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GROWING BUSINESS
THROUGH INNOVATION

FARMING
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ISSUE 7 - January / February 2017

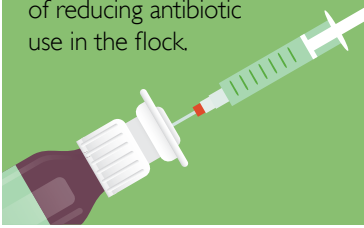
Page 7. Careful planning will help maximise sustainable use of poultry litter

FOCUS SITE
PENCRAIG, TRELECH

Understanding the practical application of novel GEBV's for Carcase Traits.

REDUCING THE USE OF ANTIBIOTICS DURING LAMBING

Plas, Llandegfan monitor ewe condition and lamb health with the overall aim of reducing antibiotic use in the flock.



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

Llywodraeth Cymru
Welsh Government

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Adding value to timber
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Events Diary
Find out what's going on in your area...

INTRODUCTION

Lambing has already started here at Great Tre-rhew after we recently increased breeding ewe numbers from 900 to 1300 over the two farms. Sponged January lambers scanned at 195%, February ewes at 185% and March yearlings at 180%, with lambing going well so far. Ewes are fluked and drenched once a year at housing, with faecal egg counts and fluke coproantigen ELISA tests now ongoing to ensure evidence based treatment and we're currently checking for anthelmintic resistance within the flock.

Early lambing works for us, catching the Easter trade and utilising home-grown feed. Strip grazing swedes over the winter ensures we have pasture for turnout of ewe and lambs. We're now looking into home-grown protein to become fully self-sufficient as we're currently buying it in for mill and mix.

We had a successful open day in December demonstrating on-farm woodland management. A 0.65 hectare of shelter belt was felled, producing 450 cubic metres of Sitka Spruce. We kept 1,000 stakes back for fencing with the remaining timber being sold on as soon as it is dry enough to transport it down to roadside.

It cost £400 for a day's planking which resulted in new toilets for our ancient barn (felled larch), oak beams, new oak doors for the house and base and beam for a new cider press. All from wood that would have otherwise been used as firewood. The value of one fallen oak tree alone after planking was over £2,000. Impressed, we're already making plans for further on-farm planking.

Jim and Kate Beavan, Great Tre-rhew Farm, Llanvetherine
Farming Connect Demonstration Site

Focus Site project at Pencraig, Trelech, Carmarthen

"Understanding the practical application of novel GEBV's for Carcase Traits"

- Dr Delana Davies: Knowledge exchange executive - Farming Connect

Already established in other agricultural sectors, Genomic Breeding Values *(GEBV's)* are now available for all Limousin sired cattle for a range of new Carcase Traits. GEBV's take conventional EBV's *(Estimated Breeding Values)* a step further by using information from animals' DNA as well as the usual measurements of performance.

Thomas and Hannah Price run a 25 cow prize winning pedigree Limousin herd on their 260 acre farm at Pencraig alongside 500 Texel x ewes. Project work on the cattle has focussed on collecting hair follicle DNA from 40 animals, including stock bulls, flushing cows, young bulls for sale and heifers retained for breeding. As well as Carcase Trait GEBV's, these DNA samples have also been tested for Myostatin variants carried to evaluate any possible correlation between Carcase Traits, Myostatin and Calving Ease.

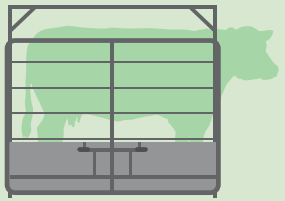
Three principal values are generated from comparing the individual animal's DNA against a 'key' that cross references information from the DNA strand with different levels of abattoir performance:

Age to slaughter GEBV (days)

Look for… High negative values (less days) for animals that will reach 350kg deadweight quicker

Carcase Weight GEBV (kg)

Look for… High positive values for animals that will reach heavier carcase weight at 600 days of age



Retail Value (index)

Look for… High positive values for animals that will achieve slaughter weight quickly and with high proportions of the high quality carcase cuts

Comparing the GEBV's generated with the percentile chart shows where the animal lies within the breed, and work has identified a difference in retail value of around £100-£150 per carcase between progeny from a high GEBV sire and progeny from a low GEBV sire.

