

THE MAGAZINE FOR FARMING & FORESTRY IN WALES

# FARMING connect



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## **Demonstration Sites**

Managing the change:  
sucklers to dairy beef

## **Management Exchange**

Researching the benefits  
of AI in goat herds



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## Block calving dairy farm aims to reduce calving period to 10 weeks

A split block calving dairy farmer is using technology to aid heat detection and increase his six-week calving rate.

Iwan Francis calves half his 200-cow herd in the spring and the remainder in the autumn, both over a 12-week block.

Iwan wants to reduce those calving blocks to 10 weeks, and one strategy he has implemented as a Farming Connect demonstration site farmer is to fit cows with heat detection collars.

“The aim is to get cows back in calf more efficiently without increasing empty rates,” says Iwan, who farms 55-hectare (ha) Nantglas Farm, near Talog, Carmarthenshire, and rents a further 75ha of off-lying land.

With the concentrated pressure on heat detection, heat detection aids, including technology, can play a significant role in block-calving herds.

But, if cows are not healthy and don't express heat clearly, no amount of technology can help, says Gwenan Evans, Farming Connect dairy technical officer, who is overseeing the project.

Vet Kate Burnby, the specialist consultant in this Farming Connect project at Nantglas, will therefore review herd management at Nantglas and the factors that influence fertility performance, including nutrition and disease status.

As there is no single cause of poor fertility, changes will be made to several management practices, says Gwenan.

“By implementing and demonstrating how small changes to several aspects of the farm management can improve fertility, it will showcase some of the solutions and how they can be achieved.

“The aim is to tighten the calving block whilst ensuring the empty rate percentage is below 10%.”

AHDB estimates that sub optimal fertility costs £25,000/year in the average performing 100-cow herd; this is equivalent to 3.2p/litre from lost milk production, fewer calves, higher culling, higher breeding and animal health costs.

There is rarely a single solution for improving fertility as there are many factors that contribute to performance.

Contributions include energy and protein nutrition, cow comfort, lameness and AI technique.

At Nantglas, effectively managing 24 weeks of calving and 24 weeks of mating accounts for a lot of Iwan's time and energy, says Gwenan.

“The plan to reduce the calving blocks to a more concentrated 10 weeks each should allow Iwan more time to run the farm and focus on fertility,” she says.

“The aim is to get cows back in calf more efficiently without increasing empty rates.”



## Using technology to increase health monitoring to improve calving pattern, conception rates and reduce calving losses

The project at Moelogan Fawr demonstration site is well underway. smaXtec boluses have been administered to 40 yearling Stabiliser heifers and the solar powered base station has been adapted and made mobile so that it can be easily moved with the cattle in their grazing rotation. The boluses are constantly monitoring the body temperature and activity of the heifers, and the data is being received by the base station before being sent to the cloud.

Within the first two months the technology has notified Llion and Sian Jones of high temperatures which was later confirmed by the vet to be a fever. The quicker identification and diagnosis meant less antibiotics was used to treat them and their performance was not stunted as it could have been if the fever had chance to develop.

One of the main drivers of introducing the boluses to the suckler herd at Moelogan Fawr was to aid in the heat detection process. They use AI on a high percentage of their herd, and as it's often difficult to spot heat in young heifers, this technology could reduce labour and the amount of straws being used. The technology notifies the farmer when the heifers are on heat and what time window would be best for insemination. Within the first couple of weeks, the boluses have identified animals that have been on heat but were not showing visible signs of bulling when inspecting them.

### NEXT STEPS:

1. Continue to evaluate the data that is being collected.
2. Inspect the heifers for heat, to see if the boluses are performing as they should.
3. Prepare for the mating season and identify those who haven't been recorded on heat for veterinary inspection.



Figure 1.  
smaXtec base station

# Demonstration Site

Elan Davies, one of our red meat technical officers, has been working with demonstration site farmer, Neil Davies, to establish a project that will strive to improve the efficiency of his business.

**Demonstration Site:**

Cefnllan, Llangammarch Wells, Powys

**Technical Officer:**

Elan Davies

**Project Title:**

Managing the change: sucklers to dairy beef

**Project Introduction:**

Cefnllan demonstration site is a beef and sheep farm in Llangammarch Wells, Powys, run by Neil Davies and his family. They are currently transitioning from the traditional suckler cow enterprise to rearing bought-in dairy-beef calves. The aim of the project is to investigate the feasibility of changing from a traditional suckler cow enterprise to rearing, growing and possibly looking at finishing bought-in Angus cross dairy calves, with the aim to do this on a low-cost, grass and forage-based system. Monitoring and optimising calf performance, as well as controlling costs will be a key aspect to the project.

