

Demonstration Farms

2014 Report



FARMING
connect
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FFERMIO

Farming Connect

- Reducing production costs
- Increasing profit margins
- Improving sustainability

Find out what worked for
our demonstration farmers...

Find out what could work for you...



Cwmwl Arianweddol Ewrop ar gyfer
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www.menterabusnes.co.uk/farmingconnect



Foreword

The overarching aim of Farming Connect is to support farming families to develop and improve the efficiency of their farm businesses. Change and greater efficiencies are necessary if we are to safeguard the future of our farms for future generations.

Farming Connect is helping to achieve this through a network of 28 Demonstration Farms which we have drawn from every sector - beef, sheep, dairy, arable, horticulture and organic.

We have created this booklet to highlight the key projects Farming Connect is undertaking on these farms, some of which have only recently joined the programme.

Many of these projects derive from the strengths and weaknesses highlighted in the business reviews produced for every Demonstration Farm.

Not only are these farms directly benefitting from this input but so too is every farmer across Wales because these projects act as a platform for trialling new and innovative management techniques and technologies.

Some of the farms are trialling rumen boluses and EID for sheep and beef systems and others rotational grazing and alternative forage crop production for finishing cattle. These activities are all aimed at improving on-farm sustainability and reducing production costs, essential for farming businesses to improve their profit margins.

Animal health and welfare is also a strong feature. Our dairy Demonstration Farms are screening for BVD and Johne's and assessing cow comfort whilst many of the beef and sheep farms are tackling lameness or evaluating the trace element status of their herd or flock to avoid disorders.

Environmental management is an increasingly important issue for farms therefore Nutrient Management Plans and Environmental Audits have been undertaken for each Demonstration Farm. These are being used to evaluate ways of reducing the environmental impact and managing clean and dirty water to reduce the slurry volume on these farms.

As a basis for production, improving grassland management is fundamental therefore many of our key activities on Demonstration Farms focus on getting the basics right, whether that's by improving soil quality and structure or reseeding and using grazing systems to manage grass and other forage crops. These projects are integral to maximising the use of forage on farm and improving productivity.

The results of all of these projects will continue to be disseminated and shared with the farming industry at open days over the coming months. Visit our website for information about all the Demonstration Farms and future events taking place in your area.

A handwritten signature in black ink that reads 'Wynne Jones'.

Professor Wynne Jones OBE FRAGS
Chairman Farming Connect
Strategic Advisory Board

Demonstration Farms

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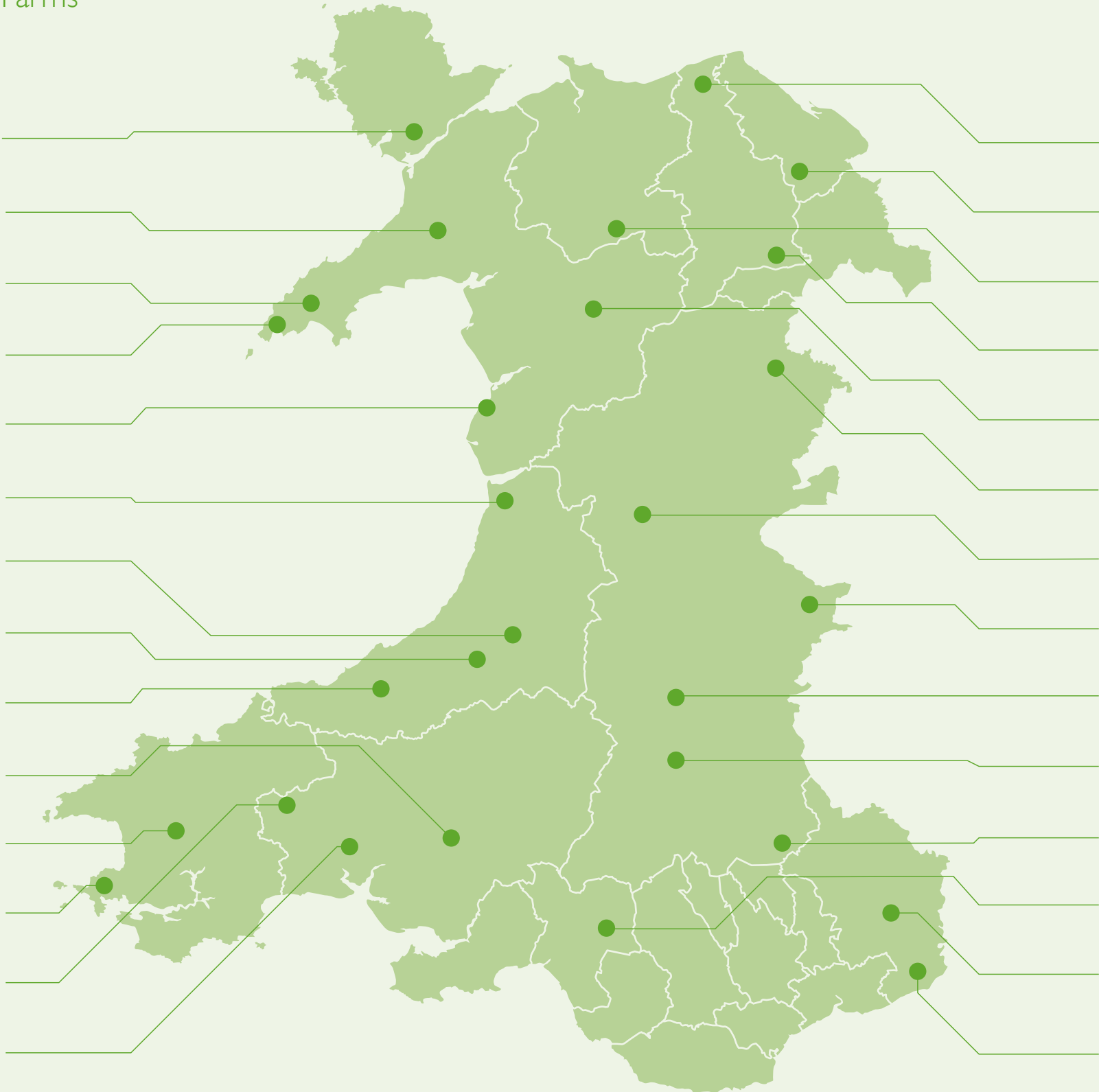
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Bodrida

Richard Rogers

Brynsiencyn, Ynys Mon, LL61 6NZ.

FARM DETAILS

- Demonstration farm within current programme since September 2011
- 750 acres
- Ranges from 30ft - 100ft

CATTLE DETAILS

- 40 suckler cows, Limousin cross
- 150 continental finishing cattle – mainly Limousin
- 200 Friesian steers >12 months
- 250 Friesian steers < 12 months
- 80 Friesian cross Angus and Hereford female calves <12 months

SHEEP DETAILS

- 1,500 sheep, including Suffolk, Texel and Aberdales cross

OTHER DETAILS

- 70 acres of cereal

KEY OBJECTIVES

1. Improve grassland utilisation
2. Reduce the use of bought in concentrates
3. Compare each enterprise on the farm according to profit per hectare to see which direction the business should go

Key projects

1. ROTATIONAL GRAZING SYSTEM

A rotational grazing system was developed at Bodrida where 40 ha of land was divided into one hectare paddocks. New Zealand Friesian steers are stocked at five steers per hectare and managed as two groups of 100 that are moved every 24 hours. The aim is to produce 1,875kg/ha of liveweight over this period on grass only (results can be found in Fig 1).



2. LAMB FINISHING SYSTEMS

Richard's opinion was that a lot of concentrates were wasted when finishing lambs at the end of season, with the lambs eating more than they needed on an 'ad lib' system. Lambs weighing 34-36kg liveweight at the start of the trial were marked, and then shared randomly into two groups of 40 lambs. The two groups were put in fields with a constant grass cover and constant stocking rate for 28 days.

One group was fed 'ad lib' by conventional feeder and the other group was fed once a day in troughs. A record was kept of the volume of concentrates fed to them.

After a period of 28 days, the marked lambs were weighed again, and even though the lambs that were fed once a day had eaten 6.4kg less per head on average, their weights were consistent with those on the 'ad lib' system (full results can be found in Fig 2).

Key performance indicators and statistics

1. Finishing Friesian steers on a rotational grazing system

Fig 1. Cattle performance

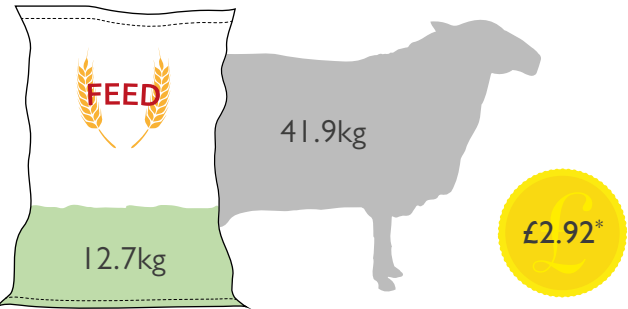
	Daily Liveweight Gain	Liveweight over the season
After 150 days	1.4kg/day	1,750kg/ha
Target (~250 days)	1.5kg/day	1,875kg/ha

2. Assess the efficiency of 'rationing' concentrates when finishing lambs at the end of season on grass

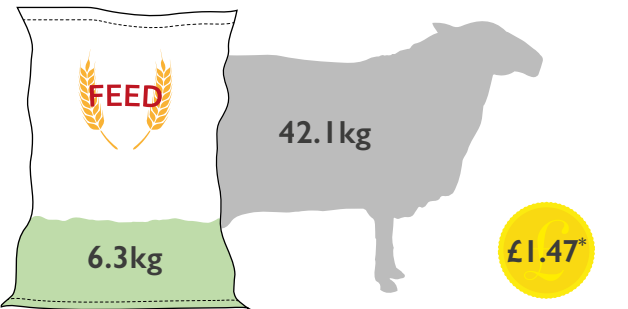
Fig 2. Lamb performance

Feeding method	Liveweight at the start	Liveweight after 28 days	Concentrates per head on average (kg)
Ad lib	34 – 36kg	41.9kg	12.7kg
Fed once a day	34 – 36kg	42.1kg	6.3kg

Ad lib (Per Head)



Fed once a day (per head)



Total saving on 500 lambs = £735

Q&A with Richard

What has been the biggest benefit of being a Farming Connect demonstration farm?

“Obtaining advice and guidance at the start of a rotational grazing system to maximise grassland utilisation.”

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“Share 40ha of the land to 40 fields of 1ha size to start a rotational grazing system and becoming familiar with this method of management.”

What changes have you implemented that will continue to be a part of your farming system for the future?

“More land will be given to the rotational grazing system in the future.”

Richard's viewpoints

1 Be open minded and flexible. There are often better ways of working as I found out through rotational grazing and the lamb finishing project.



2 Prioritise sward management because grass is one of your most valuable resources.



3 Measuring and evaluating every area of the business pays dividends as it highlights strengths and weaknesses.

4 Query all costs relating to each specific enterprise on the farm.

Hendre Nantcyll

Arwyn and Gwen Williams

Garndolbenmaen, Gwynedd, LL51 9DJ

FARM DETAILS

- Demonstration farm since January 2013
- 170 acres owned
- 200 acres rented
- Ranging from 490ft - 750ft

CATTLE DETAILS

- 27 Limousin suckler cows

SHEEP DETAILS

- 445 improved Welsh ewes and some Texel cross
- 120 ewe lambs

OTHER DETAILS

Glastir Entry and Advanced

KEY OBJECTIVES

1. Increase the percentage of lambs reared by the flock
2. Reduce the inputs costs, by trying to make the most of the farm's resources (including manure)
3. Tighten the calving period and increase the percentage of calves reared

Key projects

1. INCREASE SCANNING PERCENTAGE

One of Arwyn's main aims was to increase the percentage of lambs reared by the flock. As part of this he has started to use Aberdale rams to produce more productive ewe lambs, with the aim of reaching a scanning rate of 150% for the

whole flock. Last year's results were devastatingly affected by the presence of Toxoplasma disease. Arwyn will vaccinate the flock against Toxoplasma this year with the aim of improving scanning % for 2015 (figure 1).



2. TRACE ELEMENTS

After assessing trace elements levels in the blood of the sheep and cattle, it became apparent that there was a deficiency of iodine levels in the cattle. On the advice of the vet, boluses were given to the cattle

two months before calving in 2013. There was a significant improvement following the treatment in the liveliness of calves at birth. Also, the calving season was tighter during 2014 (see Fig 2).



Key performance indicators and statistics

Fig 1. Flock Performance

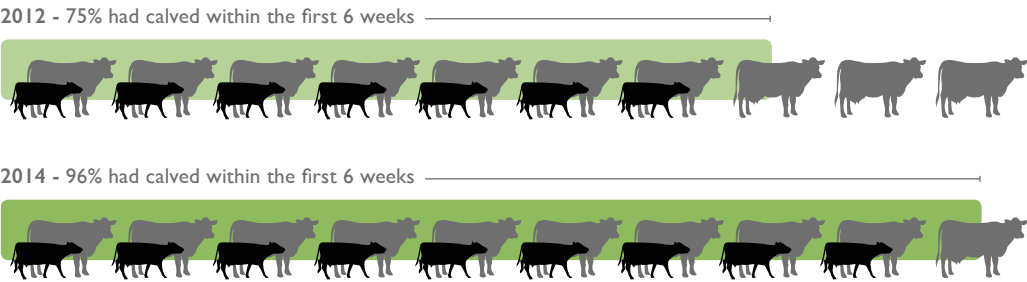
	2012	2013	2014
Number of sheep that went to the ram	412	438	449
Number of lambs predicted at scanning	556 (135%)	593 (135%)*	568 (129%)
Number of lambs live at birth	520 (126%)	**	540 (120%)

* A problem with one of the rams, therefore 143% is the percentage excluding that group.
** No figure due to extreme weather.

Fig 2. Calving Period

Year	Number of cows to the bull	Number which calved successfully	Number which calved within the first 6 weeks
2012	24	22	18
2013	23	23	18
2014	27	26	26

Fig 3. Tightening the calving period



Q&A with Arwyn

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Giving iodine boluses to cattle without any doubt. This has tightened the calving pattern, and has made the calving period more manageable."

What are your plans for the future?

"In order to tighten our lambing period, we will only select replacement ewe lambs that are born in the first month of lambing (first cycle), therefore only selecting lambs that are born from the most fertile ewes."

Arwyn's viewpoints

1

Farmers should try to take one message from each event/ discussion group and implement at home.

2

Keep the system simple and reduce production costs where possible.

3

Discover the root cause of any problem, rather than accepting that this is the best that could be done.

4

Assessing trace elements levels in the blood has been a valuable investment here at Hendre Nantcyll.



Trygarn

Rhys and Kelly Williams

Sarn Mellteyrn, Pwllheli, LL53 8EA

FARM DETAILS

- Demonstration farm since January 2014
- 174 acres owned
- 85 acres rented
- Ranges from 50 ft to 200 ft

CATTLE DETAILS

- 300 New Zealand Friesian dairy cows on a New Zealand system
- Large percentage of youngstock contract reared on other farms

KEY OBJECTIVES

1. Devise effective strategies to control liver fluke in the herd, improving health and welfare and the herd's productivity
2. Create a more sustainable enterprise by using slurry in the most effective way and taking care of every aspect of the soil - physical, chemical and biological
3. Progress with our BVD control programme of currently tag and testing all young stock to become accredited

Key projects

1. CONTROLLING LIVER FLUKE

Liver fluke can have a very detrimental impact on the herd during a bad year. In addition to the great direct losses with animals, it can have a significant impact on the herd's productivity. It is estimated that infected cattle on average produce 0.7kg less milk per day over the year, with the calving interval about 5 days longer. Rhys is working with his vet towards implementing a robust fluke control strategy.

Being a block spring calving herd, one of the two authorised Triclabendazole products is a practical option to this kind of system. For best results this should be used after the cattle have been off pasture for two weeks and dried off in November/December.

In exceptional high risk seasons, the only feasible treatment of fluke during the lactating cycle is an Albendazole based product or Zanil, which have a milk withdrawal period of 60 hours and 72 hours respectively.

Fig 1. Age of fluke (weeks) susceptible to treatment

Flukicide	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Milk Withdrawal
Triclabendazole															45-48 weeks depending on product
Albendazole															60 hours
Zanil															72 hours

Management options to reduce fluke burden:

- Identify driest fields for autumn grazing
- Fence off boggy/wet areas
- Only allow access to mains water
- Improve areas prone to poaching such as around water troughs and gateways.

