DAIRY DASHBOARD

September 2022 – January 2023

FARMING connect
cyswllt FFERMIO

51% of all activity in this quarter relevant to the dairy sector

51%
DAIRY ACTIVITY

1,804
DAIRY FARMS REGISTERED WITH FARMING CONNECT

Demonstration Network

Evaluating bokashi (fermenting organic matter) – Llwynmendy, Bethlehem (Focus site)

The overarching aim of the project was to improve farmyard manure (FYM) nutrient content on dairy farms. The project entailed fermenting manure from the dry cow shed, a process known as bokashi. A similar process to ensiling forage crops. Traditional composting is an aerobic process that generates heat, which means energy and valuable nutrients are lost. In addition, composting emits a significant amount of carbon.

By applying active micro-organisms directly onto manure before cleaning out the shed, the solution is able to mix thoroughly through the manure whilst scraping out into a heap. The fermenting process takes up to eight weeks, when Rheinallt Harris, who farms at Llwynmendy, applied the manure to a random plot on a grazing field. Samples of the manure were taken before scraping out and eight weeks after treatment, and also from an untreated manure heap, to compare nutrients.

Standard FYM sample

	Dry Matter % DM	Total Nitrogen Kg/t	Total Phosphate Kg/t	Total Potash Kg/t	Total Sulpher Kg/t	Total Magnesium Kg/t
NRM Standard FYM	21.7	5.36	1.97	12.42	2.08	0.81
RB209 (FYM)	25.0	6.0	3.2	9.4	2.4	1.8

Table 1: Standard FYM results compared to RB209 figures.

Processed FYM sample

	Dry Matter % DM	Total Nitrogen Kg/t	Total Phosphate Kg/t	Total Potash Kg/t	Total Sulpher Kg/t	Total Magnesium Kg/t
NRM Processed FYM	20.1	3.9	2.5	7.77	2.17	1.09
RB209 (FYM)	25.0	6.0	3.2	9.4	2.4	1.8

Table 2: BOKASHI treated FYM compared to RB209 figures.

The standard FYM sample had a higher potash content than standard RB209 analysis although a lower phosphate content. The processed FYM phosphate content was higher than the standard FYM sample, although the total nitrogen and potash content was lower.

Sampling errors can give rise to different results, therefore it is important that samples are thoroughly mixed to give a representative sample of the muck heaps.

The processed FYM sample had a lower overall nutrient content when compared with the standard FYM. The application of 5t/ha showed a nutrient value of £98/ha for the standard FYM and £72/ha for the processed FYM sample. This was not the result expected, especially with the opportunities to improve nutrient value.

The application of 5t/ha of cattle FYM will provide a basic level of nutrients to the grass crop. A higher application rate of FYM would be beneficial to fields where silage or hay crops are taken.

For future projects, it would be suggested to elongate the project over a couple of years to evaluate grass growth over the following years after bokashi FYM is applied and also to evaluate carbon losses in a standard FYM and bokashi processed FYM, especially with the increase in discussion around carbon sequestration.

Increasing Milk from Forage – Nantglas, Talog (Demonstration site)

Taking a proactive approach to addressing soil mineral shortages has helped Iwan Francis to improve soil health, grass quality and pica issues. – a condition that causes cattle to eat large quantities of soil, stones and other objects in the spring and early summer. Continuous soil and fresh grass analysis allowed the improvement of soil nutrient content by ensuring appropriate fertilisers applications to coincide with the analysis.

The original analysis in November 2021 showed very low levels of magnesium, phosphate and other trace elements. Fresh grass samples were taken in April 2022 before applying magnesium lime was applied at 2t/acre in April 2022, together with slurry and phosphate and potash (P and K) fertiliser.

