good grass growing farm and we have been adopting an Opticut approach for several years, taking a first cut in late April/early May and then looking to go at five week intervals,"* David explains. *"This year we cut on 5th May, 9th June, 6th July and 6th August."*

*"We budget on 100-120 acres of first cut and second cut from the same acreage. Third cut and fourth cut around 100 acres."*

*"We grow predominantly 3-4 year leys, reseeding every year after wholecrop. We precut test grass for nitrogen and*

# Reduce waste to maximise forage fed

**Csaba Adamik, Regional Business Manager in Scotland believes reducing silage waste will be crucial this year.**

Every year a significant amount of silage ends up being wasted. Any wasted silage has to be replaced with purchased feeds, increasing overall costs. This year with forage stocks being tight it is more important than ever to reduce waste levels to a minimum.

Waste levels of up to 20% are not unusual and the cost is significant. So it is important to manage clamps and feed troughs to eliminate waste.

The good news is that there are a number of simple and low costs steps that are effective.

### Manage the top sheet

Only move the top sheet back a few inches at a time to minimise the amount of forage exposed to the air and keep the leading edge weighted down with gravel bags to prevent air getting back under the sheet.

### Discard spoiled silage from the top and side

Never leave spoiled silage anywhere near the silage face as it can act as a reservoir of spoilage organisms and under no circumstances should it be fed to