2. NUTRIENT BUDGET

As Trygarn has high stocking levels, a great deal of nutrients are imported onto the unit in the form of feed - concentrate and silage. This means that there are opportunities for

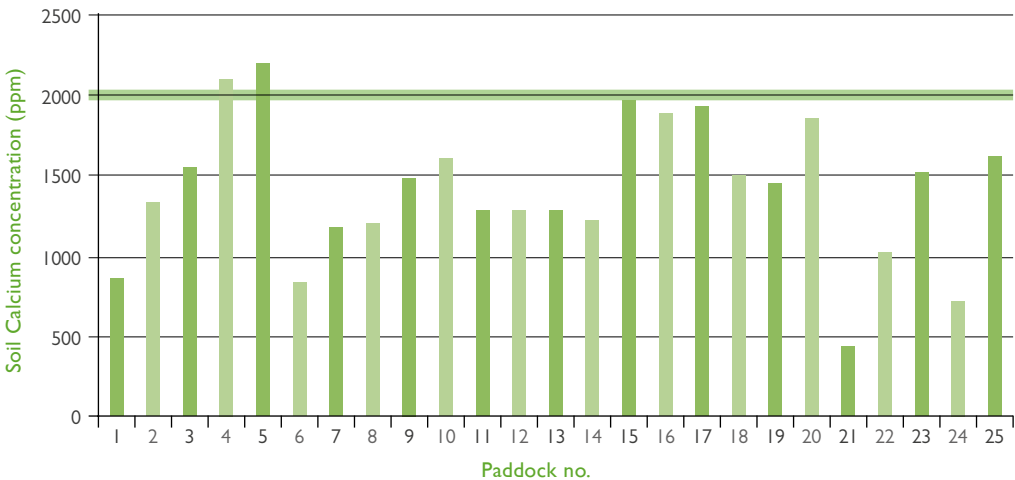
Rhys to meet the soil's P + K nutrient needs nearly entirely by using farm slurry effectively and making substantial financial savings.

Key performance indicators and statistics

- 1. Current calcium concentration levels in most paddocks are well below the desired 2,000 ppm. The aim is to improve this situation with the use of Calcium Ammonia Nitrate.

A common misconception is that if the pH is high adequate calcium is present - this is not always true.

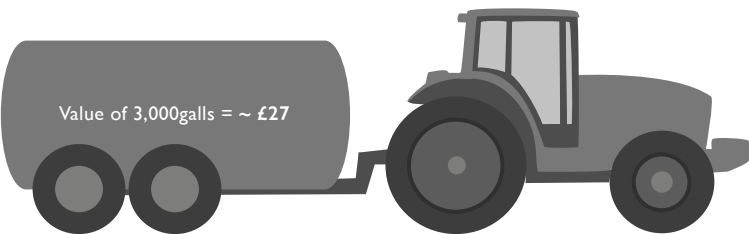
Fig 2. Soil calcium concentration levels



- 2. Maintain a yield of 5,600 litres per cow whilst continuing to improve cow health and fertility.
- 3. Retain current high stocking density of ~1.74 cows per acre whilst improving and maintaining soil health.

Fig 3. Trygarn slurry analysis

Analyte	Amount in units/1,000galls
Ammonim -N	6.96
Phosphorus (as P ₂ O ₅)	4.35
Potassium (as K ₂ O)	23.24



Financial value is based on:
Ammonium Nitrate (AN)
@ £270/t (78 p/kg),
Triple Super Phosphate (TsP)
@ £260/t (56 p/kg),
Murate of Potash (MoP)
@ £260/t (43p/kg)

Q&A with Rhys

What has been the biggest benefit of being a Farming Connect demonstration farm?

“To date, it has allowed me to make new contacts with leading consultants and other farmers, who all have a wealth of knowledge and experience.”

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“Our past strategy to control liver fluke was not effective, and this year we will try a different approach.”

What are your plans for the future?

“Continue to make genetic gains in the herd and ensure our farming system is sustainable in the long term in terms of soil health.”

What have you tried that otherwise you would not have?

“We tested the slurry this year for the first time which will be really useful for planning future fertilising.”

Rhys' viewpoints

- 1 Testing for resistance to Triclabendazole has been very useful in forming a control plan for liver fluke



- 2 Know what amount of nutrients you apply in the form of manure – it can offer substantial savings



- 3 A good workforce is essential for the success of any business, and spending time training and teaching workers is an excellent investment.





Gwythrian

Alan, Catrin, Dafydd, Wiliam and Ieuan Williams

Aberdaron, Pwllheli, LL53 8BW

FARM DETAILS

- Demonstration farm since January 2014
- 650 acres
- Ranges from 150ft to 400ft

CATTLE DETAILS

- 70 suckler cows, mixture of continental breeds
- 250 store cattle bought annually

SHEEP DETAILS

- 1,250 ewes – 250 Mule and 1,000 Suffolk x Mule

OTHER DETAILS

- 80 acres of grain
- 5 acres of swedes
- Glastir Entry

KEY OBJECTIVES

1. To develop the business and increase annual profits in readiness for the next generation to continue in farming
2. Comparing swards (old with new) for their potential sheep stocking rate and lambs in spring to improve sheep enterprise efficiency
3. To improve the feed conversion efficiency of the cattle and improve the profit per head

Key projects

1. MAXIMISING EARLY GRASS UTILISATION

One of the projects at Gwythrian is comparing two leys, one which is nine years old and the other which is two years old. From the previous “Grazing for profit” Farming Connect project (www.menterabusnes.co.uk/farmingconnect/grazing-for-profit) it became obvious that new leys perform better in the spring compared to older leys. As Gwythrian lamb relatively early, additional grass at this time of year is very valuable, and therefore offers the option of increasing stocking levels or reducing the use of concentrates.

When the grass was measured for the first time at the end of February, it became clear that the new ley was under-performing. During this period, from the beginning of

January to the end of February, the old ley had grown 2kg DM/ha per day more than the new ley at 8kg DM/ha per day and 6kg DM/ha per day respectively. Various factors could be responsible for this, but it's highly likely that the soil structure, as well as the success of the re-seed is mainly responsible for these disappointing results.

Undertaking this trial has clearly demonstrated the value of monitoring grass growth as the results are very different to what was expected.

The growth in March was much higher as expected, and this time both leys had grown the same at 24 kg DM/ha per day, although there was some variation in the dry matter levels.

Fig 1. Table showing the pasture quality

Component	Pasture quality in January		Pasture quality in March	
	Old	New	Old	New
Crude Protein (%)	28.1	29.4	26.7	27.5
D Value	69	69	69	70
Dry Matter (%)	20.7	19.3	14.9	13.2
ME (MJ/kg DM)	10.9	10.9	11	11.2

2. CATTLE FEED CONVERSION EFFICIENCY

Regular weighing and comparing different rations have improved the feed conversion efficiency. Forage was a part of the ration therefore silage analysis was taken into account as well.

The project is still at an early stage so continuous assessment and measurements are taken to work out the feed conversion and the liveweight gain.



Q&A with Dafydd and Wiliam

What has been the biggest benefit of being a demonstration farmer?

"Having a facilitator who knows our farming system and has experience of working with a number of specialists is a big help when we seek advice on particular matters."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"The advice we have received on soil structure will hopefully help us rectify the problem of compaction for next spring. Due to the heavy ground we have, conditions this wet spring were made even worse with the underlying compaction problems that we clearly had but were not aware of before."

What are your plans for the future?

"It looks like the value of red meat is not going to increase much in the near future, so as farmers we will have to look at reducing costs even more."

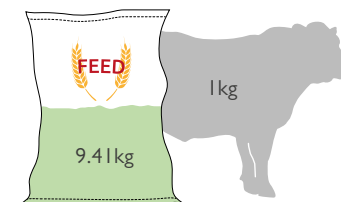
What have you tried that otherwise you would not have?

"For the first year we analysed the slurry to work out what we apply and how to use it more efficiently."

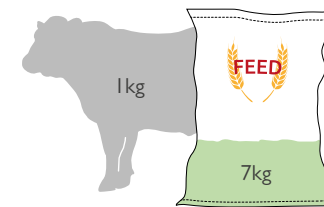
Key performance indicators and statistics

1. Improve on current feed conversion efficiency from 9.41kg of feed to 1kg of daily liveweight gain to 7kg of feed to 1kg of growth.

Current feed to growth rate



Target feed to growth rate

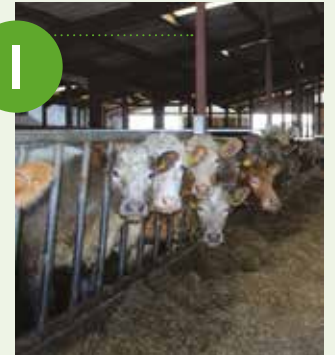


2. This year 1,450 lambs were sold out of the 1,970 lamb crop (73%) by the third week of June. The aim is to increase this to 80%, taking advantage of the early season higher lamb trade price. In order to achieve this more spring grass cover and better utilisation will be critical.

Dafydd and Wiliam's viewpoints

1

Analyse all silage on the farm so that it can be used as effectively as possible by targeting it at the most suitable stock.



2

There is much more to maximizing the value of fields than getting the P and K right.



3

A good nutritionist can make the difference between a loss and a profit



4

Measuring grass is essential to discover which fields are under performing in a set stocking system.



Henblas

Rob Pugh

Llwyngwrlil, Tywyn, LL37 2QA

FARM DETAILS

- Demonstration farm since November 2013
- 360 acres owned
- Ranges from 0ft - 775ft

SHEEP DETAILS

- 400 ewe flock - 100 Welsh Mules and 300 Welsh Mountain
- 60 home bred ewe lambs retained annually.

OTHER DETAILS

- Glastir Entry

KEY OBJECTIVES

1. To improve the utilisation of the grass produced on the farm
2. To improve the management of swards to maximise productivity
3. To monitor the soil status to ensure optimum livestock production
4. To ensure that the farm business is kept viable and sustainable despite expected changes within the industry and to direct payments

Key projects

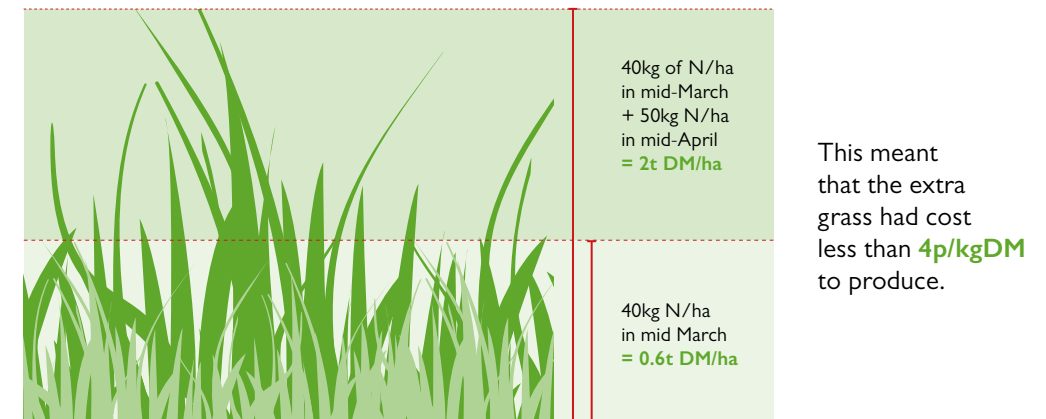
1. UTILISATION OF UPLAND GRASS

The dense swards present at Henblas were of good quality and although they were sown a number of years ago, they still produced quality and a diverse choice of grass species for livestock production. The project was set up this spring to look at the return on investment from using more early season nitrogen. All ground had received 40kg of N/ha in mid-March - one half of the field then had an additional 50kg N/ha in mid-April. Grass was

measured where protected grazing cages were present 42 days following application. The extra fertiliser cost £43 per hectare, plus spreading cost of £12 per hectare, giving a total of £55/ha.

Where extra nitrogen was applied, 2tDM/ha grew over those 42 days – at an average rate of 48kg DM/ha/day. The lower N input grew 0.6tDM/ha at a rate of 16kg DM/ha/day.

Fig 1. Grass growth (kg DM/ha)



With grass utilisation rate of only 70%, it still equates to an extra 1tDM/ha grass eaten over 42 days – enough to support an extra 10 ewes and twins per hectare. The field selected for the trial had a high amount of ryegrass (50%+) and was free

draining with no compaction, and with pH and P and K at target levels. Fields like these will achieve the greater response rates and provide the greatest return on investment – as long as the extra grass grown is grazed effectively and not wasted.

Key performance indicators and statistics

1. Additional fertiliser application of 50kg per ha in April grew 48kg dry matter per ha in 42 days. This amounts to enough grass to keep 10 more ewes with twins per ha.
2. Extra grass cost just 4 pence per kg to produce.

Q&A with Rob

What has been the biggest benefit of being a demonstration farm?

"Benefiting from expert advice - ranging from implementing advice contained in our business plan to improving grassland management."

What are your plans for the future?

"Future plans include share farming with my brother and increasing farm profit margins."

What have you tried that otherwise you would not have?

"Assessing grass growth with and without fertiliser to see how best to utilise fertiliser and having our soils tested as we now know which fields need improving and at what level we are at with our pH etc."

What changes have you implemented that will continue to be a part of your farming system for the future?

"Try to use fertiliser more efficiently to get more grass growth to save money on creep feeding the lambs, because we aim to get our lambs off sooner. We are aiming to make better use of grass in order to save on costs of ewe flock."



Rob's viewpoints

Use the information available, it is there to help you improve and grow your business.



Without testing the soil or measuring the grass we don't know how well specific fields are actually performing so testing and measuring is a good basis to know where you're at.



Business planning has worked well at Henblas as it has given us a clear picture of the business and how best to drive the business forward.



Keeping a close eye on input costs has enabled us to focus on specific areas of the business. We have taken action in areas that did not perform as well as we'd hoped financially due to high input costs and an ever changing market.



Cerrigcaranau

Dilwyn Jenkins and sons Eifion & Geraint

Aberystwyth, Ceredigion, SY24 5EJ

FARM DETAILS

- Demonstration farm since April 2012
- 460 acres owned
- 70 acres rented
- Ranges from 10ft – 500ft

CATTLE DETAILS

- 125 milking cows
- 30 pedigree Welsh Black suckler cows

SHEEP DETAILS

- 300 Welsh mules
- 150 Welsh mountain ewes

OTHER DETAILS

- 85 acres barley
- 5 acres swedes
- 5 acres of rape/kale
- Organic
- Glastir Entry and Advanced

KEY OBJECTIVES

1. Control and eradicate Johne's in the dairy herd to improve herd health status and profitability
2. Eradicate BVD in the beef and dairy herd to improve herd health status and profitability
3. Improve cow comfort and efficiency by making simple, cost effective improvements to facilities
4. Improve dairy herd fertility and investigate and install a heat detection system

Key projects

1. HERD HEALTH

Surveillance implemented to measure, monitor and manage Johne's at Cerrigcaranau included taking milk samples from all cows and submitting to laboratory for testing. The results and risk analyses were entered into myhealthyherd.com to generate a prevalence report.

A robust and practical prevention and control plan based on risks and status

and aspirations and resources of the farm was generated.

This included culling of infected cows; strict calving procedures where all calving boxes were cleaned out after each calf and any suspicious cows were not calved in boxes. Also only milk from non-infected cows used to feed the calves.

2. COW COMFORT AND COW SIGNALS

Looking at cows can give you 'signals' to help you identify potential sources of discomfort to the cows, in the buildings, facilities and surroundings. Understanding and addressing these areas can vastly improve cow comfort, feed intake levels, reduce lameness and save on vet bills. The principles of cow signals are 'Look, think and act!'.

At Cerrigcaranau, a significant number of cows were impeded by the wall at the feed barrier which restricted the cows' access to food. Advice was given to reduce the height of the wall of the feed barrier to 50cm above the floor to make food more accessible. When this work was completed, feed intakes improved overnight.

3. HEAT DETECTION TECHNOLOGY TO REDUCE CALVING INDEX

Fertility was identified as the key recoverable cost for Cerrigcaranau. The target was set to serve cows earlier to improve the conception rate. The recommendation is 42 days after calving. The average at Cerrigcaranau in October 2012 was 62 days. Serving cows earlier might help to improve the conception rate as evidence suggests that these early heats are more fertile

and stronger than subsequent heats.

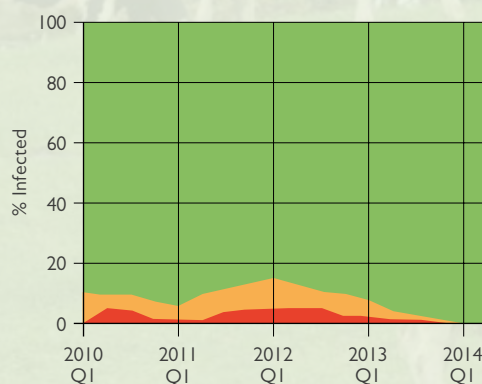
Heat detection technology has been installed at Cerrigcaranau to help reduce the calving index. Reductions have already been seen in the calving index from 431 days to 419 days. Assuming a saving of £5.60 a day for every day that the calving is reduced this already represents an improvement of £67.20 per cow or £6,988 for the herd.

Key performance indicators and statistics

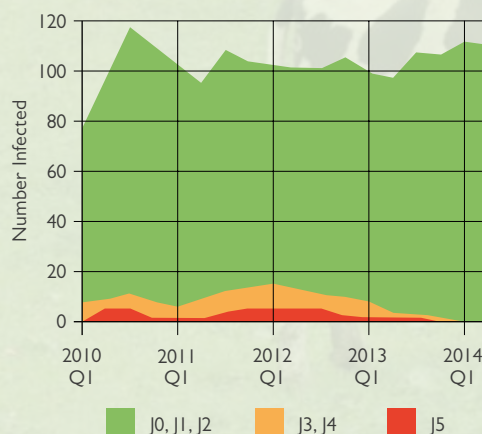
1. JOHNE'S

The herd has reduced the disease risk level to a very low risk with no infected cows in the herd. Graph below shows how percentage of infected cows (Red) and suspicious cows (Amber) has reduced since the Johne's control measures implemented in 2012.