Sample Details

Lab Reference:	3121544	Description:	FRESH GRASS	Date Cut:	05/04/2022
Sample Type:	Fresh Cut - Grass	Cut Number:		Additive:	Sample Received:	07/04/2022

Dry Matter		Analysis	Very Low	Low	Mean	High	Very High
Dry Matter	(g/kg)	246	100	350	500	650	800

Macro Minerals			Analysis	Very Low	Low	Mean	High	Very High
Phosphorus	P	%	0.24	0.10	0.20	0.40	0.50	0.60
Magnesium	Mg	%	0.14	0.10	0.25	0.50	0.70	0.80
Calcium	Ca	%	0.54	0.25	0.35	0.55	0.65	0.75
Sodium	Na	%	0.57	0.10	0.15	0.25	0.35	1.00
Potassium	K	%	1.34	0.20	0.49	3.50	4.00	5.00
Chloride	Cl	%	0.80	0.10	0.20	0.40	0.60	0.80
CAB		mEq/kg	354	140	280	420	560	700

Figure 1: April 2022 Fresh Grass analysis for Nantglas.

Over six months after applying the correct nutrients required, further soil and grass samples were taken in the same paddocks in November 2022. These showed that magnesium levels had increased from index 2 to 3, phosphate from 1 to 2 and potash from 0 to 1. The grass analysis showed a significant improvement also, with high levels of phosphorus and an increase in magnesium and potassium.

Sample Details

Lab Reference:	3317533	Description:	FARMING CONNECT PROJECT	Date Cut:	19/11/2022
Sample Type:	Fresh Cut - Grass	Cut Number:		Additive:	Sample Received:	22/11/2022

Dry Matter		Analysis	Very Low	Low	Mean	High	Very High
Dry Matter	(g/kg)	110	100	350	500	650	800

Macro Minerals			Analysis	Very Low	Low	Mean	High	Very High
Phosphorus	P	%	0.60	0.10	0.20	0.40	0.50	0.60
Magnesium	Mg	%	0.23	0.10	0.25	0.50	0.70	0.80
Calcium	Ca	%	0.34	0.25	0.35	0.55	0.65	0.75
Sodium	Na	%	0.48	0.10	0.15	0.25	0.35	1.00
Potassium	K	%	3.77	0.20	0.49	3.50	4.00	5.00
Chloride	Cl	%	1.85	0.10	0.20	0.40	0.60	0.80
CAB		mEq/kg	450	140	280	420	560	700

Figure 2: November 2022 Fresh Grass analysis for Nantglas.

Over six months after applying the correct nutrients required, further soil and grass samples were taken in the same paddocks in November 2022. These showed that magnesium levels had increased from index 2 to 3, phosphate from 1 to 2 and potash from 0 to 1. The grass analysis showed a significant improvement also, with high levels of phosphorus and an increase in magnesium and potassium. Therefore, the issue was detected. Iwan has rectified the issue and already seeing beneficial results, which will only improve.

Magnesium and phosphate are an important link in the movement of nutrition from the soil up through the grass plant and into livestock. Although the indices at Nantglas are still low, they are moving in the right direction and Iwan has seen significant benefit to analysing both soil and fresh grass samples to understand which nutrients are being locked up in the soils due to incorrect nutrients and compaction in the soil.

Knowledge Exchange Hub

Technical articles produced by the KE HUB:

- NITROGEN AND AGRICULTURE – WHERE DO WE STAND?
- CIRCULAR SYSTEMS IN AGRICULTURE PART 1: LIVESTOCK PRODUCTION SUSTAINABILITY
- SEAWEED IN AGRICULTURE

EIP Wales

Lameness in Dairy Cattle

With lameness being such a significant concern within the industry due to its impacts on welfare, productivity and public perception, finding out different ways of sharing ideas on how to tackle the issue is crucial. Over the last two years, a group of 24 farmers across south east Wales have been taking part in an EIP Wales project to assess how two new methods of receiving advice can make a difference on their farms.

Here are some results from the surveys on the perception of lameness within the farmer group at the start of the project.

