



Demonstration Network

Improving silage quality to reduce inputs and increase yields in dairy systems

Improving silage quality can not only increase yields, but also significantly reduce inputs. This was the key message from a recent project conducted at New Dairy, a Farming Connect focus site near Newport.

A key objective at New Dairy is to produce as much milk as possible from grass, with the ultimate aim of reducing purchased concentrates. The project focused on improving silage quality, by taking more frequent cuts at shorter intervals, and this was achieved by introducing a multi-cut silage model into the system at New Dairy.

Utilising the multi-cut model ensures high quality silage is produced consistently, with a higher energy density and crude protein than the alternative three cut model. By introducing the multi-cut system, New Dairy were able to produce silage with a very high digestibility (D) value.

As a result of feeding a higher quality silage, 1.5kg per cow of concentrated feed was removed from the ration.

The cuts were taken from April 2019 onwards – six times in some fields. D-value ranged between 70-75% and dry matter averaged 34% across all cuts.

- Increased milk yields from forage; rolling milk yields have risen by nearly 500 litres per cow
- Reduced input costs; concentrate use has been reduced by 5% per cow equivalent to reducing from 10.5p to an average of 7.4p per litre
- Increased system efficiency and sustainability

Improving homegrown feed quality and reducing inputs

A recent Farming Connect project held at Cothi Vale Farm in Carmarthenshire explored the potential of wholecrop as an alternative to purchased concentrates. The project's objective was to see whether there was a feed/cost benefit from including wholecrop barley in a grass re-seed. The project aimed to determine the cost of growing the wholecrop and the quality of its silage and subsequent reseed, in comparison to keeping the field in permanent pasture and taking off one cut of grass silage.

The permanent pasture was harvested in early July, followed by sheep grazing. 127 bales of haylage were harvested, equating to 32 bales per hectare. The wholecrop field was harvested in late July, followed again by sheep grazing. The total harvest amounted to 65 bales or 18 bales per hectare.

Table 1 – Cost of inputs per hectare on both fields.

	Permanent Pasture	Undersown Wholecrop Spring Barley	If it was a grass/clover re-seed alone
Machinery/ha	£89.09	£341.22	£341.22
Inputs/ha	£90.00	£445.50	£337.00
Total Costs/ha	£179.09	£786.72	£678.22

As table 1 above shows, the machinery and input costs for the under sown wholecrop spring barley were significantly higher than permanent pasture. Yield was also lower in the wholecrop field. However, silage analysis results are yet to determine the feed value of each crop and how this compares to purchased concentrates and the potential savings which could be made.

Optimising grass production on an organic hill farm

Geraint and Rachel Davies took over the family farm at Fedw Arian Uchaf, Bala, in 2011 but, because there had been no reseeding or nutrient management programme for over 20 years, grass production was poor. A Nutrient Management Plan, part funded by Farming Connect, revealed that no field on the organic holding had a pH higher than 5.8, and potash and phosphorus levels were mostly at index 0 or 1.

The main aim of the project was to trial different varieties of short-term grass leys, not only to produce higher grass yields, but to provide grazing for sheep and cattle on the shoulders (early spring and late autumn) of the year.

During a recent Farming Connect open day at the farm, independent grassland expert Chris Duller, who has been involved in the reseeding project, said that approximately £500/ha of reseeding costs were not insubstantial but pointed out, "If you can grow an additional three tonnes a hectare and utilise that grass, you will recover the cost in the first year."



In a beef system, every additional tonne of dry matter that is utilised by cattle can be converted into around £185 worth of liveweight gain.

Other issues which are being addressed at the focus site include water management and the provision of shelter belts. Through other Farming Connect services on offer, the host farmers have acquired a Water Management Plan, as well as advice on hedgerow and woodland management by working with Farming Connect, Coed Cymru and the Snowdonia National Park Authority.

Key outputs from the project:

- Increased grass yields
- Improved grass quality for livestock production
- Increased productivity from grass



Italian Ryegrass/Red clover on left and Westerwolds on right of image.

Project Introduction: Post-planting tree care and management to improve establishment and growth rates

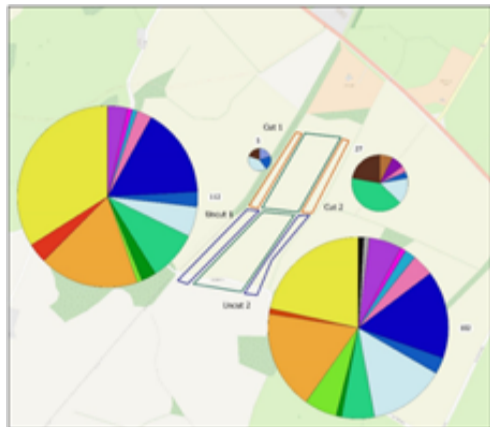
One of the new projects which will be implemented at new Farming Connect demonstration site, Moelogan Fawr, Llanrwst, from January 2020 onwards, will be focusing on how to improve the care and management of trees post-planting to ensure optimum establishment and initial growth rates.

Plots will be selected for individual treatments to include mechanical and chemical applications, with one plot remaining as a control plot. Consistent monitoring and measuring growth rates will provide data to compare the three applied treatments over the three-year duration of the project.