Johne's Historical Data Percentage



Johne's Historical Data Values



2. CALVING INDEX

Need to reduce further but managed to reduce from 431 in October 2012 to current index of 419 in 2014.

Q&A with Dilwyn

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Improving the health and welfare of our animals which will lead to increased profitability. Having expert advice tailored to our farm."

What have you tried that otherwise you would not have?

"Farming Connect has been a catalyst to help us address important on farm issues, which we probably wouldn't have otherwise prioritised."

What changes have you implemented that will continue to be a part of your farming system for the future?

"Tag and test for BVD; controlling and eradicating Johne's from the herd and installing heat time technology to improve herd fertility."

Dilwyn's viewpoints



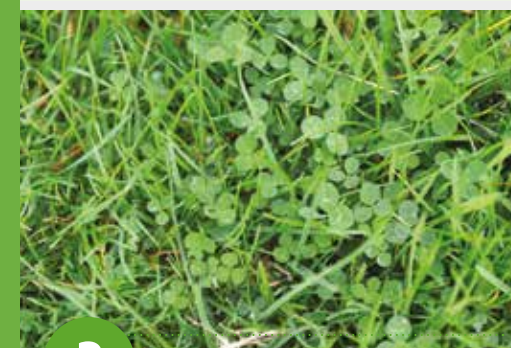
1

Take every opportunity to learn from others.



2

Small changes and tweaks can lead to big improvements.



3

Important to carry out sward assessments and prioritise improvements.

4

Essential to get soil chemistry right when direct drilling – the top inch is where the seed contact and growth is made.

Ochor

Rhun and Nerys Williams

Tregaron, Ceredigion, SY25 6QT

FARM DETAILS

- Demonstration farm since March 2014
- 115 acres owned
- 95 acres short term rent
- Ranges from 400ft to 650ft

CATTLE DETAILS

- 12 suckler cows
- 24 store cattle

SHEEP DETAILS

- 550 breeding ewes – 250 improved Welsh 300 mules, lambing in March
- 120 ewe lambs

KEY OBJECTIVES

1. Develop a cattle system that coincides with farm resources and contributes to overall farm profitability
2. Improve kg of lamb sold per ewe
3. Improve production from grassland
4. Improve net worth of business
5. Strive for optimum efficiency on the farm in order to achieve good work life balance

Key projects

1. NUTRIENT MANAGEMENT

Soil analysis and feeding the soil accordingly is essential if maximum grass growth is to be achieved. Following soil analysis, a liming programme was implemented and compounds targeted at fields low in phosphate(P) and potash (K) with high index fields only receiving straight nitrogen (N). Applying nitrogen to fields low in P and K as well as those low in pH is inefficient.

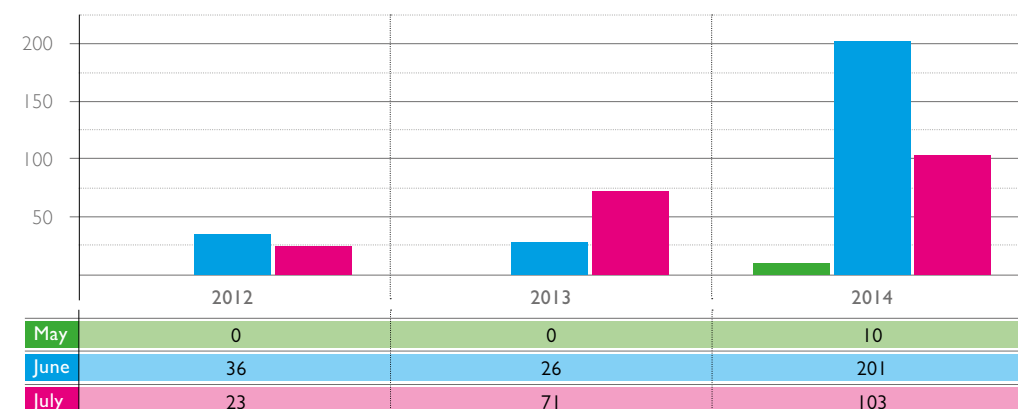
Rhun commented that without the information he would not have been able to target the FYM at the right fields as well as balancing with P and K inputs where required. Fields below pH of 5.5 were given 2t/acre of lime as this pH limits grass growth by locking up available soil P as well as reducing effectiveness of N applications. Being out by one pH unit can cost more than £100/ha each season.

2. EWE FEEDING

A combination of winter shearing, a change in diet formulation plus a very good spring ensured lambs at Ochor had a flying start this year. Some ewes were shorn last year as a trial and as a result all early March lambers (200 ewes) were shorn for the 2014 lambing. In addition, it was decided to try a ration of soya and barley this year with twins fed 250g of barley and 200g of soya and singles on silage only. All ewes had plenty of milk with lambs vigorous at birth and no significant problems identified with either prolapse or twin lamb disease. The increase in digestible undegradable protein (DUP) levels benefited performance. The cost of feeding the ewes pre lambing 2014 was nearly half the cost of 2013 at £4 per ewe.

During the summer, a programme of quality silage making was underway with red clover and high quality perennial ryegrass/white clover harvested and earmarked as ewe forage to further reduce purchase feed costs. The lamb sales profile (seen in Fig 1) illustrates that creep feeding more lambs and a combination of good weather, good ewe condition with plenty of milk has all played a part in selling three times more lambs than normal in the early part of the season. The creep cost of £4.60 a lamb has been well worth the investment with most of the 314 lambs going ahead of the price drop.

Fig 1. Monthly Lamb Sales Profile



3. GRASSLAND IMPROVEMENT

A sward MOT was carried out on some of the silage fields and grazing fields at Ochor. As part of this, grass growth was monitored for three weeks in the spring. A three year old reseed performed well but highlighted the weakness in other fields. On the basis of this, a decision was made to reseed both the silage fields.

Another field was sprayed off and a crop of Italian ryegrass and rape were established by using two different methods. Half the field was direct drilled and the other half via grass harrows and seed broadcast. The performance of both methods will be monitored.

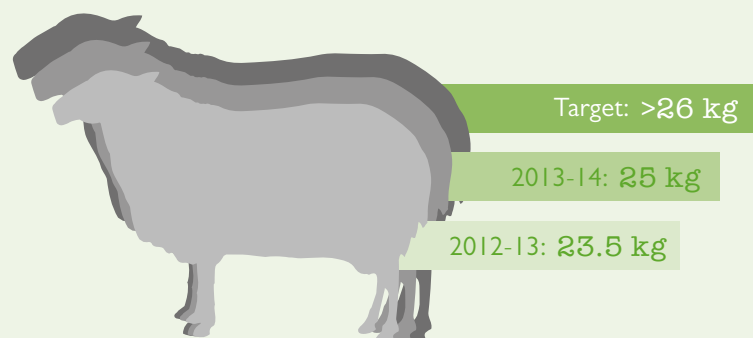
Key performance indicators and statistics

1. Stocking rate – currently 1.49 LSU/ha – scope to increase to above 1.7 LSU/ha
2. Reaching targets above will increase kg lamb sold per hectare which equates to higher farm output

Fig 2. Scanning and rearing percentages

	2012-2013	2013-2014	Target
Scanning percentage	157%	164%	170%
Rearing percentage	136%	156%	160%

Fig 3. Output per ewe (kg/ewe)



Q&A with Rhun

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Access to advice from leading experts and support from the Farming Connect team."

How has being a Farming Connect demonstration farm helped you plan for the future?

"Concentrates the mind on future direction. Different ideas makes us think about the systems that could have an impact on the farm."

What changes have you implemented that will continue to be a part of your farming system for the future?

"Certainly the winter shearing and switching to a soya based ration."

Rhun's viewpoints



1

Analyse silage – quality forage can reduce purchased feed cost significantly.



2

Winter shearing works for us.



3

Measure grass within each field to identify performance.



4

Target best fields (with correct pH and P and K indexes) with higher N levels

Pentrefelin

Eurig Jenkins and family

Talsarn, Lampeter, SA48 8QE

FARM DETAILS

- Demonstration farm within the current programme since September 2011
- 182 acres owned
- 534 acres rented
- Ranges from 260ft at the grazing platform

CATTLE DETAILS

- 370 spring calving British/New Zealand Friesian cows
- All replacements reared on farm

OTHER DETAILS

- Glastir Entry

KEY OBJECTIVES

1. Growing the business
2. Produce milk profitably
3. Keep herd in good health with the focus of continuously improving fertility
4. Reduce feed costs where possible and improve on grass utilisation

Key projects

1. ROOT CROPS FOR OUTWINTERING

As part of Glastir entry level options, root crops are grown on an off lying parcel of ground. This crop is utilised with dry cows grazing from drying off until late pregnancy. A grassland specialist worked with the

Jenkins family to evaluate the system. In 2013, 2.8ha of stubble turnips were grown. All costs were recorded as summarised in *Fig 1* demonstrating the comparison cost of housing cows.

Fig 1. Cost benefit of root crops

Cost of stubble turnips	Cost of housing
Growing cost at £295/acre and cost of fencing/bales/labour at £2250	Depreciation of building and slurry store Cost of silage, bedding, tractor work
Total cost: £95.88/day or £3.20/cow/day	Total cost: £2.13/cow/day

The cost has worked out as £1 per day higher but as the crop provides a good break between reseeding and valuable

points towards Glastir, it was seen as a valuable option.

2. GRASS RECORDING

Grass growth and utilisation are key components for any spring calving dairy herd. Pentrefelin are in their fourth season of using a platometer and second season of recording on the Agri Net Programme. Recording grass is essential to give advance warning of when the grass may be in short

supply (especially spring and autumn) and when to introduce buffer feed. The information can also identify poorer performing paddocks and enable these to be investigated. The range of growth in 2013 was 12.6 T DM/ha down to 9.3T DM/ha.



Key performance indicators and statistics

1. Maintain calving pattern – aim to get 50% of cows calved within 14 days
2. Aim to calve all cows within 10 weeks
3. Aim to calve all heifers at start of calving (front loaded).
4. Target 60% of mature bodyweight by serving (308kgs in 2014)
5. Keep culling rate below 20% (2014 saw 35% enter the herd which allowed for hard culling and herd expansion)

Q&A with Eurig

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“Expert advice which introduced us to field mapping of all grazing paddocks and introducing us to Agri Net system.”

What are your plans for the future?

“Improve cow tracks on the farm.”

What have you tried that otherwise you would not have?

“SCS fertiliser testing- this was an eye-opener to see what a small change in settings can do.”

What changes have you implemented that will continue to be a part of your farming system for the future?

“We will routinely measure grass and undertake SCS fertiliser testing annually.”



Eurig's viewpoints



Know and manage your costs.

1



Monitoring and recording grass growth is key to our business.

2



Set targets and constantly review them to make sure you stay on track.

3

Blaencwmpridd

James and Alec Cowan

Synod Inn, Llandysul, SA44 6JP

FARM DETAILS

- Demonstration farm within current programme since September 2011
- 250 acres owned
- 50 acres rented
- Ranges from 680ft to 1,000ft

CATTLE DETAILS

- 120 suckler cows
- 120 bull beef
- 40 finishing heifers
- 30 heifers for breeding

SHEEP DETAILS

- 250 Ewes - Welsh Mules

OTHER DETAILS

- Glastir Entry

KEY OBJECTIVES

1. Become more efficient with the aim of becoming non-reliant on Single Farm Payment / Basic Payment Scheme
2. Make the most of modern technology such as EID and genetics
3. Monitor and evaluate all costs within the business, which aids important decision making
4. Continuously improve land to ensure maximum potential from crops

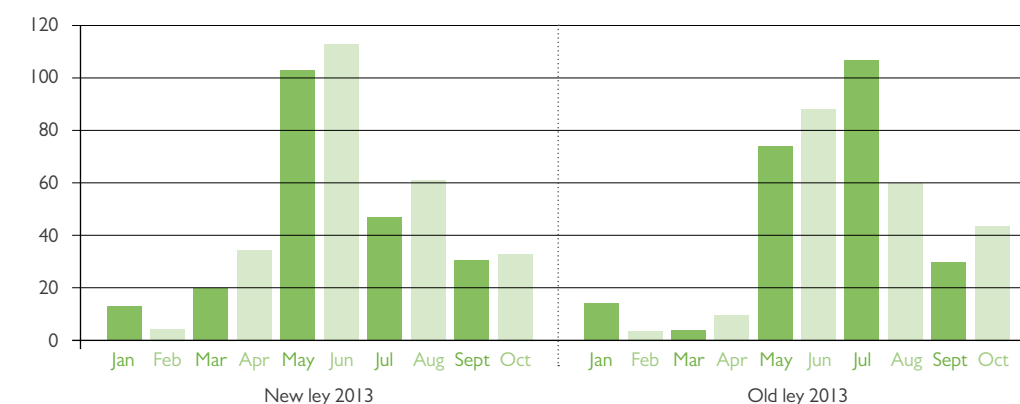
Key projects

1. GRAZING FOR PROFIT (G4P)

This project aimed to improve the quality of grazed grass through good grazing management to reap the potential from their grazing swards. This project

confirmed the benefit of reseeding in the spring months with 30% more grass being grown compared with the old ley.

Fig 1. Growth rate (kg DM/day 2013)



2. HEIFERS FROM HEIFERS

Keeping a closed herd requires replacements to be home bred with sexed semen being used in the last four years with all heifers calving at two years old. This project has been very successful with heifers producing heifers resulting in a faster genetic turn around, and an easier calving for younger heifers, as bull calves are on average larger.

Careful attention to detail in ensuring that the heifers are appropriately vaccinated, trace element bolused, trained to the crush, tail painted and observed for bulling properly, ensures exceptional conception rates, with little calving assistance required.

3. SUCKLER COW EFFICIENCY

Increased use of continental breeds and the use of high 400 day weight EBV bulls have increased the size of suckler cows, meaning that they have higher maintenance and feed costs, and may also be less efficient in terms of weight of calf weaned. There is a range of cow size at Blaencwmpridd from 400kg to 780kg and as part of a project cow weight and weaned calf weights were recorded to investigate if the heavier cows weaned the heaviest calves. First calved heifers were on average 55kg lighter than mature cows yet there were no significant differences in calf weaning weights. These

first calvers were lighter as they were calving at two years of age and bred from maternal lines of good EBV's. Detailed analysis of individual cow/calf performance in herds readily show disparities in performance and clearly show that suckler cows of a lower weight are, in general, more efficient in producing calf weight per unit of cow weight. This was true at Blaencwmpridd where the lighter cows came out on top of efficiency factor. Bigger cows also require greater feed resources to sustain condition and reproduction in order to maintain optimum calving interval.

Key performance indicators and statistics

1. Cereals and brassicas introduced during early years as a demonstration farm which started a re-seeding programme that includes winter cereals, swedes, stubble turnips, red clover and rape. All these crops result in less bought in feed and better targeting of feed for different classes of stock.
2. Due to better genetics we have reduced finishing times of the cattle. Five years ago it would take 16 months to reach 700kg liveweight. Today, cattle are being slaughtered on average at 13 months but can be as early as 11 months old at the same average weight of 700kg.



Bulls leaving the unit 90 days earlier -
with feed costs at £1.99/day
equates to £179/bull saving

3. We have tightened our calving pattern by 6 weeks over the last 5 years.



Q&A with James & Alec

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Having access to top quality mentors and speakers who provide the latest information on new practices within agriculture. To think in 2000 we only had 40 calves, the advice, training, and access to information through Farming Connect, especially over the last few years as a demonstration farm, have helped us reach where we are today."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"There are always new technologies and findings in the agriculture sector and it is important to grasp these to improve efficiency within the business to ensure higher profitability."

What are your plans for the future?

"As we are fully stocked and achieving the maximum output from the land, we have recently bought a 76 acre block. We do not envisage farming after retirement age but would like to provide an opportunity for our own children to continue in the business, or if they don't show any interest, another young farmer."

What changes have you implemented that will continue to be a part of your farming system for the future?

"Everything - crop rotation, genetics, tighter record keeping, cost control, AI in cattle for faster genetic turn around, EID, measuring grass."

James and Alec's viewpoints

- 1 Stocking rate has been increased dramatically as more grass is grown due to regular reseeded, grass measuring and sensible crop rotation.



- 2 Make use of developments in genetics - in all aspects from stock to grassland.



- 3 Listen to the advice and experience of other farmers and experts. It is important to be open minded and be willing to change practices for the better.

- 4 Having a good understanding and awareness of all costings across each specific enterprise has enabled us to expand with confidence.