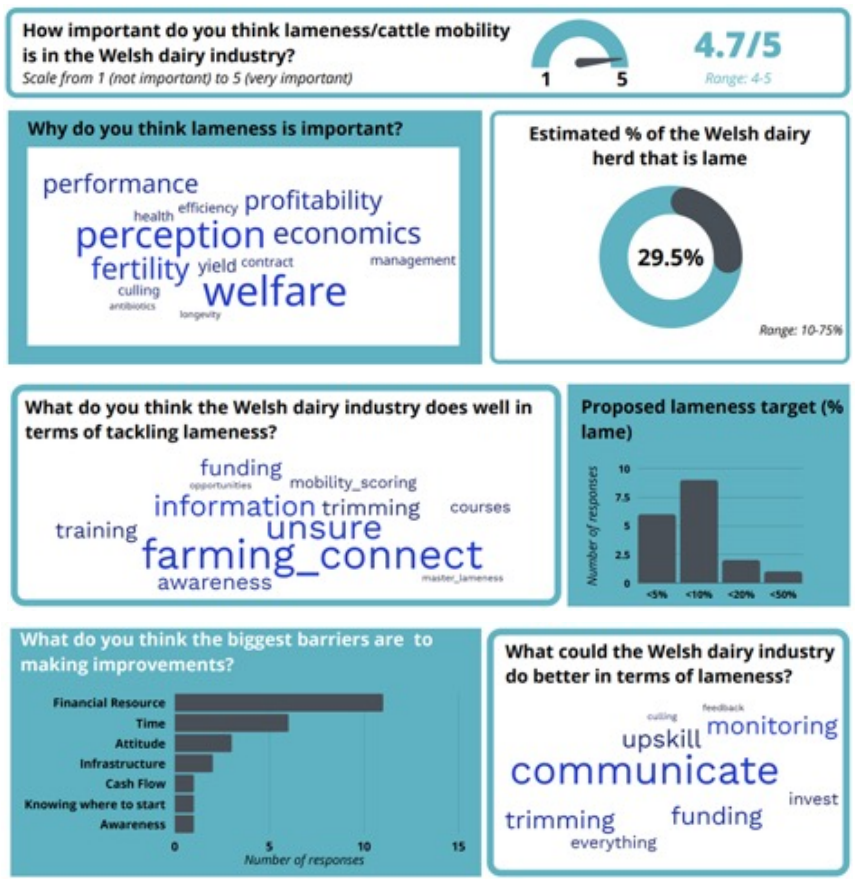


Figure 3: results of the perception of lameness survey.

"The final mobility scores are currently being collected, action plans reviewed and final meetings taking place before the project comes to an end in February. I'm really looking forward to seeing the final results. The project has already highlighted some of the challenges surrounding lameness management and also some of the key areas that underpin success, including finding practical solutions, focusing on early detection and treatment of lame cows and ensuring that the whole team is involved (farmer, vet and trimmer). There have been some excellent results on individual farms and it is hoped that some of the key outputs from the project can help farmers across Wales improve hoof health in their herds," says Sara Pederson, the project lead.

Animal health & welfare workshops

31 WORKSHOPS held with **452** ATTENDEES

Examples of workshops held:

- Antibiotic resistance
- Controlling BVD
- Bovine TB
- Parasite control in cattle
- Rearing healthy calves and maximising profit
- Reducing lameness in dairy cattle
- Reducing mastitis in dairy cattle
- Understanding Johne's disease
- Youngstock health

Discussion Groups

26 DAIRY DISCUSSION GROUP MEETINGS held with **169** ATTENDEES

Case Study

A Carmarthenshire Milk From Forage group meeting was held at Gelli Aur College during November with the aim of providing information on the slurry project being run at the college.

Guest speaker for the day was the project manager, John Owen, who began by giving some background on the project, including its establishment, the partners involved and how it's funded. He then proceeded to discuss the aim of the project and the possible benefits to farmers before outlining the process, providing specific information on the machinery involved, the underground irrigation system and the reed beds.

Following this, John presented information on the extraction rates of the below from the slurry following the extraction process:

- Solids
- Phosphorus
- Nitrogen
- Potassium
- Chemical oxygen demand

John also provided information on the 'Tywydd Tywi Weather' project. This is a weather app designed to support in-field operation decision making, such as slurry application and fertiliser application, via data gathered from six weather stations located along the Tywi valley.

To conclude the meeting, John took the group on a farm walk. Firstly, they went to see the weather station located on the farm and then they went on to the slurry project plant and reed beds, where John and his colleagues gave a detailed view on the process from start to finish.

