

Number of Arable businesses registered since the beginning of the programme:

704

Number of Horticulture businesses registered since the beginning of the programme:

263

Demonstration Network

The economics and practicalities of rearing dairy heifers on an upland sheep farm

Llys Dinmael Isaf focus site, near Corwen, is an upland sheep farm. They have developed skills by rotationally grazing sheep which may be useful in developing an enterprise to rear dairy heifers on the farm and take advantage of the productivity within the grazing platform. Generally, the requirements for grazing heifers is based on the requirements of the main dairy herd and little is actually understood about the requirements of the young heifers. This project will monitor heifer growth rates against pre and post grazing covers, with the aim of better understanding how Holstein Friesian heifers can be grazed within a rotational cell grazing system to maximise animal performance.

The grazing platform was established during the summer of 2019 and dairy heifer calves were introduced to it in July. Additionally, fodder beet was grown for winter grazing and liveweights recorded in mid-March showed average liveweight gains of 1.06kg/day. Growth rates will continue to be monitored over the forthcoming season.



Heifers on fodder beet December 2019 at Llys Dinmael Isaf



Heifers grazing in March 2020 at Llys Dinmael Isaf

Soil mapping to enable more precise land management

Pantyderi demonstration site has been investigating soil mapping to utilise variable rate fertiliser applications to improve efficiency and reduce wastage. Using Electrical Conductivity (EC) techniques it is possible to precisely map a field to see variations in soil properties. The field can then be divided into management zones and soil sampling can be targeted to the different zones.

Following information received from the soil sampling, Pantyderi has already made savings in lime applications applied to the fields using variable rate spreading as opposed to fields being managed under the original flat rate system.

	Grassland		Arable	
	Flat rate	Variable rate	Flat rate	Variable rate
Lime (tonnes)	182.1	171.3	170.0	146.0
Cost	£5,463	£5,139	£5,100	£4,380

The diagram to the right shows how the seed rate was varied across two fields sown with spring barley. The soil assessments have enabled the farmer to vary the seed rate according to what the ground can cope with enabling better use of nutrients and a more even crop.



Hendre Ifan Goch soil sample results and analysis

Back in February, soil samples were collected from three different fields across the farm at Hendre Ifan Goch in order to carry out in-depth analysis on them. These three fields were selected to collect soil samples from as they all represented the varying soil types of the farm, as well as varying productivity and general use (silage/grazing fields).

By looking at the soil sample results, there seems to be a few common factors. There are good overall Carbon levels in the soils, however the active Carbon levels are low. This indicates a lack of soil biological activity. This generally happens as a result of a less than ideal habitat for them to survive in.

It appears from the samples that one of the key contributing factors in this instance is the free movement of water within the soil. This has almost certainly been exaggerated by the very wet weather over the last six months. It is assumed that instead of the water moving down through the soil, it has been sat in the top few inches. Recently, dry weather has caused the top few inches to dry out quickly, resulting in dry ground and slower grass growth. In all probability there is plenty of moisture further down in the soil that cannot be accessed by the roots.

A major initial task is to try to get this water moving through the soil, and create more favourable conditions for soil life.

Next steps:

- Aerate the soils and to add any necessary lime. Getting the water moving will help remove the very high iron levels within the soil.
- Apply P+K to each of the fields for this year.
- Low levels of Boron were identified during testing, therefore applying granular Boron on each of the fields is recommended.
- Once the liming and aerating have been done, applying a Phosphorous stimulating Nitrogen based product would be an option, to help speed up the mobilisation of the soil biology, and start releasing the bank of nutrients within the soil.

The video below was produced to highlight the project's aims and objectives. Click [here](#) or the TV screen to watch.

The video was shared on the Farming Connect Facebook page on 03/03/2020 and received the following engagements:

People reached: 5,242
Engagements: 674
Likes, comments & shares: 50



Ear to the Ground Podcast

Listen to Rhys Williams, Precision Grazing Ltd, discuss the value of spring grass and how best to utilise it during the challenging spring of 2020.

Click [here](#) to listen.



THIS PODCAST RECEIVED **2,845** INDIVIDUAL DOWNLOADS DURING THIS PERIOD.

