

FFBC News

The Farming for a Better Climate Newsletter

December 2012 (no. 5)



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What's new in Farming for a Better Climate?

As a wet and cold year draws to a close, our farm events have covered practical steps to improve technical efficiency, farm profitability and lower greenhouse gas emissions.

Taking steps now towards lower emissions could also put you ahead of your competitors and demonstrate how the sector is helping Scotland achieve its emission reduction targets.

From farm drainage to eradicating Johne's disease from the herd, this newsletter provides a reminder of the activities on the four volunteer climate change focus farms

and takes a look at some of the practical ideas from these events and other FFBC meetings held around Scotland.

New look to FFBC newsletters

FFBC has updated the look of its newsletter following the recent merger between SAC, Barony, Elmwood and Oatridge colleges to form Scotland's Rural College, SRUC. Under the merger, SAC Consulting is a division of SRUC.

Soil structure and tyre choice at Upper Nisbet

Following a wet year, many farms will experience soil structural problems which, if left unchecked, can have a significant impact on crop growth and productivity.

That was the message from SRUC soil specialist Bruce Ball at a recent Upper Nisbet focus farm meeting hosted by Robert and Jac Neill which looked at identifying and remediating soil structural issues such as compaction.



Bruce Ball looks at soil structure

Bruce was joined by Tony Powell and his colleagues from Michelin, who demonstrated how correct tyre choice and pressure could save a staggering 20%

plus in fuel costs and reduce the risk of soil compaction around the farm.

Catering for weather at Stewart Tower

Working with SAC Consulting's Sinclair Simpson, Neil and Linsey Butler at Stewart Tower near Stanley in Perthshire have also been looking at ways to minimise compaction and improve yields.

With the business operating both a cereal and dairy enterprise they are no strangers to the problems associated with impeded drainage in a wet season. The lack of sunshine together with underperforming areas of wet, compacted headlands chopped around 1.5t/ha – 2.0t/ha (0.6 to 0.8t/acre) off cereals yields.

Sinclair suggested a range of tips and ideas to protect soils from compaction and damage due to wet weather both at ensiling and grazing.

Sinclair advised that when carrying out soil conditioning work, there is an important rule of thumb. You must “get to the bottom of the problem” i.e. any machine dealing with the problem must get below the impervious layer. In order to shatter and break up the layer the operation must be carried out when the soil is dry enough to give the shatter effect. If the conditions are too wet any type of soil conditioning, whether it's based around subsoiling, aeration or sward lifting is a complete waste of time and fuel.

Sinclair's tips for Stewart Tower will be made into a practical guide and posted on the FFBC webpages in 2013; email climatechange@sac.co.uk if you want to be notified once it's available.

Farm drainage

As one of the volunteer climate change focus farms, Ross Paton at Torr near Castle Douglas hosted a drainage meeting, led by SAC Consultant Seamus Donnelly with demonstrations from

drainage contractor Colin Dempster and Sons plus Galloway Drainage Supplies.

With climate change scenarios predicting increased rainfall and more weather extremes, could timely investment in farm drainage be a wise spend?

Seamus covered key aspects of drainage maintenance and planning with an overview of the range of options available. Good drainage through natural or artificial systems provided a number of benefits such as:

- Improved crop growth and yields
- Better nutrient uptake (a deeper accessible soil profile allows a better root system)
- Less surface run-off (less diffuse pollution and soil erosion risks)
- Less poaching of soil surface due to machinery or livestock
- Better animal health due to reduced risk of waterborne diseases and parasites
- Less soil damage as drier soils are more resistant to pressures acting on them
- Well drained soils are easier to work requiring fewer cultivations to create a seedbed
- Improved drainage can increase productivity and reduce emissions of N₂O, a powerful greenhouse gas.



Seamus Donnelly discusses drainage

Out in the field, and armed with a drainage report that Seamus completed for Torr Farm back in **1982**, visitors were able to take a look at the drains thanks to Colin Dempster and Sons digging a suitably

sized inspection hole. Galloway Drainage Supplies were also on hand to discuss the different tools, pipes and materials available. Seamus stressed that carrying out effective drainage works can be expensive, but leaving drainage issues or carrying out ineffective drainage can be far more costly to the farm business.