This project will provide a template for understanding the decisions and considerations involved with starting a new enterprise such as this one, as well as creating a blueprint for managing a low-cost, forage-based dairy-beef enterprise.

**Project Objectives:**

- Investigate the feasibility of changing from a traditional suckler cow enterprise to rearing, growing and finishing bought-in dairy calves.
- Exploring the potential of achieving high performance on a low-cost grass and forage-based system.
- To provide a template for other farm businesses considering the transition from traditional suckler cows to finishing dairy calves.

- To provide a blueprint for managing a low-cost, forage-based dairy-beef enterprise.

**Key Performance Indicators set:**

1. To increase net production in terms of kg of beef produced per hectare by 50%, from 184kg/ha (sucklers) to 367kg/ha (spring bought calves)
2. To increase annual grass yield (tonnes DM/ha) by 33%, from 5.1 to 6.8
3. To increase annual grass utilisation by 38% (0.7 tonnes DM/ha)
4. To increase liveweight gain from 0.8 to 1kg/day within the cattle finishing system at grass
5. To improve silage quality from 63 to 70 D value (digestibility value) and to aim to achieve 0.8kg daily liveweight gain over the winter within the cattle system and using less concentrates.



Figure 1. Grass measuring at Cefnllan

**Activity to date and milestones (September 2019 - August 2020)**

| Key Activities                                      | S | O | N | D | J | F | M | A | M | J | J | A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total farm cover grass measurement with plate meter |   |   |   |   |   |   |   |   |   |   |   |   |
| Baseline assessment of farm and enterprise          |   |   |   |   |   |   |   |   |   |   |   |   |
| Planning for change (Farmax scenarios)              |   |   |   |   |   |   |   |   |   |   |   |   |
| Winter forage budgeting                             |   |   |   |   |   |   |   |   |   |   |   |   |
| Measure grass (fortnightly)                         |   |   |   |   |   |   |   |   |   |   |   |   |
| Weigh calves (monthly)                              |   |   |   |   |   |   |   |   |   |   |   |   |

**Project Update:**

The first batch of 100, 3-4 month old Aberdeen Angus cross dairy calves (averaging 140kg weight) arrived at the farm in April, 2020. Dafydd Jones, Senior Livestock Systems Consultant with Precision Grazing, is leading on the project work and has been designing a subdivision plan for the farm to allow maximum utilisation of grass. Grass measurements using a plate meter are being taken fortnightly during the grass growing season to identify exactly how much grass is available to graze. AgriNet and Farmax softwares are being used to help with recording the grass measurements and forward planning.

**Next Steps:**

- Weigh calves monthly to closely monitor daily liveweight gains (DLWG).
- Measure all farm cover across the farm on a fortnightly basis to ensure optimum grass utilisation along the rotational grazing platform.



Figure 2. Grass measurement data at Cefnllan



# Rhiwaedog demonstration site project updates

Gwawr Hughes, Farming Connect - Red Meat Technical Officer

## Project 1: Improving productivity and efficiency from grass

The current focus of the grass efficiency project at Rhiwaedog is to improve nitrogen use on farm. Urea is usually applied early in the season, followed by ammonium nitrate through to silage. Although the farm is not using a high amount of fertiliser, savings could be made according to project specialist, Chris Duller.

One of the main issues with urea is the loss of nitrogen as ammonia. In April, a trial was set up at Rhiwaedog, focusing on the impact of urea versus treated urea on grass growth and quality. Treated urea has inhibitors bound into its prills which aim to reduce nitrogen losses as ammonia. Research has shown a reduction of between 25-40% in ammonia losses when using treated urea.

For the trial, a field was split into three sections. Conventional urea was applied on the first section, the second section left untreated as a control plot, and treated urea was applied to the third section. The control plot was covered with a plastic sheet during application to avoid the excess fertiliser from falling on the untreated section of the field.

Results from the trial will allow us to calculate how much grass has been grown per kg of nitrogen applied.

