Torr Climate Change Focus
Farm meeting

Discussion group meeting held at Torr Farm on Tuesday 9th October 2012 from 10.45 until 15.00 by kind permission of Ross and Lee Paton.

Meeting Theme – Maximising Returns from Good Grassland Management

Gillian Reid chaired the meeting and the guest speaker was Charlie Morgan from GrassMaster Ltd.

Charlie gave an overview of some of the climate change predictions and how the agricultural sector will be expected to play a key role in mitigating climate change, through reducing their greenhouse gas emissions and locking up carbon on the farm. UK agriculture will also need to adapt to a changing climate. Charlie reassured the audience that this isn’t something we should worry about if we farm efficiently. By improving fertility, increasing feed efficiency and increasing longevity of breeding stock, farmers will be able to meet greenhouse gas targets and create a more profitable and sustainable business.

Charlie made it clear that farmers need to think about integrating environmental management into routine farming business. Grass management was now becoming more important; grass is the cheapest form of feed we have and is within the farmers control to manage.

Managing Nitrogen
In terms of production on the farm, an increase in feed costs by 1p/kg DM could equate to an extra £80/year per dairy cow or £48/year for a suckler cow. Effectively, farmers buy and sell nitrogen. Charlie questioned how much nitrogen is harnessed from nature and how much of this is actually used? For organic farms like Torr, bagged N isn't an option.

Charlie suggested that we should look to farm animals that can produce off forage and not cake and that farmers need to think about nitrogen utilisation and how effectively livestock can produce milk or meat.
Soil quality
In terms of managing forage on the farm, Charlie stated that the challenge was threefold; we need to **grow, manage** and **utilise** better grass/clover leys. This can be done with attention to soil quality and selecting improved forage varieties and genetics that are right for the farming system. Making better silage and knowing silage quality through testing is important, as there is a big difference in weight gain between D values.

Charlie applied the same message to soil testing; in Charlie’s experience, many farmers don’t test soils. How do you know how much nutrients or lime to apply to optimise soil fertility if you don’t know your starting point?

Charlie reminded the group about what to look for when examining soils and demonstrated how to assess a spit of soil. In particular, you are looking for
- Root depth
- Friability
- Worms
- Excreta from worms – this delivers manure to roots

Soil Compaction
Soil compaction is one of the silent costs on the farm. Charlie suggested that all farmers should **dig some holes** to see what condition soils are in. Compacted soils can become anaerobic; oxygen doesn’t get to the roots and roots don’t develop correctly into the soil profile. If root development and function is being hampered, it’s going to be harder to achieve target yield for that crop. Charlie stated that a good farm will have compaction, but importantly, it will also invest to put it right. Within a group of Welsh farmers, DM/ha ranged from 4 to 14 tonnes. The farmer achieving 14t/DM/ha had an average utilisation rate of 86% compared with others reaching a mere 50% utilisation rate.

Charlie questioned how many grazing days you could be losing to soil compaction? Based on costs of around £2.50 to £5/day to keep a cow indoors, everyday you can keep cows outside is a saving. Being able to put cows out a week earlier or keep them out a week longer could be worth thousands to the farm business. **Do we need to extend our grazing season and move towards less silage and more intensified grazing systems through the right soils, right forage and the right animal?**

Grass pasture management
In 2005, taking into account all ploughing, reseeding and management costs, grass forage production worked out at 4.3p/kg DM. It’s currently around 6.5p/kg DM. Compare this with the cost of cake at around 25p/kg. This may mean producing less milk, but the milk is produced more cost effectively meaning more profit for the business.

Charlie asked who measured grass within the group and how the decision is made to move an animal on to another field? A sward height of 8cm would give around an adequate 12ME and between 18-30 protein. We all need to consider these questions to move closer to the 86% utilisation figure. Leaf stage of grazing pastures could be measured using a plate.
meter, measuring stick or use a mark on your wellies for those with sufficient experience. Measuring grass growth will help you to meet sward targets.

Charlie demonstrated how you would measure grass growth using a sward stick. A cow will eat 2.3% of its body weight per day but can only graze to 4cm sward height so a minimum height of 10cm of growing grass for maintenance of a cow is required; a sward height of 40cm across a field is ideal.

