PIGS

September 2017

Editor: Amy Quinn

Welcome to September's Newsletter

Ciarán Carroll

Welcome to the September edition of our monthly newsletter. It's been a busy month again for the Pig Development Department (PDD). Early in the month, the PDD had a very successful meeting with the Feed Mills and nutritionists with a view to progressing the use of a Net Energy system for feed formulation in Ireland. There'll be more about this in our forthcoming annual Pig Farmers' Conference.

The EU PIG group will shortly announce the winners of the Best Practice Grand Prix for 2017 and I'm glad to report that there's an Irish winner amongst the 8 successful awards, more to follow in next month's newsletter after the official announcement.

The National Ploughing Championships took place last week and once again the Teagasc PDD was well represented in the Teagasc tent for the three day event. It was a busy few days where we met with both pig producers and industry people, including our very own President, Michael D. Higgins and his wife, Sabine (see photo later on).

Next up is the annual Teagasc Pig Farmers' Conference 2017 which will take place on the 17th of October in the Cavan Crystal Hotel and on the 18th of October in the Horse and Jockey Hotel, commencing both days at 1.30pm. This year, the second session will be dedicated to a Nutrition Forum which will be addressed by our guest speaker, Dr. Bob Goodband from Kansas State University. There will also be a poster session with information updates on some current research projects at Moorepark. Make sure you put these dates in your diary as it is shaping up to be another great event. We look forward to seeing you there again this year.

In this issue:

Teagasc
Agriculture and Food Development Authority

What to expect from the Teagasc Pig Farmers' Conference 2017

Amy Quinn

This year's Teagasc Pig Farmers' Conference is fast approaching and preparations are well underway. It will take place on the 17th of October in the Cavan Crystal Hotel and on the 18th of October in the Horse and Jockey hotel. On both days the event will begin at 1.30pm. At this year's event we will cover a wide variety of topics relating to nutrition, preweaning mortality, farm insurance and farm investment to name but a few.

Our guest speaker this year, Dr. Bob Goodband from Kansas State University, will look at both sow and grower diets for the modern pig. He is involved with teaching, extension and research, and serves as part of a swine extension/nutrition team with programmes focused on developing, evaluating and disseminating the latest information to increase the profitability of pork producers while maintaining the highest level of animal health and welfare.

The opening session of this year's conference will cover a variety of topics and the second session of this year's conference will be a dedicated nutrition forum where a number of speakers including Pig Development Department staff and our guest speaker Dr. Bob Goodband will present, followed by a panel discussion.

Once again in addition to the presentations we will also display an array of research posters. This will give our researchers and postgraduate students the opportunity to update us on their ongoing and new reseach projects in the Pig Development Department.

We encourage all those involved in the pig sector to attend this year's conference as there will be something for everyone. The conference always provides an excellent opportunity to meet fellow producers as well as taking in the latest information that the Teagasc Pig Development Department have put together. We look forward

to seeing many of you there - so make sure you mark it in your diary. Please find the full conference programme below.

Programme

1:30 Registration/Poster session

2:15 Session 1

- **A closer look at preweaning mortality**
  Dr. Keelin O'Driscoll, Dr. Amy Quinn, Dr. Laura Boyle & Dr. Julia Calderon Diaz
- **Redesigning my farm, what are my options?**
  Michael McKeon & Emer McCrum
- **Is your pig business adequately insured?**
  Gerard McCutcheon, Ciarán Carroll & David Doyle
- **Zinc oxide ban must lead to improved post-weaning management**
  Dr. Peadar Lawlor & Dr. Carmen Villodre

3:15 Coffee Break/ Poster session

4:00 Session 2 – Nutrition Forum

- **ePM- PigSys – What the records tell us**
  Gerard McCutcheon
- **Phase and budget feeding programmes for finishing pigs**
  Dr. Bob Goodband, Kansas State University
- *Effects of feeding practices and energy and protein formulation on Irish pig performance*
  Dr. Edgar Garcia Manzanilla, Maria Costa & Susan Dudley
- **Feeding programmes for gestating and lactating sows**
  Dr. Bob Goodband, Kansas State University
- **Panel Discussion**

5:30 Close

Batch farrowing

Tomás Ryan

Almost 10 years ago now the Moorepark sow herd made the transition to our three week batch farrowing system. At the time we had a herd size of around 250 sows and it made logical sense for us to change production systems for a number of reasons. Labour shortages were the main reason and with a moratorium on recruitment in the public sector we had to be more efficient with less staff. The second major benefit to us as a research facility was that batch farrowing of sows allowed for greater numbers of pigs available in a given week to run experiments more efficiently. For any unit considering the transition to batch farrowing I have highlighted some points from when we made the transition.