The next stage of the project involves comparing the cost efficiency of treated urea versus conventional ammonium nitrate by monitoring grass growth and costs of the different treatments to see which is the most efficient. Grass quality will also be monitored to see if there are any differences.



## Project 2: Evaluating the benefits of heat detection technology to provide gains in suckler cow fertility

The main aim of the project is to improve fertility and tighten the calving pattern at the demonstration site to ensure a more efficient and productive beef herd. The key performance indicators which we aim to achieve as a result of the project at Rhiwaedog are:

- To tighten the calving period within both calving blocks to achieve 90% calving rate within a 6-week period.
- To reduce calving interval to UK average of 'one live calf' per 365-375 days.
- Increase conception rates to >95% of herd in-calf at first pregnancy diagnosis.

On 25 April, 13 cows were turned in with a new pedigree Welsh Black bull, Machreth Bleddyn 6th, who was added to the herd in January 2020. All cows were tagged with Moocall HEAT electronic tags and linked up to the Moocall dashboard individually. A Moocall HEAT electronic collar was placed on the bull. The same process was applied on 13 May, when 16 heifers were turned in with a Saler bull.

The collar uses information based on proximity, mounting behaviour and activity levels to determine to a high accuracy when cows are in heat. When a cow or heifer is in heat, a message is sent through the app or by text to notify host farmers, Aled and Dylan. The herd's progress can be monitored on the Moocall Breedmanager app.

The aim is to monitor the herd carefully, and identify any cows or heifers which aren't cycling properly. Any issues can be explored further through a physical examination and/or ultrasound scanning by the vet.

### Next steps:

- Monitor activity on the Moocall Breedmanager dashboard to ensure cows are cycling properly.
- Identify any cows which are not pregnant after first service and perform physical examination and ultrasound scanning if required.





## The Farming Connect Knowledge Exchange Hub

The Farming Connect Knowledge Exchange Hub (KE Hub) is based at IBERS, Aberystwyth University. Our colleagues there are playing an important role in providing farmers with the latest information from scientific research.



### Introducing Dr Will Stiles:

Dr Will Stiles is a lecturer for the Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University. In addition to his teaching responsibilities, he leads the Knowledge Exchange Hub in IBERS for Farming Connect. Will has a research background in soil science and ecology and his research looks for ways to reduce the environmental impact of agriculture, to make farming and food production more sustainable. From the Knowledge Exchange Hub, Will has produced numerous technical articles on a range of topics, with particular focus on climate and environmental change, to disseminate current scientific research to the agricultural industry.

## Improving yield and quality of grass and forage crops - Dr Will Stiles

Agricultural grasslands represent **26% of global land** and **70% of all agricultural land**. As demand for livestock products continues to increase, enhancing production potential through optimum grassland management becomes a key challenge.

### Approaches for improving forage crops:

**Cultivar selective breeding** is the selection of forage organisms for the enhancement of favourable characteristics including dry matter (DM) yield, digestibility of DM, nutritional content of plant tissue, crop durability and resistance to pests and diseases (i.e. pathogenic fungus, nematodes).

**Genomic analysis** and approaches such as quantitative trait loci (QTL) analysis or marker-assisted selection (MAS) can improve selective breeding approaches by identifying candidate genes related to nutritional enhancement, or characteristics related to enhanced production. Once identified, these genes can be specifically targeted, improving the outcomes of breeding initiatives.

### What characteristics are important?

**Nitrogen use efficiency** potential is a key target, as this relates directly to the protein content of forage. Plants that have both a high potential for growth and nitrogen accumulation in tissue offer the greatest production results.

**Digestibility** and the concentration of water-soluble carbohydrates (WSC) in leaf tissue is also a key feature as this improves animal performance. Current options that are available include *Lolium* cultivars AberMagic, AberDart, and AberElite, which have all been shown to have high growth rates and high WSC concentration during spring and summer.

**Enhancing biomass production** has been a traditional focus for forage breeding programmes. Future approaches for this are likely to focus on the manipulation of the genes associated with senescence, to increase the duration of the growing season.

**Biofortification** of cereal crops with essential trace elements is a reasonably established science. Applying the same principles to forage production could improve the health and welfare of livestock, and subsequently improve the health of people consuming these products.

**Environmental interaction** is increasingly recognised as a key feature of plant performance. Plants can directly modify the rhizosphere around their roots by altering the chemical constituents of root exudates. Understanding the mechanisms at the heart of this process could allow for strategies such as the inoculation of new forage crops with beneficial microorganisms, or the selection of organisms with specific root exudate composition.



