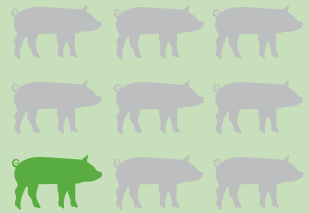




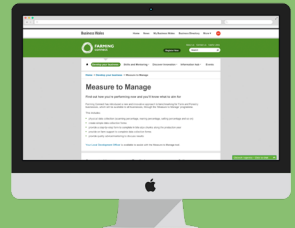
GLYNLLIFON

Profitable pigs at the brand new Farming Connect Innovation Site pig unit.



MEASURE TO MANAGE

Farming Connect is launching a new innovative approach to benchmarking for farm businesses in Wales at the Winter Fair.





INTRODUCTION



WELCOME to the sixth edition of Farming Connect's FC technical publication. Here at Tyreglwys one of 12 Farming Connect Demonstration Sites we are making the most of the remaining Autumn days, with winter routines by now in full swing and fewer daylight hours to get round all the daily tasks.

We are pleased to report a really successful year in the show ring, winning heifer champion in the Ayrshire breed at the Royal Welsh. We also enjoyed a very successful all breeds all Britain calf show in Malvern, where Gethin our son took part in the calf handling for the first time and did a remarkable job, coming 11th out of 22 forward.

The cows are milking well and we are on track to maintain our average annual yield of 8,500 litres and are taking far more from forage than normal. This autumn we have sown some high-digestibility grass, aiming to improve performance from forage next year, and are trialling the use of Timothy in one ley. Our farm is quite wet on the grazing side, but we are determined to try to get more from our grass and will be measuring it for the first time during the 2017 grazing season.

As a Demonstration Farm we are trialling Selective Dry Cow Therapy, to date not only has the trial saved us money we are also achieving our targets in improved cow health and reduced mastitis through sustainable use of antibiotics.

We are also trialling cameras that have been installed in our calving boxes. We aim to assist with calving earlier if needed, and not at all where possible to avoid damage, evidence shows that calving problems can impact ongoing fertility. Remote monitoring means you can keep a close eye on the cow from anywhere (including my phone) without interrupting her progress. This is saving unnecessary trips to the pen and we are monitoring much more, but disturbing cows and calves less in their early hours.

Geraint Thomas - Farming Connect Demonstration Farmer

Farming Connect
Register for the programme today!

08456 000 813

<https://businesswales.gov.wales/farmingconnect/farming-connect-registration>

Glynllifon Innovation Site

Productive and profitable pigs key at brand new Farming Connect Innovation Site pig unit

Following the recent completion of the brand new pig facilities at Glynllifon, the first Farming Connect project there is now up and running. Pedigree Welsh and Rattlerow Landroc hybrid pigs, which stock the new unit, will be evaluated for performance and productivity during a long-term Innovation Site project.

Each individual piglet is tagged with EID tags at birth, allowing data collection to be a simple and quick process. Every piglet will be linked to its mother using regular sheep Shearwell Data software, already available at the site.

Piglet weight at birth, mortality, health issues, feed intake and weight gain are all factors which will be monitored during the project with the aim of identifying the most prolific breeding lines both within the Pedigree Welsh and Hybrid herds.

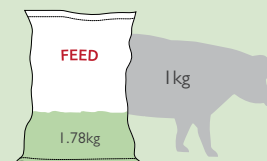
"Gathering this data will allow us to maximise the performance of the herd by gaining a better understanding of the impact of genetics on a vast number of parameters, including daily live weight gain, feed conversion efficiency and days to slaughter, said Rhodri Owen, Farm Manager at Glynllifon.

"We will utilise the information collected when making key management decisions, for example, when selecting our replacement gilts."

As a result of this project, Glynllifon hopes to...

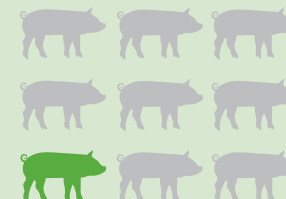
1.

Achieve a feed conversion ratio of **1.78** which is currently achieved by the **top 10% EU herds**.



2.

Aim towards reducing the pre-weaning mortality rate from **12.5%** to below **10%**.



3.

Increase the number of pigs sold per sow per year by two pigs, potentially leading to an increase in pork sales by **£10,175/year**.



