BUSINESS

December 2021 – March 2022

FARMING connect
cyswllt FFERMIO

Number of businesses registered:

12,292

Number of individuals registered:

25,692

Knowledge Exchange Hub

Technical articles produced:

GROWING CROPS FOR THE PHARMACEUTICAL INDUSTRY

This article looks at the potential diversification opportunities for farm business and the opportunities to produce high-value products if farm conditions are suitable.

DEVELOPING SHORT FOOD SUPPLY CHAINS

Short food supply chains offer farmers opportunities to diversify their business, increase their customer base and provide information on quality and provenance. All of these things have the potential to increase value, and hence profitability.

LAND USE CHANGE FOR CARBON SEQUESTRATION: ASSESSING THE INFLUENCE OF CARBON TRADING

This article investigates the potential to earn an income from carbon trading and the potential pitfalls that could be encountered.

Personal Development Plans

A TOTAL OF **207** PDPS WERE CREATED DURING THIS PERIOD

Demonstration Network

Pantyderi, Pembrokeshire
Key Sector: Arable, Beef, Sheep

The growing of cereals provides enough starch energy to grow and finish the 400 beef cattle at Pantyderi annually, but a 36% protein concentrate blend was bought in to make up the protein shortfall in the ration. A bi-crop of peas and beans was trialled at Pantyderi, with the aim of replacing the bought-in blend with a home-grown protein crop.

Stats:

Feed rations

Beef rations of equal energy and protein to the previous winter's diets were formulated; the cost savings for feeding the peas and beans are shown below.

	Growing ration		Finishing ration	
Year	1	2	1	2
Cost/head/day £	1.35	1.29	2.39	2.18
Cost saving £*	**1,800**		**3,788**	

*Cost saving based on 200 cattle being fed for five months on the growing ration, and three months on the finishing ration.

Winter wheat has followed the pea and bean crop, and it is estimated that the nitrogen-fixing capacity of the legume crop will contribute up to 100kg/ha residual nitrogen for the cereal crop, worth £1508 for the 8ha field.

Farm carbon footprint

Feed C savings from not purchasing 40 tonnes protein concentrate:

- 40 x 1.5 tonnes CO2e/tonne = 60 tonnes CO2e

Fertiliser C savings for following winter wheat crop:

- 800kg Nitrogen x 3.4kg CO2e/kg = 2.72 tonnes CO2e.

Mountjoy: Trial shows only small grass yield drop from cutting summer N usage

Mountjoy, a Farming Connect demonstration site near Haverfordwest, already uses less N than the upper limit recommended in RB209, but would like to reduce inputs further if possible, to save costs and reduce its environmental impact. The target is to reduce the whole farm average to 160 kg N/ha, from past levels of around 230 kg N/ha annually.

The trial consisted of applying standard rate of N for the first four grazing rounds across the whole trial area – followed by a zero-rate, half-rate and full-rate of N for four further grazing rounds.

Impact of halving or halting nitrogen applications			
	No summer N	**Half summer N**	**Full N**
Total N applied	80 kg N/ha (before July)	119 kg N/ha	158 kg N/ha
Percentage of total N used in season	50%	75%	100%
Cost saving/ha July-September versus full-rate N application (34.5%N@£650/t)	147/ha (£1.88*78 kg N/ha)	£73/ha (£1.88*39 kg N/ha)	
Total kilos of dry matter produced across season (kgDM/ha)	14.4 t DM/ha	15 t DM/ha	16.0 t DM/ha
Percentage of total dry matter production potential	90%	94%	100%

Reducing total nitrogen by 50% grew only 10% less grass – but this reduction relied on high levels of soil mineralisation and clover fixation through the summer to replace most of the bagged N.

A zero N treatment was introduced on a section of the trial field, with the rest of the field receiving 94 kg N/ha from three applications. **The half-rate summer trial once again had a small impact on total grass growth – a 19% reduction in nitrogen use led to only a 5% reduction in grass growth.**

Impact of removing nitrogen – and of halving summer nitrogen, 2021			
	No N	**Half summer N**	**Full N**
Total N applied	0	120 kg N/ha	147 kg N/ha
Percentage of total N used in season	0%	81%	100%
Total kilos of dry matter produced across season (t DM/ha)	8.33 t DM/ha	11.8 t DM/ha	12.4 t DM/ha
Percentage of total dry matter production potential	14.4 t DM/ha	15 t DM/ha	16.0 t DM/ha

On the no-N treatment, the amount of white clover in the sward has increased (to 23% compared to 13%), so there may be potential to see greater N fixation from the clover, and a boost in late season grass growth.