# The importance of planting the right tree in the right place

Dafydd Owen, Farming Connect - Forestry Technical Officer

Planning woodland that coincides with the farmers' aims is essential in order to improve the farm's environmental and economic performance. These aims could be conservation, environmental or economic; producing woodlands for income generation, or to benefit livestock by increasing shelter and biodiversity on the farm. It is important therefore to look at the farm in its entirety when planning and identifying suitable areas for planting.

When planning a woodland, consideration should be given to how the specific farm or system could benefit from the trees. For example, would more shelter in a specific area on the farm be beneficial in terms of livestock growth? Or are some areas of the farm prone to flooding?

The right tree in the right place can offer many advantages. According to a five-year study, sheep that had been grazing in sheltered areas showed a 21% increase in live weight gain. The sheltered areas also showed an increase of up to 17% in milk production, and a 20% increase in grass growth as a result of warmer soils.

To ensure that the farming system and the woodland are mutually beneficial, the requirements of the UK Forestry Standards must be met, i.e. that the trees offer benefits in terms of sustainability, by delivering environmental, economic and social functions.

All trees have their own functions and needs, therefore choosing the right species is essential to ensure survival and resilience. In order to do this, the species must be selected according to the properties of the soil, the landscape and expectations from planting trees.

It is also important to consider factors such as climate change and the threat posed by pathogens and pests during the planning stage.

Therefore, you should consider planting a variety of species, including a mix of broadleaved trees and conifers, and manage your woodlands to develop the best possible variation in structure to ensure resilience for the future. Planting trees from seeds that have been collected and grown in the UK is also a contributing factor to ensure the resilience of our woodlands.

Choosing the same species of trees that already grow in the area is a good indication of which trees are most likely to adapt to the soils and the environment to survive.

Understanding the soil is important during the planning stage. Although many species are able to grow in a range of different conditions, some grow better in specific soils. For example, oak prefers moist, well-drained soils rather than sandy soils.

The condition of the soil tends to vary in different areas of the farm. It is important to consider that some trees are more suited to specific environments, and that different species have different requirements in terms of moisture. For example, willow, alder and common birch trees prefer wet areas, whilst the silver birch and the rowan can thrive in a less sheltered, drier environment.

If the aim is to create a conservation woodland for wildlife and to increase biodiversity, fruit-producing species should be chosen. These can include rowan, hazel, crab apple, cherry, beech or oak.

If the objective is to plant a productive woodland whilst also focusing on the core business of food production, it's important to consider suitable areas for planting to avoid conflict. This might include any marginal land and the less productive areas of the farm that will contribute towards improved economic and environmental performance for the whole farm.

There are many options in terms of trees to plant, but the Sitka spruce is the most popular these days. It grows best on less fertile soils but likes moisture, so it is very suitable for upland areas in Wales. Alternatively where soil conditions allow, i.e. sufficient depth and drainage, the Douglas Fir can be considered, which can be used for construction due to its strength.

It is important to note that due to disease status currently affecting larch and ash in Wales, the planting of these species are not permitted.

Please see information on Coed Cymru website to help you choose tree species based on the moisture requirements of the trees.

[www.coed.cymru](http://www.coed.cymru)

The ninth Expression of Interest (EOI) round for Glastir Woodland Creation has been extended to 31 July 2020. Please note that submitting an EOI must be undertaken by a registered planner. Please see <https://gov.wales/glastir-woodland-planners-contact-details> for details of Glastir woodland planners.



*An example of how tree planting is designed to help manage livestock and reduce overland flow*

# Women IN AGRICULTURE

## NUMBERS SOAR FOR WOMEN IN AGRICULTURE ONLINE

Farming Connect received nearly 30,000 interactions on its social media platforms and website when the programme's annual Women in Agriculture (WIA) campaign went online for the first time last month.

Billed this year as 'Leading change', the mix of group webinars, fully-subscribed one-to-one telephone surgeries, online video presentations and Q&A sessions proved to be a winning format. Topics ranged from mental wellbeing to personal development and from succession planning to animal health and diversification, drawing comments, views and opinions from women not only throughout Wales and the UK but even Dubai!