The project will provide baseline data for other projects which will be held at the site in the near future. A project exploring the potential of the Improvac vaccine to improve welfare, performance and the meat eating quality of both untreated and treated entire male boars will begin at the site during winter 2016.

Focus Sites located throughout Wales, will demonstrate 'one-off' projects or trials on a wide range of topics. Results and outcomes from the projects will be disseminated at regular open events.

LAN FARM

Lan Farm, Cynwyl Elfed, Carmarthen is an organic 172ha upland farm running 120 head of black Limousin suckler cows producing 10-14 month old calves for sale. The emphasis is on making best use of home grown forages, including red clover silage.

Improving suckler cow efficiency by optimising mature cow body weight

The project aims to evaluate changes in cow mature weight and cow efficiency in terms of weight of calf weaned as a percentage of cow weight. This is against a background of change from native to continental genetics together with the use of high growth EBV sires to produce replacement heifers.

Weights of cows and calves at weaning have been collected at Lan Farm for the past four years as part of a previous Demonstration Farm project, producing the following results to date:

COW EFFICIENCY

(Calf Weight as % of Cow Weight)

	2012	2013	2014	2015
1st Calvers	50.8 (308)	49.3 (303)	48.7 (316)	53.2 (316)
2nd/3rd Calvers	55.2 (327)	51.3 (308)	46.5 (307)	46.4 (307)
Older Cows	51.2 (310)	52.4 (312)	52.7 (316)	52.2 (319)

The overall herd average was 50.9%. The figures in brackets are the average calf weaning weights (first calvers were weaned/weighed at a later calf age).

Lower cow mature weights would result in reduced cow maintenance costs thereby increasing efficiency and profitability. Data collected to date demonstrates that keeping a smaller cow does not necessarily result in the production of lighter calves.

COW EFFICIENCY

(by cow weight bands)

Cows	Number	Average Cow Weight	% Efficiency	Weaning Weight
< 550	7	525	55.8	293
551 – 600	19	583	53.6	313
601 – 650	14	623	52.3	326
651 – 700	13	672	47.2	317
701 – 750	6	721	43.8	316
751 - 800	3	775	42.1	321

1st Calvers	Number	Average Cow Weight	% Efficiency	Weaning Weight
< 550	2	536	59.5	319
551 – 600	8	582	57.4	334
601 – 650	7	624	47.3	295

The % efficiency is weight of calf at weaning divided by weight of cow at weaning.

Additional information collected and analysed in undertaking this project will include:

- The effect of calving at two-years-old in comparison to three years old on subsequent cow mature size
- Recording individual body condition scores in relation to calving interval to determine whether cows that produce the heaviest calves are able to maintain reproductive efficiency

Join us for the

'MAINTAINING EFFICIENCY IN THE SUCKLER HERD'
event at Lan Farm on

Tuesday the 13th of December at 12:30pm
where we'll be discussing -

- Optimum cow mature size using latest project results;
- Calving heifers at 2 year old v 3 year old using farm data from spring 2016;
 - Maintaining reproductive efficiency; and
- The importance of disease control in ensuring maximum productivity

For more information on this event please contact

Delana Davies
01437 890233
delana.davies@menterabusnes.co.uk

Reducing BRD (Bovine Respiratory Disease) in housed young calves



The main enterprise by brothers Arfon and Gerallt Jones at Llindir is intensive indoor calf rearing for the beef trade, with an annual throughput of 1,400 calves. The calves come on to the unit at 3-6 weeks of age and are reared until approximately 150kgs before they are moved on to a finishing unit.

The calves come from numerous units all over the UK, and are tested for BVD (Bovine Viral Diarrhoea) using the tag and test method. Despite high welfare standards at the unit, due to the nature of the enterprise, pneumonia incidence is higher than desired.

Excellent stockmanship coupled with close analysis of milk intake of each individual calf means that affected animals are identified very quickly and treated accordingly resulting in a very efficient enterprise.

Despite this high level of performance, the Jones brothers were looking for further improvements in DLWG and reducing their vet and medicinal costs, particularly the use of antibiotics.

One of the specialists involved in this project is Vet Dai Grove White who along with a group of final year students from Liverpool University has been monitoring the health of calves by using a BRD (Bovine Respiratory Disease) Scoring tool developed by the University of Wisconsin. This has identified a number of mildly affected calves which would not have otherwise been detected,

as there are no clear visual signs. Despite this mild infection, Dai believes the performance of such calves will be compromised, with a substantial reduction in DLWG thus reducing efficiency within the business.