GrassMaster visits Torr

Look after your soils, select grass varieties suitable for your needs and measure your sward heights for effective grazing were three of the key take home messages from the recent grassland meeting at Ross Paton's Torr Farm with GrassMaster Charlie Morgan.



Charlie Morgan examines a spit of soil

Charlie felt that we shouldn't underestimate the importance of home grown forages and the role they play in a cost effective, efficient dairy, beef or sheep system. Following comparisons between the cost per kg of DM of growing grass and concentrates, the group agreed it made financial sense to maximise output from their grass. Charlie believed we could all make improvements in both management and utilisation of grass and outlined how this could be achievable.

Getting the best from your grass means you have to know the condition of your soil, know its nutrient status and maintain optimum sward heights. If re-seeding Charlie noted that selecting the best varieties is important along with preparation of the optimum seed bed.

Out in the field, Charlie stressed the silent costs to the farm posed by compaction; a

good farm will have compaction but will take action to put it right by either sub soiling or using an aerator when soil conditions allow (i.e. don't carry out if soils are too wet or too dry).

Re-seeding and variety choice for grazing mixtures, opportunities from using clover in grass swards and grass utilisation by grazing cows were all discussed. Charlie demonstrated how to use a sward stick to measure the length of the grass, as this will help you to decide when livestock should be moved from one field to another to ensure greatest productivity.

By growing, managing and utilising grass correctly Charlie stated that feed efficiency will increase, benefitting productivity and helping to lower emissions from the farm.

Maximising cattle performance for reduced carbon emissions

Working with SAC Consultant Peter Lindsay, David and Morag Houstoun at Glenkilrie near Blairgowrie have demonstrated that the best way of achieving lower emissions within their 140 suckler cow herd and over 1000 sheep flock, is by improving the physical performance of their business.



Livestock at Glenkilrie

Improving livestock productivity can help to reduce the farm carbon footprint, as milk/meat output from a herd is increased compared to a fixed output of greenhouse gases. SAC Consulting's Jimmy Hyslop and SRUC Vet David Gibson, with farmer

David Houstoun looked at how we can tip the balance in the farms favour.

David runs 70 autumn calving cows and 80 spring calving cows at Glenkilrie. They are predominantly Limousin cross cows running with Limousin bulls, with all calves sold as store. David explained that the biggest health issue affecting cattle performance is Johne's disease. Keeping his own replacements, annual testing and removing positives from the herd are ways David is working to eradicate Johne's. There was plenty of opportunity for discussion with vet David Gibson, who supported David's actions and explained how Johne's was spread, identification and removing it from the herd.



David Houstoun (l) and Jimmy Hyslop (r)

Jimmy Hyslop asked if we can improve productivity with the same fixed costs? For example 100 spring calving cows whose offspring are finished at 24 months need the same housing as 140 autumn calving cows with the calves sold at 12-14 months of age.

Beef and lamb production systems are recognised as a source of greenhouse gas emissions contributing to climate change (principally methane (CH₄) and nitrous oxide (N₂O)). At the level of an individual farm, several "carbon footprint" calculators are now available to estimate tonnes of CO₂ equivalents (t CO₂e) produced for each enterprise with the results usually being expressed per tonne of food product output (e.g. per tonne of beef or lamb carcass). Benchmarking your carbon footprint results can help you compare where you are with like farms and identify

scope for savings in both costs and emissions.

Knowing the carbon footprint of your product and taking steps to reduce it could give you the edge over competitors, especially when selling direct to local butchers, restaurants or at farmers markets.

Calving at 2 years or 3 years of age?

There has been much discussion about the pros and cons of calving heifers at 2 or 3 years old. David has trialed this approach at Glenkilrie and the first batch were successfully calved this year.