Eirwen Williams, director of rural programmes with Menter a Busnes, said that the success of the week paves the way for increasing the range of online or digital services provided by Farming Connect, which have been steadily expanding since the introduction of the Covid-19 restrictions, which put a stop on all mass gatherings.

"Although this year's Women in Agriculture participants missed out on the face-to-face networking and what is always a very sociable day, by changing the format and duration of the campaign, we have been able to reach out and inspire thousands more individuals who joined in online."

Young farmer and leading social media influencer Anna Truesdale, who farms with her family in County Down, Northern Ireland was one of the week's star attractions.

"Anna's enthusiasm and positivity prompted very positive feedback and we had nearly 4,000 views of her specially recorded presentation which started off a fantastic week of activities which exceeded all expectations."

*Nb if you missed out on any of this year's presentations, or would like to hear those words of wisdom again, catch up online by visiting the Women in Agriculture pages on [www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect)*

## WOMEN IN AGRICULTURE 2020...WORDS OF WISDOM



*"The secret to getting ahead is getting started."*

Instagram sensation Anna Truesdale shared her tips for creating content and generating followers on social media.



*"Step back, reset your thought processes and move your business up a gear!"*

Farming Connect mentor Lilwen Joynson touched a chord with many participants when she talked about the importance of personal development.



*"Adapt to change, learn the lessons, bounce back."*

Crai Valley farmers Julie and Keri Davies run a diversified 5\* tourism business. This couple provided a searingly honest account of how they overcame adversity and came back stronger.



*"Start the conversation, it's never too soon."*

Farming Connect mentor Siân Bushell urged families to start the tricky topic of succession planning sooner rather than later – which she says is often too late!

*#Farmtter*





# Animal Health & Welfare webinars...helping you protect the health of your stock



Looking after the health and welfare of livestock is a priority for all farmers at all times. Ignoring early warning signs or letting things slip is simply not an option for any efficient, professionally run business.

As the industry adapts to cope with the restrictions of Covid-19, many farmers are turning to Farming Connect for help. Provided they are registered, eligible farmers can receive 'remote' online guidance from approved farm vets. Delivered by participating veterinary practices throughout Wales, the content for each interactive webinar has been designed by the National Animal Disease Information Service (NADIS).

- ✓ Fully funded animal health workshops – delivered 'remotely' via webinars
- ✓ Short, interactive sessions on a wide range of topics delivered by approved vets
- ✓ Learn how to identify, manage and control many animal health issues
- ✓ Take actions to resolve problems and reduce the need for professional interventions

The wide range of available webinar topics includes:

|                              |                             |
|------------------------------|-----------------------------|
| Antibiotic resistance        | Lameness                    |
| Bovine TB                    | Mastitis                    |
| Bovine viral diarrhoea (BVD) | Parasite control*           |
| Johne's disease              | Pre and post lambing losses |

"With each webinar lasting under two hours and led by an approved participating farm vet, farmers have the opportunity to learn from an expert, to voice any questions they may have and to learn from the experience of other participating farmers," says Rebecca Summons, who leads on the delivery of animal health training on behalf of Farming Connect.

"Farm animal health planning involves having a proactive approach which focuses on prevention rather than cure.  
"The benefits to individual farm businesses are significant because improving animal health and welfare leads to increased productivity and resilience," said Miss Summons.



A list of all participating veterinary practices and the topics they offer, is available on the Skills and Training pages on the Farming Connect website, with times, dates and registration details shown on the 'What's On' pages. All participants will be provided with a certificate of 'remote attendance' which will be added on their behalf to their Farming Connect Storfa Sgiliau record.

Webinars are easy to access and can be booked through any participating vet practice.

*\* A new parasite control online planner has been developed which enables vets and farmers to compile a parasite control plan for their flock and/or herd. The planner is available to view at [www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect) and can be implemented and included within a farm health plan.*

Registered Farming Connect farmers interested in specific animal health topics can also access a wide range of fully-funded interactive e-learning modules.  
**TOPICS INCLUDE** - Antimicrobial resistance (AMR); Cattle lameness; Controlling BVD; Liver fluke management; Sheep scab; Trace elements in livestock.  
Visit [www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect) to see the full list of all e-learning courses.