As with most animal health issues, prevention is better than cure, and to this extent the project will be evaluating the use of a probiotic added to the milk as a method of reducing dependence on antibiotics. The calf environment is also a key factor in the incidence of BRD, and with this in mind vet Sara Pederson who specialises in building design has been drafted in to look at what can be done to further improve the housing.

"The importance of stocking density and building design in reducing BRD instances in young calves cannot be over stated. Dairyland Initiative research suggests that a target of at least 2.8m² bedded area per calf and at least 1.8m³ of air space should be provided. This coupled with a consistent and constant supply of fresh air without draught will drastically reduce the BRD challenge experienced by young calves."

Technical Officers

Catherine Nakielny -
Red Meat Technical Officer (Mid Wales)



Catherine has always been involved in the family upland sheep farm in Talley, near Llandeilo. She continues to work on the 400-acre farm and says she is very bossy when it comes to the 800 Welsh cross ewes! The ewes lamb outdoors in April and an increasing focus is being placed on grassland improvement and rotational grazing.

Lamb rearing rate is an average of 150% for the ewes and ewe lambs are tupped most years. Swedes and forage crops are grown as winter feed in-combination with silage for the sheep that are outwintered on the higher parts of the farm.

Catherine studied animal science at Aberystwyth University, followed by a PhD in sheep breeding. After completing her PhD she worked for a sheep breeding company for five years, then as an independent sheep consultant for seven years, while remaining heavily involved with the family farm.

Catherine completed a Nuffield Farming Scholarship in 2011 on improving efficiency of lamb production, travelling to Ireland, New Zealand and Australia, and is also involved with the Farmers' Union of Wales and National Sheep Association.

Catherine was appointed as the Farming Connect Red Meat Technical Officer for Mid Wales in October 2016, as maternity cover for Lisa Roberts.

Catherine's areas of expertise:

- Worm control
- Sheep breeding
- Health planning
- Key performance indicators
- Cost-benefit analysis

Farming Connect Measure to Manage online tool

Farming Connect is launching a new innovative approach to benchmarking for farm businesses in Wales. The 'Measure to Manage' programme allows businesses to record historic and current performance data and compare their performance with other similar businesses as well as benchmark their performance against Aberystwyth University's Farm Business Survey data.

The Measure to Manage online tool will be accessible to all registered Farming Connect businesses, and those who are members of Farming Connect discussion groups will gain access and on-farm support to complete data collection.

By inputting data to the Measure to Manage online tool, you will be able to measure your performance against amongst others the following Key Performance Indicators:

- Gross Margins (per ha and per ewe/cow basis)
- Flock/herd output
- Variable costs
- Forage costs

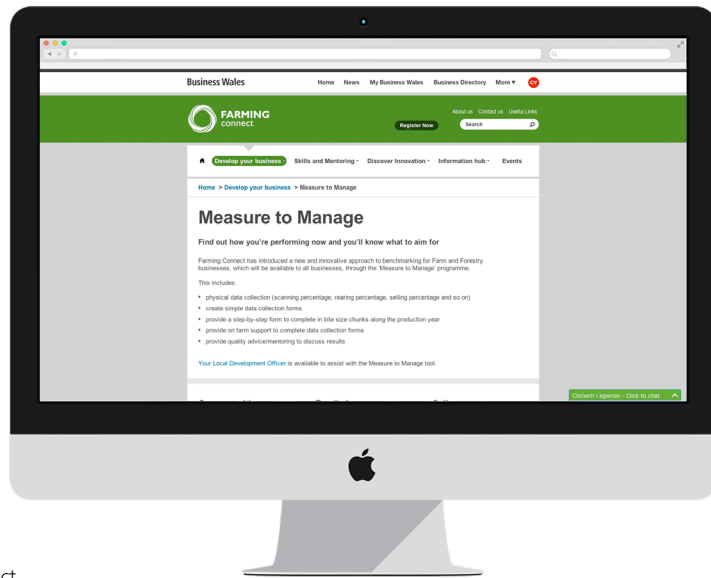
The online tool will also allow you to assess and compare your performance against:

- Your farms historical performance
- Other group members
- Top 10% performers
- Farm Business Survey figures

Comparing against these criteria will enable you to identify specific strengths and weaknesses in your business and identify areas for improvement so that you as a business can progress to or remain in the top 10%.