David showed the results of this first trial at a recent meeting. With 6 cows in a pen, 3 had calved at 2 years old and 3 had calved at 3 years old. Although the ones which had calves at 2 years old were smaller, they were younger cows. The calves they were rearing were of similar size to those who had 1st calved at 3 years old.

| Calving at 2 years old | |
|---|---|
| Positives | Negatives |
| It costs £300 - £400 per annum to keep a cow and therefore an extra cost before return on money | Need to ensure good LWG from birth |
| Cows do not last longer if calved for 1 st time at 3 years old so more production out of lifetime of cow | Require extra concentrates in 1 st lactation |
| If they do not get in calf under 24 months, can be sold fat without the 30 month penalty for older cattle | May have issues getting back in calf |
| Can have more calving difficulties at 3 years old as cattle can be over fat | Cows may be slightly lighter |
| Less management groups required | Need to get the management right |
| | Use easy calving bull in 1 st year |

Focus farm facilitator Peter Lindsay and David will monitor the effect this has on the carbon footprint but the extra concentrates fed to the heifers to meet the target liveweight before bulling will be offset by the reduction in time taken for these animals to become productive.

Bedding cattle on recycled wood fines

David is currently trialling bedding stock on recycled wood fines. Jimmy Hyslop uses it in the SRUC trials facility for many of the cattle, and at approximately £18/tonne, these wood fines are cheaper than straw and require less labour.

Animals only require to be bedded on it once per week, instead of 3 times a week for straw. When discussed at a recent meeting, one farmer mentioned how he was really pleased with this system; his cows were cleaner bedded on woodchip than on straw and fat cattle required no belly clipping.

Glenkilrie has a lower carbon footprint when compared to similar farms and it is these type of efficiencies which result in good use of the fixed costs as well as good stock management which enables this to be the case.

All farmers are welcome to attend our free focus farm meetings. Notes from previous events are available at the FFBC website www.sruc.ac.uk/downloads/120200/climate_change_focus_farms.

Improving livestock nutrition

By kind permission of the Robertson family, Fodderletter Farm near Tomintoul was the host for a recent joint event between Farming for a Better Climate and Cairngorms National Park to look at livestock nutrition.

Farmers attending the event had the opportunity to have their silage analysed, so as they could gauge the benefit of knowing feed value of silage and

accurately match their silage quality with bought in concentrates.

SAC Consulting's Jenny McCallum discussed how to make good quality silage, followed by colleague Ricky Marwick demonstrating condition scoring of cows and discussing a range of issues from creep feeding to rations. John Smith from Harbro continued the session talking about acidosis, fluke and different protein sources.

There were also practical sessions on condition scoring of sheep, with information on nutrition at tugging, scanning, pregnancy and after lambing.

Not only do these points make sound business sense, but can also reduce emissions. For example:

- Making good silage (preferable using clover swards to supply nitrogen), can reduce the amount of bagged fertilisers needed to maximise yields. The higher protein in clover swards will also reduce the need for bought in protein such as soya.
- Analysing silage and condition scoring of cows is important to determine if bought in concentrates/protein are necessary (reducing both haulage & inputs)
- Scanning ewes will allow appropriate feeding, for example reducing concentrates for singles

Free SAC technical notes on condition scoring and other topics are available at www.sruc.ac.uk/downloads/120202/technical_notes

New practical guides

From establishing and managing clover swards, to information on the Renewable Heat Incentive, there is plenty of useful information in our practical guides and farmer case studies; take a look at www.farmingforabetterclimate.org. We are continually adding to our practical guides and case studies; let us know if there are topics you would like to see covered.

On farm benefits of natural flood management

We all need to think about how we can adapt to a changing climate; Jim Sinclair at Crookston near Heriot kindly hosted a meeting to show the Natural Flood Management (NFM) work he has carried out on his farm in partnership with the Tweed Forum.



Visitors see new planting

In addition, visitors were able to hear tips about sheep management and reducing diffuse pollution risks, both of which could contribute to reducing greenhouse gas emissions whilst benefiting the farm business.

Hugh Chalmers from the Tweed Forum explained how fencing and tree planting around river margins could be used to create a buffer, acting as a natural sponge to help 'slow the flow' of rainwater run-off from land and help to alleviate flooding downstream as rivers burst their banks during high rainfall events. Allowing floodwater to spill into these areas can help to protect towns and villages downstream.

