

Glenkilrie Climate Change Focus Farm meeting



Discussion group meeting held at SAC “GreenCow” research facility near Edinburgh on Tuesday 28th February 2012.

Meeting Theme – Benefitting from current ‘GreenCow’ research

The Glenkilrie climate change focus farm discussion group took a trip to Edinburgh recently to look at the work being carried out by SAC at its “GreenCow” research facility. Peter Lindsay, group facilitator began the day by introducing David and Andrew Houston, who farm Glenkilrie, followed with a quick run down of the farming system at Glenkilrie. He then introduced SACs Beef specialist Jimmy Hyslop and Senior researcher John Rooke along with Rural Business Unit Consultant Robert Logan as speakers for the day.

Jimmy and John were keen to point out that farmers should not get too hung up on the climate change targets. **Measures which reduce the effects on climate change also tend to improve the efficiency of production and visa versa.**

GreenCow

The GreenCow research facility is located on a working farm with just over 1,000 ha, including 650ha hill, 90 ha upland and 250 low ground. There is 50ha of barley which is mainly grown for whole crop and therefore the business needs to buy in the majority of grain and straw. On this land they run 250 cows of which 200 are spring calving and 1,600 ewes. The research facility can replicate almost any farming system as the farm covers most classifications of land.

The cows are Limousin x Aberdeen Angus and Aberdeen Angus x Limousin. Cows which were sired by an Aberdeen Angus will be put to a limousin bull and vice versa. This gives the research centre more animals of a similar type. All of the calves are finished with the majority being part of a trial during this time. They also have 30 pure Charolais and 35 Luings. The ewes are Blackface, Mule and Texel cross.

Key points to maximise efficiency

The advice which Jimmy Hyslop gave to reduce the carbon footprint and improve efficiencies remains much the same as it always has been. Many of the trials John has carried out to look at production of methane emissions back up this fact. Key points were:

- Maximise daily liveweight gains and minimise the finishing period
- Minimise losses – implement a stringent animal health plan
- Maximise fertility – cull any barren cows and don’t carry passengers
- Calve heifers for the first time at two years of age rather than three
- Creep feed calves before weaning to reduce the weaning check
- Reduce winter feeding of cows by utilising body condition throughout winter i.e. utilise body condition gained at grass

- Match feed quality to animal requirements – high quality forage to finishing cattle, lower quality forage to dry cows
- Run the system which is most suitable to your farm i.e. if your farm is most suitable to store calve production then don't try to finish cattle
- Use genetic selection to maximise productivity and reduce calving difficulties etc

'The Big Shed'

The group then went for a look around the new shed. Measuring 375 x 110ft the shed was built to be flexible with many different pens available to suit a range of trials. There is an external and an internal feed pass and a state of the art handling facility. Jimmy gave some sound advice; "always make your shed bigger than you think" – machinery etc is always getting bigger and going for a larger shed will give you more options. Think forward to the potential changes on your farm that could happen in the next 30 years.

Methane hoods

In the shed there were several cattle courts with individual feed bunkers. The bunkers were hooded (hoods shown open on photo) and could measure methane produced as well as measure the intake of the animals as each having weigh cells. Each animal had an electronic tag which allowed the researchers to know which animal was eating at the bunkers. There was also cameras set up to record the amount of movement the cattle were doing for some of the trials. It has been shown that animals which are not stressed and move about less are more efficient as they use the energy for growth and not motion. Some groups were bedded on sawdust or recycled kitchen units to prevent them eating the bedding which would affect the results of the trial.



The cows are almost all covered by artificial insemination. They are synchronised and AI'd up to three times. This allows a compact calving and more uniform calves which is necessary for trial work.

Methane chambers

The group then went on to look at the methane or respiration chambers. Once inside the chambers John went on to explain the system. Firstly, there are a series of holding pens to acclimatise the animals to being on their own and to the design of the pens. Livestock remain in the holding pens for around six days before they go into the chambers.

The chambers act as a sealed unit allowing gases to be measured and monitored. The floor is made of a rubber which is often used for horse bedding. This is so that during trials on feed intake no straw etc is consumed by the animal. The animals are in the chambers for three or four days. The readings from the first day are discounted and there are also "dead" periods which are not included, for example when the door has been opened to allow the

animals to be fed and cleaned out. Both the chambers and holding pens are designed to be up to the current welfare standards for one cow and calf. The chambers are kept at 15°C to prevent the trial being affected by animals trying to keep their body temperature stable.

Currently, trials done in the sealed chambers are primarily done to measure methane production. The trial while the group was visiting was to measure the difference between forage based diets and cereal based diets and the amount of methane produced from each. There is also an interest as to whether the different amounts of bugs in the rumen affect the amount of methane produced and whether there is a breed variation to this. Much of the work at the moment is to provide basic data as to the amounts of methane produced as the government does not at present have such figures. A baseline figure is required to be able to measure improvements.



The group was also shown a laser gun which could measure the methane produced when it was pointed at an animal's nostril. Although this was not as accurate as the chambers, there was a correlation between them. There are also sheep and cattle mouth sensors which measure the methane produced but it is difficult to get the animals to keep the halter on without breaking the sensor or halter. Trials on sheep can also be done in the chambers. John expelled the myth about "farting" cows. Only 2% of the methane produced comes from the back end of cows.

Speakers at the meeting concluded that no matter what your system is, it needs to be run efficiently. In any system there are some farms which perform better than others. QMS benchmark figures show that the top third performing businesses of any system also have the lowest carbon footprint. This is usually because these businesses sell more animals (lower losses), generally at heavier weights and often quicker and using less concentrates.

Carbon footprinting

After lunch Robert Logan, Rural Business Consultant for SAC talked to the group. Robert explained that there are Scottish Government and UK targets to reduce the carbon footprint. He explained that the carbon footprint of a business is basically how much greenhouse gas they produce. He reinforced what John and Jimmy had mentioned in the morning that improving the carbon footprint of the business will increase the profitability of the business by using several factors including grassland management, rations and fertility management. He emphasised that the more intensive finishing systems have a much lower carbon footprint.

Robert also explained that many tools exist to measure the efficiency of a business and SAC has just launched the Agri-CARB carbon calculator. This tool can be used to benchmark a business against others of a similar type and we will now look to benchmark Glenkilrie against other upland beef & sheep farms and look for areas in which improvements can be made.

Peter Lindsay closed the meeting by thanking Jimmy, John and Robert and thanking everyone for coming.

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 which in turn reduces emissions. It's free to come along and you will be able to influence the topics, speakers and location of future meetings.

Contact Peter Lindsay for details of the next Glenkilrie event at peter.lindsay@sac.co.uk or telephone the SAC Perth office on 01738 636611.

If you want to keep up to speed with what's happening at Glenkilrie but don't want to attend all the meetings, ask to be added to the Glenkilrie 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

