The Farming for a Better Climate (FFBC) newsletter keeps you up to date with some of the measures being discussed on the Focus Farms to improve farm efficiency and profitability, which in turn could result in fewer emissions per unit of production and a lower farm carbon footprint.

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What's been happening?

It's been a busy time since our last newsletter.

Feed efficiency and silage quality has been at the front of most livestock producers’ minds after the prolonged spell of bad weather over the summer months and has featured at a number of our Focus Farms and other on-farm meetings; we highlight some of the findings.

Even though the International Year of Soil is drawing to a close, soil and soil quality is still key focus for us. The Focus Farms have been looking at their soils in terms of protection and improvement of structure, organic matter and nutrient status.

For the first time in the project, (nearly) all the focus farmers were in one place in Perth in October, meeting up to discuss some of the things they had been looking at on their farm or were keen to explore further.

This newsletter provides an update of some of the practical ideas and activities recently explored on the Focus Farms.

Notes from the discussion group meetings are available at www.farmingforabetterclimate.org within the individual farm pages.
Update from Nether Aden

Farm Facilitator and SAC Agricultural Consultant Alan Bruce updates us on activities at Nether Aden, a mixed farm over 210 hectares on the outskirts of Mintlaw, Aberdeenshire run by David and Nicola Barron.

Winter nutrition

Like many of the other Focus Farms, nutrition for the suckler cow and feeding cattle through the winter months was the topic of a meeting in October. SAC nutritionist Karen Stewart and Norvite Technical Director David McClelland highlighted the poor levels of protein common to many silages this year, and the implications that this has for feeding stock. The importance of grouping and feeding cows to condition was discussed, as was the need to accurately know the weight of the cow. Individual feed requirements can vary considerably depending on these factors; its very easy to either underfeed or overfeed the animal, which can have a significant effect on successfully producing a calf in the spring. Different rations were discussed by the group for the various classes of cattle on the farm. Speaker David McClelland also highlighted the trace element and mineral requirements of the cow over the winter and how these can help to produce a healthy calf, an easy calving and a good supply of colostrum.

Improving soil structure to benefit yields

Soil structure and organic matter content will influence yields. After looking at soils over the summer months, David and Alan have set up a trial on some long term arable fields on the farm. This will assess the potential impact of using compost, ploughing in straw and the use of green manures on improving soil structure and the nutrient status of the soils in an effort to improve yields of arable crops. The crops will be assessed through the growing season, with various measurements being taken right through to harvest e.g. establishment, tiller number, tissue analysis, yield etc. Farmers will have the opportunity to view different treatments throughout the growing season.

Efficient cow size?

Earlier this month we considered cow size. Robert Logan of SAC Consulting led a discussion on the effect of cow size on the efficiency of beef production. Breeding policy, feed requirements, birth weights of the calf, growth rates, labour requirements etc. and how this can affect the physical and financial performance of the herd and the farm as a whole were discussed. With cattle recently housed, the meeting also covered animal health issues that need to be addressed between now and calving to produce a healthy calf.

Our next meeting on 12th January will consider estimated breeding values (EBV’s). This meeting is timed to take place just prior to the main bull sales and will give more of an understanding of how EBV’s can be used to help farmers select a bull that will meet their requirements.
Nutrition at Rumbletonrig

John Mitchell of Rumbletonrig in the Scottish Borders focused on cattle nutrition at a recent discussion group meeting. Rumbletonrig covers 327 ha in the Scottish Borders. The main enterprise is beef production with sheep and plus some arable cropping.

Silage analyses across the Borders area has shown average or above average energy levels but surprisingly low protein content, writes Farm Facilitator and SAC Agricultural Consultant Donald Dunbar. The table (below right) shows the range of protein levels from the 125 samples taken by local staff with 39% below 10% protein.

Analysis of the Rumbletonrig silage confirms the trend of higher energy and lower protein when compared to last years results:

| Comparison of Rumbletonrig Silage Analysis 15/14 |
|-----------------|--------|--------|
|                | 2015   | 2014   |
| Dry Matter g/kg| 293    | 283    |
| Energy MJ/kgDM | 11.2   | 10.3   |
| Protein g/kgDM | 92     | 115    |

At the meeting, SRUC Nutritionist Colin Morgan was on hand to explain about ruminant’s requirement for protein and how cattle rations can be cost effectively balanced using supplementary feeds such as soya, beans or dark grains.

