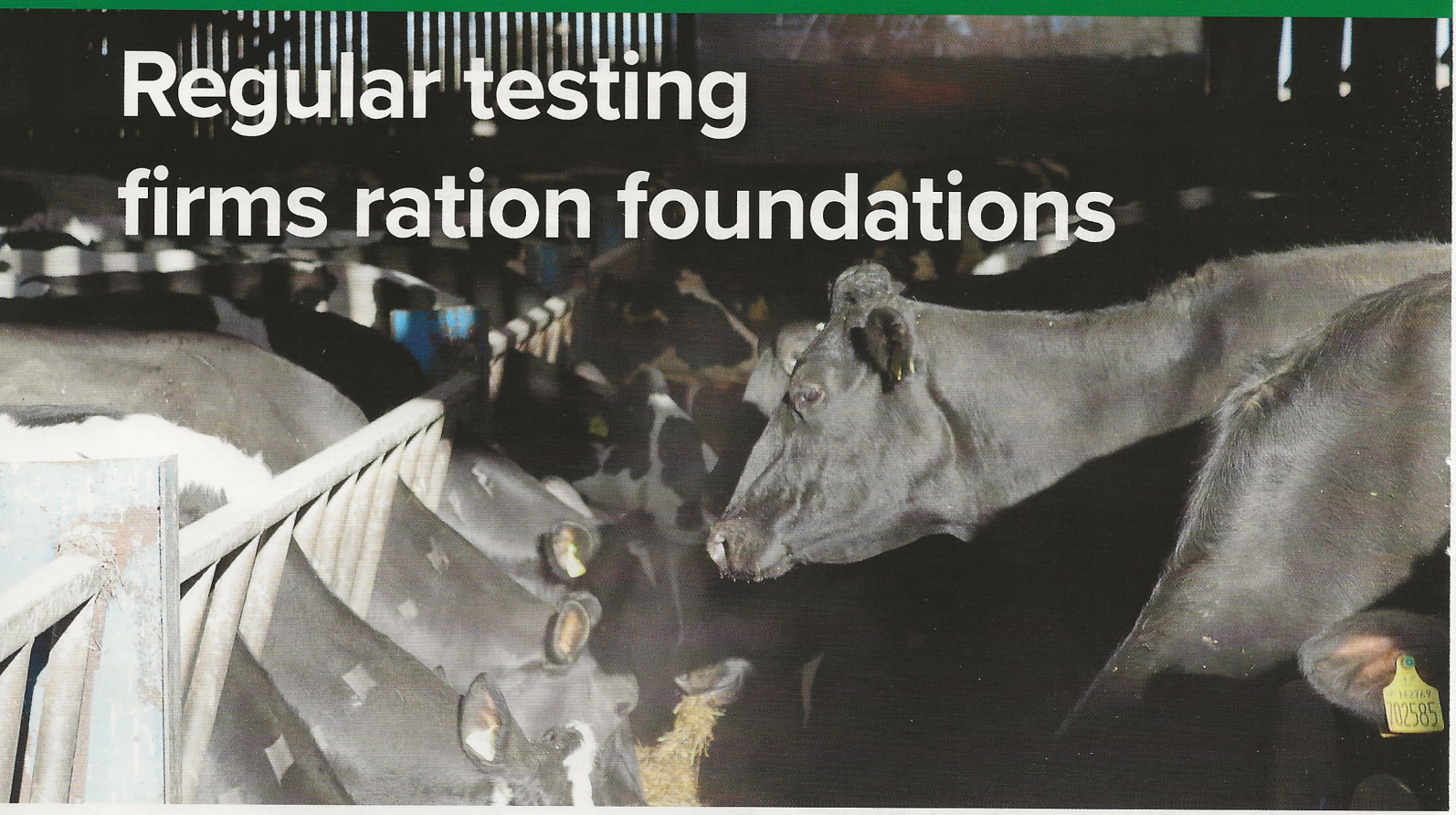
Regular testing firms ration foundations



Representative sampling and more regular analysis will help improve milk production from forage and allow more precise rationing. One Derbyshire-based producer and his nutritionist both swear by it.

TEXT PHIL EADES

Trouw Nutrition GB's Liz Homer says no silage clamp is full of a consistent feed, meaning that supplementation has to be regularly assessed to optimise herd performance.

The key to precise and cost-effective supplementation is getting clamps analysed regularly to ensure rations are based on the silage actually being fed.

"We know even a clamp containing a single cut will be made up of different proportions of different swards as you work through the clamp," she says. "They will potentially be a mix of specific cutting leys, general-purpose swards, and permanent pasture. And they are likely to be harvested across at least two days, risking being affected by the weather, and moved several times, which will affect feed value through the clamp.

"The variation is even greater in clamps containing multiple cuts," says Dr Homer. "Yet the average sampling interval identified at our laboratory for grass silages is close to two months, which is far too long. For herds of 250 cows we recommend the optimum is to test every 17 days, while for 120 cows it is every 26 days."