For more information and assistance with the Measure to Manage online tool, please contact your local Development Officer by visiting the following webpage <https://businesswales.gov.wales/farmingconnect/your-local-development-officer>

Or alternatively, if you are at the Winter Fair, call by the Farming Connect stand to give the Measure to Manage online tool a go for yourself.



5 OPTIONS FOR LAMB FINISHING

At Aberbranddu, near Pumsaint, Carmarthenshire, Irwel Jones sells 800 lambs a year to Dunbia after finishing on grass reseeded and silage aftermath with some concentrate, between September and the end of November. Five finishing systems have been put to the test for a new project and to evaluate lamb performance and cost-effectiveness for the 850-acre hill farm.

The project is comparing 310 male lambs, which have been split into five equal groups all having an average weight of around 32kg, for finishing on five different systems:

- Forage rape and Italian Ryegrass mix
- New reseed
- Old ley only
- Old ley with concentrate supplements
- Concentrates indoors

"We want to finish lambs faster and at heavier weights, so it will be interesting to compare the different options and see which help the lambs perform best," says Irwel.

"However, the cost of the finishing method also needs to be justified. One of our main aims is to be less reliant on bought-in feed, so by doing this project I can put a value on different ways of finishing and have faith that we are using the best method for us in the future."

The project started in early September and lambs will be weighed every fortnight through to fattening by the end of November.

The project will record the number of days to finishing, the kg of lamb sold per hectare, volume of concentrate used, any health issues and all costs and return on investment.

Leading sheep consultant Lesley Stubbings says farmers must carefully consider their options for lamb finishing, while ensuring they do not impact on next year's lamb crop.

"Farmers cannot afford to let lambs rob ewes of grazing they need to get back in the right condition for tupping. This will not only affect the scanning percentage of the flock, but it will also have a knock-on effect on lamb growth next year," says Lesley.

"The best place to start is to weigh the lambs that are left, work out how much weight they need to gain and match this to what is available. The bottom line may be that to protect the ewe flock, some lambs have to be sold as stores, rather than bringing them in and finishing on concentrates. As a rule of thumb, by the autumn, assuming they are healthy, lambs need 7-8kg of feed for each kg of gain, so at £200 per tonne, that will cost 150-160p per lamb per kg of gain."

An open day will be held at **Aberbranddu, Cwrt y Cadno, Pumsaint** on **14 December 1pm-3pm** to disseminate the results, all are welcome.

For further details contact **Menna Williams - 07399 600146** menna.williams@menterabusnes.co.uk



Applying technology for early lameness detection

Lameness is a costly problem on dairy farms, and can make a cow vulnerable to other issues. AHDB Dairy estimate that a quarter of dairy cows in the national herd are affected by lameness at any one time and mobility is becoming increasingly important to consumers. Lameness is also one of the most visually obvious welfare problems, impacting on the overall image of the dairy industry.

Usually a pain response, lameness is a change in the way a cow moves which can be assessed easily and cost effectively on farm by mobility (or locomotion) scoring. Early detection of problems can reduce their severity, so regular mobility scoring is considered best practice, however it can be subjective and time consuming.

Technology could play a greater role in future mobility monitoring. At Trawscoed Innovation Site a 'Step Matrix' system has been installed to measure the force and direction of hoof placement of cows exiting the parlour. This allows daily analysis of data, earlier detection of locomotion changes and recovery monitoring.

When cows face health challenges, their behaviour changes. GPS technology can also be utilised to monitor behaviour changes which indicate lameness before the cow's gait has visibly altered. Technology is commonly used in housed herds for monitoring fertility and health traits, but is less common in the grazing herd. A Farming Connect project will be run throughout the 2017 grazing season monitoring and scientifically evaluating cow behaviour to explore ways of identifying lameness earlier. GPS technology will be used to evaluate changes in the proportion of time spent displaying three behaviours – grazing, resting and walking. Patterns will be developed and deviations from 'normal' could indicate early onset lameness. Look out for updates on the technology project and others commencing in spring 2017.

More information can also be found on our website, including a short film on digital dermatitis treatment, best practice footbathing and other key messages from veterinary expert Sara Pedersen. www.gov.wales/farmingconnect

Agrisgôp egg producers

Collaboration and vision has helped to secure a viable future for four Welsh family farms, who have invested a total of £3 million diversifying into free range egg production.