During the transition period sows were weaned every 3 weeks at 3, 4 and 5 weeks of lactation and grouped into a single batch of about 35 sows. We found no problems in weaning pigs at the young age of 3 weeks because we strategically used cull sows as foster mothers. This was a big advantage for the smaller, younger pigs.

We noticed that sows that were weaned at 5 weeks took longer to return to oestrus. We believe that this was mainly down to a combination of missed heats and poor body condition. As you would expect body condition is harder to maintain over such a lengthy lactation period. This was evident in our case where sows did rear pigs upwards of 15 kilograms in body-

weight. As a result it is important to closely observe sows that are losing an excessive amount of body weight. Moreover, cross fostering must be practiced to ensure that litters are kept as even as possible on sows that will be lactating for 5 weeks. Adequate levels of creep feed must also be available to the litter in order to minimise strain on the sow; these litters can then be weaned directly onto a link feed. Feed curves may need to be reviewed before undertaking the switch over to batch farrowing to ensure that sows are able to cope with the greater milk demands of the litter.

It can be helpful for the increased numbers at weaning to wean about 30% of your piglets the afternoon before your normal weaning day to alleviate the workload on the weaning day itself. This may result in a small proportion of your sows coming into heat a day earlier than planned but we found the effects of this beneficial when it came to the subsequent farrowing day as we had a larger spread on farrowings and could give sows more attention. This works well on a Wednesday/Thursday weaning routineas you will be serving sows Sunday to Tuesday and farrowing Wednesday to Friday.

For units that operate dynamic group dry sow accommodation the 3 week batch system also works nicely. At Moorepark we select out pregnant sows at 110 days gestation for farrowing on a Thursday evening and fill our farrowing places Friday morning. Alongside this then we re-introduce the previous group of sows at day 5 of pregnancy to the main dry sow house and they take up the space vacated the night before, reducing aggression and pregnancy loss at mixing.

Regarding herd replacements, it is important to maintain batch sizes as evenly as possible. It can be a little tricky trying to synchronize gilts coming into oestrus with an existing batch. However, this can be easily rectified at weaning by adjusting the lactation length of the sow, so she will blend into the nearest batch. The use of foster sows will also help as they should be used to nurse smaller pigs from out of sync gilts. Foster sows should also be used to nurse pigs from sows who may have repeated outside of the normal cycle.

The biggest barrier to moving to batch farrowing for smaller herds is the extra farrowing accommodation that's needed. You need approximately 10% more farrowing places as you will have 6 weeks of sows in your farrowing rooms where you once had only 5 weeks. The tables below illustrate the differences in farrowing room places needed in the batch system versus the conventional weekly system.

Table 1. Batch farrowing system

Herd Size (sows)	200	180	150
Farrowing Places	64	57	48

*Table 2. Weekly farrowing system**

Herd Size (sows)	200	180	150
Farrowing Places	57	51	43

**Includes 1 free washing week*

Overall we are very happy with how the switch-over went. Any unit that operates on a comparatively small scale like ours benefits greatly for being able to pool their labour resources into different areas of the unit at the different stages of the three week cycle. However, any producer who may be thinking of making the transition should seek as much advice as they can from their advisor. As with any change to the management of a unit there are pit-falls to be avoided!

Interesting findings from the 7th International conference on the assessment of farm animal welfare (WAFL) 2017

Laura Boyle

Earlier this month staff of the PDD attended the WAFL conference in The Netherlands. This is the only conference dedicated to farm animal welfare in the world and it is held every three years. For many years the on-farm assessment of farm animal welfare was limited to scientific studies. However as animal welfare is increasingly seen as an integral part of sustainable livestock production and not just a legislative burden on agriculture in EU member states it is entering a new phase. There are now global initiatives, such as those taken by the OIE, to improve animal welfare. Food business operators (FBO's) in many parts of the world are considering more welfare friendly ways of animal production. These developments require welfare to be assessed by FBO's thereby taking welfare assessment out of research institutes and universities and bringing it into everyday farming practice.

