

GRAZED GRASS FOCUS

A successful series of farm walks with a focus on grazing was staged this spring by British Grassland Society, Milk Development Council and RABDF. If you were unable to attend, here's a report from one of the host farms.

Measuring the grass cover in the 26 paddocks that make up the 117ha grazing platform at J & G Quicke's Home Farm dairy unit takes an average of 2-3 hours every week, but – as herd manager Peter Jones happily points out – it beats scraping slurry.



PETER JONES



MEASURING GRASS COVER EACH WEEK ACROSS ALL THE PADDOCKS MAKING UP THE HOME FARM GRAZING PLATFORM PROVIDES ESSENTIAL MANAGEMENT INFORMATION

THIS ISSUE:

Summer grazing options



Chicory boosts growth



Out-wintering update



Maximising forage acres



The 500-cow operation, based at Newton St Cyres in Devon, now operates as a truly grazing-based system, with

“Our policy is to graze the cows at every available opportunity,” explains Peter. “The land can be quite heavy in winter, and easily poached, but with sensible management we are successfully achieving as close to an all-year-round grazing system as is possible.

“We have a good network of tracks that provides direct access to virtually all the paddocks, and we avoid overstocking, particularly in winter. Cows only go out by day in the winter months, and we did keep them in for a period this February when the ground was virtually under water.

Continued over...

GRASS USE:
Of 13 t DM/ha
produced annually
at Home Farm, 11.5 t
DM/ha is used

grass intakes not only the mainstay of the ration but the basis on which total feed requirements are calculated. As such, the weekly tour with a platometer is arguably the most important task on the farm, as it produces the key input data for a feed budgeting program that lies at the heart of the herd's management.

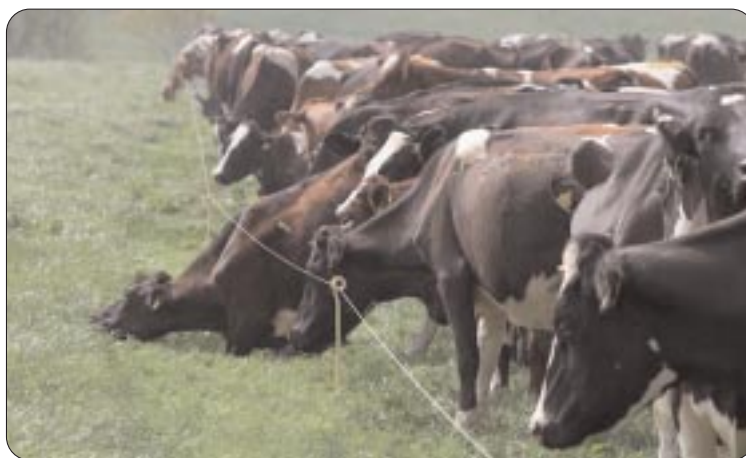
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"We are producing 13 tonnes of grass dry matter per hectare annually, and utilise around 11.5 tonnes, which is a good indication of grazing efficiency."

The average stocking density for the 117ha grazing platform is 4.5 – 4.6 cows per hectare, which includes the land taken out for silage cuts during peak growth periods. The rotational grazing system is managed so that cows are turned onto fresh pasture after each milking, with a back-fence always in place to prevent spoilage of the regrowth.

"At peak growth periods the pastures are producing 140-150kg/DM/ha/day, so it is critical to protect this if we are to maximise utilisation," Peter stresses. "Our aim is to graze as tight as possible, to a target cover of 1,450kgDM/ha, and turn cows onto pastures at between 2,750 and 2,800kgDM/ha."

"At peak growth periods a rotation can be completed in about 14 days, whilst it will take 16-18 days during most of the summer. During the winter months, when cows are inside at night, rotations will typically



take 20-30 days."

Whatever the time of year, grass cover measurements are routinely entered into the feed budgeting program, along with other crucial information such as stocking density, estimated intakes, yields and the residual cover. This allows the rest of the ration to be calculated for the herd as a whole. Grazing quality is checked 2 – 3 times a year and factored in to the rationing.

Although the herd comprises autumn and spring calving blocks, the milking herd is managed as one, with a level parlour concentrate feed rate that averages out at 4kg/cow/day. The cows are a three way New Zealand

Friesian / Swedish Red / Ayrshire cross, averaging 7,700 litres with 5,000 litres coming from forage, and with excellent milk quality (4.8% butterfat and 3.7% protein) for the Quikes Traditional Cheese enterprise that it supplies. The cows really are bred for a grazing system, and a very high health status and low replacement rates (just 12%) emphasises the benefits.