## Welsh dairy goat farmer introduces benefits of AI into his own herd

**A Welsh goat milk producer says artificial insemination has the potential to accelerate performance improvements in the national herd.**

Gary Yeomans has been performing AI on his own herd of 600 British Saanen, Toggenberg and Alpine dairy goats since visiting France with the Farming Connect Management Exchange Programme to find out more about the technique.

France has a million dairy goats on 6,000 farms and produces 29% of the European goat milk output.

As a result of the Exchange Programme, Mr Yeomans has adapted his breeding programme at Pant Farm, Llanvetherine, by inseminating a group of goats using French AI techniques.

“We have just scanned these goats and we had a 48% success rate, compared to 38% using the vet previously,” says Mr Yeomans, a finalist in the 2019 Farmers Weekly Dairy Farmer of the Year Award with his wife, Jess.

He is now encouraging other goat farmers in Wales to embrace the

concept of AI within their own herds since it allows for faster genetic gain and, as there are known kidding dates, easier herd management too.

“UK goat herds should take up AI to improve performance,” Mr Yeomans recommends.

“It improves biosecurity as there’s less need to buy in males and it allows the facility to concentrate on improving specific traits within a herd.”

He acknowledges that AI is more expensive but says the financial benefits resulting from improvements exceed this cost as genetic improvement allows more profitable goats and increased milk yield, constituents and longevity.

Mr Yeomans is using goat semen from France because of the extensive progeny testing that has been undertaken in that country, with at least 60 daughters per male required.

There is also good knowledge of the breeding values, a diversity of bloodlines with selection available on milk, components and type, he says.

France’s Alpine and Saanen genetic programme incorporates 170,000 goats with selection objectives ranging from milk quantity and quality and udder and conformation to somatic cell counts and a reduction in inbreeding.

In France, frozen semen is available for all the goat breeds, providing an average pregnancy rate of 62%.

Goats are selected based on their reproductive ability, genetic level and morphology.

The Management Exchange allowed Mr Yeomans to undertake AI training at Capgenes, a co-operative of goat breeders which is approved by the French ministry of agriculture for management of breeds.

He now plans to increase the number of goats in his herd bred through AI over the next few years.

“If the success rate continues, I will possibly offer an AI service to other goat farmers in the area,” he says.





## 'Ambassadors for our industry' Agri Academy class of 2020!

Farming Connect is delighted to announce the names of this year's intake of 24 successful applicants selected to take part in its flagship personal development programme, the Agri Academy. Despite the restrictions of Covid 19, the independent judging panel were able to undertake their shortlisting and interview procedures remotely.

Judges Aled Rhys Jones, who will lead 12 participants in this year's Junior Programme, a joint collaboration with Wales YFC, and Llyr Jones, leader of the Business & Innovation Programme, said the judging panel was very impressed by each of the successful candidates, who all demonstrated both ambition and the determination to forge out successful careers in agriculture.

"We are looking forward to working with the class of 2020 – they are a talented group of young people with a cross-section of backgrounds, interests and ideas.

"All ambassadors for our industry, they are certainly ones to watch for the future!"

### Here is what four of this year's candidates have to say...

#### Laura Lewis, Business & Innovation Programme

Qualified teacher Laura Lewis is married to a sheep farmer and the couple have two small children. With two hugely popular 'treehouses' having put their farm business in Llanbister firmly on the tourist map and planning permission recently approved for a third, Laura has now taken on the full time role of marketing and promoting their expanding business.

"I will market the entire enterprise myself going forward, by focusing on social media marketing and taking direct online bookings.

"I believe being part of the Agri Academy Business & Innovation Programme will give me the confidence, networks and skills to help get our brand for both the treehouse retreats and our new website known and 'out there' for the clients we have already started to approach.



#### Rhun Crimes, Junior Programme

Rhun is a lower sixth form student currently studying for his AS Levels and a BTEC in engineering at Ysgol Aberaeron in Ceredigion. Brought up on the family beef and sheep farm in Mydroilyn, he hopes to study agriculture at university.

"I think being part of the Agri Academy Junior Programme will help me learn more about farming in a modern setting and how we need to adapt to both current and future economic and political changes.

"I am looking forward to meeting and learning from people of my age who share the same interests in farming as me."

#### Tomos Huws, Business & Innovation Programme

Tomos, a countryside management graduate, says that his background growing up on the family beef and sheep farm and a working visit to New Zealand, convinced him that he wanted to be a hands-on farmer. His current role is managing a 300 cow dairy herd near Llanrwst.