It is against this background that the main themes of this year's WAFL emerged. There was much focus on linking animal welfare to indicators of sustainability, on the role of animal welfare in society, on refining and improving the ways in which we measure welfare on farms and on better understanding the perceptions and attitudes of all stakeholders, including producers and citizens, about animal welfare.

One of the most important talks at WAFL was given by Prof. Imke de Boer from Wageningen University on future food systems and the implications for animal welfare. The challenge to produce enough food for a growing and more prosperous population in an era of diminishing natural resources is widely acknowledged. Animal agriculture is often unfairly attributed the larger part of the blame for environmental problems. Notwithstanding this fact it is largely undisputed that the animal sector uses a great deal of natural resources and contributes to environmental issues. This challenge for animal agriculture is aggravated by the escalating debate about how animals are kept in many production systems. Prof. de Boer outlined three potential scenarios for future food production systems. The first is that we could produce more animal based food with less environmental impact. This is called 'sustainable intensification'. Examples include breeding of faster growing pigs, use of growth promoters and better prevention of disease. The second potential solution is to consume less, or even no animal based products, or at least to only eat animal based products with a low environmental impact. This is called the 'consumption narrative'. An example would be to switch from eating high environmental impact beef to chicken, fish or insects. The third is based on the belief that animals are essential for resource efficient food production as they can convert biomass inedible for humans into nutritious animal based products. Natural resources are used most efficiently if animals are fed mainly on biomass inedible for humans, also referred to as leftovers! In this scenario low

yielding ruminants grazing marginal land might be more resource efficient than high yielding ruminants fed grain and maize silage. Similarly slow growing chickens fed on insects or leftovers would probably be more resource efficient than fast growing chickens fed on grain. From Prof. de Boer's research this latter option offers the most potential to produce in an environmentally friendly and animal friendly way. Her conclusion that even still, developed countries will need to reduce their consumption of animal based products drew consternation and debate from the audience.

Research from Austria evaluated the environmental impact of systems of pig production with different implications for pig welfare namely 1) fully or partially slatted; 2) deep-straw bedding and 3) a hybrid straw flow system. Welfare, emissions and cost changes were evaluated. Results show that while pig welfare is improved in deep straw bedding, green-house gas (GHG) emissions and costs are increased. Hybrid systems which improve pig welfare can reduce GHG relative to a slatted system indicating that sustainable solutions which satisfy animal welfare, environmental concerns and economic costs are possible.

In related work public perceptions of pictures of pigs in different farm settings were evaluated. Over 1000 German citizens were shown standardised pictures of supposedly 'happy' and 'unhappy' pigs in either a slatted floor or straw setting. The way in which people evaluated the picture was always more influenced by the pen setting than by the pig itself such that the welfare of both the 'happy' and 'unhappy' pig was always rated poorest in the slatted setting. The straw pen was always rated more positive for welfare.

The results show that public perceptions of slatted husbandry systems are not altered by showing animals appearing to be in a positive or 'happy' state. They illustrate the growing challenge that slatted systems face in terms of public acceptability and therefore sustainability.

An Israeli study restrained 80 sows in farrowing crates for different durations of time after farrowing (short restraint: 3-9 days and long restraint: 14-21 days post farrowing). They found lower pre-weaning mortality, higher number of pigs weaned and lower requirement for medical intervention in sows and piglets restrained for shorter periods. The sows also had lower cortisol levels reflecting reduced chronic stress.

In Denmark they are trying to achieve continuous feedback on tail length and lesion score from the slaughterhouses to pig producers because of the ban on tail docking. Researchers from the Danish Meat Research Institute presented their work developing a method of measuring tail length and lesion score automatically on the slaughter line. They developed a vision based system which takes two pictures of the tail, one with 3D information and one with colour information. From these pictures tail length and width are measured and the area with lesions can be calculated. In Denmark entire male production is on the increase. Research presented at the conference showed that overall stress levels were higher in the abattoirs when entire male pigs were present.

