

# Upper Nisbet climate change focus farm launch



Upper Nisbet, Jedburgh on Thursday 20<sup>th</sup> October 2011 by kind permission of Robert Neill and Partners.

---

**It's all about business efficiency.** That was the message from NFUS President Nigel Miller, who set the scene and opened the information day at Upper Nisbet. Farmers were invited to come to Upper Nisbet and hear why Robert and Jac Neill are working with SAC as part of the Scottish Government funded Farming for a Better Climate Initiative.

Although better known for their award winning Limosin cross cows, Robert and Jac also have a significant arable side to their business. Upper Nisbet has 242ha of winter wheat, winter barley, spring barley and beans, 202ha under grass with an additional 80ha of grass rented on a neighbouring farm. Working with SAC, Robert and Jac would be able to take a second look at their rotations and current practices with a view to trying out a range of measures that could benefit the farm business whilst also cutting greenhouse gas production.

Organised by SAC's Moira Gallagher, the information day at Upper Nisbet saw a range of talks from both Nigel, Robert and agricultural consultants on how farmers can turn the carbon agenda to their advantage through practical ideas for the farm that could increase profits and reduce greenhouse gas losses. Below is an overview of the information given on the day; these topics will be expanded on in forthcoming farmer discussion group meetings planned for the winter months.

At the stading:

- **Introduction to Upper Nisbet and the new grain dryer – Robert Neill, Upper Nisbet**

Upper Nisbet has big square fields, mostly facing south; Robert is slowly working around the farm to stock proof fields. When Robert arrived at Upper Nisbet in 2000, soil pH was low with an average of 5.1 across the farm. The addition of farm yard manure (FYM) from the beef enterprise has made a real difference to soil quality and nutrient status, with yields slowly beginning to increase in response to the better soil conditions. All farm work is done by Robert and 2 full time staff; only hedge cutting is carried out by contractors. A new grain shed approx 50 m x 25 m has been erected this summer, unfortunately not in time for harvest due to planning issues. The project has been co-funded through an SRDP grant.

- **Making better use of energy on the farm – Jim Campbell, SAC**

The key to energy reduction is to monitor what you are using for which tasks; Robert has a handy little black book for this and it will enable Jim and Robert to put costs to different operations in the future. Electricity use at Upper Nisbet is low, as you would expect from this type of enterprise. Jim highlighted that the farm electricity bill is about 1 1/2 times more than you would expect from a family house.

Grain drying and feed milling is all tractor driven, so there could be some scope for a reduction in diesel use. The new grain dryer runs on kerosene; this is 0.10p/litre cheaper than gas oil so a good choice in terms of farm costs.

Renewable sources of energy were considered for Upper Nisbet; a micro-hydro scheme was easily discounted due to a lack of watercourses on the farm. Anaerobic digestion could be a consideration, but would mean altering the current cropping regime to provide a feedstock, which wasn't deemed to be that advantageous. Installation of a wind turbine could merit further investigation, but first port of call would be the MOD to see if the proposed wind turbine site was outside their interference zone for their seismic listening post. Although the published wind speed at Upper Nisbet was reportedly sufficient to power a turbine, monitoring equipment would be needed to confirm this see if the numbers stack up.

Solar photovoltaic panels (Solar PV) was thought to be viable at the site with a payback of around 12 years taking advantage of the current rate of Feed-in Tariff (FiT), giving a 10% return over 25 years. Jim noted that there is some speculation that the FiT for Solar PV could be cut for those looking to enter into the scheme after 31<sup>st</sup> March 2012, but no details were publically available at the time of the meeting to support this.

At the winter barley field:

- **Overview of rotations – Robert Neill, Upper Nisbet**

The arable enterprise is very well integrated with the rest of the business. Rotational grass is the main break crop along with spring beans and potatoes (let). Aim to grow first wheats only where possible followed by winter barley (s), spring barley and then down to grass. The aim is to be self sufficient in grain for the cattle enterprise but also to have grain that meets malting specifications to sell.

- **Crop diseases and pests – Mary Munro, SAC**

There are lots of options for weed control in the autumn; key is to know what the weed or pest is and what strategy you are going to use to deal with it. Often easier to control weeds pre-emergence; target inputs to what you are dealing with. Farmers in the south are already beginning to see blackgrass resistance to some products; mixtures may help in this case. Is an application definitely required? If not, can you miss it out, saving on fuel, time and product?