At 1700 kg DM/ha dairy cows would need to be moved from the field (approx. 7cm). However a 1500 kg DM/ha (4cm of autumn grass) would be ideal maintenance for sheep.

Charlie recommended that farmers calculate cow requirements, deduct energy from cake in the parlour, calculate how much the cow needs from forage, calculate how much area is required per cow then fence off paddocks. Crichton Royal Farm is doing this at 100 cows per 1ha paddocks and using a plate to measure the grass.

**Variety choice**

Charlie highlighted how choice of grass variety is important. Silage and grazing grass varieties should be different. For grazing use diploids which are more persistent and give better seasonal growth. Charlie highlighted some of the Aber varieties, with Aber choice, Aber avon being good late diploids. There is a seasonal variation in grasses; some varieties are more suited to spring growth whereas others favour autumn growth.

Diploid varieties are more persistent than tetraploids. As a rule, they are higher yielding and give good ground cover. New varieties, such as Aber magic are high yielding with reduced N inputs, so good autumn growth but does suffer from winter kill, therefore probably more suited to sheep and not dairy cows.

**Clover**

Charlie took the group to a field Ross had recently reseeded with red clover. Charlie stated the benefits of using red clover; the downside is that it only last 3 years. New varieties are being bred to last up to 5 years. Around 300kg N per annum can be fixed by red clover, however it is usually released when it is cold and the crop is not growing, therefore you can lose some of the N from the farm.

For silage, Charlie recommended 3kg/ha red clover in the mix and only introducing white clover to extend the life of the crop at 1.0kg/ha; if you are looking for a grazing mix then Charlie felt it was safer to go with white clover.

Once red clover has reached 20cm, it’s the ideal time to graze. Don’t take clover below 4-5cm. Don’t grow red clover in less than 5 year rotation due to Scleritnia risk, for this reason

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mixes should not have 0.5-1.0kg of red clover just thrown in. To minimise disease transfer, it’s a good policy to cut new red clover fields before old red clover fields.

If sowing out a long term grass ley to red clover, no start up N is required. If sowing out a cereal field to red clover, 25 units/acre of N would be required for establishment before it begins to produce its own N.

Following discussion around the benefits of red clover in both a wet and dry season, the group questioned how you remediate a compacted soil; Charlie recommended that once dry, ploughing or sub soiling would break up compaction. Applying slurry to compacted soils was also discussed; slurry will either evaporate or run off, as the slurry can’t enter the soil; a trailing shoe will not help the slurry enter the soil any quicker. Avoid spreading slurry onto red clover as it scorches the leaf and chokes it.

There was some discussion around drainage. Yes it can be expensive but this is where investment should be made. A future meeting will look at this topic in more detail.

Key points to improve grassland efficiency:
- Test soils
- Dig holes – assess and remedy compaction
- Measure sward growth; meet sward targets
- Choose grass varieties to meet purpose and season
- Know silage quality
- Manage grazing

After a few more questions and some discussion, Gillian closed the meeting and thanked Charlie, Ross and the group for their participation.

Further information was provided at the meeting, including the following practical guides:
- Assessing your soil structure
  www.sruc.ac.uk/downloads/file/132/practical_guide-assess_your_soil_structure
- Improving soil quality
  www.sruc.ac.uk/downloads/file/648/practical_guide-improving_soil_quality
- Soil Management
  www.sruc.ac.uk/downloads/file/130/practical_guide-soil_management
- Establishing grass clover
  www.sruc.ac.uk/downloads/file/649/practical_guide-establishing_grass_clover

Do you farm and would you like to attend to future meetings?
The meetings provide sensible ideas for the farm business, from invited speakers and other farmers, to improve efficiency whilst reducing the loss of greenhouse gases. It’s free for all farmers to attend and you will be able to influence the topics, speakers and location of future meetings.

Torr has two farm facilitators. You can contact either Gillian Reid at SAC Bush Office on 0131 535 3435 email gillian.reid@sac.co.uk or David Keiley at SAC Dumfries office on 01387 261172 email david.keiley@sac.co.uk for details of the next Torr meetings.

If you want to keep up to speed with what’s happening at Torr but don’t want to attend all the meetings, ask to be added to the Torr email list; you will receive notification of future event and meeting notes.

Visit the website at www.farmingforabetterclimate.org or email a general enquiry to climatechange@sac.co.uk

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