27 APPROVED EIP WALES PROJECTS working with **142** FARMERS AND FORESTERS

The *Pasture for Pollinators* project has completed two seasons worth of surveying to investigate whether simple management changes on six Calon Wen dairy farms can increase pollinator numbers.

The organic dairy farms already utilise herbal leys and clover rich swards which are beneficial for pollinating insects. But when making silage, all of the pasture is cut removing all of the forage for insects. The farms are looking at the impact of leaving uncut strips along the field margins to provide continuity of feed for insects.

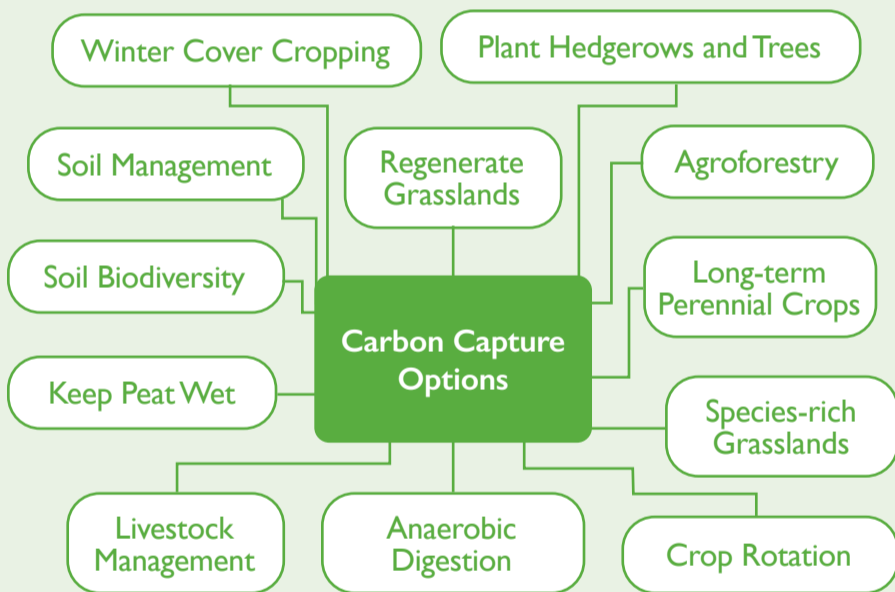


This chart shows bumble bee numbers at New Hall Farm, Chirk. There are greater numbers of bees present in the uncut margins than the cut areas of the fields (shown by the larger pie charts). The different colours refer to different species.

Many of the bumble bees found in the survey were long-tongued species which have been disappearing at the fastest rate in the UK.

Knowledge Exchange Hub

An article titled 'Carbon capture technology – 12 methods that can be incorporated on your farm' was published in November. Carbon capture and storage may offer solutions to reduce CO2 levels in the atmosphere and reduce GHG emissions. The article outlines different interventions and how these contribute to capturing carbon on farm.



E-learning

Some of the e-learning courses completed within this period include:

MULTISPECIES GRASSLAND

THISTLE CONTROL

RUSH CONTROL

BENEFITS OF TREES ON UPLAND FARMS

Click [here](#) to visit the website.

Training Courses

Course Name	Number completed during this period
Rough Terrain Telescopic Handler	25
Safe use of Pesticides PA1 and PA2	20
Sit-Astride ATV	14
Mole Trapping	13
Chainsaw maintenance, cross-cutting, felling and processing trees up to 380mm	12

Advisory Service

Number of business who have received support through the Land Categories of the Advisory Service during this period.



64 individuals received one-to-one support through the Land Categories of the Advisory Service during this period.



121 groups received support through the Land Categories of the Advisory Service during this period.

Feedback from businesses regarding the delivery of this advice:

"We are aiming for a grass-based system to fatten lambs, and hopefully we will achieve this with the advice we've been given to correct our soils and enhance grass growth."

Management Exchange

John Goodwin's Management Exchange, November 2019

Topic: Trufficulture on the continent

Country: Sweden



During November, John Goodwin travelled to Sweden to complete the second part of his exchange. Trufficulture is a fairly new industry on Gotland, with the first truffles found in the 1970s. By now, many trufficulture plantations have been established across the island – on a scale of a few

trees up to a scale measured in hectares.

John benefited greatly from visits to a commercial truffle orchard, the original university trial orchards and the Gotland Truffle Festival 2019.

Master Soils

The 4th successful Master Soils event was held in October. Similar to previous events, 20 attendees benefited from learning how they could improve their soil management and reduce synthetic inputs whilst improving productivity and the natural environment.

Key topics covered included:

- The importance of soil management and its effect on crop growth, animal productivity and the environment.
- Soil assessments.
- Soil indexes targets and how to achieve targets.
- pH and nutrient availability.
- The use of fertiliser and using the RB209 fertiliser guide.
- Soil compaction and different machinery that could be used to tackle it.
- Understanding and using a Nutrient Management Plan.

Excellent feedback was received with participants noting that they had significantly increased their understanding of soil management to the benefit their business and the environment.

Feedback from attendees:

"I've learnt a lot and have a better understanding of soil requirements. I intend to change the way we manage our land."

"Excellent introduction to the importance of soil types and their structures."

"I intend to improve soil condition as well as measure and monitor soil structure and chemistry."