- **Soil Mapping – Aiden Monaghan, SOYL**

The fields at Upper Nisbet have been mapped for soil phosphorus (P), potassium (K; often referred to as potash), magnesium (Mg) and lime. Soil mapping using GPS involves taking a greater number of soil samples across a field; the position of each sample is recorded using GPS equipment. Soils are analysed and their results linked to a map of the field; this information allows a coloured map to be produced, relating to the nutrient level in different areas of the same field. The map shows variation in soil nutrient status and allows you to then selectively apply nutrients in line with the soil status and demands of the growing crop. Field mapping at Upper Nisbet showed that through careful management, Robert had raised the pH of soils to a more profitable level but there was still scope for variable application of nutrients to further target low spots.

- **Best use of Fertilisers – Donald Dunbar, SAC**

A significant amount of nutrients are removed in crop offtake but can be replenished through considered FYM application and these levels then topped up with purchased fertilisers. Some crop types will show a yield response to additional nutrients applied at the right time; others wont. As an estimate, 1t FYM could be worth around £7.50 in terms of nutrient value to the growing crop. Nutrient value, especially N, could reduce over time in stored FYM. Rainwater running through a field heap will remove a percentage of the nitrogen, meaning more to be topped up with bagged N. Know crop demand, soil nutrient status and FYM values to accurately know how much additional fertiliser to apply.

After lunch in the workshop:

- **Carbon footprinting – Julian Bell, SAC**

As a farmer, why should you bother about carbon footprinting? There are currently three main drivers; supermarkets, cost savings and Government targets. Cost savings are probably the most relevant issue for farms. Looking at carbon losses (i.e. greenhouse gas emissions) could highlight scope for financial savings on the farm. Benchmarking data allows you to compare how efficient you are with like farms. Production gains fit neatly with reductions in greenhouse gases; e.g. quicker, more efficient live weight gain means fewer emissions per kg beef produced. First step is to establish a farm carbon baseline; this will indicate where the most scope is for improving efficiencies.

- **Woodfuel and the Renewable Heat Incentive (RHI) – Neil Harrison, SAC**

The RHI is similar to the FiT scheme for renewables; the Government will pay you to produce heat for your own use. Small farms could take advantage of this in terms of solid biomass (e.g. a woodchip boiler) or a ground source heat pump (GSHP). Neil gave an overview of some of the systems and their pros and cons. The introduction of the RHI could give an incentive to manage woodland and opportunities for additional revenue streams for the farm business.

- **Financial efficiency – Gavin Dick, SAC**

Managing costs of production and fixed costs were two key areas to focus on. As a farm business, you need to know the output or yield of a crop and what are both the variable and fixed costs that need to be taken into account. Fixed costs, for example labour and power machinery could be up to 60% of overall costs. Gavin gave some examples which costed out two similar machinery purchases with different power outputs. Both incurred similar costs over a five year period, but there were other options to consider, for example was it more cost effective to get a contractor in, machine share with neighbours, purchase second hand or even change farm enterprise mix? If you can measure it you can manage it; making informed decisions means improved efficiencies on the farm.

## Key findings

- Energy use – monitor to manage and save
- Renewables - may need to factor in changing tariffs if on line after 31<sup>st</sup> March 2012
- Woodfuel – could you benefit from the RHI?
- Crop pests and diseases – plan ahead, be sure you know what weeds, pests & diseases you are dealing with and the economic thresholds so that you are not going with a treatment uneconomically, know what the main threats are and what strategy you are going to use to tackle them.
- Nutrients - Know crop demand, soil nutrient status and FYM values to accurately know how much additional fertiliser to apply.
- Carbon budgeting – could highlight previously hidden costs
- Financial efficiency - Informed decisions means improved efficiencies



### Do you farm and would you like to attend to future meetings?

Farmer discussion group 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 to come along and you will be able to influence the topics, speakers and location of future meetings.

Contact Moira Gallagher for details of the next event at Upper Nisbet at [moira.gallagher@sac.co.uk](mailto:moira.gallagher@sac.co.uk) or telephone the SAC St Boswells office on 01835 823322

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

Visit the website at [www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org) or email a general enquiry to [climatechange@sac.co.uk](mailto:climatechange@sac.co.uk)