Under the 'Real welfare' scheme (part of the Red Tractor Pigs Assurance Scheme) vets have been collecting data on pig welfare on British pig farms since April 2013. Over time they found a significant increase in the % of pens with

undocked pigs and in pens with substrates provided to the pigs (environmental enrichment). They also found a decrease in the proportion of lame pigs, pigs requiring hospitalisation and in pigs with severe body lesions. While the researchers from the University of Newcastle did not know if these improvements were attributable to better management of sick pigs or to better attention to animal welfare. Nonetheless the results show the benefit of including animal based measures in assurance schemes and how continuous improvement can be achieved by benchmarking such outcomes.

Following on from this Prof Dan Weary talked to us about how 'farmers trust their own data' and why this makes benchmarking work so much better than traditional knowledge transfer strategies. He advocated that advisory services and scientists abandon the traditional method of transmitting knowledge on animal health and welfare to farmers such that supposed 'knowledge deficits' are simply 'filled' with information. It is no surprise that such methods are associated with variable levels of success because they often require farmers to make significant changes to their own behaviour. Human beings in general are slow to change their behaviour – just look at how hard it is for many of us to diet or give up smoking! Prof Weary advocated that advisory services and scientists need to adopt a collaborative approach to achieving changes on farms such that all stakeholders take the journey together rather than simply telling farmers what to do. He gave the example of significant improvements in lameness in North American dairy herds where animals were routinely scored for locomotion. Using these data for benchmarking purposes farmers working together with scientists and dairy advisors were able to track their improvements relative to other farms.

Enrichment diversity: a good way to reduce biting behaviour for piglets

Aurelie Poidevin*, Oceane Schmitt & Keelin O'Driscoll

**Aurelie spent 5 months in the pig research facility from University of Paris 13, carrying out her thesis*

This spring, an experiment was carried out in Moorepark to study the impact of giving a variety of enrichment materials to piglets during lactation. We compared three ways of providing enrichment, from 1 week of age onwards. The control treatment was providing piglets with just one type of material (hessian bags), suspended at two points in the pen. One bag was provided

dangling in the middle of the floor space, with the other on the back wall. Our first 'variety' treatment had a bamboo pole in the middle, and a hessian bag on the back wall, and our second 'variety' treatment was the same as the previous, except the position of the bag and the bamboo pole was swapped. After weaning, all of the piglets were moved to the same environment, with only a commercial toy.

Figure 1. Examples of farrowing pen enrichment.

In the farrowing pen, the piglets spent more time interacting with enrichment hanging in the middle of the pen, than next to the wall. When it came to the type of enrichment, the piglets interacted more with the hessian bag than the bamboo. We also found that piglets performed different types of behaviour with the different materials. The piglets performed more biting and shaking the object with their mouths with the hessian bag than with the bamboo. This could have been because it is easy to grab and destructible. However, the piglets performed more pushing of the object with their nose while playing it, with the bamboo than they did with the bag.

When it came to damaging behaviour, we found that the group which only had hessian bags performed more biting behaviour than the piglets with more than one type of enrichment. This could be because, as seen above, having both types of enrichment provided the pigs with more of an outlet for different types of behaviour. In fact, the pigs with a variety of enrichment performed less biting not only during the lactation, but also after they were weaned.

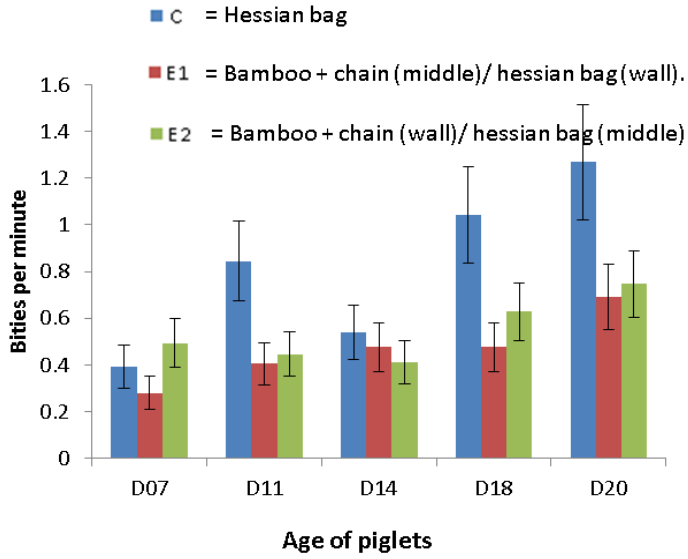

Figure 2. Biting behaviour of piglets while in the farrowing crates (D= days of age).