A further topic of discussion was the length of the finishing period of John’s steers. If this period is shortened then the number of days of methane production per animal is reduced, which would be a win for climate change. We will be looking at this in more detail with feedback provided at the next meeting.

Silage quality - know what you’ve got

We have seen variable silage analyses results this year Scotland-wide, as highlighted at both Nether Aden and Rumbletonrig. Speaking at a recent FFBC meeting in Orkney, Susan Pirie, Senior Agricultural Consultant with SAC Consulting Kirkwall said: “Those silages with good dry matter content, good metabolic energy content (ME) and good protein levels will score highly; but if just one of these areas is lacking the silage will be low quality. Due to the cold, wet weather in most cases the silage analysis found low protein content, which means more feed will need to be bought to compensate, making the coming winter quite expensive.”

As reported in earlier newsletters, knowing the feed value of pit silage can save you money. With good silage analysis results, previous Climate Change Focus Farm host David Houstoun was able to feed concentrates to his 1,042 ewes two weeks later than usual and fed less feed for the remaining six weeks. The result was a total reduction in concentrates fed pre-lambing of 13.5 tonnes. This is a saving of just under £3,000 and 4.84 tonnes of CO₂e with no loss of production.
Highland Farming Efficiency Network ‘HiFEN’

Stephen and Sheena MacKenzie at Auchmore near Muir of Ord, David Girvan and Family at Corrimony at Glenurquhart and Jason and Victoria Ballentyne at Clynelish, Brora are working together as Focus Farms in a farm efficiency network, here Farm Facilitator Jenny McCallum outlines some of the key activities:

Ewe Efficiency
This year we looked at ewe efficiency before lambing and tried to determine what the factors affecting flock longevity could or perhaps should be. We also looked at labour efficiency and best use of electronic tags with Roddie Scarborough (pictured left with Jason Ballantyne on right), as being able to handle sheep effectively makes gathering data less of a chore. Without this information about your flock’s productivity it is difficult to make informed decisions and hopefully business improvements.

Forage
Before turnout in a Spring (which wasn’t feeling very warm), we looked at the limiting factors on forage yield and accessibility at Auchmore. Having previously carried out some GPS soil testing to establish the nutrient status in a selection of fields on each farm, SAC Consulting’s Bill Crooks took us out into the field to see whether there was anything affecting the soil structure. Michael Blanche from QMS then gave an introduction to the paddock grazing system, which we are keen to get up and running on the farms.

Stabilisers
After a hectic summer we reconvened at Corrimony to look closer at the Stabiliser cattle. The Stabiliser Cattle Company came up to explain the background of the breed and we were astounded at how quiet they were when we mingled with them in the field. David is into his first full year of finishing male calves as bulls and it will be interesting to see how they perform.

Looking ahead
In the next 12 months we look forward to looking at the design and implementation of a drainage programme at Corrimony as the foundation of improving grassland productivity and fine tuning the introduction of a paddock grazing system.

The carbon audits have been done for a second year and fertiliser and manure management was highlighted as an area that could be targeted for improvements. The group plan to look at how PLANET could be used to improve this for an upland farming system. We have also devised a lamb record sheet. This is a single sheet to note what losses are attributed to. While this might seem a bit depressing, a post lambing self help session at Clynelish in early June will look at the main trends across the area and see what changes could perhaps be implemented for another year. The more folk that participate in this information gathering project, the better the results. Finally, we will look at how technology can help productivity with drones at Auchmore monitoring grass yield potential and GPS plotting where the silage bales are concentrated.