"We feed an 18% protein, high digestible fibre cake across the board, and offer maize and whole crop silage during the summer, as this helps with the availability of energy," Peter continues. "Minerals are supplied in the water supply, according to requirements as identified

from periodic liver biopsies carried out on a random sample of cows."

Pastures are primarily medium to long term grazing swards, comprising perennial ryegrass and clover. Since the conversion from a high yielding high genetic index herd to the current grazing-based system in 1999, significant pasture improvement has been carried out, and is now maintained primarily through over-seeding, with white clover a key component.

With artificial fertiliser use confined to the shoulder periods (Feb / March and Sept / Oct), the farm makes good use of dirty water applied through an umbilical system during the summer. Total nitrogen applied, including that from dirty water, is estimate to be 280-300 units N/ha.

The early grazing demonstrations organized this spring by BGS, MDC and RABDF attracted over 600 visitors in total.



Treat grass like TMR

You wouldn't feed a total mixed ration without knowing exactly what you are feeding - and it should be the same for grazed grass or any grazed forage, according to MDC extension officer Jennie Playford. "You can allocate it like silage."

As sward density can differ between fields and seasons, measuring grass can be achieved most accurately using a rising platometer. To understand what grass is available and how quickly it is growing, this should be done across the grazing area once a week, she says.

"Take 50 readings across a field to produce an average cover in DM/ha. The more modern platometers provide this reading instantly, unlike older models that required a calculation."

Comparing these figures with those the week before allows you to calculate the growth rate. This means you can work out a

feed budget and then an area to allow cows each day. It will also tell you how much DM of grazed grass is in the diet, so you can work out if supplements are needed, adds Miss Playford.

GRAZING TIPS:

- Start grazing at 2700kg DM/ha
- Leave a residual of 1500kg DM/ha
- Allocate a fresh area every 12 hours
- Protect regrowth (from 3 days after first grazing)



MDC'S JENNIE PLAYFORD SAYS GRASS SHOULD BE MEASURED AND ALLOCATED WITH THE SAME PRECISION THAT APPLIES TO SILAGE

Summer grazing options

Fast growing fodder crops such as Appin turnips and the newly available hybrid brassica Swift can provide valuable summer grazing for cattle and sheep, and – if managed correctly – can also offer the bonus of regrowth into the autumn.

So says **Richard Wilkie** of British Seed Houses, who reports that more and more livestock farmers are now realising that fodder crops are an opportunity for the present and are applying new approaches to growing and utilisation – despite the traditional image.

“The key is to apply crop establishment and husbandry practices in the same way that a premium quality cereal crop would be managed,” he says. “Soil nutrient levels should be tested and made good before sowing, for example, and the crop should be given the best possible assistance during the first six weeks.”

In the case of all brassica fodder crops, this means producing a firm, fine seed bed and using seed that has been appropriately treated.

“I always recommend broadcasting the seed and then rolling it in,” adds Richard. “This ensures that the seed isn’t sown too deep and creates good soil-to-seed contact.”

“Using seed treated with Ultrastrike is also vitally important, to aid establishment and protect the developing crop against pests such as flea beetle and prevent fungal diseases such as damping

off. Ultrastrike also contains the often-deficient trace element selenium and includes a bird repellent.

“It is then essential to monitor your crop, by walking it at least twice weekly during the first six weeks, to check for pest or disease damage. Pests such as flea beetle can be devastating, as can saw fly later on. It will be far easier to rectify any problem that is spotted early – crops can become irretrievably damaged without prompt action.”

With this level of husbandry, a crop of Appin grazing turnips should reach maturity in 60-90 days, whilst Swift is typically ready to graze in 90-110 days.

“Both are superb ‘catch crops’ and ideal for overcoming late season grazing shortages,” continues Richard. “To utilise them effectively, firstly measure the dry matter available and manage stocking density accordingly. Whether grazing with sheep or cattle, it is always better to restrict access, to avoid unnecessary wastage. Both

Appin and Swift offer regrowth potential, so if this is the intention you will need to avoid damage to the crown (in the case of Appin) and ensure the main stem remains intact (in the case of Swift).

TARGETING HIGH PRODUCTION PER HECTARE

Isaac and **Kerry Piper** who run a herd of 800 Friesian dairy cows at Hele Barton Farm near Launceston in Cornwall (in addition to a further 600 Jerseys nearby) are including both Appin grazing turnips and Swift in their summer grazing plans.

Around 30 ha of Swift and a similar area of Appin have been drilled this spring with the intention to supplement grazed grass in the latter half of June and throughout August.