Bronyglyn

Gareth Morgan & family

Llanfynydd, Carmarthen, SA32 7TRU

FARM DETAILS

- Demonstration farm since January 2012
- 300 acres
- 40 acres rented on a seasonal basis
- Ranges from 750ft to over 1,000ft

CATTLE DETAILS

- 70 spring calving cows, mostly Limousin cross

SHEEP DETAILS

- 480 breeding ewes – mostly Suffolk cross Texel

OTHER DETAILS

- 10 acres of wholecrop
- Glastir Entry

KEY OBJECTIVES

1. Improve profitability of the sheep and beef enterprises
2. Improve grassland productivity to maximise stock growth and performance
3. Reduce input costs

Key projects

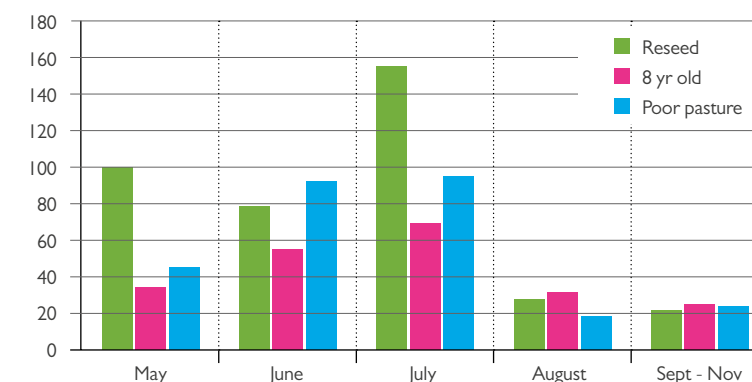
1. GRASSLAND IMPROVEMENT

During 2013, grass growth rates were monitored in three separate fields to assess the productivity of the leys. One was a new reseed, the other was an eight year old ley and the third was a poor pasture.

Fig 1. Grass growth

	Tonnes of dry matter (DM) per hectare (Ha)	Average daily growth kg's of dry matter per day
New reseed	9.2	77
8 year old ley	6.3	43
Poor pasture	7.3	55

Fig 2. Daily grass growth on 3 field types kg DM/day



The value of reseeding is clearly shown in the early months with three times more grass grown in May compared with the eight year old ley. This is equivalent to seven acres of reseed yielding the same as 21 acres of eight year old ley. The poor pasture did outperform the eight year old ley as the eight year old was poached significantly in 2012 and had compaction issues which further emphasised that the soil needs to be managed if growth potential of grass is to be realised.

2. NUTRIENT MANAGEMENT

A Nutrient Management Plan was compiled in 2012 and from the soil analysis it was evident that the potash and phosphate levels for many of the fields was sufficiently high and that the 20:10:10 compound fertiliser used was not needed. This led to a change to apply a straight Nitrogen compound which has seen a significant saving of £1,000 per annum in the cost of fertiliser purchased.

Key projects

3. EFFECTS OF SULPHUR AND NITROGEN APPLICATION ON GRASS GROWTH

NITROGEN

With the increase in fertiliser prices over the years there has been a reduction in the rates applied. A small scale trial was set up

to see if applying higher rate of Nitrogen was cost effective. Four rates were used and results of yields shown in Fig 3 below:-

Fig 3. Grass yields and costs

kg N/ha	Fresh weight T/ha	DM/ha (20% DM)	Cost of N/ha	Cost per T DM
50	26	5.22	£43.00	£8.24
80	38	7.66	£68.80	£8.98
100	39	7.80	£86.00	£11.03
120	41	8.20	£103.20	£12.59

The extra nitrogen costs more and puts the price per tonne up, but output per hectare was better and for an extra £25.80 you get

an extra 2.44t/DM/ha. Therefore a tonne is £10.57 which demonstrates that 64 units/acre or 80kg/ha is worth doing.

SULPHUR

Results from grass sample tests in 2013 highlighted a sulphur deficiency which could be affecting grass yields, quality and subsequently animal performance. Gareth was keen to investigate the potential benefit of sulphur fertiliser.

Nitrogen sulphur fertiliser was applied to half a field while the other half received a straight nitrogen. The yields at harvest were as follows which showed a positive response to the sulphur fertiliser:

Sulphur + Nitrogen = 7.82 tonnes DM/Ha

Straight Nitrogen = 7.04 tonnes DM/Ha

Key performance indicators and statistics

1. GRASSLAND IMPROVEMENT

Based on a weaned lamb weighing 35kg, growing at 150g/day, with a daily intake of 1kg of dry matter, the newly reseeded field would be able to support 76 lambs per hectare as opposed to 43 on the eight year old ley and 55 on the poor pasture.

2. SELL MORE LAMBS OFF GRASS/FINISH LAMBS EARLIER

Gareth managed to finish 277 lambs by 17 July on grass this year compared to 132 lambs by 26 July 2013 as a result of the grassland improvement.

Q&A with Gareth

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Gaining access to advice from industry experts and working with them on projects and trials has helped me to adopt new practices I otherwise would not have considered."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"The nutrient management plan has led to better targeted grassland improvements. Knowing what each field requires as opposed to applying the same compound for each field has resulted in increased productivity and lowered costs."

How has being a Farming Connect demonstration farm helped you plan for the future?

"Being a demonstration farmer has encouraged me to take a closer look at the costs of running my business. With the impending changes to the Single Farm Payment, managing my costs will be crucial to maintain the sustainability of the farm."

Gareth's viewpoints

- 1 Regular soil testing – important to target farmyard manure and slurry at nutrient draining crops e.g. wholecrop.



- 2 Check for compaction – a compacted field will never grow as much grass as one that is not regardless of the age of the ley.



- 3 Analyse silage and check feed analysis and ration accordingly.



Stember

William Jenkins and family

Poyston Cross, Haverfordwest, SA62 4DX

FARM DETAILS

- Demonstration farm since January 2012
- 150 acre dairy farm
- 150 acres rented
- Ranges from 160ft to 210ft

CATTLE DETAILS

- 180 cows all year round calving
- Home bred Friesian breeding realises premium for calves sold

KEY OBJECTIVES

1. Improve milk quality and yield to realise potential higher milk price (if yield is improved from 7,400 litres to 7,600 litres per year this could give an extra £9,600 to the business)
2. Increase length of grazing period and increase stocking rate
3. Decrease impact on the environment to increase sustainability

Key projects

1. LENGTHENING THE GRAZING SEASON

In 2012, cows would have been turned out to grazing for the first time around 30 March and housed again at the end of September, giving a six month grazing period. Putting in tracks meant the Stember herd gained a month grazing at each end of the season, increasing the grazing period from six months in 2012 to eight months in 2013. Better track surfaces have also played a part to improve welfare of the herd by reducing lameness caused by stone bruises.



2. COW MOBILITY AND SIGNALS

In an effort to reduce incidences of lameness in the herd, cows were mobility scored in October 2012 when it was found 8% were lame. By investing in better surfaces on the cow tracks, increasing attention to early detection of problems and time spent foot trimming, the level had reduced to 5% by January and remained at the lower level of 5% in February 2013. Improvements have continued to be made in terms of cow comfort through low cost building adaptations to increase cows' lying time and the amount of light in cubicles. An average sole ulcer case costs £196 therefore 10 less cases have resulted in a potential saving of £1,960.



Key performance indicators and statistics

1. Aim for over 7,500 litres per cow/year
- currently 7,400 litres per cow/year
2. Maximise milk quality –currently
butterfat 3.9% and protein 3.3%
3. Calving interval is currently 383 days
– which is reduced from 410 days

Q&A with William

What are your plans for the future?

“We are continuing to work on reducing the age of our heifers at their first calving, which is something our consultant has been mentoring us on. We have a new Angus chaser bull to use on the heifers which should be easier calving than the previous one we used which gives us the confidence to mate earlier.”

What have you tried that otherwise you would not have?

“We wouldn’t have done any sub-soiling if it wasn’t for an open day trial on drainage and compaction. The field that was sub-soiled as part of the demonstration now has a much better yield and less weeds than the area left as a control. We plan to increase the area sub-soiled by using a spiked roller behind the grazing cows.”

William’s viewpoints

- 1 Digging holes and collecting samples is an ideal and simple way to look at soil quality – identifying and addressing areas of compaction has increased grass growth significantly, and we had not been aware of suppressed performance previously.



- 2 Low cost changes can be made to building/ infrastructure design to make a big difference to cow comfort. e.g. increasing lunging space, introducing more light and improving ventilation will all result in benefits to animal health.



- 3 Investing in the cow tracks has increased our grazing season significantly as cows can travel around the farm without poaching for longer.



- 4 We thought we had lameness issues and although monitoring showed we perform better than most, we concentrated on the issue and have been able to make improvements.





Winterton

Steve and Liz Ford

Marloes, Haverfordwest, SA62 3AS

FARM DETAILS

- Demonstration farm since January 2012
- 220 acres owned
- Ranges from 30ft - 150ft

CATTLE DETAILS

- 120 store cattle reared annually

SHEEP DETAILS

- 310 ewes lambed early – predominantly Suffolk cross mules

OTHER DETAILS

- Producing seed barley in undersown crops
- Early chipping potatoes produced without de-stoning

KEY OBJECTIVES

1. Improve flock performance by identifying and culling underperforming ewes
2. Utilise data to help increase efficiency and maximise profit
3. Make better use of home grown forage

Key projects

1. UNDERSOWING METHODS

Traditionally barley is undersown with a grass ley at Winterton and normally both the grass seed and barley seed are sown simultaneously. It was decided to try and sow the barley and grass seed two weeks apart to allow the barley to establish before the ley. There should be an increase

in yield of barley (especially valuable in a crop of seed barley) and also it would allow non clover safe herbicides to be used. The poor spring of 2013 resulted in a 4 week gap between barley and ley and as a result the ley failed to establish and had to be redone.

2. EWE EFFICIENCY

Many producers are looking at the weight of their ewes in relation to their efficiency. Winterton carried out a project designed to understand the impact of ewe size on the flock's efficiency. With concerns over the feed costs associated with heavier

ewes, the project found that without looking at overall production levels and the individual flock circumstances it was possible to overestimate the value of lighter ewes to the flock's profitability.

Fig 1. Ewe weight and feed requirements

Assumptions (kg)	Average daily intake	Example annual feed costs
	Average daily dry matter requirement of 2% of bodyweight	Average dry matter feed costs of £0.1 /kg/DM taking into account all grazing, conserved forage and concentrate costs
50	1 kg	£36.50
60	1.2 kg	£43.80
70	1.4 kg	£51.10
80	1.6 kg	£58.40

At first glance the results suggested that lighter ewes would be the most profitable in the flock however heavier ewes tend to be associated with: higher

lamb birth weights, faster lamb growth rate and higher cull ewe value.

The key advantages are shown in Fig 2.

Fig 2. Advantages from the ewe efficiency project

Heavier ewes	Lighter ewes
Higher birth weights	Lower feed requirements
Can improve lamb growth rate	Increased stocking rate
Increased prolificacy (in some instances)	Option to meet targets through the use of high index rams
Increased cull ewe value	

Q&A with Steve

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Getting the whole farm soil sampled has helped us make significant savings on fertiliser – around £2,500 less spent in 2013 than in 2012. We intend to soil sample 25% of the farm each year, to ensure we get round the whole farm every four years, and will investigate any under-performing fields."

What are your plans for the future?

"We have three children, so we need to consider our succession plans to ensure a fair way for the business to continue once we are not here. We will put into action some of the design features discussed at our most recent open day which looked at multipurpose building design."

What have you tried that otherwise you would not have?

"We always scan our sheep pre-lambing, but were previously not managing them in separate groups. Following discussions we split them and we saved 800kg of feed on the 64 single bearing ewes alone in the three weeks pre-lambing. The re-shuffle in the shed was at no extra cost, and also feeding to requirement reduced lambing problems in the singles, at no detriment to lamb birth weights."



Key performance indicators and statistics

1. Ensure yield of spring barley crop is minimum 2.98 tonnes/acre
2. Ensure lambs average daily live weight gain from birth to slaughter is 0.29kg/day
3. Average number of days for fat lambs to slaughter at 115 days
4. Maintain sheep scanning percentage above 179% (2013 figure)

Steve's viewpoints



1

Using data and sheep EID technology can help improve flock performance and improve efficiency.

2

There is no point collecting data if you don't use it to influence your management decisions.



3

Health and safety can't be ignored; there are no second chances – make best use of Farming Connect grid reference plaques.

4



Delaying the undersowing of spring barley resulted in a very poor ley establishment illustrating just how weather dependent this strategy is.



Frowen

Ben Anthony and Diana Fairclough

Frowen, Login, Whitland, SA34 0TP

FARM DETAILS

- Demonstration farm since June 2013
- 145 acres owned
- 110 acres rented
- Ranges from 350ft – 500ft

CATTLE DETAILS

- 40 spring calving suckler cows

SHEEP DETAILS

- 610 breeding ewes

OTHER DETAILS

- Glastir Entry and Glastir Woodland
- 370 turkeys and 250 chickens for the Christmas market

KEY OBJECTIVES

1. Reduce feed costs of sheep enterprise without reducing production
2. Increase the percentage of lambs reared
3. Evaluate various establishing techniques for brassica crops to see which are most cost effective
4. Introduce EID technology to the sheep enterprise
5. Increase kgs of lamb sold per hectare

Key projects

1. TRIALLING DIFFERENT METHODS FOR ESTABLISHING BRASSICA CROPS

A crop of rape and stubble turnips, utilised for finishing lambs, trialled three methods of establishment. The first method was broadcasting on to ploughed ground, the second was to utilise a corn drill on to ploughed and harrowed ground, and the third was to direct drill.

All methods worked well with yields from 8.3T DM/ha to 13.2 T DM/ha, with the ploughing and corn drill having highest yield.

Fig 1. The typical cost associated with seed rate using various establishment methods

	Seed rate @ 2kg/acre	DM Yield/ha
Plough, broadcast and grass harrow	£201.76	8,470 kg
Plough and corn drill	£197.76	13,200 kg
Direct drill	£177.64	8,300 kg

2. EWE NUTRITION – PRE AND POST LAMBING

Ben and Diana received expert advice to formulate feed rations for ewes in the run up to lambing and after lambing. The rations were based on silage sample results. Savings on feed costs have been achieved, along with a trouble free lambing (results can be found in Fig 2).

3. USE OF EID

EID has enabled performance of ewes and lambs to be monitored and decisions made based on the information collated. There has been a change in replacement ewe breed as the figures illustrated a significant difference in rearing percentage between breed types. An overview of the flock performance can be found in Fig 3.

The performance of lambs from different sires and the effect of trace element supplementation have all been measured using EID.



Key performance indicators and statistics

1. To reduce feed costs for flock (the weather impacted on costs in 2013, but there was a significant drop in 2014).

Fig 2. Costs per head per year



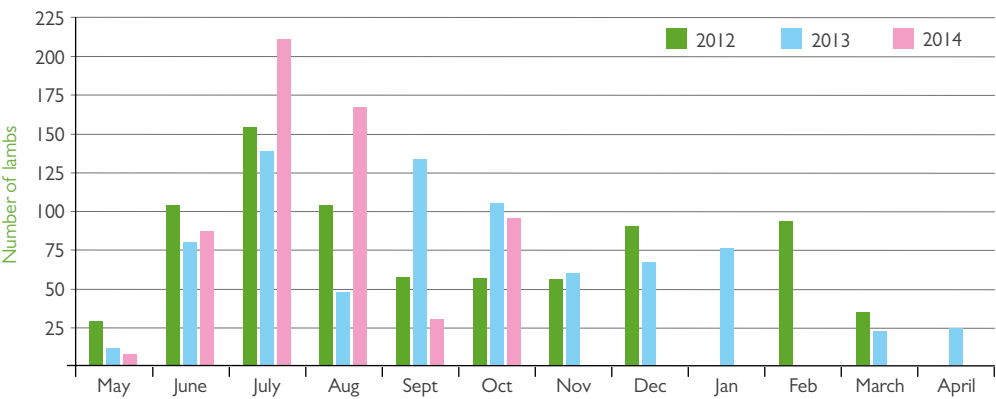
2. To increase scanning % and rearing % of lambs

Fig 3. Flock performance

Year	Scanning %	No. lambs at scanning	No. lambs reared	% Reared	% lost scan to reared
2011 (522 Ewes + ewe lambs)	150	783	725	139	7.4
2012 (574 Ewes + ewe lambs)	165	950	791	138	16.7
2013 (688 Ewes + ewe lambs)	156	1075	835	121	22.3
2014 (609 Ewes + ewe lambs)	156	950	832	137	12.4%

3. To sell lambs earlier by tightening up lambing spread, the use of high growth rams, grassland improvement and change of ewe nutrition at lambing.

Fig 4. Lamb sale comparison



Q&A with Ben and Diana

What has been the biggest benefit of being a Farming Connect demonstration farm?

“Access to relevant advice and knowledge from industry specialists which encouraged us to alter or improve farm systems and led to progress. The introduction of EID has been beneficial in terms of growth rates and monitoring performance.”

Is there anything you’ve tried that you would not do again or any lessons learned?

“We will no longer shear store lambs as there has been no benefit in terms of extra weight of lambs sold.”

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“To date, nutritional planning for the in-lamb ewes has been the most beneficial. Costs have been reduced significantly through savings on purchased feeds, along with a relatively trouble free lambing, leading to further savings in both medicine costs and labour.”

What are your plans for the future?

“We plan to reduce cattle numbers in order to expand the sheep enterprise and to focus on increased scanning percentages.

We certainly wish to continue to improve our grassland management systems, and build on the improvements made to our grazing system.”

What have you tried that otherwise you would not have?