Cheerio!
Sadly we have recently said goodbye to two of our FFBC team. Isla Fraser, Resource Efficiencies Project Coordinator who did a lot of our behind the scenes work with the website and project support has moved on to an office manager role in Edinburgh, and Jenny McCallum, who worked with the HiFEN farms has also moved on to pastures new, (but hopefully we will see Jenny at future HiFEN meetings). Thanks both!
Update from Ardoch of Gallery

Willie Officer and family farm at Ardoch of Gallery near Montrose in Angus. The arable unit covers just over 131 hectares, growing winter wheat, spring barley, oilseed rape and seed potatoes. The business has recently diversified into daffodils, with 8 ha in bulbs and significant investment in new storage facilities. Here, SAC Consulting Farm Facilitator and Consultant David Ross updates us on activities with Willie and team at Ardoch.

Improving organic matter
The farm does not have any livestock and discussions centred on how to improve organic matter in the soils through chopping straw and using compost. These additions are also a good source of plant nutrients and were discussed as part of a nutrient budget for the farm. A cover crop trial, which was set up in the summer after bulbs and before wheat was sown was also shown with variances between the two mixes used. This was discussed extensively and the group wished further trials to be established in coming year.

Using GPS
With Aiden Monaghan (pictured) from SOYL, our latest meeting of the Ardoch Focus Farm the group looked at strategies for production at low commodity prices. The farm has been using GPS soil analysis for over 10 years and has yield mapping on the combine. The group looked at the results to see if there were any correlations between the yield and soil maps and identified areas of fields where compaction could be an underlying issue.

Best use of nutrients
Maintaining the correct pH is vital to avoid wastage; low pH will prevent nutrient uptake. Many in the group were already taking this in hand and had moved to variable rate spreading for lime. At around £1000 a time to fill the spreader, adopting a variable rate application allows you to target bought in nutrients to exactly where they are needed within each field, improving efficiency and reducing overall emissions. The next meeting will look at fertiliser efficiency and timing.

Follow FFBC
We can’t promise daily photos of what we are having for our tea or kittens in jackets (calves maybe), but there are regular updates, photos and notification of meetings and events over on our Facebook page and Twitter account. There’s also more details about the initiative and our Focus Farms, including case studies and practical guides at www.farmingforabetterclimate.org
Cover cropping at Castlemains

Cover crops can boost soil health, improve soil structure, reduce erosion risk and lead to an improvement in yields. Host Bob Simpson was keen on exploring how cover crops could benefit his arable system at Castlemains.

The cover crop trial was sown on the 16th of September 2015. The method of establishment was by terra discing the stubble and drilling with a conventional power harrow, drill combination. The control was terra disced and left unsown. The trial plots on site consist of two mixtures and a control. These have been replicated on the either side of the field to show the differences in soil type, soils being heavier towards the Castlemains side of the field and lighter to the west side of the field.

The mixtures used were:

- Mixture 1 - Rye 80%, vetch 18% & Phacelia 2%, 100kg/ha
- Mixture 2 - Italian rye grass 42.8%, Vetch 42.8% & Radish 14.4%. 35kg/ha

Seed was kindly supplied by Dodds of Haddington. Photo above shows emergence of radish on 25th September.

On 10th November the group met at Castlemains for an update on the farms activities including a site visit to the field with the cover crop demonstration plots. A late harvest had delayed the sowing date and coupled with dry soils, this meant the plants were not as well established above ground as hoped. However, when the plants were dug up they showed more growth below ground than above, which demonstrates beneficial effects on soil structure. The Radish, Rye and Vetch (pictured respectively below) all showed significant root growth.

The group also discussed the increased nutrient recommendations for Castlemains based on the higher crop yields from the 2015 season. These highlighted the point that an additional 1 tonne per hectare yield, based on cereals and straw harvested, will have removed approximately 8.5kg/ha more phosphate and between 10 -12 kg/ha more potash from soils.

We will be heading out to Castlemains shortly to assess top growth and root development and hope to have updates for you via Facebook and Twitter in January.
Woodhead

In just over 12 months, the dairy industry in Ayrshire is now almost unrecognisable. As farm gate milk prices have plummeted, the importance of efficiency can not be overstated, writes Farm Facilitator for Woodhead and SAC Agricultural Consultant Robert Ramsay. Hosts John and Anne Kerr have been looking at the impact of fertility on dairy profitability, rationing and dry cow management at Woodhead. The discussion group farmers took a lot out of the recent meetings and have had the opportunity for stimulating debate with others within the discussion group and several specialist speakers, helping them to adapt practical ideas to use at home.