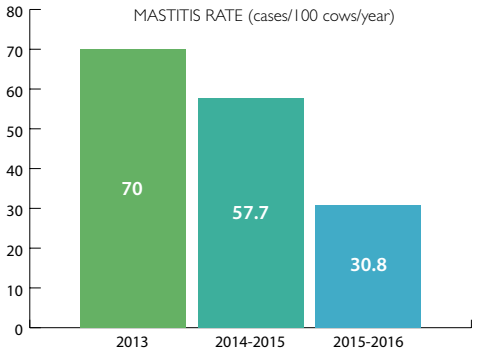
By evaluating the genes of an animal at an early age, or even evaluating its parents, we can determine the occurrence *(and number of copies)* of genes that can influence meat quality, and therefore make breeding decisions based on that information.

Embracing genomic technology will allow pedigree and commercial farmers to be more accurate in their breeding decisions, and more responsive to market needs and demands.

Cutting the rate of new clinical mastitis cases reduces antibiotic use and helps dairy farm save £55,000 a year

A WELSH dairy farm is saving a staggering £55,000 a year on cases of clinical mastitis, compared to a few years ago, after implementing the AHDB Dairy Mastitis Control Plan, which has led to a reduced rate of new cases in early lactation. This has been achieved by improved dry and calving cow management and meant a significant reduction in the use of antibiotics used on farm.

In 2013, the overall clinical mastitis rate at Nant Goch, Pen y Bont, Oswestry averaged nearly 70 cases per 100 cows/year across the 700-cow herd. When the Mastitis Control Plan was implemented in 2014-15, mastitis was costing the business an estimated £117,927 a year. However, the mastitis rate has now been reduced by 50% and somatic cell count has also decreased significantly, and in 2015-16 the cost had been cut to £62,894.



	2014-2015	2015-2016
Mastitis rate (cases/100 cows/year)	57.7	30.8
Total cost*	£117,927	£62,894
Cost/cow/year	£151.19	£80.63

** Estimated total cost calculated from farm-specific figures for the cost of a clinical case of mastitis, including milk price, feed and fertiliser cost, treatment cost, herdperson time, reduction in milk yield, proportion of mastitis cases that are severe, and cows culled from the herd due to mastitis*

In the 12 months ending May 2016, there were 256 less cases of mastitis on the farm than for the 12 months ending May 2013, meaning 1,536 fewer antibiotic tubes were used, at an average of six tubes per case.

A Farming Connect Focus Site project has continued with the Mastitis Control Plan at Nant Goch, with the aim of improving udder health and mastitis control in the herd and reducing antibiotic use. Vet Dr James Breen, a Royal College recognised specialist in cattle health and production, works closely with the herd's own veterinary practice and recently spoke at a joint event between AHDB Dairy and Farming Connect at Nant Goch.

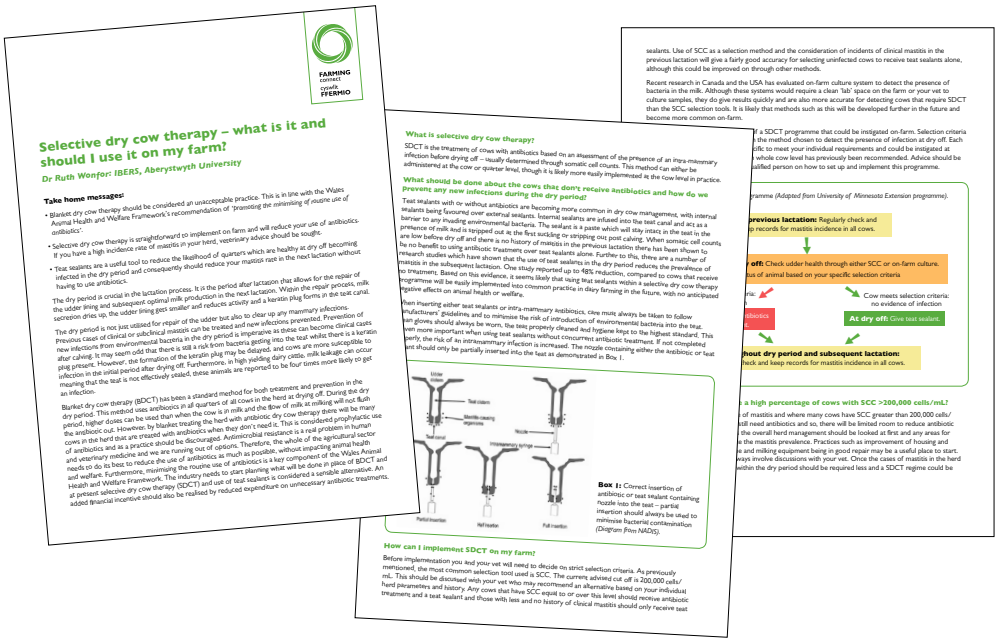
He said: *"The outstanding progress in mastitis control at Nant Goch highlights the benefits in implementing the Mastitis Control Plan – and in this case the clear impact that infections during the dry period were having in the next lactation. Through making a small number of targeted improvements to the environment and management of close to calving cows, the herd has cut the cost of mastitis which has improved cow welfare and productivity and significantly reduced the use of antibiotic on farm."*