The trial has shown that if no N was applied at all, Mountjoy would currently grow around 7t DM a year, driven by clover and soil N mineralisation; this is considerably less than the herd's requirement.

Reducing summer nitrogen where soil conditions and/or clover levels are high will have minimal effects on grass production, but could have significant financial savings, and should be encouraged.

EIP Wales

Developing a novel way of rapidly measuring agronomic treatment effects on forage crop growth

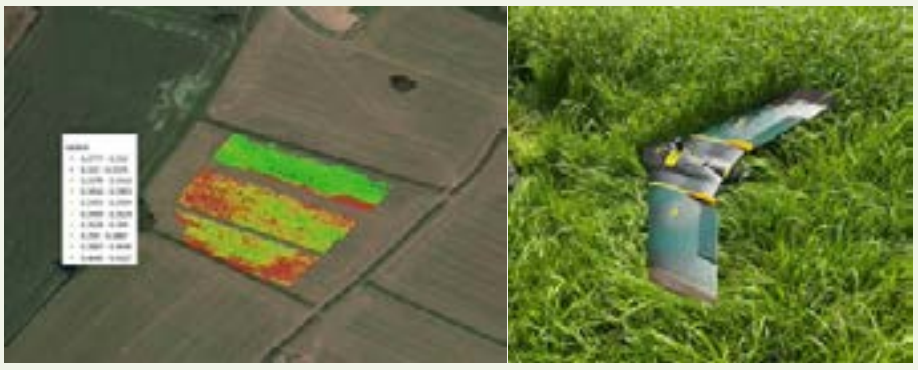


Figure 1. satellite imagery, to measure different agronomic treatments using tramline/ strip scale trials.

Measuring forage crop yield is a time-consuming and laborious task, because it either involves multiple measurements with a rising plate meter, or counting and weighing silage trailers. Grass/forage producers risk falling behind, in terms of the rate of productivity improvement compared to arable farmers, who have access to combine harvesters with yield monitors. During the growing seasons of 2020 and 2021, three grassland farmers investigated the potential of drones and satellite imagery, to measure different agronomic treatments using tramline/ strip scale trials, and the use of this information to optimise crop management.

The study tested a wide range of agronomic treatments, including different grass and clover mixes, sulphur fertiliser rates, slurry, Smart Grass growth promoter, and bio-stimulant products.

Results

- Both the drone and satellite could detect significant differences in the agronomic treatments applied on the farms.
- Drone data has the advantages of high precision, and can be acquired in cloudy conditions. However, it does require a high level of technical expertise for a farmer to operate and collect this data; alternatively, a specialised contractor would need to be used.
- Satellite data can be free, but does require expertise to acquire the data. It can only be captured in cloudless conditions, which may not occur for several weeks sometimes, and cannot detect treatment differences as small as those detected using drone data.

Estimated costs:

- The cost of acquiring the drone data was approximately £850 per field.
- Consultant time cost for acquiring freely available satellite data from the Sentinel-2 satellite was approximately £200 per field.
- Consultant time cost for analysing data to statistically test the effects of agronomic treatments is estimated at £400 per field for drone and £250 for satellite. All costs are ex-VAT.

Advisory Service

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

132 individuals received one-to-one support through the Business categories of the Advisory Service during this period.

16 individuals from 8 Joint Ventures received support through the Business categories of the Advisory Service during this period.

Feedback from businesses on delivery of this Advisory Service:

"Excellent service, cannot fault any aspect. The knowledge base of the advisor regarding farming/agriculture was expert, which enhanced the whole process. Excellent Business plan compiled well within our time frame. Professional and efficient. Many Thanks"

Discussion Groups

Gower beef discussion group

Chris Duller (an independent soils and grassland consultant) was invited to speak to the discussion group about the role of Nitrogen in modern day farming – especially in recent times, with the cost of fertiliser being so high. Farmers are having to make key business decisions that could impact their productivity and profitability, in terms of whether to buy fertiliser or not, and considering alternatives currently on the market.

Before the meeting began, Chris had asked all the group members to provide him with information on what nitrogen they used within their farming systems for 2021, and what difficulties (if any) they have faced in 2022 so far. This led to plenty of discussion on increasing costs and threats to business viability.

Chris went on to discuss the current prices of nitrogen fertiliser, and how they are based on the gas market. He showed the rough differences in price from 2019/20 to 2022, and how they will impact businesses on both their £/ha costs, as well as p/KgLW.

Chris believed that there was still a need for nitrogen. He said that not buying this year would be a bad choice, as it would greatly impact grass and crop growth – but there may be options to cut back. The group discussed where to prioritise their nitrogen applications, and Chris discussed with them how they should not cut costs on their first cut silage applications, as this is still the most important time of year to ensure they get the bulk of their winter forage produced.

