

Integrated approach to grassland improvement pays dividends

Whether grassland is for grazing or cutting, optimising both the quantity and quality of grass is the foundation to increasing margins and profits on dairy units. That's the message from the Grassright Group, who have been helping farmers meet these goals.

The Grassright Group is a collaboration of four companies, each with an interest in helping livestock farmers to appreciate the value of their grassland and understand how best to get the most from it. The Group consists of grassland machinery supplier OPICO, grass breeder and wholesale seed merchant Limagrain UK, fertiliser manufacturer GrowHow and agrochemical manufacturer United Phosphorous.

To optimise grassland productivity, attention to soil structure and nutrient content is important, as is reseeding policy, choice of seed mixture, and weed and pest control.

All these factors have an indi-

vidual impact, but the best results are obtained when they are considered together in an integrated approach to grassland improvement.

From 2008 to 2011, the Grassright Group worked with Lancashire dairy farmer Richard Corlett helping him to implement improvements to his grassland management.

As a result, Richard now has a higher quantity and quality of grazed grass, and has been able to increase the stocking rate by 0.5 cows/ha. Milk yields also increased by 850 litres/cow, with only a small increase in the amount of concentrate fed. The majority of the yield increase was gained from



Overseeding has worked well for farmer Dave Richards—new growth is shown in the foreground in December after overseeding in September.

improved grazing and forage. On a per hectare basis, milk from forage increased by 20% (from 4,396 litres/ha to 5,350 litres/ha), with a corresponding increase in margin over purchased feeds.

New Grassright project

Last autumn, the Grassright Group began working with Worcestershire dairy farmer Dave Richards of Ridgend Farm who farms in partnership with his father John. They currently milk 150 cows and run a flock of 360 sheep. They plan to expand their herd numbers to up to 250 and increase milk yield to over 9,000 litres per cow.

However, to achieve this, Dave needs to be getting more production from his grassland. In the short term, there is also a need to

boost grass supply. Dave explains: "I was disappointed with my silage yields last year, and I think it was probably a consequence of cutting back too hard on fertiliser to save costs.

"The high yielders stay in all year, and we are currently short on silage stocks. So, if the weather allows, we will be cutting silage in early May rather than mid-month.

"Similarly, I'd like to be getting more grazing from my fields. It's not just about putting the cows out early if we have a dry spring. They need something to graze on!"

A farm inspection by members of the Grassright Group late summer last year enabled the overall state of the grassland at Ridgend Farm to be assessed and priority

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fields and issues identified.

Limagrain's John Spence explains: "Ground cover in some of the fields was poor, although the leys were not very old. Areas of bare earth are an invitation for weeds and weed grasses to germinate. It's not always necessary to plough up and reseed a field. In some cases, it can simply be rejuvenated with some overseeding."

This was the case on several silage fields. Dave used an OPICO grass harrow and seeder to oversow a two-year cutting ley into the fields. Dave comments: "I'd never oversown before. To be frank, I'd always been a bit sceptical about it—it sounded too simple! But I'm really impressed with how well the grass has come through—I oversowed in early September and by December you could see young green grass where previously there had been nothing."

OPICO's Neil Robinson comments: "Harrowing was essential—Dave had been applying slurry and it had capped the surface of the ground. This would have been preventing air from



Dave Richards and OPICO's Neil Robinson demonstrate how harrowing breaks up the dried slurry which caps the soil. This allows air to get to the roots of the grass and releases nitrogen locked on the surface.

reaching the grass roots, and also locking up the surface nitrogen.

"Harrowing by itself is beneficial to spring grass growth. It brings up the trash and dead material from the base of the sward, allowing air to get to the roots, and releasing locked up surface nitrogen."

Dave harrowed the field once and then again at right angles to

the first pass. He switched on the seeder for his second pass at an advised rate of 10kg per acre, nearly half the normal rate. He followed up with a grass roller, to ensure good seed-to-soil contact was achieved.

Back in 2008, Richard Corlett had also embarked on a programme of overseeding. He was stuck in a cycle of not having enough grazing available to take a field out of production to reseed it. Many leys had become old and low in productivity. Since he had killed off the clover in leys while controlling weeds, he oversowed with Limagrain's Cloverplus pelleted clover blend to boost the protein content of the sward and also allow fertiliser applications to be cut back.

To support grass growth, soil needs to be of a healthy structure—one which allows water to drain through it, and allow oxygen interchange. During the summer field inspections at Dave Richards' farm, some soil compaction was identified in some of the silage ground and longer term leys.

Due to the depth of the compaction—greater than 20cm, the solution was to subsoil using an OPICO Sward-Lifter. Thanks to dry weather, this was done in December.

With the dry weather that has followed, the alleviation in compaction has not yet been visible.