“Without being a demonstration farm, we would certainly not have utilised a rotational grazing system at Frowen.”

Ben and Diana's viewpoints

- 1

Prioritise expenditure - not everything can be done at once.
- 2

Focus on long term investments and the returns.



- 3

Get advice on formulating your sheep rations.



- 4

Try out rotational grazing.
- 5

Continue to improve and move forward – don't stand still.

Plas

Lloyd Thomas & family

Bancyfelin, SA33 5DB

FARM DETAILS

- Demonstration farm since January 2012
- 320 acres owned
- 300 acres rented
- Ranges from 90ft to 150ft

CATTLE DETAILS

- 350 all year calving Holstein cows, with all replacements reared

OTHER DETAILS

- 60 acres maize
- 28 acres wholecrop
- Glastir Entry

KEY OBJECTIVES

1. Producing high quality forage in adequate volumes
2. Maximising outputs from own resources
3. To achieve the highest efficiency levels whilst maintaining consistency of production and quality
4. To make the most of available on-farm nutrients

Key projects

1. GRASSLAND RE-SEEDING TRIAL

An area of 27 acres was reseeded with different seed mixtures, to find which would be most suited for the farm/land in question in terms of productivity and durability. The first and second cut results showed a 30% difference between highest and lowest yielding mix.

2. USING METABOLIC PROFILES TO IMPROVE FERTILITY

The aim of this project was to work with the vets with a regular blood sampling programme to assess the diets of the cows to investigate the energy levels and any other pre disposing factors which has led to the significant improvement in calving index. The vet, nutritionist and farmer worked closely as a team to improve calving index.

Fig 1. Yearly Calving Index results



*(assuming a saving of £5.60/cow/day for each day the calving is reduced)

Key performance indicators and statistics

1. Milk to feed ratio (2012-13 0.34L/kg / 2013-14 0.32L/kg).
2. Fertility levels - heat detection of 63% compared with National average of 50%.
3. Number of days to first service (average 55 days) and average days to conception (119 days).
4. Calving index is closely monitored – currently 396 days.
5. 57% of herd in calf by 100 days in milk.

Q&A with Lloyd

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Grassland advice has had huge benefits and we are now focused on increasing the productivity of our land by paying attention to soil health."

What have you tried that otherwise you would not have?

"Thanks to being a demonstration farmer, we have undertaken a reseedling trial comparing different seed mixtures in one field. I've learned that yield can be very different and is dependent on the mixture used."

What are your plans for the future?

"Our plan is to continue to build on what we have learned to date and to continue with the re-seeding work that has been started. Our aim is to produce more, better quality grass, that results in increased milk production."



Lloyd's viewpoints

- 1 Always consider the importance of re-seeding for quality and quantity of forage produced.



- 2 Use soil analysis as a basis for any grassland management or cultivation work.

- 3 There is always something new to learn from other producers, large and small.

- 4 Regularly check and maintain soil pH.



Gop

Meilir Jones & family

Trelawnyd, LL18 6DG

FARM DETAILS

- Demonstration farm since June 2012
- 210 acres owned
- 50 acres rented
- Ranges from 260ft - 650ft

CATTLE DETAILS

- 1,000 cattle purchased and finished annually

SHEEP DETAILS

- 450 broken mouthed ewes bought annually
- 100 Charollais ewes

OTHER DETAILS

- 10 acres of fodder beet
- Glastir Entry

KEY OBJECTIVES

1. Monitor costs and make savings where possible
2. Improve handling and housing facilities to improve animal welfare and reduce labour costs
3. Invest in EID technology to improve cattle monitoring programme
4. Identify which types of animals perform best on the system in order to source these in the future

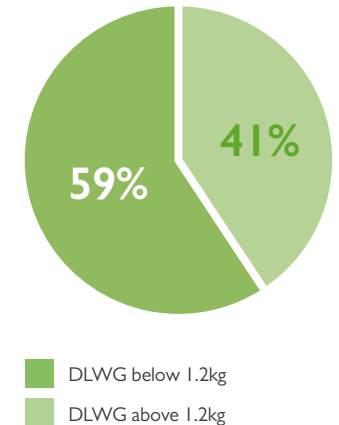
Key projects

1. CATTLE MANAGEMENT THROUGH EID

With ever tightening margins in the beef sector, Meilir was keen to see what gains could be achieved through better management of the enterprise. With the feed ration costing £2 per head per day, the cattle need to be achieving a daily liveweight gain of at least 1.2kg, this is a crucial KPI for the business. A recently purchased cattle crush with EID reader has made the process of monitoring the performance of each animal much easier and less time consuming.

By using EID and collecting data on all animals, it is easy to identify and manage non-performers. The pie chart in Fig 1 illustrates that a number of animals are not performing to the target of 1.2kg DLWG. Identifying and managing these animals will be a key objective for the business going forward. Under performing cattle will either be sold immediately or managed differently in order to increase their DLWG. Utilising EID in cattle will improve cattle management and enabling quicker decisions to be made on an individual basis therefore reducing time spent managing the cattle.

Fig 1. Liveweight gain cattle sold in May 2014



2. ANIMAL HOUSING

Since purchasing Gop, Meilir has been utilising the farm buildings in their current state as best as he can. Unfortunately, their design was not driven by animal health issues e.g. ventilation, comfort. As a result of closely monitoring cattle performance he became aware of the impact such factors have on animals. Meilir is now modifying the buildings with low cost solutions to improve the airflow within the buildings which should impact on overall productivity.

Key performance indicators and statistics

1. Ensure that every beef animal achieves or exceeds a DLG of 1.2kg/day. This is the minimum growth requirement needed to achieve profitability and to cover the cost of the ration of £2/day.
2. Selling 1.5 lambs from the 450 ewes, and recouping the initial market value of the ewes.

Q&A with Meilir

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Raising standards of efficiency with the beef enterprise by monitoring cost, daily liveweight gain, breeds, feed efficiency and performance."

What valuable lessons have you learnt?

"We have learned that cattle comfort is of vital importance. Addressing airflow within the building has improved herd health."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business and how has this helped you progress for the future?

"Implementing the EID monitoring system allowed us to evaluate the daily liveweight gain of the cattle."



Meilir's viewpoints

1

Always monitor costs to evaluate business performance - our EID system allows accurate monitoring and recording.



2

Herd health planning is essential for the treatment and prevention of disease



3

Be aware of health and safety on the farm. Our new hydraulic crush and handling system have eased cattle handling, improved animal welfare and health and safety.



Carreg Y Llech

Terrig and Edward Morgan & family

Treuddyn, Mold, CH7 4NZ

FARM DETAILS

- Demonstration farm since February 2012
- 179 acres owned
- 136 acres rented
- Ranges from 600ft – 850ft

CATTLE DETAILS

- 220 dairy cows, housed in cubicles over winter and grazing in summer
- 60 in calf heifers
- 60 heifers up to 12 months old

OTHER DETAILS

- 30 acres winter wheat
- 15 acres of maize
- Glastir Entry

KEY OBJECTIVES

1. Maintain stocking rate at 220 dairy cows
2. Run an efficient profitable business
3. Increase milk yields from 8,500 litres to 9,000 per cow/year
4. Produce strong healthy replacements to calve at 22-24 months or sooner

Key projects

1. HERD HEALTH

Screening for Johne's disease was undertaken, 30 blood samples were taken and the results suggested that 35% of the herd were infected. If no changes were made it would be likely that 90% of the herd would be infected by 2017. Following the initial screening, Carreg Y Llech now conduct tests four times per year

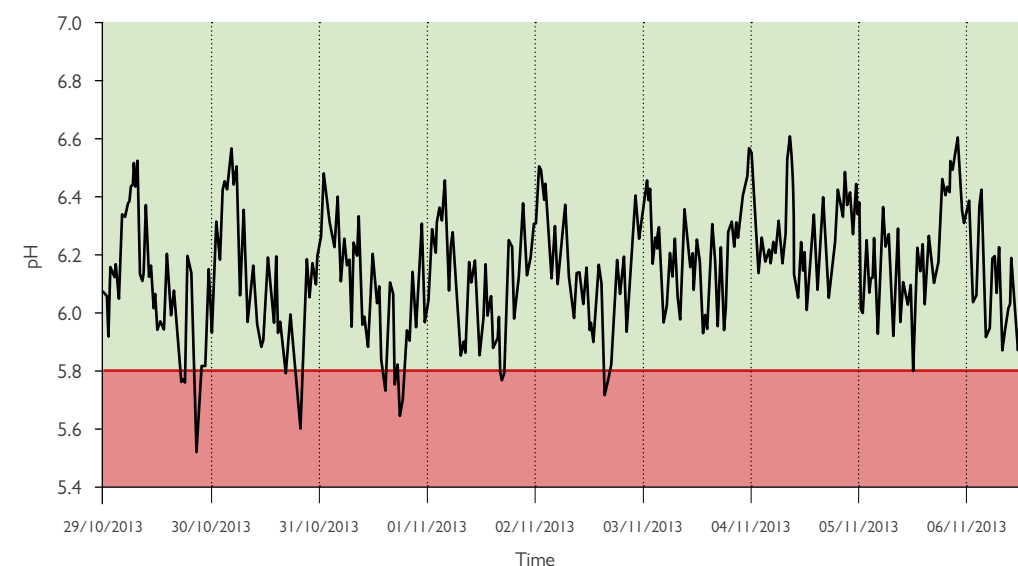
in order to identify any cows that have the disease. Through testing for Johne's on a whole herd basis, disease levels within the herd are not as high as first thought. If any cows are identified as possibly infected, each of them is tagged and is bred to a beef bull or culled.

2. MAXIMISING PERFORMANCE THROUGH MONITORING

Rumen boluses were used to measure pH and temperature - they were placed into six cows from different feeding groups. This gives an insight into how well the cows are performing by ensuring that the pH is maintained around the ideal figure of 5.8 and also to identify feeding and drinking patterns. This allows for well informed decisions to adjust rations as and when needed before it is reflected in the yields. The ration in the parlour was reduced by 0.5kg (equating to £825/month) and straw intakes increased together with sodium

bicarbonate to act as a buffer in the rumen. Fig 1 shows a sample pH reading using the bolus. The green area is classed as the safe zone with regards to acidosis and the red zone represents the 5.8 pH line which we class as the acidosis risk zone. Cattle are not immediately at risk of acidosis when they drop below the line and it is dependent on the amount of time spent in the risk zone. Cows that spend >5 hours a day under the red line are at a significantly higher risk of acidosis.

Fig 1. Plot of pH over 9 days



Key performance indicators and statistics

1. Working with the farm vet to maintain the fertility status of the herd.

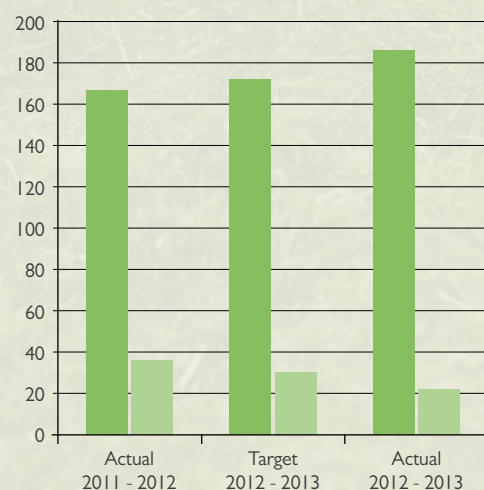
Fig 2. Fertility Statistics

	Number of services	Conception rate	Submission rate
Average performance 2012 - 2013	429	36%	84%
Average performance 2013 - 2014	453	42%	80%
Target	450	40%	80%

2. Reducing mastitis cases means a saving of £225 per cow for the business and a benefit of over £11,000 annually. The target is to maintain the low current mastitis cases of no more than 30 cows per 100.

Fig 3. Mastitis incidence levels

■ Number of milkers
■ Number of cases per 100 cows



Q&A with Edward

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Having the opportunity to look at different projects, interacting with other farmers and learning from others' experiences."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Focusing on cow health and having a better understanding of nutrition has given us increased yield with very little or in some cases no increased cost."

What are your plans for the future?

"Looking to the future, the goal will be to breed all replacements from heifers using sexed semen using Genomic sires with high fertility and longevity."

What have you tried that otherwise you would not have?

"Health checks for Johne's disease are now an important part of our farming policy to monitor the situation."

Edward's viewpoints

- 1 Address dry cow management and ensure they receive the correct ration.



- 2 Testing for Johne's has increased awareness of how to control the disease.



- 3 Improved cow comfort has resulted in reduced lameness and increased longevity.



- 4 Foot bathing three times a week to reduce digital dermatitis.

Hafod y Maidd

Iwan and Eleanor Davies

Glasfryn, Corwen, LL21 0RY

FARM DETAILS

- Demonstration farm since October 2013
- 1,150 acres including owned and rented land
- Ranges from 900ft - 1,400ft in a Severely Disadvantaged Area

CATTLE DETAILS

- 85 spring and autumn calving cows Belgian Blue cross Limousin and Luing

SHEEP DETAILS

- 1,000 breeding ewes mix of Penderyn and Cheviot cross Texel ewes

OTHER DETAILS

- 20 acres swedes annually
- 17 acres barley
- Glastir Entry and Advanced

KEY OBJECTIVES

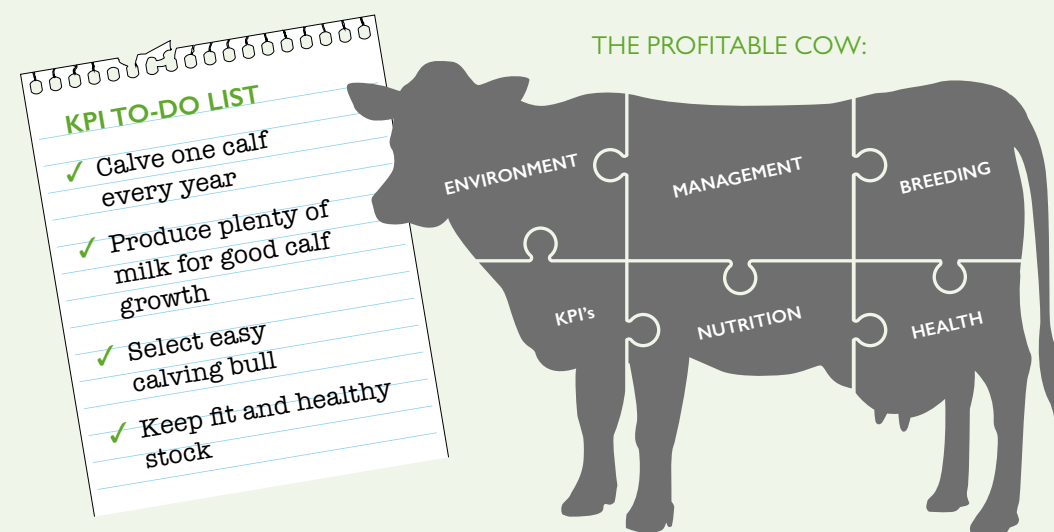
1. Increase the suckler herd to 110 cows within five years
2. Move away from continental cow breeds to hardier native breeds in order to utilise marginal grazing better and reduce costs
3. Reduce the calving index from 410 days to improve herd profitability

Key projects

1. COW EFFICIENCY

For the last six months, Iwan has been looking at suckler cow efficiency by comparing the current continental cross bred herd with the recently purchased

Luing cattle. A financial analysis of the farm business identified areas for improvement in order to increase the herd efficiently.



THE PROFITABLE COW:

2. HEALTH STATUS OF THE HERD

Iwan worked with his vet to come up with an in-depth but practical health plan for both the cattle and sheep. Concentrating on the fertility of the cattle, the herd has been thoroughly tested and blood test results have encouraged Hafod y Maidd to join the SAC Health Scheme.

The farm is free from Johnes and will now vaccinate against BVD and IBR to work towards a full health status. The aim is to produce healthier calves and cows quicker to get back in calf.

Key performance indicators and statistics

1. Measuring weaning weight of calves in comparison to cow weight with the aim of achieving 50% of cow weight at 200 days old.

2. Calving index currently 410 days, but aiming to reduce to 365 days. This could mean an annual saving of £13,387.50 for Hafod y Maidd.

*£3.50 cost attached to every day a cow's calving interval extends beyond 365 days.



Q&A with Iwan

What has been the biggest benefit of being a Farming Connect demonstration farm?

"I have valued the collective input of specialists during the Management Group meetings. This included my vet, grassland specialist and a beef and sheep specialist who sometimes joined us via Skype."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Through the Farming Connect Whole Farm Plan service, we now have a business plan which has helped us focus on our priorities for development over the next five to ten years."

What have you tried that otherwise you would not have?

"Full blood testing of the herd has proved very useful, giving us an accurate picture of herd health. The purchase of a new cattle weighing scales has proved invaluable."

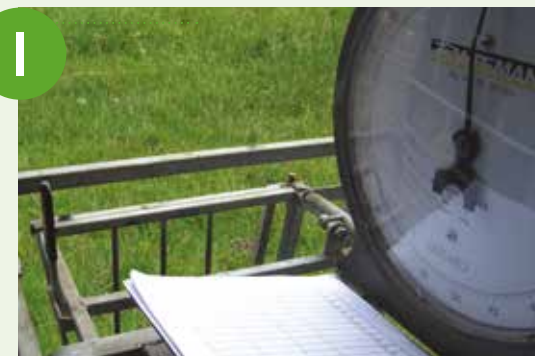
What changes have you implemented that you will retain?