When the Mastitis Control Plan was implemented on the farm, analysis of clinical cases and somatic cell count data showed the importance of environmental infections in the herd, originating predominately during the dry period. Management and husbandry changes have helped reduce the rate at which cows develop clinical mastitis during the first 30 days of lactation from two to three cases for every 12 cows at risk to less than one in 12 cows affected. In the 12 months ending May 2016, 97 cows were affected with clinical mastitis in the first month, compared to 247 from May 2012-May 2013.

"A combination of changes were important at Nant Goch, including cubicle management for the close to calving cows, management of the calving yard and group changes around calving. In addition to the environment of the dry cows, we have also improved hygiene at drying-off to reduce the risk of infection during administration of dry cow therapy, and moved to using teat sealant alone in low somatic cell count cows at drying-off to reduce the risk of E. coli mastitis in the next lactation."

The adoption of a selective approach to dry cow therapy has also been an important step in reducing the risk of clinical mastitis in fresh calvers, as well as further reducing antibiotic use, which highlights how the industry is working with the government to reduce antibiotic usage on farms.

The Farming Connect Knowledge Exchange Hub has produced a technical article on Selective Dry Cow Therapy. To view the article go to ***businesswales.gov.wales/farmingconnect/knowledge-exchange-hub***



Plenty of options to add value to timber from farm woodlands

THERE are *'countless opportunities'* to add value to under-utilised farm woodlands through efficient extraction and felling of timber which can then be sold or used on the farm. Restoration of neglected shelter belts also offer an opportunity to improve the management of on-farm natural resources.

At Skirrid Farm, Llanddewi Skirrid, near Abergavenny, 300 tonnes of timber has been felled from a 0.65 hectare conifer block. Alongside Sitka Spruce from the shelterbelt, some Larch and Oak from the farm were also felled, with the aim of creating valuable products for the farm business from a currently unused resource.

"The shelter belt is an unused piece of woodland of little value because it's come to the end of its days. However, by felling the trees we've added value on the yard with the timber we're collecting," said Demonstration Farmer Jim Beavan.

The Spruce was made into fencing stakes and Yorkshire boarding for use in some of the farm sheds, while the larch was cut into roofing timbers to help repair a stone barn and the Oak will be used to make a cider press. The rest of the timber will be sold and the site will be replanted with Oak, Beech and Rowan and re-established as a shelter belt.

When designing shelter belts, planting shrubs and trees together can create more layers of protection from the wind and become effective relatively quickly. As well as re-establishing shelter for crops and livestock on farm, existing areas can be a potential income source if management techniques such as thinning are deployed.

When extracting timber from farms, careful planning and management are key to success in maximising potential revenue. All relevant licences must be in place and consideration given to safe harvesting methods and transportation off site, and the specification required from the wood.

Careful planning will help maximise sustainable use of poultry litter

POULTRY litter can provide an excellent fertiliser for grassland and crops, however targeted use and nutrient management planning are essential to ensure sustainable utilisation and uptake of nutrients and in order to minimise nutrient losses.

Poultry manure is high in available Nitrogen (N) and Phosphate (P) which has led to concerns about diffuse pollution of watercourses, particularly in areas with high concentrations of poultry units. However, its high nutrient value means that poultry litter offers an attractive alternative to compound fertilisers. Based on the following standard nutrient analysis, poultry litter has a nutrient value of £18.50 per tonne, where the available Nitrogen is worth £5.50, Phosphate £8 and Potash £5.