EIP

6 PROJECTS APPROVED DURING THIS PERIOD working with **20** FARMERS AND FORESTERS

Foliar feed for grassland

After the first two seasons of applying foliar feed to compare the performance against prilled nitrogen a report has shown some interesting early findings. Four farms are using the foliar feed on grass fields and comparing performance against a prilled nitrogen feed and a control that is receiving no fertiliser.

Application rates;

- Foliar feed is applied at three-week intervals at 20kg/ha
- Prilled nitrogen is applied twice at 125kg/ha

While the results are showing that the total dry matter (DM) yield is higher for the prilled nitrogen, the efficiency of how the grass utilises foliar nitrogen is far greater. Higher DM yields for prilled nitrogen are unsurprising as the total nitrogen applied is higher but what is interesting is the additional yield per kg nitrogen applied is more than double for the fields receiving foliar nitrogen.

Site	Conventional plots		
	Total N applied (Kg/Ha)	Additional Yield (Kg/Ha)	Additional yield per Kg of N applied (Kg/DM/Kg N)
1	250	3100	12.4
2	250	2200	8.8
3	212	1700	8.0
4	268	6000	22.4

Site	Foliar feed plots		
	Total N applied (Kg/Ha)	Additional Yield (Kg/Ha)	Additional yield per Kg of N applied (Kg/DM/Kg N)
1	46	1300	28.3
2	64	1600	25.0
3	72	1300	18.1
4	72	3800	52.8

Advisory Service

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



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



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

Feedback from businesses on delivery of this Advisory service:

'It has enabled better decision making, helping us identify where we can reduce fertiliser inputs and target certain other fields to top up those that do require additional inputs.'

'Very useful to have such specific information for each field on the farm. We will follow the advice because we didn't know where to start before.'

Discussion Groups



Case Study

North Wales Beef Discussion Group

Members of the beef finishing discussion group in Ynys Môn had the opportunity to have their soil tested for organic matter with the Haney soil test method. Steve Townsend of Soil First Farming met with the group to discuss the findings.

Generally, the group members' soils were exemplary, with an organic matter content of over 15% in some cases. Steve covered the following key points at the meeting:

- Calcium was the most important element after carbon in the soil as it controls soil structure
- Healthy soil contains 25% air and 25% water
- Calcifert or Limex will work quickly and effectively
- Aim for pH level of 6.5, and K levels double that of Mg on the Haney analysis table
- High soluble carbon levels are a reliable indicator of healthy soils in terms of microbiology

It was also suggested that the group members test for cation exchange capacity in their soils, as this indicates the soils capacity for retaining minerals. Good soil should contain 68% Ca, 12% Mg, 2-4% K and 1-2% Na.

The importance of sulphur was encompassed due to its action in creating amino acids within plants, which in turn has a bearing on the protein levels within the crop. Fertilizer such as 38:0:19 with a top up of Muriate of potash as a straight would be recommended for optimum sulphur application. Protein levels also proven to have improved if arable and silage crops had an application of Epsom Salts three weeks before harvesting.

The take home message was the importance of having a more in-depth soil analysis done, so that more elements could be viewed with a view of correcting any obvious issues impacting on soil health.

MasterGrass

MasterGrass was held over the course of three days at the beginning of January at Gelli Aur College, Llandeilo. 13 dairy farmers were in attendance for the duration of the event. The first day included information on soils and maximising grassland quality with independent grassland specialist, Chris Duller. The second day of the event included workshops by Sean Chubb, LIC and John Owen, Dairy Development Centre, Gelli Aur. These workshops focused specifically on grazing management. The third day of the MasterGrass event included presentations on grass utilisation to maximise production efficiency.

Training Courses

Course Name	Number of individuals trained during this period
Level 2 Award in the Safe Use of Pesticides PA1 & PA2	16
Rough Terrain Telescopic Lift Truck	25
Sit-Astride ATV's including loads and trailed equipment	14
Chainsaw maintenance, cross-cutting, felling and processing trees up to 380mm	12
Mole Control – Trapping Techniques	7

E-learning

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



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