"The expert advice we received as demonstration farmers gave us the confidence to continue with our plans for moving to different breeds."

Iwan's viewpoints

Analyse and use all recorded data for accurate performance and successful farm management.

1



Take advantage of all opportunities, take heed of advice from specialists.

2



Compare farming systems fairly and make informed decisions. Don't be afraid of change if it benefits your farming system.

3



Abbey Farm

Jonathan, Arran, Billy & John Davies

Llangollen, Denbighshire, LL20 8DD

FARM DETAILS

- Demonstration farm within current programme since September 2011
- 500 acres owned
- 420 acres rented
- Ranges from 450ft to 1,400ft

CATTLE DETAILS

- 100 Suckler cattle

SHEEP DETAILS

- 2,000 ewes - Welsh mountain, Lleyn Cross, Mules

OTHER DETAILS

- 50 acres of crimped barley or wheat
- 15-20 acres of root crops
- Glastir Entry and Advanced

KEY OBJECTIVES

1. Improve health of sheep flock focusing on lameness to reduce occurrence
2. Improve efficiency of flock by concentrating on performance of two Welsh crossbreds
3. Monitor and manage ewe condition score

Key projects

1. LAMENESS PLAN

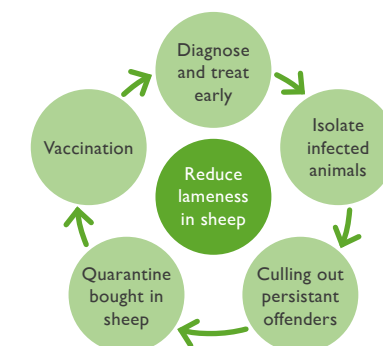
The lameness plan developed at Abbey helped identify key areas to make significant changes to the performance of the flock. The target level of lameness to be achieved

within three years is to be less than 1%. Abbey have significantly reduced lameness levels in the first 12 months as seen in Fig 1.

Fig 1. Changes in lameness levels within the sheep flock in 12 months

	2013	2014
Sheep lameness	7 - 10% Across the flocks	1 - 2% Welsh ewes 3 - 5% Mules
Degree of lameness (Scale 0 minor -3 severe)	2 - 3	1 - 2
Cost of lameness due to footrot (using Reading University Footrot Cost Calculator)	£11.80 per ewe	£3.20 per ewe
Estimated savings at Abbey in 12 months - £13,760		

Fig 2. Five-Point Plan at Abbey



2. COMPARING EWE ATTRIBUTES FOR FARM

Just over 200 yearling ewes of two crossbred types were weighed and condition scored prior to tupping in October 2012. Ewes were subsequently condition scored again post-scanning and individual scanning results obtained. All were yearlings and were being tupped for the first time. Tupping was

carried out in a single group from the middle of October.

The two types of crossbred ewes are referred to as crossbred A (mules) and crossbred B (Lleyn cross Welsh Mountain). Both crosses were bred from Welsh Mountain draft ewes from Abbey Farm.

Fig 3. Performance of crossbred A and crossbred B

	Crossbred A	Crossbred B
Ewe condition* at mating	2.25	2.65
Ewe weight	48.6kg	42.2kg
Scanning results	130%	105%

* Condition scoring 1 – 5
(1 being very thin,
5 being extremely fat)

Following the trial Jonathan was able to make a management decision based on the facts, and decided to increase Crossbred A. This highlights the importance of collecting

and analysing information on flock performance in order to make valuable management decisions.

Key performance indicators and statistics

1. Reduce lameness to 1% overall in flock
2. Target condition score of ewes at mating 3 to 3.5

Q&A with Jonathan

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Taking full advantage of the depth of advice and specialists that have visited the farm over the last three years."

Of all the advice, what has had the biggest impact on your business?

"We feel that the lameness plan has had a huge impact on the farm, the reduction in incidences is very visible and the cost saving is also coming through."

What are your plans for the future?

"I want to make better use of the marginal land that we have on the farm, it's a huge resource to have and I want to make the most of it."

What changes have you implemented that will continue to be a part of your farming system for the future?

"The lameness plan will now be an integral part of the sheep management system. Also we will continue to employ a nutritionist annually to make sure the rations for the ewes at lambing is spot on."



Jonathan's viewpoints



Use the data that you gather to analyse the performance of the farm and make changes if needed.



Using a nutritionist to create a ration helped with reducing feed bills, hitting target condition scores for each group.



Discussing problems with others has led to finding solutions.



Grassland management has improved since becoming a demonstration farm, understanding what seeds to use, when and where.

Huw and Linda Roberts & family

Llanuwchllyn, Bala, LL23 7DE

FARM DETAILS

- Demonstration farm since January 2012
- 340 acres owned
- Ranges from 700ft to 1,675ft

CATTLE DETAILS

- 45 Welsh Black cows

SHEEP DETAILS

- 660 Hardy Welsh breeding ewes
- 60 Cheviot cross ewes
- 220 ewe lambs retained annually

OTHER DETAILS

- Glastir Entry

KEY OBJECTIVES

1. Maximising the efficiency of hill grassland
2. Reducing input costs to improve profit margins
3. Tightening calving patterns and cow conception
4. Improving the scanning percentages on the farm
5. Demonstrating new technologies and varieties of medium and long term grass seeds

Key projects

1. FERTILISER PROJECT

The aim of the project was to ensure that the best possible return on investment was achieved when applying fertiliser. Small changes can make a significant difference to the financial input and output of the farm, and understanding the cost benefit

of fertiliser application could prove to be vital.

A two year ley was selected and the field was split into three separate plots to receive different fertiliser treatments (see Fig 1).

Fig 1. Two year old ley split into three treatments and monitored for grass growth

	Normal practice 100kg/acre (22:4:14) mid-May	Extra N 150kg/acre (22:4:14) mid-May	Split dressing 50kg/acre CAN late April, 100kg/acre 22:4:14 mid-May
Grass growth - from 30 April to 10 June (kg DM/ha)	2,780	3,530	4,357
Response to N (kg grass/kgN)	50	43	48
Fertiliser cost/ha	£83	£125	£128
Value of extra grass grown	-	£147	£309

In good grass growing conditions of 2014, and on a responsive young ley, an additional kg of fertiliser increased production by 25%, and the additional cost realised a 350% return on investment.

Splitting the application to include an early application of readily available nitrogen in the form of calcium ammonium nitrate boosted production above normal practice by nearly 56%.

2. ANALYSING TRACE ELEMENT DEFICIENCIES WITHIN THE FLOCK

Through blood and forage sampling, farmers can determine the trace element deficiencies on the farm in order to supplement animals to meet their needs. Six ewes were sampled and the blood analysed by their local vet.

Y Gyrn had no particular problems with trace element deficiencies. However, the Cheviot cross flock received a trace element bolus and the barren rate reduced from 6% to under 3%.



Key performance indicators and statistics

1. Target weight for lambs sold is 32kg liveweight. This year the first draw of lambs were sent at 9 weeks of age on the 29 May weighing 32kg.
2. The herd of Welsh black cattle are all sired by AI bulls, at present 88% of cows are calving within the 365 day interval but the aim is to raise this to 95% through culling and monitoring.
3. In 2011, 712 ewes were scanned at 160%. In recent years, ewe numbers have crept up to 772 but the scanning percentage has fallen to 155%, prompting a reduction in ewe numbers in order to regain a better scanning percentage whilst having less ewes to feed.

Q&A with Huw

Is there anything you've tried that you would not do again or any lessons learned?

"The soil testing that was undertaken on the farm, the project on worm resistance and learning from the expert knowledge and guidance from expert advisers who visited the farm on topics such as ventilation and herd health."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"The advice that I have been given on my herd health, tightening the calving pattern and being more ruthless with underperforming cows."

What are your plans for the future?

"To proceed with farming sustainably, keeping the business viable and preparing the business for a likely reduction in the Single Farm Payment."

What changes have you implemented that will continue to be a part of your farming system for the future?

"Choosing the correct drenches, bulls and fertiliser – especially application rates."

Huw's viewpoints

1

Soil testing is a very important aspect of grass management, we never know the status of the soil until we test it.



2

Establish a good relationship with your vet – discussing matters while completing your animal health plan is a very useful tool for farmers.



3

Trying new varieties of grass seed has taught me what works best on my land and continuing to do so is key to maintaining the best quality grass for livestock production.



4

Focusing on an aspect of your business that is under-performing will improve the general profitability of your farm, and obtaining correct expert advice is always worth it.



Trewylan Ganol

Edward and Helen Owen

Llansantffraid, SY22 6TJ

FARM DETAILS

- Demonstration farm since February 2012
- 260 acres owned
- 78 acres rented
- Ranges from 102ft to 151ft

CATTLE DETAILS

- 140 Holstein cows
- 100 bulls

SHEEP DETAILS

- 90 North Country Mules

OTHER DETAILS

- 85 acres of arable / forage crops
- Glastir Entry

KEY OBJECTIVES

1. Increase the profitability of the business and improve fertility management
2. Increase number of cows to a level where the farm is at its optimum efficiency
3. Improve calf rearing methods
4. Reduce bulling age of heifers

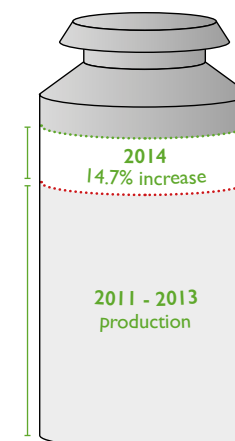
Key projects

1. ANIMAL COMFORT

With guidance from Farming Connect specialists, a new building was designed to provide the best possible environment for the cows. The building was fitted with two types of cubicles, a conventional cubicle and a plastic JVC cubicle.

Mastitis cases have reduced by 13% over the past two years. The new shed with open side and a higher pitched roof, has made a big difference to shed temperature, air flow and air quality resulting in a cooler shed throughout the year. Mastitis costs the farm around £115 per case (this includes treatment costs and loss of milk production).

The new building at Trewylan Ganol has helped to improve cow welfare, comfort and working conditions and the herd has increased technical performance significantly. Milk yield is now on average 1,171 litres per cow higher than it was two years ago - an increase of 14.7%.



2. HEIFER MANAGEMENT

Edward received specialist advice on getting heifers to their 380 kg bulling weight (60% of adult weight) earlier and ultimately to calve earlier rather than the traditional calving down age of 31 months at Trewylan. This will in turn reduce rearing costs by around £400/heifer and will also produce income from approximately 4,000 litres of milk in that time. In addition heifers will be four times less likely to need assistance at calving than an older heifer and twice as likely to still be alive as a five year old.

The heifers were monitored over the summer months and achieved a daily liveweight gain (DLWG) of 0.75kg on relatively poor pastures.

The heifers reached their target weight of 380kg by 18 months and bulling has now been tightened. Further improvements will be concentrated on in the coming year to continue to achieve bulling weights at an earlier age.

3. CALF REARING

Calf rearing methods were recorded to include colostrum quality and the time that 2.5 litres of colostrum was fed to the calf post-calving. The general conclusion was that colostrum quality was variable. It was advised that all calves were fed 5 litres of good quality colostrum within 24 hours of birth and were blood-tested before they were 7 days old to ensure they had received sufficient colostrum. A significant difference

has been seen in terms of the strength and immunity of the calves since this policy was implemented.

The biggest impact of this work has been seen in the level of calf scours occurring. As a result of all the new procedures implemented post-calving there has been a 25% decrease in the incidence of scours.

Key performance indicators and statistics

1. Target bulling weight of 380kg at around 15 months
2. Feed 5 litres of good quality colostrum (of at least 50mg/ml) to every calf within the first 24 hours after birth
3. Herd annual calving index has decreased by 14 days over the past two years. Assuming a saving of £5.60/day of reduction per cow, this represents an improvement of £10,505 for the herd.
4. Cull rates have also decreased by 12% due to better overall herd health, including lameness and fertility.

Q&A with Edward

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“Receiving specialist advice on building design for the new 140 cubicle shed. Improvements to the cows’ environment have been made and these are already having a beneficial effect on the business.”

What are your plans for the future?

“To keep on trying to improve every aspect of the business and ensure we keep up to date and adapt as needed. We plan to increase cow numbers and hope to invest in robotic milking if it proves viable.”

Edward's viewpoints

1

As farmers we must be prepared for change within our businesses – don’t be afraid to make improvements to increase profitability.



2

Good building design has a positive impact on animal welfare and performance.



3

Monitor and assess the quality of colostrum.



Dol Llys

Andrew and Janet Evans & family

Llanidloes, SY18 6JA

FARM DETAILS

- Demonstration farm since December 2013
- 500 acres owned
- 50 acres rented
- Ranges from 550ft – 1,200ft

CATTLE DETAILS

- 20 pedigree Hereford cows
- 50 commercial suckler cows (Blue and Limousin cross)

SHEEP DETAILS

- 800 commercial ewes
- 70 pedigree Suffolk ewes
- 170 ewe lambs
- 30 pedigree Suffolk ewe lambs

OTHER DETAILS

- 11 acres of rye
- 5 acres of turnips
- Glastir Entry

KEY OBJECTIVES

1. To control costs through being more self sufficient – and produce more home grown feed
2. To determine how we can use fertiliser more efficiently and use this information to maximise grass growth at the optimum cost
3. To improve the profitability of the farm for the next generation

Key projects

1. OPTIMISING FERTILISER USE

To maximise forage production on farm, optimising the use of fertiliser in early spring and identifying the response to nitrogen is essential. One field was split into 3 and

different rates and products were used to demonstrate how grass growth is influenced by sward quality, soil conditions and nitrogen supply.

Fig 1. Grass growth data

	Grass growth measured 20 Apr - 10 Jul 2014	Grass quality
No Nitrogen	3.6 t DM / ha	15% Ryegrass
100kg/ha of 16.16.16 applied May 8	4.9 t DM / ha	60% Ryegrass
150kg/ha of 10.10.10 (slow release) applied May 30	4.5 t DM / ha	50% Ryegrass

2. CROPS FOR LAMB FINISHING

Identifying the cropping options most suited to improving lamb performance is essential to ensure the greatest economic return. The existing cropping will be costed and compared throughout the year.

Detailed input costs are being recorded with a crop diary of all management operations, along with crop yield and animal performance. Full results will be available on completion.

3. BLOOD SAMPLING FOR DISEASE ACCREDITATION

An Animal Health Plan was carried out for both the Hereford and commercial herds and the cattle were blood sampled for BVD, leptospirosis and Johne's disease. The objective was to blood sample the herds to obtain their current health status and work towards disease accreditation under a HiHealth Cattle Scheme.

screened for BVD and leptospirosis while all cattle under two years of age were tested for Johne's disease. The herd was found negative for BVD, leptospirosis and Johne's disease antibodies.

The Hereford herd passed the first qualifying test towards disease accreditation and in the commercial herd, selected cattle were

This is a starting point to which future record keeping and regular appraisals/ discussions on herd performance will identify and target areas for improvement and help develop the profitability of the farm.

Key performance indicators and statistics

1. Applying the correct fertiliser rates at a cost of £90 / ha for the fertiliser
- 1.3t of extra grass was grown which was worth £256 (11.5 ME and 20% CP).
2. As a result, Dol Llys would be able to stock an extra 3 ewes and twins per acre

Q&A with Andrew

What has been the biggest benefit of being a Farming Connect demonstration farm?

"The grassland management advice given for the farm, along with the idea of costing inputs."

Is there anything you've tried that you would not do again or any lessons learned?

"I have learned not to apply fertiliser on land with low pH, liming the land is better value for money instead."

What have you tried that otherwise you would not have?

"We used to grow root crops, but our adviser recommended to put in a short term grass ley. This allows us to have quality spring grazing for ewes."

What changes have you implemented that will continue to be a part of your farming system for the future?

"To look at using short term leys to improve the grass output per ha. Test the soil on a regular basis. Cost all inputs into the crops to determine viability/feasibility."



Andrew's viewpoints

1

Be more open to new and different ideas. Have the confidence to listen to the advice provided.



2

Investment in grassland management is the future for the farm to be more resilient to volatile purchased feed costs.



Cwmwhitton

Colin, Phyllis and Gareth Pugh

Whitton, Knighton, Powys, LD7 1NL

FARM DETAILS

- Demonstration farm since August 2012
- 530 acres owned
- 500 acres rented
- Ranges from 650ft to 1,200ft

CATTLE DETAILS

- 130 Saler cross suckler cows

SHEEP DETAILS

- 950 texel cross mule breeding ewes

OTHER DETAILS

- 65-70 acres seed potatoes, graded and sold January - April
- 21 acres spring oats
- 100 acres spring barley
- 27 acres wholecrop silage undersown with red clover
- 14 acres fodderbeet
- 6 acres swedes
- 14 acres maize

KEY OBJECTIVES

1. Self-sufficiency is one of Gareth's key objectives. However, if you can buy it in cheaper than you can grow it then you need to weigh up the options - quality, convenience and financial
2. Maximising output – rearing as much progeny from breeding stock as possible
3. Measuring growth rates to ensure rations are correct. You need to know how you are performing in order to make improvements

Key projects

1. BULL BEEF FEED TRIAL

This is an on-going trial comparing the performance of two groups of 11 bulls fed on different rations. The aim is to compare daily liveweight gains and dry matter intake on diets of dry rolled and crimped cereals. The interim project report so far shows that the bulls on the crimped cereal ration have

a 2% increase in daily liveweight gain and £34.66/head increase in gross margin over feed in comparison to the cattle fed on the dry rolled cereal diet. The bulls fed crimped cereals have also shown a 2.5% increase in carcass weight from 1.5% less days in age.