This approach also gave day to day benefits for the farm. Jim explained that the NFM scheme meant that he now had a decent buffer between in-field operations and the watercourse, removing the risk of losing sheep in the burn and reducing their exposure to wet sites which could carry higher numbers of ticks and liver fluke.

As part of a wider scheme, the actions at Crookston Farm were also helping to reduce flooding risk for communities down

stream. Less obvious benefits, such as additional habitat for wildlife conservation and carbon storage were also being provided as part of this scheme.

Part of the visit discussed how land managers can cope with changing weather patterns, especially the more extreme rainfall events and how taking this approach now can benefit the business in the future.

For more information on the work carried out by the Tweed Forum, see www.tweedforum.org

Scope for renewables at Upper Nisbet

An energy audit carried out by SAC Consulting's energy specialist Jim Campbell, identified the potential to meet the existing electricity demand at Upper Nisbet of around 5000 kWh/year from wind or solar photovoltaic (PV) energy.



Example of on-farm renewables

Potential wind turbine sites with reasonable exposure in the prevailing wind direction and far enough away from farm buildings and cottages were identified. Using the national database provided by the department of Energy and Climate change (DECC) and the Carbon Trust database, the sites chosen had

annual wind speeds of 5.5-6.7m/s at a range of heights above ground.

The first step was to carry out on-site monitoring before choosing and installing a turbine. In partnership with their landlord's Lothian Estate, the Neill's erected an anemometer in 2011 and have been recording wind speeds. The information has been invaluable as it has recorded much lower speeds than predicted making any wind project at Upper Nisbet unviable under present conditions.

The new grain shed and drier which was used for the first time this harvest has presented the opportunity to closely monitor energy usage. With the new weigh bridge Robert has been able to record crop tonnage and moisture removal against kerosene and electricity usage for each batch dried. The data will be used to inform efficient drier operation and will also provide real information to compare this system against a potential biomass fuelled drying system, which even if not installed at Upper Nisbet will give useful information to other local farmers thinking about a renewable system for grain drying.

Feel the heat: benefitting from the Renewable Heat Incentive

On a chilly evening, SAC Consulting Portree delivered some warming advice to crofters, hoteliers and accommodation providers about a government scheme that can pay you for heating your home or business.

SAC Consultant John Farquhar hosted the event to shed light on the Renewable Heat Incentive (RHI) and the benefits of woodfuel heating. Using a renewable heating source can reduce our need for energy produced from fossil fuels.

John explained how the RHI works, and particularly highlighted the changes that are coming in the near future. John offered a wealth of additional information on the world of woodfuel. He drew on some real

life case studies of woodfuel installations and demonstrated the fuel bill savings and income from the RHI that can be achieved with a woodfuel boiler.

For more information on the RHI, see the practical guide at

www.sruc.ac.uk/downloads/120198/improve_farm_efficiency

Upper Nisbet hosts Ministerial visit

Paul Wheelhouse MSP, Minister for Environment and Climate Change visited Upper Nisbet to hear how farmers are finding ways to reduce agriculture's impact on climate change and improve their efficiency.



(L – R) Paul Wheelhouse MSP, Robert Neill and SRUC's Bruce Ball.

In a tour of the farm Mr Wheelhouse heard how the Neill's have already measured their farm carbon footprint and carried out detailed audits of their energy use and the scope for wind power. One aspect the Minister showed particular interest in was the adoption of so called "precision farming" techniques. With careful analysis of soil fertility and the use of satellite mapping and tractor mounted GPS they can target fertiliser use better, reducing waste, cutting costs and avoiding nutrient losses.

Other aspects of the Ministers visit included discussions on feed rations for farm livestock, assessing soil quality and

compaction issues after the wet season and a look at the wind speed measurements being taken made to assess the prospects of an on farm turbine.

Agri-renewables workshop

Scottish Government met with farmers and landowners plus supporting agencies at an Agri-renewables workshop earlier in the year. The aim of the workshop was to contribute to the development of the Agri-renewables Strategy through discussing key opportunities arising from agri-renewables in Scotland, identifying challenges to the uptake of agri-renewables and making recommendations to support the uptake of renewables on farm.