Free range egg production presented a viable option to develop enterprises capable of generating sustainable incomes for the families, who were all in the initial stages of progressing their business ideas when they joined a Farming Connect Agrisgôp group led by Elaine Rees Jones.

Arwel and Delyth Jones farm 56-acre Parc Farm at Llangwm, near Cerrig y Drudion, Conwy. They have a flock of 100 ewes but wanted an enterprise that would allow one of them to work on the farm full-time. Delyth has given up her job to run their 16,000-hen unit, which is scheduled to be operational in November.

At Rhallt Ycha Farm in Llanfair Caereinion, Powys, Daniel Bates has left his job as an agronomist to work with his wife Trudi in their 32,000 bird unit.

"This enterprise will allow us to sustain the farm going forward," said Daniel.

The group worked on all aspects of their new enterprises together and shared details such as dealing with banks, securing contracts, equipment choices and availability of building contractors.

Elaine Jones and her partner, Robert Corfield, have established a 32,000 hen unit at Bron y Nant, Trefeglwys, Powys, and Julian and Emma Morris are awaiting the outcome of a planning appeal before building work can start on their 40-acre holding in the Ceiriog Valley near Llangollen.

"Egg production is the only viable enterprise we could run on such a limited acreage, this is our first opportunity to get it back into a working farm," said Julian.

If you are interested in establishing an Agrisgôp group contact Farming Connect on **08456 000813** for details of Agrisgôp Leaders in your area.

ANAEROBIC DIGESTATE AS BIOFERTILISER

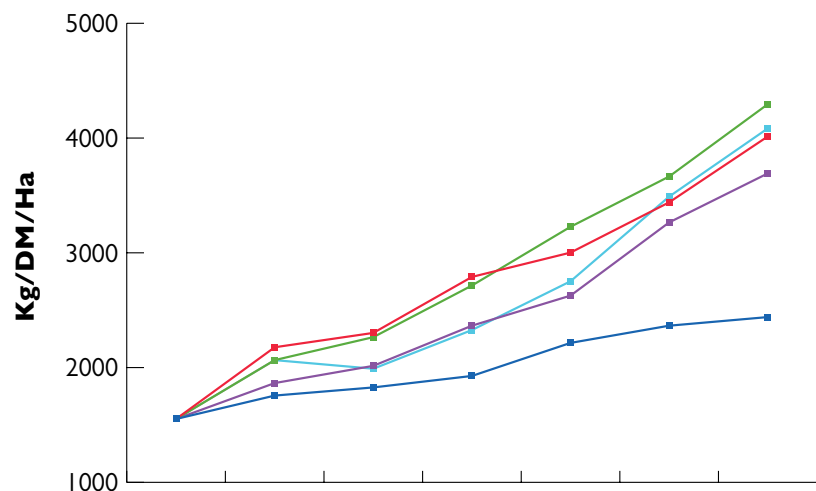
Digestate is a by-product of anaerobic digestion and a recent Demonstration Site project at Newton Farm, Scethrog, Brecon compared the use of liquid digestate to compound fertiliser.

The household food-based digestate for the project came from the Bryn Pica plant four miles from Aberdare, south Wales. The nutrient content of the digestate (in the same terms as fertiliser) was NPK 111:20:41, and the product was applied to 0.5h plots via a splash-plate, trailing shoe and disc injector at a rate of 9.11t/acre. A compound fertiliser was applied at a rate of 8t/acre (important to note the fertiliser plot received 1.11t/acre less nutrients.)

Grass growth was recorded every week for seven weeks and the results were:

Grass Growth

Grass growth was measured via a rising plate meter once a week on each plot, results are shown below.



	26 Jul	11 Aug	18 Aug	25 Aug	01 Sep	07 Sep	12 Sep
Control	1552	1756	1827	1927	2215	2365	2440
Trailing Shoe	1552	2177	2302	2790	3002	3440	4014
Disc Inj	1552	2065	2265	2715	3227	3665	4295
Splash Plate	1552	1865	2015	2365	2627	3265	3692
Fertiliser	1552	2065	1990	2327	2752	3490	4084



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Using this year's average fertiliser prices, the difference in cost between fertiliser and digestate was substantial -

Fertiliser costs (9.11t/acre) -

N = 111 units @ 28.5p/unit = £31.64

P = 20 units @ 27p/unit = £5.40

K = 41 units @ 20.5p/unit = £8.40

Total cost of compound fertiliser = **£45.40** of nutrients/acre (not including spreading cost)

Digestate cost- £2/tonne spread @ 9.11t/acre = **£18** of nutrients/acre

Digestate has been proven to be a viable option for farmers within the catchment area, not only being economical compared to compound fertiliser, but it also helps restore the natural recycling of nutrients and recycles scarce nutrients such as phosphorous. Secondly, using digestate instead of some synthetic fertilisers derived from natural gas can save energy, cut consumption of fossil fuels and reduce our carbon footprint.