As such, the two fodder crops provide a complementary mix, with the faster growing Appin becoming available earlier and

then being followed by the Swift. During this late summer period, these crops will be strip grazed for about 2 hours per day and will provide 15-20% of daily intakes for the milking cows, alongside grazed grass and a limited amount of parlour-fed concentrate. The intention will be to re-graze both the Swift and Appin in the autumn.

“Our system is geared to maximising production per hectare by providing the highest possible forage quality,” explains Isaac. “We are targeting 17,000 litres per hectare (1,340 kg milk solids per hectare) from the 250 hectare milking platform at the home farm, with just 300kg/cow/year of concentrates. Supplementing quality grazing with brassica crops such as Swift and Appin is a key part of the strategy.”

With the farm currently in organic conversion, Isaac adds that brassicas provide a vital break crop between grass leys, adding fertility and aiding weed control.

BRASSICA GRAZING TIPS:

- Avoid sudden unrestricted access
- Calculate available DM
- Adequate water supply (3-5 litres/1kgDM)
- Provide additional fibre (hay/straw)
- Monitor stock



SUMMER-GRAZED BRASSICAS ARE HELPING ISAAC AND KERRY PIPER MAXIMISE PRODUCTION PER HECTARE AT HELE BARTON FARM

MEASURING FODDER CROP DM

Whatever your fodder crop, all you need to establish DM yield is a one metre square frame, a seed bag, a pair of garden shears and scales. Sampling a field more than once is advisable.

- Place the frame in your crop
- Using the shears, cut each plant within the frame and put the harvested crop in your bag
- Hook the bag onto your scales and read off the fresh crop weight per m²
- Multiply the fresh weight per m² by 10,000, then multiply by the expected crop dry matter % (e.g. 15% for kale) to give you the total DM per hectare

The booklet “**Cutting Feed Costs and Filling Forage Gaps with Fodder Crops**” contains further information and is freely available from British Seed Houses.



A ONE METRE SQUARE FRAME IDENTIFIES THE AREA OF CROP TO BE WEIGHED

OUT-WINTERING SLASHES COSTS AND FUELS EXPANSION

We revisit Chepstow-based Paul and Mel Rymer, where out-wintering cattle is now cutting costs by around £90/head, whilst also improving health and allowing expansion.

The Rymers run three units on 750 rented acres at Portskewett, just north of the second Severn Crossing. Iftonhill Farm is home to 100 Holstein Friesians averaging 10,700 litres/cow, while the Innage and Wyeland units run 300 head of beef cattle and 1100 lambing ewes.

"We lost our barns to property development so looked at out-wintering out of necessity, but the experience has shown us how much cost you can take out of a housed rearing operation," explains Mr Rymer. "We calculate that we've been able to cut winter rearing costs from £1.07/head/day to £0.47/head/day."

According to Richard Wilkie from British Seed Houses, the crucial ingredients for success include field selection, soil nutrient levels prior to sowing, kale variety selection and ensuring that all machinery work is carried out in the summer.

"Cross-compliance should not be a widespread problem," he says. "Select fields where grass production is falling and

ones that offer some shelter and are free-draining.

"Soil testing around 6-8 weeks prior to sowing is essential. Work with your adviser to ensure any



CATTLE STRIP GRAZING ON KALE. INSET: PAUL RYMER

deficiencies are corrected otherwise you will restrict crop yield and push your feeding costs up.

"Variety selection is also vital. You need a high leaf-to-stem ratio, winter hardy variety like Maris Kestrel, because it is

highly palatable with digestible stems – yet it won't fall over. A good crop can deliver up to 0.85kg of weight gain a day and will leave you with a brown field for a follow on crop immediately after grazing.

"Using Ultrastrike treated seed is also crucial to aid crop establishment and protect

seedlings against flea beetle attack."

Mr Wilkie points out that yields of 16.5 tonnes DM/hectare are achievable, which at around 80% utilisation delivers 13.2 tonnes DM/hectare for around £235 –

as little as 1.78p/kg DM.

Paul Rymer introduced 93 cattle weighing an average of 400kg/head to the kale crop in early November. Feed intake calculations were based on a two-thirds kale (6.4kg DM) one-third roughage (3.2kg DM) split. Break fencing is moved once a day, giving stock self-feed access to a new crop strip based on a simple and practical available DM/hectare calculation.

"Cattle on brassicas must have access to a source of roughage in the diet – around 1-4kg DM/day is recommended," Mr Wilkie stresses. "Haylage or cereal straw with a chop length of 3-10cm is ideal. To prevent machinery damage on wet fields make sure enough bales are strategically located in the crop in the summer, straight after sowing."