Calf housing

Improving the environment in the calf house can increase animal performance and reduce calf losses. Calf housing has been looked at in detail at Woodhead as it was identified as a potential weakness in the system. The calf shed is an old building, however, with ideas from SRUC Vet Helen Carty and Buildings Specialist Jamie Robertson from Livestock Management Systems Ltd, a number of small but effective improvements were put in place as an interim solution. Measures included:

- The calf house was lined with stock board, which can be easily removed to enable pressure washing on both sides.
- Bedding was kept away from the area around the feeder (see photo). It was replaced with sawdust that can be routinely scraped out. This has significantly reduced the bacterial loading in this area - Helen noted that this was a good strategy to help to keep the numbers of scour bugs down.
- Ventilation was an issue; a fan has been installed to improve air flow.

In addition to changes in the calf shed, John and Anne have just installed 2 igloos, which are used to house weaned calves. The system has been installed at low cost but provides an excellent environment for calves, which should optimise calf growth rates and ultimately reduce time to bulling. Looking forward, in the new year, we will be having a dairy outlook meeting in early January - see further events section for details.

Monitoring grass growth

With a challenging summer behind us, we were not expecting too much with the figures from weekly grass growth in the paddocks at Woodhead. SRUC Technician Billy Harrison visited the farm on a weekly basis across 20 weeks over what was technically referred to as ‘the summer months’ to measure grass height and coverage.

Our data reflects the weather conditions, grass growth was poor in the early to mid summer but when the weather finally improved in August, grass growth was significantly better, in some cases, grass was growing at around 100kgDM per hectare. The farm benefited from a combination of cutting and baling paddocks that were too long to graze and also applying slurry by trailing shoe to grazing paddocks, which allowed John to make best use of farm produced nutrients while still maintain his grazing rotation.
Bedding—too much or not enough?

Clean and dry bedding is essential for calf health and comfort. SRUC Vet Helen Carty discussed some of the results from a Welsh Dairy Youngstock project* at a recent meeting. The study found that farms with healthier calves also had drier beds and deeper bedding, however, it can be difficult to be objective about the amount of bedding you use in your own system and find a cost effective balance whilst keeping calves cosy. Helen suggested the nesting score and bedding moisture score in the report as useful rule of thumb, aiming for a high nesting/low moisture score.

This meeting also looked at the new igloo calf housing, calf health, splitting the herd to reduce costs and managing fertility. You can read the meeting notes via the Hillend page on the Farming for a Better Climate website or click the link here.

Nesting Scores:
*When calves are lying in straw bedding, how much of their legs can you see?*

<table>
<thead>
<tr>
<th>Score</th>
<th>Legs fully visible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 1</td>
<td>Legs half visible</td>
</tr>
<tr>
<td>Score 2</td>
<td>Legs not visible</td>
</tr>
<tr>
<td>Score 3</td>
<td>Legs not visible</td>
</tr>
</tbody>
</table>

Bedding Moisture Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 1</td>
<td>Very dry bed; after kneeling for 10 Seconds, knees will stray dry. No ammonia smell.</td>
</tr>
<tr>
<td>Score 2</td>
<td>Moist: moist knees after kneeling for 10 seconds. Slight ammonia smell.</td>
</tr>
</tbody>
</table>

NEW Woodland Carbon Code - Opportunities for small woodland projects

New woodlands that meet Woodland Carbon Code standards can generate a new income stream, create a legacy for future generations, and contribute to tackling climate change, here Vicky West from the Forestry Commission gives more details.

Many businesses would like to invest in woodland carbon projects, but need assurance of standards to be confident the projects are well managed and will capture the carbon they claim. Launched in 2011, the Code enables landowners to benefit whilst helping businesses reduce their carbon footprint.