	DM	Total N	Available N	Available P	Available K
LAYERS	35%	19kg	9.5kg/t	8.4kg/t	8.6kg/t
BROILERS	60%	30kg	10.5kg/t	15kg/t	10kg/t

"It's all about minimising waste and maximising returns by reducing the amount of bought-in fertiliser and feed" independent grassland specialist Chris Duller told farmers at a Farming Connect event. *"But you need to think about avoiding pollution and oversupplying grass systems with nutrients, so a sustainable and low-risk plan for the long-term needs to be in place."*

Analyse the manure to determine the level of nutrients and take soil samples to target fields with low P indexes of 0 and 1 or high P demand crops. Limit N application to 60% of the total crop demand and incorporate it into the ground quickly to avoid potential losses.

A Nutrient Management Plan will identify risk areas of the farm. Avoid fields with low pH, also sloping fields, bare stubble, hard frozen ground, areas prone to waterlogging and anywhere within 10 metres of a watercourse.

Storage is important to avoid potential nutrient losses, as is managing the flock's ranging area outside their housing to avoid soil damage and prevent run-off. A six to eight week rotation of ranging areas is recommended to allow soil recovery, and birds should be encouraged to roam further to prevent nutrient build-up in the immediate areas surrounding sheds.

Focus site project at Rhiwlas, Bala LEAN MANAGEMENT

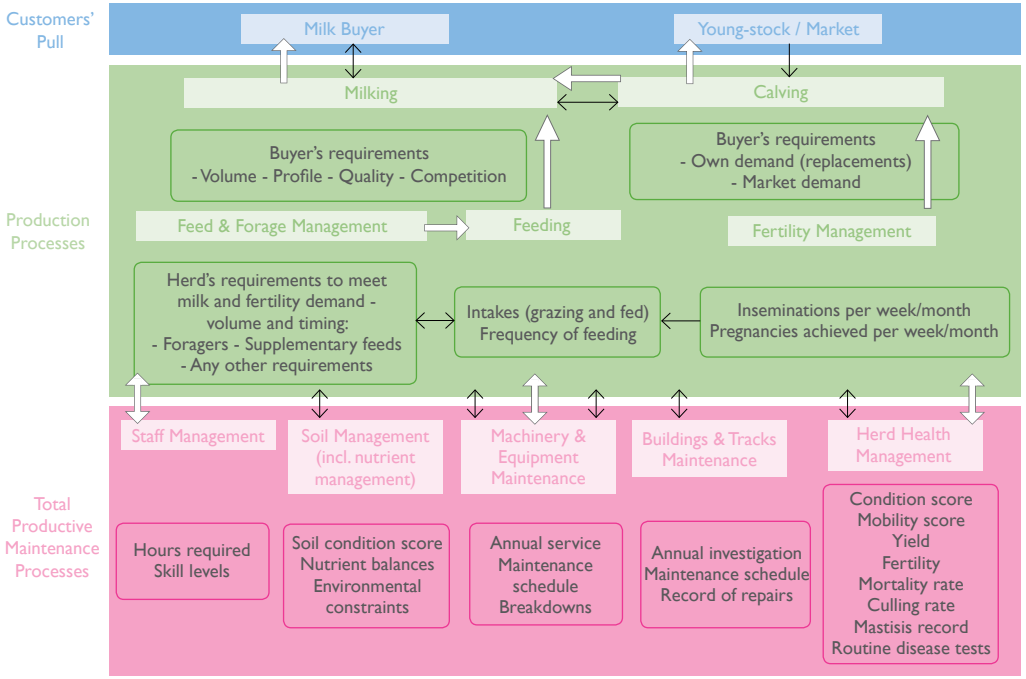
The concept of lean management *(LM)* although relatively new to the dairy sector is a well-established management tool for many in the manufacturing industry with Toyota being a famous example. The overarching objective of LM is to eliminate and prevent the creation of systematic waste and maximising value from the best use of inputs. Examples in dairying include improving herd fertility, lameness, mastitis and replacement rates. LM will identify value streams *(e.g. physical and financial KPI's)* and remove waste *(unnecessary workloads, mastitis etc.)* and is extremely valuable at finding the root cause of problems to aid continuous improvement.