Cattle came off the kale at an average weight of 530kg at the end of March to be finished on spring grass.

"Having been out all winter we expect them to finish rapidly off the grass and grade well," he says. "Despite recent wet conditions, the kale fields have stood up well and the cattle have thrived. They're definitely a lot healthier and happier outside. We've had no pneumonia problems at all and the cost savings mean we'll be exploiting the system further next year."

BROWN FIELD OR A WASTE OF DM?

Observational kale grazing trials at Thankerton Camp Farm near Biggar have revealed startling differences in the utilisation of commonly used varieties.

Following winter cattle grazing, the aftermaths varied from a brown field to a forest of ungrazed stems, with only the leaf canopy being eaten in some cases.

"You want to be left with a brown field for your following

crop in the spring as this means the crop has been fully utilised by the cattle," comments Michael Shannon of British Seed Houses.

"Maris Kestrel is the proven fodder kale variety and the one most farmers come back to time after time. Nothing beats it because it stands up well, yet both its leaves and stems are highly digestible.

"Nobody should be growing varieties that produce large quantities of green manure."



MARIS KESTREL, THE CHOSEN VARIETY FOR SAC OUT-WINTERING TRIALS, WILL ENSURE MAXIMUM CROP UTILISATION AND LEAVE A BROWN FIELD.



SOME INFERIOR 'GAME-COVER' TYPE KALE VARIETIES ARE NOT WELL UTILISED BY CATTLE – WITH THESE VARIETIES STEMS ARE ALMOST COMPLETELY OVERLOOKED.

Perennial chicory provides boost to growth rates - even in drought

The new variety of perennial chicory, Puna II, bred and now widely used in New Zealand is beginning to stimulate the interest of livestock farmers in the UK – and not only for its nutrient value and potential to support high growth rates.

This deep rooting herb offers drought tolerance as well as high yields of palatable grazing, and it is this characteristic that British Seed Houses' Paul Billings believes is as likely to result in its widespread use in this country.

"If we are indeed facing more and more summers like 2006 as a result of climate change, then livestock farmers will need more tools in their armoury to bridge some serious grazing gaps," he says.

"Catch crops such as kale will continue to have a valuable role to play, but there are great advantages in having medium to long term leys with an inherent ability to keep going under dry conditions.

"Including white clover is certainly going to help - as the plants have rooting characteristics that seek out available moisture more effectively than ryegrasses – but chicory is better still at dealing with drought stress."

A deep taproot not unlike red clover is the key to perennial chicory's drought tolerance, and it is this ability to draw nutrients

from below the root profile of most grasses that results in its high mineral content (most notably zinc, potassium and copper).

Growth rates

Animal feeding trials in New Zealand have shown that perennial chicory can consistently achieve lamb growth rates of up to 350g/head/day during a finishing period, and it is also a high quality fodder for cattle. In comparisons with alternatives such as plantain, white clover, ryegrass and lotus, perennial chicory shows its potential for



PUNA II PERENNIAL CHICORY

promoting good growth rates over a full growing season (see table below).

Results like those being reported from New Zealand have led to a surge of interest in the UK, with British Seed Houses leading the way by making new varieties commercially available in 2006.



ROB POWELL

Upland lambs receive grazing boost

Powys upland farmer Rob Powell first saw perennial chicory being grown on a study tour to New Zealand and was keen to try it at 120ha Blaenbwch, near Builth Wells, where he trades as Powell Brothers with his uncle, running a mainly Beulah flock of around 1300 ewes, 300 ewe lambs and 50 Welsh Black cattle.

Suffolk cross lambs are produced with the aim of finishing as many as possible off grazing and Rob saw the potential to increase growth rates with the inclusion of chicory in his swards.

In early May 2006 he sowed a 14 kg/acre cutting and grazing mixture, with late perennial ryegrasses, Timothy and white clover complemented with a 1kg/acre inclusion of Puna II chicory.

"The sward established well, with the chicory showing through quite strongly early on, and by early July we had turned around 350 lambs onto it. We sold 300 of these lambs at an average of 36kg liveweight on 27 July and rested the field for two weeks. We turned on another 200 lambs in the middle of August and these were averaging 34kg by mid September. The lambs certainly took to the chicory straight away and grew well, and didn't seem to scour as much as can be the case.

"The summer of 2006 was a particularly dry time, and we certainly saw the potential for the chicory to keep going despite a shortage of significant rainfall. I do not believe we would have seen the growth rates that we did last summer without the chicory."