2. SUCKLER HERD EFFICIENCY

This project has the following aims:

- establish a ratio of cow to calf and stock bull efficiency within the suckler herd
- assess 200 day weights and calf weaned weight as a percentage of cow weight: cow efficiency
- analyse the effect of cow and bull efficiency and the correlation of bull beef performance against cow size and calf production along with stock bull EBV

All cattle are regularly weighed every time they enter the crush and the results of this work will be known by early 2015.

Key projects

3. SHEEP EFFICIENCY

Aberdale ewes carrying the Inverdale prolificacy gene are able to produce an increase in scanning results without the need for autumnal flushing of the ewes. Cwmwhitton have for the past 3 years been using these genetics to help improve the number of lambs produced from the flock.

Calculating the fertility index provides a useful indication of the efficiency of ewes at different body-weights. The figure is calculated by dividing average ewe weight at tupping by the groups scanning percentage.

The typical range in results is between 2 and 3 with 2 indicating a lower level of prolificacy for the given weight of the ewe and 3 indicating a high level of prolificacy. This is a useful indication to help identify when heavier ewes are not leading to sufficient lamb numbers.

Fig 1. Fertility index of Aberdale and non-Aberdale ewes

Breed type	Typical ewe weight at tupping	Typical scanning results (%)	Fertility Index
Aberdale	66kg	186	2.82
Non-Aberdale (3/4 Texel)	66kg	158	2.39

Key performance indicators and statistics

1. Bull beef have been finishing at 15 months and at heavier weights (around 700kg).
2. Bull beef fed on crimped cereals increased Gross Margin by £35/head compared to cattle fed on dry rolled cereals.
3. Scanning results have increased by approximately 30%, which could result in a further 26 lambs reared and a potential increase in income of £1,950 per 100 ewes in the flock.



Q&A with Gareth

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“The beef efficiency and feeding advice received has made a marked difference on the business. Our bull beef are now finishing a month earlier. They are also heavier and the extra weight also helps to compensate for the falling prices we have seen recently.”

What changes have you implemented that will continue to be a part of your farming system for the future?

“Closely monitoring the performance of the suckler herd will remain an important management tool. My target is to achieve even greater weaning weights – I believe this is key to maintaining good performance. The introduction of Aberdale genetics increased the scanning percentage and therefore I will continue to use Aberdale genetics within the flock.”

Gareth's viewpoints

- 1 You may have done something a certain way for years but this doesn't mean you shouldn't change it and try something new – it might work out better for you.
- 2 Monitor growth rates regularly to ensure rations are correct and animal performance is hitting target.
- 3 Integrate cropping plans to suit livestock demands throughout the year.

Blaenbwch

Rob and Tracy Powell

Blaenbwch, Builth Wells, LD2 3HU

FARM DETAILS

- Demonstration farm since December 2011
- 370 acre upland farm plus Rhosferig a 320 acre farm along with a grazing licence on Epynt Mountain
- Ranges from 400ft to 1,350ft

CATTLE DETAILS

- 200 – 250 Welsh Black sired cattle

SHEEP DETAILS

- 1,800 ewes (various types) split into three flocks

OTHER DETAILS

- 95 acres of arable/mixed forage crops
- Glastir Entry

KEY OBJECTIVES

1. Trial alternative crop/forages to reduce reliance on purchased concentrates
2. Control costs – monitor and evaluate costs associated with each enterprise to see where potential savings could be made
3. Improve soils and grass leys to maximise stock production and performance
4. Embrace EID to see what benefits it has to offer
5. Move to a rotational grazing system on some of the land to evaluate potential

Key projects

1. LUCERNE AND RED CLOVER FORAGES

The potential of lucerne and mixed red clover/grass silages were compared last year, with and without inoculation at Rhosferig. Silages were fed to four groups of cattle and those fed red clover grass silage weighed 10kg heavier compared to those fed lucerne at the end of the project. Treating the lucerne silage made no difference to daily liveweight gains (DLWG). The performance difference was due to the protein in the lucerne being much more degradable, and the crop was a late cut crop with a low dry matter content of 24%, which could have limited intakes. However, differences were recorded in cattle performance fed on red clover/grass silages (see Fig 1).

Fig 1. Performance of cattle fed on red clover silages



2. USING EID TO OUR ADVANTAGE

EID has made monitoring stock performance much easier, and as a result Rob is now weighing more often than ever. Last year the cattle averaged 1.4kg/DLWG over 138 days of summer grazing from May to September, producing 971 kg/ha. They now aim to beat this performance next year and improve the margin per kg.

3. Paddock Grazing and Measuring Grass

Once grass growth was measured, it became apparent that there was huge variability across the farm from field to field. The aim is to get the average closer to the best paddock, in order to double the acres for stock rearing.

Q&A with Rob

What have you learned as a result of the projects?

"The grazing project has allowed me to produce more grass from the same ground. The EID and forage project have helped me monitor exactly how much my stock consume, work out the costs and assess how the animals are performing. All the Farming Connect projects help me monitor and evaluate costs which is critical."

Of all the advice, what has been most beneficial to your business?

"Rotational grazing has demonstrated how to manage and utilise grass more effectively. I now measure grass with a plate meter and manage my grassland far more efficiently."

What are your plans for the future?

"The results of rotational grazing have been so good; I intend to increase my stock numbers by an extra 400 ewes. Measuring performance through EID will enable us to cull poor performers and retain ewe lambs from the better ewes to increase the productivity of the flock."

Key performance indicators and statistics

1. GRASS GROWTH STATISTICS

	Tonnes of Dry Matter DM/Ha	Average Daily Growth kg/DM	Round bale equivalent per ha (approx.)
Farm average	6.9	25	34
Re-seeds average	12.5	45	62
Best paddock	16	58	80
Poorest paddock	3.5	13	17

2. CATTLE

- 29 cattle grazed on 5.2ha from 10 May to 15 August, with the area extended to 7.2ha from 15 August until 27 Sept.
- Area split into four paddocks with shifts at four to six day intervals.
- Average weight at beginning of project = 374kg.
- Based on an intake of 3% of body weight per day they would have consumed around 1,800 kg/DM of grass over the project period.
- With the average cost of 1kg/DM of grazed grass estimated at 8p/kg this equates to £144.
- With an average LWG per animal of 191kg valued at £1.80/kg the added value over the project period was £343.80 leaving a £199.80 per head margin before deducting all other associated costs.

Fig 2. Cattle performance

	Days	Daily live-weight gain (DLWG)	kg gained per animal	Total gained	Hectares grazed	LWG/Ha
10 May – 10 June	30	1.8 kg	54	1,566 kg	5.2	301 kg/ha
10 June – 10 July	30	1.4 kg	42	1,218 kg	5.2	234 kg/ha
10 July – 15 August	36	1.1 kg	39	1,131 kg	5.2	217 kg/ha
15 August – 27 Sept	42	1.35 kg	56	1,624 kg	7.2	225 kg/ha
Totals / Averages	138	1.4 kg	191	5,536 kg	5.7	971 kg/ha

Rob's viewpoints



1 Always try new things. I was told I couldn't grow lucerne at Rhosferig but did so very successfully.



2 We are utilising grassland much more efficiently by measuring grass and using paddock grazing.



3 Using EID as a sheep management tool proved really useful.



4 I am a great believer in farmer-led learning. Farming Connect discussion group meetings and open days provide a great opportunity to discuss what works well at farm level with fellow farmers.

Aberbran Fawr

Andrew and Kay Matthews

Aberbran, Brecon, LD3 9NG

FARM DETAILS

- Demonstration farm since December 2011
- 50 acres owend
- 480 acres rented
- Ranges from 450ft - 900ft

CATTLE DETAILS

- 50 suckler cows - predominantly first cross Limousins, together with several second cross heifers and some Charolais

SHEEP DETAILS

- 500 breeding ewes - mixture of Mule and Mule cross ewes

OTHER DETAILS

- A successful 'pick your own' soft fruit enterprise
- 130 acres of wheat, barley, beans, oats and roots
- Glastir Entry

KEY OBJECTIVES

1. Maximise utilisation of both inorganic and organic fertilisers to improve farm economic and environmental sustainability
2. Improve flock management
3. Trial different methods of re-seeding to find out which is most cost effective
4. Reduce concentrates usage without reducing productivity
5. Extend the 'pick your own' season

Key projects

1. IMPROVE FLOCK MANAGEMENT

Prolapse was an issue at lambing in 2012, with 6% of the flock affected. It was suggested that the ewes were possibly gaining too much weight on root crops in mid-pregnancy and the amount of home mix offered was too high, particularly with the high protein red clover silage fed. Feeding a high starch mix all in one feed (at over 0.5 kg per day) would be disturbing rumen pH and upsetting digestion and rumen outflow – so smaller feeds would be better. Rations were formulated based on silage analysis and recommendations

were given to reduce the level of concentrate and to offer in two feeds in the day, once offering more than 0.5 kg/day. Incidence levels were then reduced to ~2.5% in 2013 and 2014, with ewes regularly body condition scored to avoid them going over a score of 3.

The results demonstrated the need to monitor ewe condition and check ration formulations to avoid excessive weight gain from mid pregnancy through to lambing.

2. NO TILL SPRING BARLEY PROJECT

A 2ha field was sprayed with glyphosate at the full application rate and after adequate time had elapsed for the product to be effective, half the area was ploughed and cultivated and seed sown with a combi-drill. The remaining area was direct drilled (zero till).

Fig 1. Project results

	Conventional/ hectare	Zero tillage/ hectare
Fresh Yield grain(t)	4.5	2.6
Dry Matter yield grain(t)	3.8	1.9
Straw Yield (t)	2.7	1.2
Grain Value Nov 2012 @£180t	684	345
Straw value @ £100/t* (less bale cost @£2.50/bale)	248	110
Total Crop Value (£/ha)	932	455
Total Cost of Production (£/ha)	502	514
Gross Margin (£/ha)	430	- 60

2012 was an extremely wet year which impacted on yields, furthermore slug damage contributed significantly more on the zero tillage treatment. Zero tillage operations would also have been £51/ha less without the drying costs which occurred purely due to the oversight of slug control.

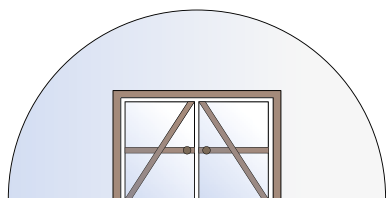


3. TABLE TOP STRAWBERRY PROJECT

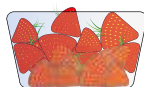
A table top system has recently been set up in polytunnels and this £5,600 investment has added a number of benefits to the business. Growing plants at table top height has removed the threat of soil-borne diseases which were starting to become a problem. In the sheltered environment of polytunnels there is also the potential to yield up to 15% more fruit and strawberries can be grown over a longer period extending the season and making the enterprise more viable. Added benefits for the customer include easier picking at table top height and shelter from the wind and rain.

Aberbran were on track to produce 1,000kg of strawberries from the polytunnel this year, and as an additional polytunnel comes into production next year, they aim to produce 4,000kg.

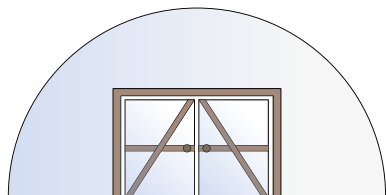
Strawberry production 2014



1,000 kg



Projected strawberry production 2015



4,000 kg



Key performance indicators and statistics

1. Maintain or lower prolapse incidence which is currently at 2.5%
2. Aim for body condition score (BCS) 3 for mid-pregnancy

Q&A with Andrew

What has been the biggest benefit of being a demonstration farmer?

"I've made full use of all the advisers and mentors I've worked with and learnt from them all. I've discovered with for example, seed selection, that the cheapest is not always the best. Also, by recognising the importance of condition scoring, ration formulation and feeding ewes in late pregnancy, I've reduced the risk of prolapse."

What has made you the biggest financial savings or increased your profitability?

"By my calculations I have saved over £1,500 per annum on fertiliser applications thanks to having a nutrient management plan."

Andrew's viewpoints



1

Carry out a nutrient management plan. It is a valuable document which when used correctly forms the basis of a grassland management plan.



2

Don't overlook condition scoring, ration formulation and feeding ewes in late pregnancy to reduce the risk of prolapse.



3

Ploughing and combination drilling of spring corn has produced the most consistent results and the use of slug pellets in the min till system is a necessity.

Guddr

Richard and Jane Powell & family

Llanbedr, Crickhowell, Powys, NP8 1TA

FARM DETAILS

- Demonstration farm since February 2012
- 400 acres
- Ranges from 600ft - 1,200ft

CATTLE DETAILS

- 77 head of cattle, Limousin cross and Blue cross suckler cows.

SHEEP DETAILS

- 1,000 Talybont Welsh mountain ewes running on the Black Mountains

OTHER DETAILS

- 20 acres fodder beet
- 18 acres maize
- 18 acres wheat

KEY OBJECTIVES

1. Make more efficient use of home grown feeds
2. Assess potential of maize under plastic
3. Plan a trace element supplementation programme
4. Use soil nutrient testing to optimise muck and fertiliser use to cut costs

Key projects

1. TRACE ELEMENTS

Following suspected selenium deficiency in calves during the winter, a grass silage sample was analysed for minerals and trace elements and selenium levels were found to be very low. Blood samples confirmed lower than adequate levels in cows and calves, and selenium/Vitamin E deficiency was confirmed. Selenium acts with Vitamin E to protect tissues against oxidation and breakdown of cell membranes and

deficiency is seen as white muscle disease (causing sudden death) in growing animals, lack of vitality in new born calves, ill thrift, retained placenta and poor fertility.

The cattle were treated with selenium injection and subsequently blood selenium levels were monitored under veterinary supervision.

2. MAIZE UNDER PLASTIC

Growing maize under plastic promotes earlier maturity and greater yields of starch. In 2013, a trial comparing

seven different varieties under plastic (with Accumen grown conventionally) gave the following results:

Fig 1. Performance of maize

	Fresh weight tonnes/acre	Starch kg/acre	Dry matter tonnes/acre
Justina	18.2	1.9	5.2
Award	17.2	3.3	5.8
Accumen	14.1	1.6	4.2
Asgard	15.4	2.5	6.2
Ambition	9.2	1.9	3.7
DM002	9.7	3.8	1.7
Justina 2	24	2.5	6.9
Accumen Conventional	18.6	1.9	5.3

It was a good year for maize growing and the conventionally grown maize in the adjacent field grew well and yielded well. There were additional upfront costs with the plastic mulch which worked out

at £135 per acre on this farm, but this cost was outweighed by the additional yield of maize and potentially the ability to establish a subsequent crop.

Key performance indicators and statistics

PERFORMANCE OF BULL BEEF

The ration is based mostly on home grown feeds (grass and maize silage, crimped wheat, maize distillers grain and rapeseed) to promote a growth rate of 1.55kg/day for the 350kg Charolais cross bulls:

Fig 2. Ration data

ME (MJ/kg DM)	11.7
Protein (%DM)	15.6
Cost £/head/day	1.54

Fig 3. Slaughter data averages for group of 9 bulls August 2014:

Age (months)	15.8
Weight (kg)	363
Grade	-U2
Price (£ per kg)	3.37

At 0.76 kg carcass gain per day with a value of £2.56, the bulls have generated a margin over feed of £1.02 per head per day.

Q&A with Richard

What has been the biggest benefit of being a Farming Connect demonstration farm?

“Looking at the business review to identify potential downfalls within the business and explore different options of farming practices that could be trialed.”

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

“Animal health planning and working closely with the vet to improve the overall health of the stock, through regular fertility testing of bull and blood testing for trace element deficiencies.”

What are your plans for the future?

“Continue trying to improve the farm whilst looking into the potential to diversify into another business sector to help compliment the farm business. Also consider environmental schemes and renewable energy.”

What changes have you implemented that will continue to be a part of your farming system for the future?

“Supplementing the calves with selenium; continue producing bull beef as it allows a quick turnover of animals should we be unable to sell stores due to TB restrictions; and maintaining an animal health plan and keep reviewing it through working closely with my vet.”

Richard's viewpoint

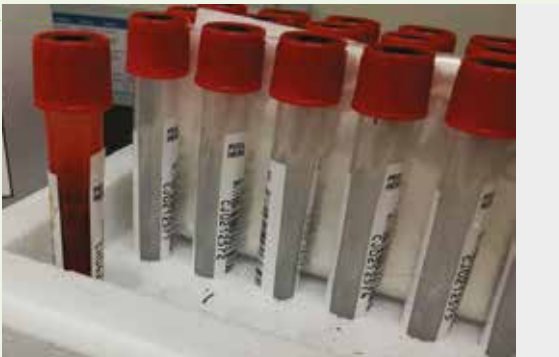
1 Take advantage of any information provided by experts, their wealth of knowledge is key and their advice can increase the potential of a farm.