Andrew Nicholas a qualified dairy lean management consultant will be working closely with Sam Carey from Rhiwlas, Bala to establish and embed LM protocols and improve practical processes that the farm staff can follow.

Piloted LM implementation through AHDB and Reaseheath College on various trial farms resulted in gains including net margin increases from 1ppl to 5ppl, hours per cow reduced from 21 to 15 hours and savings of up to 4ppl in feed and forage costs on previous years.

The Farming Connect Focus farm project will look at how LM can help Rhiwlas increase efficiencies and net margins, set achievable targets and develop professionalism and consistency within working practices of the farm staff.

A SIMPLE VALUE STREAM MAP FOR A DAIRY FARM



Reducing the use of antibiotics during lambing

by Kate Hovers BVSc CertSHP MRCVS

PLAS, LLANDEGFAN - FARMING CONNECT DEMONSTRATION SITE

Over use and misuse of antibiotics in humans and animals is a real concern. It can promote resistance in the bugs that are being treated. For example, there have been outbreaks of E.coli in lambs in the UK that are resistant to many antibiotics.

At the Farming Connect demonstration farm, Plas, Llandegfan on Anglesey, Arwyn Jones is looking to reduce the amount of antibiotics used in newborn lambs by concentrating on nutrition and condition of the ewes plus hygiene in the buildings, sheep and shepherds.

Whether animals get sick is a balance between the amount of infection they meet and their protection against that infection. Good flock management and nutrition of the ewes will help that balance.

The lambing sheds now have hand wash facilities with hot water, this is an area often overlooked and disease can quickly build up on hands, clothes and boots. Where hand wash is not available and with outside lambing, disinfectant gels can be used.

Some individual pens have been set in a separate block for any aborting or sick ewes or sick lambs. If a pen has housed a sick lamb it should not be used again until after complete clean out, wash and disinfection.

Bedding samples from individual pens and from the main lambing area will be taken and tested for bacteria during lambing to see which bacteria are potentially building up.

Arwyn always has his forage analysed and then formulates a ration. In addition, this year ewes have been blood sampled to look at their metabolic profile 2 to 3 weeks before lambing. This showed that the twin ewes were a little short of energy. The concentrate would have increased to 600g per day but was stepped up to 720g following this investigation.

Nutrition is vital for producing good quality colostrum, lambs will be blood sampled to check the amount of immunoglobulins from colostrum they have, which shows protection against disease and is an inexpensive check the vet can do.

By monitoring ewe condition and lamb health adjustments can be made as necessary with the overall aim of reducing antibiotic use in the flock. These lambs will then be monitored for DLWG and worm resistance regularly until they are sold as finished lambs. This will give us and indication on how much of a factor colostrum intake is on lamb performance.

NUTRIENT MANAGEMENT PLANNING

Farming Connect Knowledge exchange hub

Your manure resources are valuable. They need to be well managed to reduce fertiliser costs and contribute valuable organic matter that improves your soils. This becomes even more important if you're farming in a Nitrate Vulnerable Zone (NVZ) where limiting nitrate pollution and keeping water quality high is a priority.

HOW MUCH HAVE YOU GOT?

NITRAM (600KG)	MUCK (1 TONNE)	SLURRY (1000GAL)
		
207kg of Nitrogen/bag	(25%DM) contains **6**kg N, **3.2**kg P and **8**kg K	(6%DM) contains **11.8**kg N, **5.4**kg P and **14.5**kg K

These are book figures for total nutrient content *(not all the NPK is available immediately)* sourced from the Fertiliser Manual (RB209): it's a good idea to get your muck and slurry analysed to confirm the nutrient content and allow you to plan your applications more accurately.

HOW MUCH DOES YOUR CROP NEED?

You will need to calculate this taking account of:

- your soil indexes and the recommendation for the crop you're growing
- the nutrient resources you have available and the timing of application
- do make use of tools such as **PLANET** and **MANNER NPK** software ***www.planet4farmers.co.uk***, the Fertiliser Manual (RB209) and seek advice from a FACTS qualified advisor who is able to help you draw up a nutrient management plan. Through the Farming Connect advisory service farmers can access up to 80% funding towards Nutrient Management Planning. See our Farming Connect web pages at: ***http://gov.wales/topics/environmentcountryside/farmingconnect***

Help is available for you if you're farming in an NVZ
– do call the Wales NVZ helpline 01974 847000 and see www.gov.wales

We're now accepting applications for the 2017 Agri Academy!