"I am optimistic that being part of the Agri Academy Business & Innovation Programme will help me progress within the industry, by giving me the skills I need to create a profitable, successful business.

"I am sure that expanding my network of contacts and mentors will help me set realistic targets, open new doors and give me new ideas on how best to create a prosperous business."



#### Elan Thomas, Junior programme

Elan Thomas is a student at Ysgol Dyffryn Taf in Whitland. Brought up on the family dairy farm in Carmarthenshire, she enjoys working with the calves both at home and at a nearby farm, where she has a part time job looking after and showing the stock.

Elan's dream is to qualify as a lawyer and practice in her home county while also running her own herd of pedigree Jersey cows.

"I think being part of the Agri Academy Junior Programme will enhance my personal development, build my confidence and help underpin my core values and belief that family farms are the backbone of our country."



## SQUILL – A NEW CASH CROP FOR WALES?

During the spring of 2018, five farmers from north Wales were preparing to plant squill bulbs for the very first time in the UK. Even though the crop has never been planted here in the UK, the majority of us have come across the plant at some point in our lives as it contains one of the key compounds in many over-the-counter anti-cough syrups.

Squill (*Drimia maritima*) is a wild perennial plant that grows from a large bulb just below the soil surface. It predominantly grows wild in rocky coastal areas in the Mediterranean Basin. In recent years, the plant has been subject to uncontrolled collection in these areas because of the increasing demand for the key ingredient to produce health related products.

Some preliminary research at Bangor University had confirmed that squill can grow here in Wales which sparked the interest of having a larger scale project to learn more. The aim of this EIP Wales project was to investigate the ability to grow squill at a variety of locations with varying differences such as rainfall, altitude and distance from the north Wales coast. More importantly it aimed to discover if the plant could produce suitable levels of the sought after active ingredients within its bulb.



Figure 1. The location and altitude of the five trial sites

## THE RESULTS

The table below is a snapshot of the project results.

| Site   | Altitude (Metres) | Weight of squill bulb when planted in 2018 (kg) | Weight of squill bulb when harvested in 2019 (kg) | Growth  |
|--------|-------------------|---|---|---------|
| Site 1 | 197               | 14  | 34  | 242.86% |
| Site 2 | 8                 | 15  | 32  | 213.33% |
| Site 3 | 32                | 14  | 35  | 250.00% |
| Site 4 | 33                | 15  | 36  | 240.00% |
| Site 5 | 15                | 14  | 34  | 242.86% |

The project has demonstrated that squill can be successfully grown in north Wales and that it contains high value compounds that could be used within the pharmaceutical sector. Soil analysis before planting and post harvest also showed no significant changes to soil macro-nutrient balance however a multi-year trial is needed to examine the long-term impact on soil nutrient levels.

Kevin Stephens, who co-founded Agroceutical Products, which is processing galanthamine from daffodils, worked closely with the group throughout the project. He is confident that squill could be planted, harvested and processed with relatively inexpensive equipment on farm before being sold on for further processing. He was also interested to discover that squill contains a number of other compounds that have potential anti-bacterial and anti-cancer properties and may also be of interest in treating diabetes and arthritis.



Figure 2. Squill bulb

Further work is needed to replicate the trials and to experiment with different growing conditions to further increase our knowledge on this peculiar plant. More research is also needed on how farmers wishing to start growing squill could access the market as there are regulatory constraints when supplying ingredients for health related products. The result of this project has however been very encouraging and has hopefully sparked the beginning of an exciting new diversification option for farmers in Wales.

The full project report is available on the Farming Connect website.

[www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect)

# ICT Training Programme

If you would like further assistance or support help is available to eligible businesses through Farming Connect's fully funded ICT training programme.



## Online ICT training...at a time, level and pace to suit you!

Despite the current restrictions surrounding face-to-face training, our fully funded computer training is now available online, digitally or over the phone for eligible farm and forestry businesses registered with Farming Connect.