A new ‘Small Woods Scheme’ for projects up to 5 hectares / 12 acres cuts costs and administration for landowners looking to create small areas of woodland on their holding, which could also help to reduce runoff to watercourses or provide shelter for stock. This can unlock a new revenue stream for landowners by selling the rights to the captured carbon, thereby supplementing other income from forestry grants, timber, woodfuel or sporting activities. Participants in this emerging market have typically received between £3 and £10 per tonne of carbon dioxide (tCO₂), depending on a number of factors. With a typical new native woodland capturing about 300-400 tCO₂/ha over 50 years, carbon income can be significant.

As of the end of September 2015, 208 projects were registered with the Woodland Carbon Code, which are expected to create 15,600 hectares of woodland and sequester around 5.8 million tCO₂. For further information see www.forestry.gov.uk/carboncode and climatechange@forestry.gov.uk or contact your local Forestry Commission woodland officer.

Stewart Tower hosts SRUC Students

Previous climate change focus farm Stewart Tower hosted around 20 SRUC students from the Sustainable Environmental Management and Agriculture courses from SRUC campuses across Scotland. The visitors heard about how Neil and Linsey Butler manage the herd and produce ice cream for sale in their shop and café. Neil outlined some of the savings they had made through making changes to routine practices and some of their plans for the future. And the students proved it was never too cold for ice cream.
We all want to hand on a thriving and profitable business. With unseasonal weather conditions and increasing prices, this is becoming more of a challenge.

With Scottish Government funding and support from NFUS, SRUC are running the Farming for a Better Climate (FFBC) initiative, focusing on practical ways we can improve business profitability, which in turn could help to reduce farm greenhouse gas emissions linked to climate change.

There’s no one measure, but instead a whole range of ideas suitable for most farms that could benefit the farm business and help to reduce emissions through improved efficiency. With host Focus Farms and their discussion groups, we look at a range of practical efficiency measures, grouped under five key action areas.

Join us at one of our events

All our events are advertised both locally and on our Facebook and Twitter feeds. Events are free to attend and all farmers are welcome. All we ask that you book so as we can order the right number of lunches. Here are a few of our focus farm events that are coming up in January...

- Estimated Breeding Values - 12th January at Nether Aden Nr Mintlaw. This meeting is timed to take place just prior to the main bull sales and will give farmers an understanding of how EBV’s can be used to help them select a bull that will meet their requirements. Contact alan.bruce@sac.co.uk for details and to book.
- Profiting from Improved Efficiency - 13th January 2016 at Forrester Park, Carneyhill. Join Hillend discussion group and Vet Alastair Macrae to hear about the benefits of blood testing within the dairy herd to assess metabolic profiles. Contact james.buchanan@sac.co.uk for details and to book.
- Dairy Outlook – Tuesday 19th January at Auchincruive. Join David Kelley and the team to look at prospects and options for your business. Contact robert.ramsay@sac.co.uk for details and to book.
Where are our previous and current focus farmers...

... how can you benefit?

It’s always good to see what others are doing, identify tips and share your ideas about common issues. Each Focus Farm hosts a series of practical, on-farm meetings with farmer speakers, SRUC Consultants and industry specialists to look at practical ways to strengthen and develop the farm business.

The Focus Farms have around 5 meetings or visits each year at times to suit the farming calendar. Meetings are free of charge and all farmers are welcome to attend.

If you farm and would like to come along to the meetings you would be very welcome. You can read notes from previous meetings on the project website at www.farmingforabetterclimate.org via the individual climate change focus farmer pages. Meetings and events are advertised through our Facebook page or on our Twitter account @SACFarm4Climate. You can also discuss the programme in more detail with your local farm facilitator.
There is more information about what we are doing, along with dates of our forthcoming meetings on our Facebook and Twitter feeds. You can read more about the farms, download practical guides and case studies at www.farmingforabetterclimate.org

Get in touch - contact one of the team:

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Thank you for reading the newsletter. If you would like to be notified when the next newsletter is out, email climatechange@sac.co.uk and ask to be included on the mailing list. Your email details won’t be shared with anyone else. You can also keep up to date with the project via @SACfarm4climate or find us on Facebook

Best wishes for a happy, healthy and productive 2016.

Visit the website at www.farmingforabetterclimate.org

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