RURAL LEADERSHIP PROGRAMME -
for the agricultural leaders of tomorrow

BUSINESS & INNOVATION PROGRAMME -
for farming innovators and entrepreneurs

JUNIOR PROGRAMME -
for those wanting to pursue a rewarding career in the food and farming industry

For more information and to download a copy of the application form, visit the Farming Connect website: **www.gov.wales/farmingconnect**

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European Agricultural Fund for Rural Development: Europe Investing in Rural Areas
Llywodraeth Cymru
Welsh Government

EVENTS

DATE	EVENT	TIME	VENUE	CONTACT
15/02/17	Improving Piglet Survival	11:00 – 13:00	Ffridd, Llithfaen, Pwllheli, LL53 6NH	**Gwawr Llewelyn Hughes** 07896 996841 gwawr.hughes@menterabusnes.co.uk
16/02/17	Fertility Management — Improving dairy pregnancy rates	11:00 – 14:00	Tyreglwys Farm, Gypsy Lane, Llangennech, Llanelli	**Jamie McCoy** 07985 379819 jamie.mccoy@menterabusnes.co.uk
21/02/17	Developing your Business workshop	11:00 – 14:30	Carmarthen	**Carys Thomas** 01970 631402 carys.thomas@menterabusnes.co.uk
01/03/17	Keeping disease OUT!	18:30 – 20:30	The Fforest Inn, Presteigne, Powys, LD8 2TN	**Gwawr Llewelyn Hughes** 07896 996841 gwawr.hughes@menterabusnes.co.uk

PDP SURGERIES

DATE	TIME	VENUE	CONTACT
06/03/17 13/03/17 27/03/17	10:00 –15:30	Monmouthshire Livestock Market, NP15 2BH	**Catherine Smith** 07896 996841 catherine.smith@menterabusnes.co.uk
06/03/17 20/03/17	09:00 –13:00	Welshpool Livestock Sales, SY21 8SR	**Gwenan Ellis** 07866 547894 gwenan.ellis@menterabusnes.co.uk
07/03/17	09:00 –17:00	Feathers Royal Hotel, Aberaeron, SA46 0AQ	**Eleri Jewell** 07985 379887 eleri.jewell@menterabusnes.co.uk
07/03/17 21/03/17	09:00 –17:00	Gelli Aur College Farm, Golden Grove, Carmarthen, SA32 8NJ	**Alun Bowen** 07896 262736 alun.bowen@menterabusnes.co.uk
13/03/17 20/03/17 27/03/17	09:00 –17:00	Menter a Busnes, Parc Gwyddoniaeth, Aberystwyth, SY23 3AH	**Eleri Jewell** 07985 379887 eleri.jewell@menterabusnes.co.uk
14/03/17 21/03/17	15:00 –19:00	Gwesty'r Bull, Llangefni, Anglesey, LL77 7LR	**Trystan Siôn** 01248 668638 trystan.sion@menterabusnes.co.uk
14/03/17	09:00 –17:00	Castle Hotel, Brecon, LD3 9DB	**Nerys Hammond** 07985 379816 nerys.hammond@menterabusnes.co.uk
14/03/17 28/03/17	09:00 –17:00	Gelli Aur College Farm, Golden Grove, Carmarthen, SA32 8NJ	**Gareth Griffiths** 07772 694112 gareth.griffiths@menterabusnes.co.uk
15/03/17 29/03/17	09:00 –17:00	FUW, 21 Stryd Fawr, Lampeter, SA48 7BG	**Eleri Jewell** 07985 379887 eleri.jewell@menterabusnes.co.uk
17/03/17	10:00 –15:30	Heads of the Valley Training, Abergavenny, NP7 0EB	**Catherine Smith** 07896 996841 catherine.smith@menterabusnes.co.uk
20/03/17 27/03/17	10:00 –17:00	Gower Golf Club, 3 Crosses, Swansea, SA4 3HS	**Deian Thomas** 07772 694952 deian.thomas@menterabusnes.co.uk
22/03/17	10:00 –17:00	Coleg Pencoed College, Bridgend, CF35 5LG	**Deian Thomas** 07772 694952 deian.thomas@menterabusnes.co.uk