### Training for complete beginners

- A home-based study course, which gives you up to six weeks to complete at a pace to suit yourself
  - Each of the six workbooks will teach you how to send and receive emails; use Word; use Excel spreadsheets; learn how to search the internet; use social media and access Rural Payments Wales online
- The option to speak directly to one of our participating college tutors if you need extra help

### One-to-one 'remote' tutoring for those with basic ICT skills

- Up to two fully funded one-to-one telephone, online or digital tutoring sessions from specialist ICT tutors (up to two hours each)
- Training tailored to your requirements focusing on any problems or gaps in your ICT knowledge, including using social media platforms to either promote your business or 'meet up' online

### Online webinars for individuals who want to learn about the latest ICT

- Learn how to utilise ICT within your farm and forestry business
- For webinar topics which could include e.g. creating a website; farm software packages; utilising social media, visit the 'What's on' page on Farming Connect website.

For further information or to register your interest visit

**[www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect)** or  
contact the Farming Connect Service Centre on **08456 000 813**.

#einffermydd  
#ourfarms



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**DEMO FARM LIVE**

Join us live from our demonstration farms throughout this summer from the comfort of your own home where farmers will show, first hand, how new technology and different management techniques are changing the way they farm.

We will be answering your questions live with the host farmers and the panel of experts at each event.

**[www.gov.wales/farmingconnect](http://www.gov.wales/farmingconnect)**

| Date       | Time  | Demonstration Site      | Main topic of the event  |
|------------|-------|-------------------------|--|
| 22/07/2020 | 19:30 | Mountjoy, Haverfordwest | Embracing genomic technology to breed replacement cows and reducing nitrogen input through the use of clover.  |
| 05/08/2020 | 19:30 | Rhiwaedog, Bala         | Evaluating the benefits of heat detection technology to provide gains in suckler cow fertility.<br>Improving productivity and efficiency from grass.                 |
| 19/08/2020 | 19:30 | Wern, Welshpool         | Exploring optimal environment conditions for free-range laying hens i.e. air, litter and water to increase bird health and therefore productivity and profitability. |
| 02/09/2020 | 19:30 | Graig Olway, Usk        | Focus on cow mobility, slurry storage and infrastructure.  |
| 16/09/2020 | 19:30 | Dolygarn, Newtown       | Alternative forage options to improve productivity and reduce environmental impact on an upland farm.  |





## Weekly Webinars

Join us and industry experts for a wide range of topical webinars aimed at providing useful support and information to you during this uncertain time. To join a webinar, contact Delyth Evans on [delyth.evans@menterabusnes.co.uk](mailto:delyth.evans@menterabusnes.co.uk) or visit our events page on our website.



| When                      | Topic  | Speaker  |
|---------------------------|--|--|
| 16/7/20<br>20:15          | <b>Adding value to farm woodland</b>   | Gareth Davies,<br><i>Coed Cymru</i>  |
| 22/07/20<br>19:30 - 21:00 | <b>Demo Farm Live - Mountjoy</b><br>Embracing genomic technology to breed replacement cows and reducing nitrogen input through the use of clover.                                      | Fearne Pearston,<br><i>AHDB</i><br>Chris Duller,<br><i>Independent grassland specialist</i>                              |
| 23/07/20<br>19:00 – 20:00 | <b>Agroforestry</b> - an introduction and the benefits to the farm business in Wales   | Tim Pagella,<br><i>Bangor University</i>   |
| 27/07/20<br>18:30         | <b>An introduction to drones and their benefits</b>  | Sam Cook,<br><i>Tremio Aerial Photography</i>  |
| 28/07/20<br>20:00         | <b>Diversification options</b> - will Covid-19 open new doors for farmers?   | Jeremy Bowen Rees,<br><i>Landsker</i>  |
| 03/08/20<br>18:00         | <b>Social Media Training</b>   | Eddy Webb,<br><i>Insynch</i>   |
| 05/08/20<br>19:30         | <b>Demo Farm Live - Rhiwaedog</b><br>Evaluating the benefits of heat detection technology to provide gains in suckler cow fertility. Improving productivity and efficiency from grass. | Joe Angell,<br><i>Milfeddygon y Wern Veterinary Surgeons</i><br>Chris Duller,<br><i>Independent grassland specialist</i> |
| 06/08/20<br>19:30         | <b>Considerations and planning a multi-cut silage system</b>   | Richard Gibb,<br><i>Independent consultant</i>   |
| 10/08/20<br>18:00         | <b>Creating a Website</b>  | Eddy Webb,<br><i>Insynch</i>   |
| 13/08/20<br>20:15         | <b>Hedgerow Management Plans</b>   | Peter Jackson,<br><i>Environmental and resource management advisor, AgriPlan</i>   |