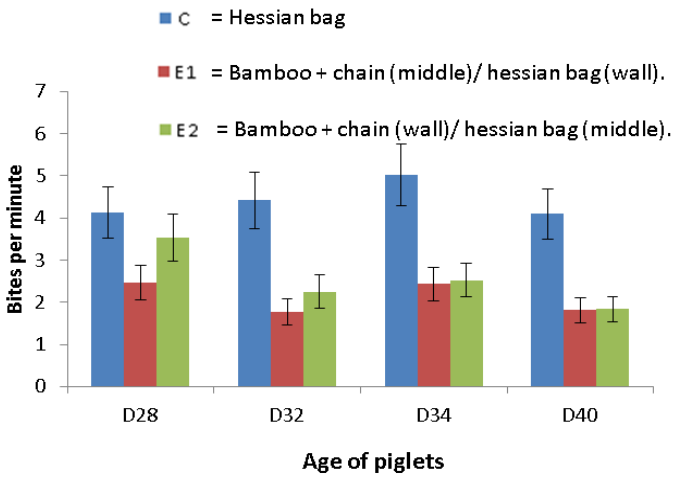

Figure 3. Biting behaviour of piglets after weaning (D= days of age).

An interesting conclusion from this experiment is that biting behaviour started much earlier than thought, during the lactation. In order to limit these behaviours, a good start could be to give the piglets different simple enrichments, such as a hessian bag, wood, chain, ball, rope, newspaper, even as early as 7 days of age, and continue to give them in the weaning period. Even for pigs, variety is the spice of life!

The National Ploughing Championship

The National Ploughing Championships took place this week and once again the Teagasc Pig Development Department were well represented in the Teagasc tent for the three day event. It was a busy few days where we met with both pig producers and industry personnel. The PDD was also delighted to welcome President Michael D. Higgins to our stand where the Irish pig industry and herd performance was discussed.

Teagasc Pig Managers course

The Teagasc PDD is still enrolling for a new Pig Farm Managers Course. If you or a member of your staff is interested in registering for the course please email amy.quinn@teagasc.ie.

Farm hazardous waste collection 2017

The Farm Hazardous Waste collection is being run again in 2017. This is supported by the DAFM, the EPA the Dept. of Communications, Climate Action & Environment and Teagasc. Since 2007 over 7000 farmers have brought hazardous waste to the collection points. The dates for delivery are from 18th of October to 28th of November. For further details on locations please contact your Teagasc Advisor or check the event leaflet at: https://www.teagasc.ie/media/website/events/Farm-Hazardous-Waste-Flyer.pdf

FAO report

In recent years meat production has being criticized as inefficiently using valuable global resources. However a new FAO report examined how efficiently global resources are used for meat production and has refuted some of this criticism. The report determined that 86% of livestock feedstuffs are not suitable for human consumption and if crop residues and by-products were not consumed by animal they would become an environmental burden. The usage of cereals to produce meat was found to require a ratio 3:1 (kg cereal: kg meat prod) rather than the previously higher estimates of up to 20:1. The report also found that meat consumption is very important for global nutrition as it contributes 18% of global calories and 25% of global protein consumption. See report on www. fao.org/more fuel for the food-feed debate

Connect with us on Twitter

Just a reminder that the Teagasc Pig Development Department have a dedicated Twitter account, @TeagascPig. Make sure to follow us to keep even more up-to-date on the PDD activities, news, events and photographs.

For More Information

This newsletter was edited by Amy Quinn, Pig Development Officer, Teagasc Moorepark, Fermoy, Co. Cork. For more information on any of the newsletter content please contact Amy at amy.quinn@teagasc.ie

Please visit our website at www.teagasc.ie/pigs/