Clinics

231 CLINICS held with **933** ATTENDEES

Key topics included:

- Animal health
- Nutrition
- Infrastructure
- Soils

Surgeries

72 SURGERIES held with **401** ATTENDEES

Key topics included:

- Agriculture Pollution: Workbook
- Marketing and diversification
- Planning
- Law

Businesses from the dairy sector attended all of these surgeries.

Mentoring programme

12 NEW DAIRY FARMERS ACCESSING THE MENTORING PROGRAMME

126 DAIRY FARMERS HAVE USED A MENTOR

16% OF ALL MENTEES ARE DAIRY FARMERS

The most popular topics applied for during this period were:

- Farm succession
- ICT
- Renewable energy

Strategic Awareness Events (face-to-face & webinars)

40 DAIRY THEMED EVENTS held with **527** ATTENDEES

Examples of webinars held include:

- Agriculture Pollution: Risk Mapping
- Agriculture Pollution: Workshop Workshop

Shows

Wales Dairy show

Farming Connect attended the Wales Dairy show on the 25th of October, 2022. It was attended jointly with the Welsh Government, BVD Cymru, the Wales Farm Safety Partnership and AHDB Dairy. The Wales Dairy show is a flagship event within the dairy sector and an opportunity to network with those involved with the sector. All Farming Connect staff promoted all services available, in practically the Agri-Pollution Regulations. Being on a joint stand provided a one stop shop for Dairy farmers to gain information on any knowledge transfer projects and services available across Wales.

During this one-day event, the project results from the Dairy Demonstration Network projects were detailed on the display panels as well as Dairy technical officers in attendance to discuss. New and existing businesses had an opportunity to talk to Farming Connect staff and submit any enquiries they may have.

It is beneficial that Farming Connect continue to attend these flagship events to promote services, network with other project and to support the industry. Businesses that don't use the internet or have an email address use these events as a prime opportunity to learn and gain information on what is happening within the industry.

During this event, the following topics were most asked about:

- Details of local Development Officer
- Information on upcoming grants
- Support available on the Agriculture Pollution regulations

Factsheets and flyers on the above were available on the stand and were shared with those Farmers.

Advisory Service

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

196 of main sector Dairy businesses have accessed advice through the advisory service during this period.

Examples of webinars held include:

- Grassland
- Business

Feedback from dairy businesses on delivery of the Advisory Service:

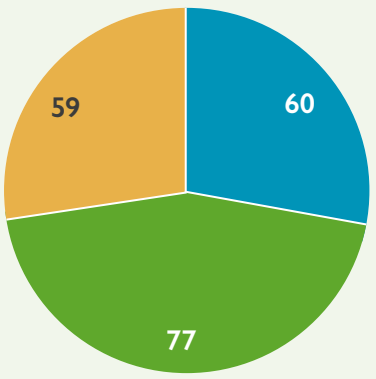
> *"As per other members in the group, this service reinforced that everything that had been implemented on the farm was now paying dividends from an environmental perspective."*

> *"Very happy with the support that we had from the advisor. He was very knowledgeable on the topic."*

Training

During this period, **196** instances of face-to-face training were delivered to the Dairy sector.

Number of individuals that completed training per category



The most popular courses in each category were:

	Total
Emergency first aid at work	19
Rough terrain telescopic lift truck	17
DIY AI	7
Book keeping	12
Cattle foot trimming	11
L2 Safe use of pesticides (PA1) & (PA2)	11
Introduction to work control and faecal egg	10
Safe use of sheep dip	6
Marketing your business	6
L2 Chainsaw maintenance and cross-cutting	6

E-learning

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

- BODY CONDITION SCORINGS
- CLIMATE CHANGE AND LIVESTOCK
- CATTLE LAMENESS
- FARM SAFETY – WORKING SAFELY WITH LIVESTOCK

Click here to visit the website.

Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig: Ewrop yn Buddsoddi mewn Ardaloedd Gwledig
European Agricultural Fund for Rural Development: Europe Investing in Rural Areas
Llywodraeth Cymru Welsh Government