Challenges in ten key areas emerged from the event and the workshop participants suggested a range of recommendations to address each. You can read the report in full at

www.sruc.ac.uk/downloads/file/947/agri_renewables_consultative_workshop_report

We're still 'Twittering'

We are still using Twitter to put out bits and pieces of news and re-tweet important snippets from others. If you haven't tried twitter, it's a worth a look. You can keep up to date with the project by following us on Twitter at SACFarm4Climate.

What is FFBC?

With Scottish Government funding and support from NFUS, SRUC are running the Farming for a Better Climate (FFBC) initiative to help you identify practical steps to reduce farm emissions linked to climate change.

The key to reducing greenhouse gas emissions is **improved efficiency**, which is also vital for a sustainable and profitable business. **Demonstrating that we are taking action now could offset future regulations for the agricultural sector.**

Farming for a Better Climate aims to identify some of these practical steps and demonstrate what others have found when putting these steps into practice on their farm. It promotes 5 key action areas that we can all benefit from:

- Optimising fuel and energy use
- Renewables
- Locking carbon into soils and vegetation on the farm
- Improved nutrient use
- Optimise livestock management

We are continually adding to the range of practical guides and farmer case studies.

For profiles of the climate change focus farms, practical guides and farmer case studies, take a look at

www.farmingforabetterclimate.org

Dates for the diary

- **Aeration meeting at Oatridge Campus on Thursday 24th January**

In response to the effect of recent wet seasons on compaction and poaching on grassland, SRUC are organising a soil aeration event. The event will include a mix of trade displays including machinery which is designed to correct compaction in grassland, grass seed suppliers and information on drainage and grassland management techniques. There will also be practical demonstrations on assessing soil and drainage conditions and talks on methods of aerating and draining soils. Further details can be obtained from SAC Consulting on 0131 535 3430.

- **Soil, Muck & Money: Nutrient Management Event, Tuesday 26th February, Jedburgh**

A practical day looking at soil management and how to make best use of FYM, slurry and compost, with an introduction to PLANET.

The event is free of charge to primary producers & £60.00 plus VAT to others. Places are limited and booking is essential so lunch and resource packs can be provided. For further information please call Lyn Matheson on 0131 666 0847 or

email matheson@soilassociation.org
(With support from SRDP's Skills Development Scheme & QMS).

- **Nature of Scotland Awards; closing date 15 March 2013.**

The annual Nature of Scotland Awards 2013, aiming to recognise and celebrate excellence, innovation and outstanding achievement in Scottish nature conservation are open for entries. There are eight categories, ranging from Sustainable Development to Innovation. Its free to enter; see www.rspb.org.uk/natureofscotland.



Come to the next meeting

FFBC meetings cover practical farming topics with specialist guest speakers. Meetings are free and all farmers are welcome to attend. Contact climatechange@sac.co.uk or the local farm facilitator using the details below. Meetings are advertised at www.sruc.ac.uk/events/120175/farming_for_a_better_climate

Getting in touch

What would you like to see covered in future newsletters? You may already be taking steps to mitigate or adapt to climate change; we would love to hear about them.

You can send a general enquiry to climatechange@sac.co.uk or contact one of the team:

- Project Coordinator — Rebecca Audsley, SAC Auchincruive Office. Email rebecca.audsley@sac.co.uk Tel 01292 525089
- **Glenkilrie** Focus Farm Facilitator — Peter Lindsay, SAC Perth Office. Email peter.lindsay@sac.co.uk Tel 01738 636611

- **Stewart Tower** Focus Farm Facilitator — Sinclair Simpson, SAC Perth Office. Email Sinclair.simpson@sac.co.uk Tel 01738 636611
- **Torr** Focus Farm Facilitator — Gillian Reid/David Keiley, SAC Dumfries Office. Email Gillian.reid@sac.co.uk or David.Keiley@sac.co.uk Tel 01387 261172
- **Upper Nisbet** Focus Farm Facilitator — Moira Gallagher, SAC St Boswells Office. Email moira.gallagher@sac.co.uk Tel 01835 823 322

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