However after sward-lifting, Dave did notice that the sward immediately by the path of the subsoiler legs was a darker green—indicating that capped surface nitrogen had been released and taken up by the grass. He also noticed that subsoiling had boosted clover growth.

Richard Corlett also benefited from improvements in drainage following grassland subsoiling. By having drier ground, he was able to keep cows out for longer at both ends of the season, gaining valuable milk from grazed grass.

Nutrient management

Soil samples were taken from around a third of the fields at Dave Richards' farm early this year, identifying those that were most in need of an up-to-date test. A standard soil test identifies the P, K, Mg and pH status of a soil. A suitable nutrient plan can then be developed which utilises manures and fertilisers in the best combination, and ensures no nutrient is over- or under-supplied and that lime is applied where needed.

Ross Leadbeater, regional business adviser at GrowHow says: "We recommend soil sampling a third to a quarter of the farm each year, so that all fields always have an up to date soil test. Each field should be sampled every three to five years at least."

The soil sample results from Ridgend Farm showed that although the pH levels were at or just above the recommended 6.0 for grass, all the fields were short of phosphate (P) and some of them were

high in magnesium (Mg).

On dairy and livestock units it's important and cost-effective to account for the nutrients already on-farm in the form of slurry and FYM. Ross used GrowHow's Encompass programme to create a nutrient plan for the grass and cropping at Ridgend Farm, accounting for the manures that were likely to be spread, when considering the fertiliser that was required.

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Richard Corlett.

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Ross explains: "It's best to address phosphorous shortfalls slowly, as it can be expensive to try and increase levels in a short space of time. Nor is it advisable, as some of the P can be lost on soil particles in runoff during the winter months. This can result in P moving into watercourses, so it's not good from an environmental point of view.

"For grass, the P index should be 2. Some of Dave's cutting leys have a P index of 0 or 1, so in addition to slurry applications for first and second cuts, he also needs to apply a careful combination of fertilisers. Slurry will provide sufficient K for first cut, but additional P is required, so EarlyBite will be used. At second cut, some additional fertiliser K is needed, as well as P, which will be supplied by MultiCut Sulphur. In some fields where P is very low, an application of 100kg/ha of DAP has been recommended to help re-build levels. Ensuring the nutrient supply is adequate in this way should support a good first cut of silage.

"We are looking to balance the soil indices to the recommended levels across the farm—that is, index 2 for P and 2- for K. Once the correct index is reached, Dave can switch from applying nutrients to build levels, to just maintenance dressings of P or K," says Ross. "We'll also try to target slurry nutrients to where they can best be used."

The magnesium levels in some of Dave's fields are as high as 4 and 5. The ideal index is 2. Ross explains: "To reduce the magnesium index, Dave could target slurry applications away from these fields and should avoid buying magnesium limestone when looking to lime his fields."

Next year, another third of the land will be soil-sampled to continue to build a picture of the nutrient status of the farm. "By following this nutrient management plan, we expect to see phosphorous levels gradually increasing over a period of time to their required index. In the future, Dave may not need to buy P and K fertiliser, only needing to buy nitrogen and sulphur for



Dave Richards sward-lifting in December to remove soil compaction.

grass growth, with perhaps some fertiliser compounds to support cropping or silage offtakes, where slurry nutrients cannot supply enough."

Soil testing and nutrient planning enabled Richard Corlett to tailor his fertiliser purchases to meet soil nutrient requirements. He changed from using NPKS compounds to primarily NKS and straight nitrogen, and saved money in the process. Since the Grassright project, Richard has stayed on track. He only needs to purchase straight nitrogen for applying pre-turnout. Then after first cut, he applies a compound fertiliser to support grazing.

This year, Richard has decided to analyse his slurry. Due to NVZ regulations he has been keeping rainwater out of the store to maximise the storage potential, meaning that the slurry is thicker. As a result the nutrient content will be less dilute, and needs to be accounted for in application rates.

The next steps

With grass growth well under way, so is weed growth. Dave will be receiving advice through United

Phosphorous on control of weeds and grassland pests.

Where grass and clover leys have dock infestations, then the Grassright Group will advise the best step taking into account the overall ground cover and sward quality of the ley.

There is currently no clover-safe herbicide. The recommendation may be to hold off spraying and then carry out a complete reseed in the autumn, or it may be to spray and sacrifice the clover which can be oversown back in later.

Taking a more proactive approach to grassland management certainly paid off for Richard Corlett, who continues to keep on top of the different factors which impact on quality and yields.

For Dave Richards, improvements are already being seen in terms of more grass in the oversown fields, and a more informed fertiliser plan.

The Grassright Group will continue to support him with technical information and practical advice over the next few years, and will be assessing the financial returns of an integrated approach to grassland improvement.