It is very important to remember that digestate products need to be used sensibly and sustainably due to their high nutrient content, which Charlie Morgan, an independent soil and grass specialist highlighted during the open meeting at Newton Farm.

"If we were to use this product day in day out on grazing fields our phosphate and potash would go over required indexes, therefore there is an absolute essential importance to be doing soil tests and discussing the amount of digestate we apply," said Mr Morgan.

When being offered digestate, it is fundamental that farmers investigate the nutrient levels within the product as this varies dramatically in response to the type of input used (e.g. manures, purpose grown crops, household waste etc). Once nutrient status has been established, digestate application rates need to be matched to the soil nutrient levels.

NATURAL RESOURCES WALES

"Our natural resources are coming under ever increasing pressure and we need to use them more sustainably. The recently published State of Natural Resources Report (SoNaRR) reported that managing our soils and land use more effectively can increase the resilience of our natural resources".

"To make sure that we're making the most of our resources and soils we would also recommend that farmers sample their soils routinely. This analysis will provide essential information about the residual nutrient content in the soil so that any additional nutrient applications can be carefully targeted to meet crop requirement"

When used appropriately digestate is a good example of sustainable resource management.

EVENTS

DATE	EVENT	TIME	VENUE	CONTACT
23/11/16	Lameness Workshop	10:30 – 14:30	Llanina Arms, Llanarth, SA47 0NP	Eleri Jewell 07985 379887 eleri.jewell@menterabusnes.co.uk
24/11/16	Marketing and Diversification Surgery	09:00 – 17:00	Wolfcastle Hotel, Havefordwest, SA62 5LZ	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk
24/11/16	Winter beef rationing	14:00 – 17:00	Neuadd Goch, Adfa, Newtown, SY16 3DE	Catherine Nakielny 01970 631406 catherine.nakielny@menterabusnes.co.uk
24/11/16	Productive Pigs – Improving performance and maximising returns	11:00 – 15:00	Glynlifon Site, Ffordd Clynnog, Caernarfon, LL54 5DU	Gwawr Hughes 07896 996841 gwawrhughes@menterabusnes.co.uk
24/11/16	Reducing Antibiotic use in Dairy Herds	10:30 – 15:00	Nant Goch, Pen y Bont, Oswestry, SY10 9JG	Gwenan Ellis 07866 547894 gwenan.ellis@menterabusnes.co.uk
06/12/16	Beef nutrition and industry outlook	12:30 - 14:30	Blaencwmpridd, Synod Inn, Llandysul, SA44 6JP	Menna Williams 07399 600146 menna.williams@menterabusnes.co.uk
06/12/16	Marketing and Diversification Surgery	09:00 – 17:00	Gower	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk
07/12/16	Business Plan Workshop	09:00 – 17:00	Broneirion Limited, Llandinam, Powys, SY17 5DE	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk
09/12/16	Business Plan Workshop	09:00 – 17:00	Galeri, Caernarfon, LL55 1SQ	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk
12/12/16	Marketing and Diversification Surgery	09:00 – 17:00	Ruthin	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk
13/12/16	Maintaining efficiency in the suckler herd	12:30	Lan Farm, Cynwyl Elfed, Carmarthen, SA33 6SP	Delana Davies 01437 890233 delana.davies@menterabusnes.co.uk
14/12/16	Lamb Finishing Options	13:00 - 15:00	Aberbranddu, Cwrt y Cadno, Pumsaint	Menna Williams 07399 600146 menna.williams@menterabusnes.co.uk
15/12/16	Business Plan Workshop	09:00 – 17:00	Hotel Mariners, Mariners Square, Havefordwest, SA61 2DU	Catrin Lloyd 02920 467418 catrin.lloyd@menterabusnes.co.uk