Will Bunting:
"Regular silage analysis means we're in control"

Representative sample

She says taking a representative sample, comprising handfuls from different points across the face, should take just a few minutes, perhaps while the feeder wagon is mixing. A sample sent for traditional NIRS analysis will be back on farm within 24 hours and give all the information needed to fine-tune the ration.

"Set against the potential benefits of fine-tuning the diet to maintain or improve performance and reduce feed costs, the cost and time of taking samples more regularly is immaterial."

Will Bunting runs a 200-cow Holstein herd, near Ashbourne in Derbyshire, and has moved to analysing grass silage every two weeks. "Due to rising feed prices we need to make sure the diet is as cost-effective as possible," he says. "Working with our nutritionist, Richard Ford from Massey Feeds, we have been able to keep a close eye of forage quality to keep cows milking well."

Three cuts of grass silage are made every year. First cut is usually 80 hectares taken around May 22 and Will and his father are looking to make 1,600 tonnes freshweight. First cut is clamped indoors in a building erected two years ago. "Having the main clamp indoors means we should have a more consistent forage, with no variation due to winter weather," says Will. "We take the silage out in thin wafers, working in vertical blocks to try and feed a more consistent forage and get across the 18-metre-wide clamp in two days."

Vertical block: Will's clamp-face management is meticulous

Second and third cuts are both taken from 40 hectares in early July and early September and clamped outdoors.
Herd average yield is 10,000 litres, at 4.3% fat and 3.25% protein, and milk is sold to Arla on a Tesco contract.
Cows are fed a TMR twice a day in the winter, comprising 9kgDM grass silage, 3kgDM wholecrop and a blend. This supplies maintenance plus 22 litres, with a 16% compound fed through the parlour to a maximum of 8kg per day.
Cows graze from early May until the start of October. High yielders and fresh calvers are housed at night and all cows are buffer fed the same diet as the winter TMR, adjusted for the time spent grazing.
Since November, the clamp has been analysed every two weeks with significant variations seen despite the consistency of the harvested material (see Table 1).
"Looking at the clamp it was possible to see bands of different material that Will tries to even out through his feed-out management," says Richard Ford. "But much of the week-by-week variation would not be visible.
"We are looking at as much as 5% difference in dry matter, which can have a big impact while the 2.5MJ difference in ME is equivalent to half a litre. With 180 cows in milk, that's 90 litres a day."
The factors affecting rumen health also varied. The total and rapidly fermentable protein and carbohydrate figures indicate how much energy and protein will be fermented in the rumen – and how quickly. "Together they tell

a great deal about how the rumen will perform," says Richard. "Key to keeping cows milking well is to maintain a balanced rumen and minimise disruptions, so we monitor changes carefully.

Silage protein

"When we rationed the cows based on the analysis taken in October we formulated a 22.5% protein blend, which we included at 6.5kg per cow. But when we saw the analysis in mid-November we were able to reduce this to 20.5% protein because silage protein had increased. At the same time we increased fermentable carbohydrates to better balance the rumen.

"These changes have helped reduce feed costs while cows have continued to milk well. Optimising rumen balance and increasing the rapidly fermentable carbohydrates have improved milk quality. Fats are averaging 4.3% and protein 3.3%, which is helping to maintain milk price.

"Since then we have left the blend the same. But after each analysis we adjust the wagon sheet to accommodate changing silage dry matter to ensure we are feeding enough freshweight to provide sufficient dry matter. We also keep a close eye on rumen balance as we change the ratio of silage to blend," says Will.

"When we had the poor analysis in late November, we didn't rush to change anything but monitored performance closely, suspecting, as proved the case, that it was just a poor patch as indicated by fermentation characteristics.

"But the fact we knew about it meant we were in control," he adds. "Had this been the only analysis we could have ended up with an unnecessarily complicated and expensive diet to balance the analysis. Regular analysis avoided this.

"Without more frequent analysis we may have been feeding more protein than necessary. Analysing frequently means we can fine-tune the diet to keep cows performing well while making the best use of the forages. Reducing protein has cut costs," concludes Richard. |

Table 1: First-cut analysis results

	6 Oct	10 Nov	30 Nov	13 Dec	23 Dec	min to max
DM (%)	30.3	27.3	27.9	32.6	29.1	5.3
CP (% DM)	14.8	17.2	17.4	15.0	17.2	2.6
ME (MJ/kgDM)	11.7	11.4	9.3	11.2	11.6	2.4
NDF (% DM)	46.3	46.7	50.6	46.9	45.1	5.5
total fermentable protein (g/kgDM)	112	126	115	114	118	14
total fermentable carbohydrates (g/kgDM) (g/kgDM)	481	417.3	335.7	446.3	420.3	145.3