2 Improve animal health by working closely with the local vet to identify any potential issues within the stock and eradicate them before they become a problem.



3 Don't spend unnecessarily - identify trace elements deficiencies through blood testing and target accordingly.



4 Nutrient management planning is key to growing high yielding crops. 'Get the basics right' to ensure soil nutrient levels are correct before planting a high value crop. This is vitally important and should be the starting point for any farmer considering growing arable crops.



Gelli

Richard and Susan Howells & family

Cymmer, Port Talbot, SA13 3NN

FARM DETAILS

- Demonstration farm since March 2012
- 1,850 acres
- Ranges from 900ft - 1,800ft

CATTLE DETAILS

- 25 spring calving Limousin cross and Blue cross suckler cows
- 25 pedigree Limousin cows producing around 10 breeding bulls for sale annually

SHEEP DETAILS

- 2,250 ewes, all Glamorgan Welsh Mountain
- 300 Texel cross Welsh ewes

OTHER DETAILS

- 20 acres rape/turnips
- Glastir Entry

KEY OBJECTIVES

1. Work to correct soil pH, phosphate and potash levels to produce more home grown feed
2. Use veterinary advice to formulate worming and fluke policy
3. Add value to the pedigree herd by performance recording
4. Formulate a trace element supplementation programme

Key projects

1. LAMB PERFORMANCE

As a result of previous seasons' disappointing lamb performance and in the light of past blood sampling work which indicated low cobalt (B12) levels in lambs, a project was initiated to determine the efficacy of two methods of cobalt supplementation.

Three groups of lambs were marked and allocated to treatment groups at random:

1. Cobalt bolus, commercially available
2. Cobalt sulphate home prepared drench to be repeated monthly
3. Control group

The lambs were weighed, with FEC and blood cobalt (B12) samples taken on a monthly basis.

Fig 1. Effect of cobalt bolus and drench on lamb performance

	Control	Cobalt bolus	Cobalt drench
Lamb weight (kg)	31.3	34.1	33.8
Lamb weight gain (g/day)	26	174	158
Blood cobalt (pmol/l)	103	122	116
FEC (epg)	30	30	30

Lambs treated with cobalt performed significantly better, but blood cobalt levels were still below the reference level of 188pmol/l in all three groups.

Key projects

2. ESTIMATED BREEDING VALUES (EBVS)

The Howells' recognise that bull buyers are increasingly demanding performance and calving ease EBVs. They now weigh their pedigree calves every 100 days with data inputted onto BASCO, the web based performance recording system. Muscle and fat depth scanning of the loin is also being

carried out by a technician for all animals between 350 to 500 days of age. The latest official Limousin breed evaluation has generated the following EBV figures for the bull 'Igor' compared to three other bulls in the same contemporary group on the farm:

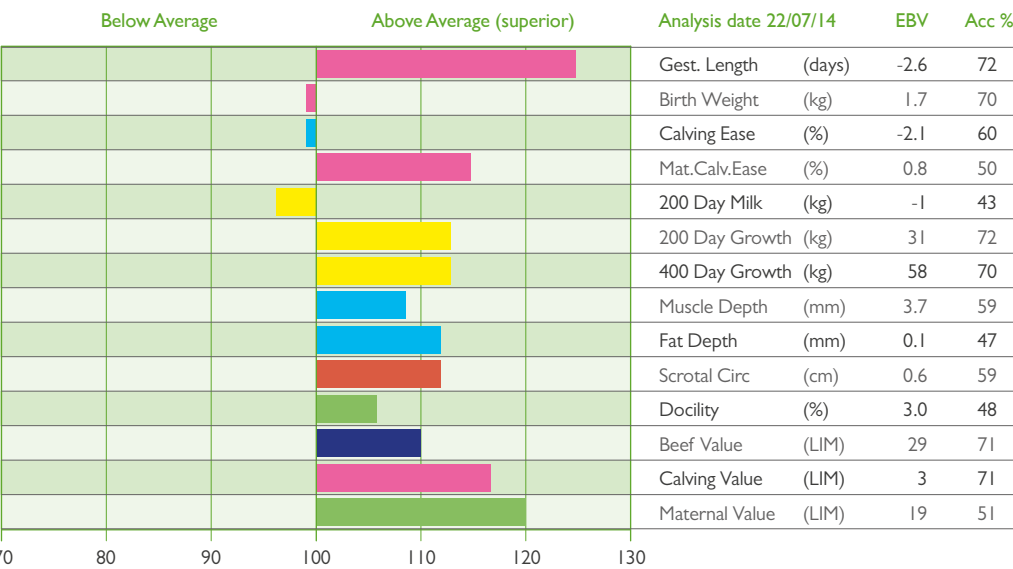
Fig 2. EBV comparison

	Actual adjusted 400 day weight (kg)	400 day growth (EBV)	Muscle depth (EBV)	Fat depth (EBV)	Beef value (LIM)	Beef value accuracy (%)
IGOR	647	58	3.7	0.1	29	71
3 BULLS	592	37	3.1	0.13	23	63

Weighing and scanning all the bulls has therefore identified the bull Igor as having better genetics for growth and muscling compared to his contemporaries and

has contributed to generating a more dependable accuracy figure for the overall index of Beef Value which increases confidence in the figures for bull buyers.

Fig 3. Igor EBVs



3. MYOSTATIN (DOUBLE MUSCLING)

Myostatin genes promote increased meat yield and quality and better feed efficiency. Pedigree Limousin replacement heifers at

Gelli have been tested for variants carried to help make more informed breeding decisions.

Key performance indicators and statistics

- 1. Lambs reared per ewe (hill flocks)
 - Top third 1.34
 - Gelli 1.24
 - Average 1.13
- 2. Concentrate costs per ewe at £18 against £13 average figure for hill flocks.
- 3. Suckler cow margins for cross bred herd 103% higher than hill suckler cow average.
- 4. Pedigree herd margins 165% higher than average for hill suckler cows.

Q&A with Richard

What has been the biggest benefit of being a Farming Connect demonstration farm?

"Highlighting the nutrient management plan and re-evaluating the grassland management. We have used the results to buy lime in bulk and correct the P and K figures."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"We assumed the farm was lacking in sulphur and undertook the sulphur project with Farming Connect; it showed we did not need to use sulphur in the fertiliser therefore saving some costs."

What changes have you implemented that you will retain?

"Without a doubt less routine worming, as we now do regular faecal egg counting (FEC), but more regular fluke drenching. Testing has also shown there was no worm resistance on the farm."

Richard's viewpoints



1 Getting a nutrient management plan for the whole farm has indicated where we need to focus our resources.

2 The use of electric fences are essential to ensure the lambs eat the whole crop of brassicas and also reduce the run back.

3 Undertaking faecal egg counting work has enabled us to plan our worming strategy.



4 In response to bull buying demands, we have recorded the weights of calves to generate more accurate EBVs.

Great House

Peter & Sue Williams

Llansoy, Usk, Monmouthshire, NP15 IDE

FARM DETAILS

- Demonstration farm since June 2012
- 170 acres owned
- 100 acres rented
- Ranges from 131ft to 322ft

CATTLE DETAILS

- 30 suckler cows (various cross breeds)
- Beef cross dairy calves are bought in to rear as suckler replacements

SHEEP DETAILS

- 400 ewes comprising of mostly crossbreds (with small Badger Face and Balwen flocks)

OTHER DETAILS

- 10 acres of wholecrop
- Glastir Entry

KEY OBJECTIVES

1. Improve flock productivity and lamb performance
2. Provide and safeguard opportunities for the children to work at home on the farm
3. Improve systems of clean and dirty water separation on the farm
4. Improve soils and grass leys to maximise stock carrying potential

Key projects

1. TRACE ELEMENTS

Initial forage analysis for minerals and trace elements at Great House showed potential problems with copper, zinc and selenium, plus very high levels of iron and aluminium that could further lock up copper and prevent animal utilisation. Ongoing blood monitoring in cattle and sheep has revealed selenium and copper levels below the adequate reference levels with cobalt just adequate.

Following veterinary advice, cows and calves are now treated twice yearly with a bolus containing copper, selenium, cobalt, iodine, manganese and zinc, and administration of cobalt and selenium boluses to the ewes 2 months prior to lambing.

Fig 1. Blood selenium levels in calves (January 2013)

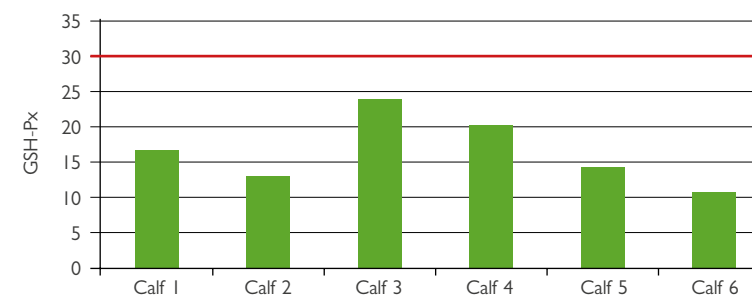


Fig 2. Blood cobalt levels in calves (January 2013)

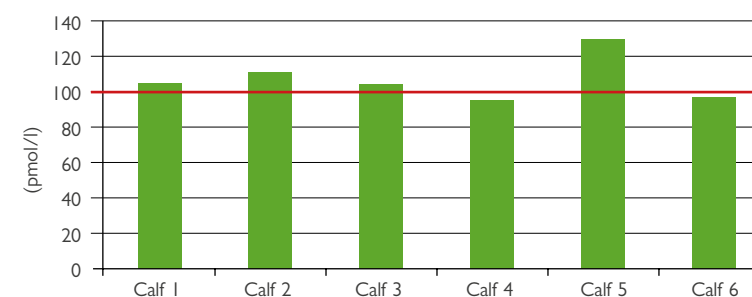
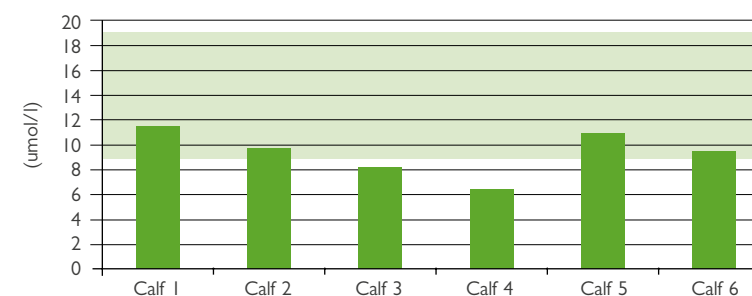


Fig 3. Blood copper levels in calves (January 2013)



Key projects

2. DUNG BEETLES

Dung beetles are said to have significant benefits as they:

- bury and shred livestock dung
- reduce pasture fouling
- increase soil nutrients
- provide palatable grass growth
- promote soil aeration
- reduce livestock parasite burdens on pasture

Initial project investigations found that dung beetle numbers at Great House were fairly low, few different species were present and dung decomposition rates were slow.

Decomposition increased after additional dung beetles were released and this benefit will potentially increase every year as the beetles breed and the population increases on the farm. Wormer use has now been modified to ensure that the regime is less toxic to dung beetles.

3. REDUCING SLURRY PRODUCTION

Calculations on the existing set up at Great House showed that the 100 beef cattle required over 900m³ (nearly 200,000 gallons) of slurry store capacity, 90% of which was contaminated rain water. Providing this capacity could range from £20,000 for an earth bank lagoon to over £63,000 for a shuttered concrete store.

With a total investment of £1,200 Peter has reduced the volume of dirty water and slurry produced at Great House by:

- Installing new guttering and downpipes
- Removing cattle from open yards
- Relocating feed barriers to shed openings
- Installing concrete lips to prevent effluent seepage onto clean yards

Key performance indicators and statistics

FLOCK PERFORMANCE

Following administration of cobalt and selenium boluses the following effects were noted:

- Stronger lambs born
- Better lamb growth rates
- Reduced number of poor thrive lambs

Lambs drawn June-July 2014	+98%
Weight lamb carcass	+0.2kg
Lamb value first draw	+£14
Timing first draw	30 days earlier

Q&A with Peter

What has been the biggest benefit of being a Farming Connect demonstration farm?

"The biggest benefit has been without doubt meeting the farm advisers, gaining their expert advice and working with them to implement positive changes on our farm. The impact of their work will help us to decide the future direction of our farm business over the forthcoming years."

What have you tried that otherwise you would not have?

"I would never have got involved with something like the dung beetle project, if I had not been a demonstration farm. However the outcome was fascinating and it has fundamentally changed the way we select and use wormers on the farm."

What changes have you implemented that will continue to be a part of your farming system for the future?

"The changes to farm infrastructure were simple and cost effective. The new system is easier to manage and less labour intensive and so has significant cost savings. Harvesting rainwater from building roofs has also considerably reduced the expense of water for the farm."

Peter's viewpoints



1 Listen and talk to the advisers whenever you have the opportunity - there is always something new to learn.

2 Be open minded about the potential business opportunities that your farm has to offer.



3 Assess and monitor the trace element status of your flock/herd. It is vital to maintain stock health and maximise growth rates.

4 Large financial investment isn't always necessary to make a positive change and achieve the results needed.

Ifton Hill

Paul and Melanie Rymer

Portskewett, Chepstow, NP26 5TU

FARM DETAILS

- Demonstration farm since March 2012
- 150 acre tenanted on the Severn estuary
- 600 acres rented, mainly grass
- Ranges from 16ft to 40ft

CATTLE DETAILS

- 150 Holstein cows
- 150 dairy heifers calving at 2 years old

OTHER DETAILS

- 40 acres of winter wheat
- 40 acres of spring barley
- 40 acres of oil seed rape for sale
- 60 acres of maize grown for the dairy cows

KEY OBJECTIVES

1. Improve profitability by utilising forage more efficiently
2. Improve dry cow management to maximise lactation potential
3. Concentrate on disease control and prevention to improve productivity
4. Increase dairy cow numbers to maximise milk contract potential
5. Aim to become more sustainable by not being so reliant on Single Farm Payment

Key projects

1. BVD CONTROL AND ERADICATION

After an initial blood screen in young stock showed exposure to the BVD virus, the search for PI animals was carried out by testing the bulk tank for virus. On the same day as the TB testing was carried out, all animals that were not supplying milk to the bulk tank; dry cows; cows under treatment and young stock were all ear tissue sampled. After culling any PI animals, all calves born were subject to 'tag and test' for 12 months resulting in the herd now being free of BVD.

2. REDUCING MASTITIS AND SOMATIC CELL COUNTS

Detailed analysis of mastitis records resulted in a herd diagnosis of predominantly 'environmental' mastitis of both 'dry period' and lactating period origin. Alterations to the dry period and fresh calver environment during the winter months are now being monitored in terms of new infection rates and new clinical mastitis case rates.

3. IMPROVE FEED EFFICIENCY

Grass and maize silage quality is excellent at Ifton Hill and while overall concentrate feed rate is good at 0.31 kg/litre there is scope for increasing milk from forage to target 3,000 litres. Making a marginal reduction in feed rate of 0.02kg/litre would deliver a saving of approximately £3,500 annually. Ensuring the optimum balance of energy and protein sources in the ration while challenging the cows to utilise forages better will be key to reducing costs while maintaining milk yields.

Key performance indicators and statistics

Fig 1. Ifton Hill herd data

	Autumn 2012	Spring 2014	Cost/benefit per case/cow
Concentrates (kg/litre)	0.36	0.31	£108 per cow
Mastitis (cases/100 cows)	39	44	£325 per case
Heifers age at calving (months)	26	24	£70 per head

Q&A with Paul

Is there anything you've tried that you would not do again or any lessons learned?

"After a trial on out-wintering young stock, we will not be doing this again because of the problems of having to cope with adverse weather conditions."

Of all the advice, what has been most beneficial and/or had the biggest impact on your business?

"Carrying out detailed monitoring of mastitis cases highlights persistent offenders and identifies the stage of lactation when cases are most likely to occur."

What are your plans for the future?

"Our plans are to increase dairy herd numbers."

What have you tried that otherwise you would not have?

"Building a complete picture of the BVD status of all the cattle in one day during TB testing by taking a bulk milk sample and ear tissue sampling dry cows, cows under treatment and all young stock."

What changes have you implemented that you will retain?

"Using and analysing farm collected data more efficiently to make an impact on our costs and outputs which ultimately improves profitability."

What simple action have you carried out that has reaped a big benefit?

"On the advice of a buildings consultant, a windbreak was installed alongside a problem shed for pneumonia in young stock. Antibiotic treatments have now been virtually eliminated and growth rates improved."



Paul's viewpoints

1

Pay more attention to quality of silage and test grass prior to mowing for sugar and nitrate levels



2

Work closely with your vets to monitor and manage disease issues. It's important to continue long term disease control programmes e.g. monitoring mastitis, BVD control.



3

Carry out regular soil sampling to correct imbalances and to ensure maximum response from nitrogen fertiliser



Farming Connect

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- Benchmark performance
- Share best practice
- Increase efficiency

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