Chris discussed mitigation strategies to balance high variable costs; these included: selling stock earlier, buying extra forage in, establishing low N-demanding crops and increasing clover in the swards, looking for alternative sources of nitrogen.

Through farming Farming Connect, there are a number of services that can help businesses worried about rising costs, including business surgeries, mentors and support for business plans.

Figure 2. Chris Duller (an independent soils and grassland consultant).

Venture

801
EXPRESSIONS OF INTEREST SUBMITTED SINCE THE START OF VENTURE

311
ACTIVE PARTICIPANTS

LOOKING FOR A MATCH (fully enrolled)

MATCH FOUND

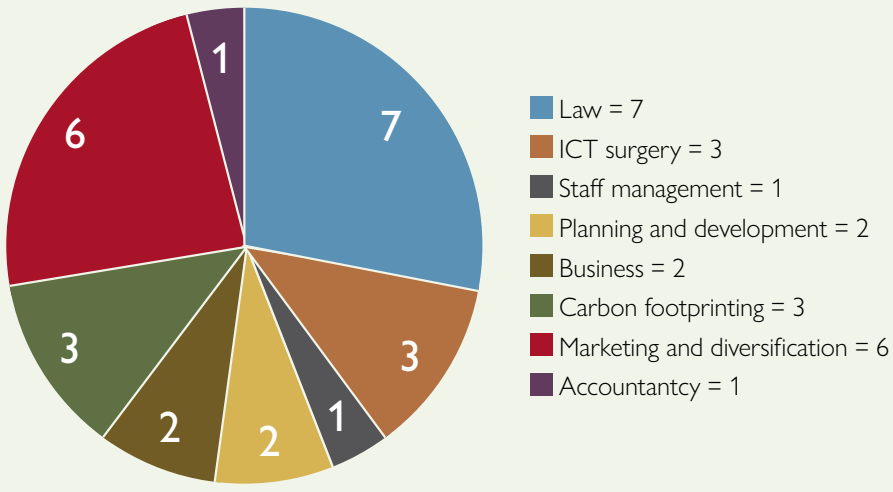
COMPLETED JOINT VENTURE

52,300
ACRES OF LAND INVOLVED

Surgeries

28 SURGERIES HELD with **189** ATTENDEES

The chart shows what type of surgeries the business had and how many:



One business attended a marketing and diversification surgery and a planning surgery, with a possibility of looking to develop a campsite. The feedback received after attending the surgery was:

"I have learnt how to create a business plan to go with our business intentions and what steps we would need to take next regarding planning and marketing techniques."

"The surgery highlighted things that we hadn't considered and learnt that we needed much more in-depth financial planning than we had already done."

Management Exchange

Kathryn Tarr's Management Exchange, February 2022
Topic: Regenerative Livestock Farming Country: UK

Figure 3. Kathryn Tarr

During February 2022, Kathryn travelled to other Red Devon herds in the UK, exploring the viability of boxed-meat schemes. Kathryn realised the need to add value to the end product by also looking into grass-finished produce. She identified a niche market for this product, and saw that marketing would be key in developing a successful meat box business. On her return, Kathryn has enrolled herself on a Master Grass course, to help implement what she has learned and the outcomes of her Management Exchange, to help develop her idea of adding value to her product, with the aim of selling her own end product via a meat box scheme in the near future.

Agrisgôp

Working together within a group, Agrisgôp members can learn new management skills, access specialist information, and explore and develop viable futures for themselves, their families and their businesses.

38 ACTIVE GROUPS with

408 MEMBERS attending a total of

78 MEETINGS

Topics included:

- Regenerative farming
- Diversification
- Bookeeping
- Beekeeping

Mentoring

644 MENTEES MENTORED

15 NEW MENTEES DURING THIS PERIOD

The most popular topics applied for during this period were:

- Succession planning
- Diversification
- Beekeeping

E-learning

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

- FARM BUSINESS DIVERSIFICATION
- FARM HUMAN RESOURCES
- RURAL CRIME – KEEPING YOUR FARM SECURE
- PLANNING & FINANCE

Click here to visit the website.

Training

Courses	Number of individuals trained during this period
Book-keeping	17
Emergency First Aid at Work	13
Understanding Your Accounts & Financial Statements	7
Marketing your Business	6
Introduction to Agricultural Business Planning	6

ICT Programme

LEVEL 1	LEVEL 2
6 week training course = **51** individuals trained	One-to-one tutoring = **172** individuals trained

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