REDUCING WORM BURDENS WITH CHICORY

The potential for Puna II perennial chicory to reduce the effects of gutworms is being investigated at a number of UK institutes this coming summer. Look out for reports in future editions of Forager.

To date, work at SAC Craibstone, near Aberdeen, has shown that lambs reared on chicory had a 40% reduction in worm egg excretion and grew 20% faster than their counterparts grazing grass and clover. In separate field trials in Midlothian, gutworm numbers in lambs grazing chicory were reduced by 40%.



The effect of pasture species on lamb lifetime liveweight gain (g/head/day)

Year	Perennial chicory	Plantain	White clover	Ryegrass	Lotus
1	182	141	219	128	N/a
2	181	84	225	98	175
3	214	102	233	136	136

Source: Fraser and Rowarth. Proceedings of the New Zealand Grassland Association, 58.

GRASS RESEED FOLLOWING MAIZE MAXIMISES FORAGE ACRES

Drilled in mid-September 2006 following forage maize, a new silage ley at Martin and Dorothy Coar's Shotwick Hall Farm near Chester provided a substantial first cut that was clamped on 30 April 2007.

This effective strategy to maximise forage acres has been achieved by growing the ultra early (Maturity Class 11) forage maize variety Revolver – which produced a fully mature crop in late August – followed by timely establishment of a quality medium term grass mixture.

"We ploughed following the maize and drilled the grass seed using an Opico combination tine harrow seeder using the recommended 13kg/acre seed rate," explains Martin. "We used no seedbed fertiliser, and have applied a 25:5:15 NPK compound followed by a straight nitrogen top dressing this spring, which amounts to around 90 units of nitrogen per acre in total."

Martin expects the ley to provide quality forage for 4-5 years, with early spring growth one of the key selection criteria. The mixture is mainly made up of the IGER-bred Aber High

Sugar Grasses, including the intermediate perennial ryegrasses AberDart and AberStar and the hybrid ryegrass AberEcho.

Martin and Dorothy Coar are newcomers to 120ha Shotwick Hall Farm, having successfully moved on from a smaller tenanted county council holding in Cheshire in the last year. Their 200 cow dairy herd now averages 10,000 litres/cow and their policy going forward will be to maximise the use of home grown forage. This will be based around high quality grass silage and grazing, plus forage maize.

"We've tried wholecrop in the past, but this farm grows maize very well and I think the grass and maize combination provides us with the best yield of energy per acre," adds Martin.



MARTIN COAR

"Growing the ultra early variety Revolver meant we were able to harvest a mature maize crop around three weeks earlier

than our main maize crop. This created the opportunity to establish the grass seeds and the results are now in the clamp."

Red clover breakthrough

High yielding red clover varieties with the persistency to perform well into a fourth year could soon become the most significant development since the recommencement of the breeding programme at IGER in 1998.

Latest assessments from Aberystwyth and Edinburgh trials sites of new early flowering diploid selections show outstanding fourth year ground cover compared with greatly depleted control varieties.

"Two particular selection lines have out-yielded all other red clover varieties after three years and remain obviously superior to anything else in this fourth year," comments IGER clover breeder Terry Michaelson-Yeates. These lines were initially selected from plants with better crowns and then underwent a series of recurrent selections on the basis of persistency and yield. Greater persistency is perhaps the single most desirable characteristic for red clover, and we seem to be well on the way to achieving this."

New high yielding red clover varieties with four year persistency could potentially be available from British Seed Houses by spring 2008.



NEW IGER RED CLOVER SELECTION LINE SHOWING IMPROVED PERSISTENCE AS IT GOES INTO ITS FOURTH YEAR.

MAXIMISING FORAGE ACRES:

- Grow ultra early maize
- Drill grass/clover ley after maize
- Quality seeds mixture
- Early spring growth



FIND OUT MORE...

A selection of technical guides and Farm Bulletins is available free on request from British Seed Houses.

Please contact either the Lincoln or Bristol offices for your free copy.



Cutting Feed Costs and Filling Forage Gaps with Fodder Crops: Start benefiting from low cost forage.



Seed Mark 2007: Top quality grazing and silage mixtures, including AberHSG and other IGER-bred varieties.



Farm Bulletin: Using the BSH Sward Stick (available with free Sward Stick, pictured left).



Farm Bulletin: Increasing Grazing Options with Puna II Chicory.



Farm Bulletin: Successful Out-wintering on Maris Kestrel Kale.



Clover Management Guide: Best practice guide for red and white clover.



Bristol
Tel: 0117 982 3691
Lincoln
Tel: 01522 868714

www.britishseedhouses.co.uk

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