PIGS

May 2021

Edited by Ciarán Carroll

Welcome to the May edition of our monthly newsletter.

Pig prices have been getting stronger recently and all market indications are that they will continue to rise in the months ahead. It's good to see pig prices moving in the right direction , no doubt the extra revenue can be channeled back into the farm to improve facilities and address those repair and maintenance issues that need to be sorted.

If you haven't already done so, it would also be worth considering investing more to improve your farm biosecurity. The threat of African Swine Fever continues to focus attention along Eastern European borders. A good starting point for you is to have a biosecurity audit (using the BioCheck tool) carried out by your vet. This audit is funded via the DAFM ASAH programme with Animal Health Ireland. The audit will highlight areas for improvement on your farm and help you decide where to make any necessary investments.

We have some really interesting articles in this month's newsletter. First up is an update on proposals for the Pig Research Facility at Moorepark, to test equipment and housing changes with a view to addressing queries and concerns for commercial farms here in Ireland.

Secondly, Emer McCrum gets us to focus on the weaned pigs and how best to manage them in light of recent increases in litter size and production performance.

And finally we have a guest article from Melanie Hall, DAFM who provides some insight into upcoming changes to EU Veterinary Medicines Regulations that many of you have been enquiring about.

In this issue

Teagasc
Agriculture and Food Development Authority

Thinking about the future in the Teagasc Pig Research Facility

Tomás Ryan and Edgar Garcia Manzanilla

One of the roles of the Teagasc Pig Research Facility (PRF) is to be a test-bed for new technologies and provide farmers with information on the results they can expect from using such technologies. This saves farmers the need to test these technologies on their own farms and should prevent the adoption of any innovations that are not suited for the Irish pig sector.

With the constant increase in productivity and the new regulatory challenges on animal health, welfare and ammonia emissions, the EU pig sector needs innovation now more than ever. The Teagasc Pig Development Department is considering a series of technologies to test them at the Teagasc PRF. Here is an introduction to some of them and please let us know if there is any technology out there that we should be testing.

New feeding systems

The PRF at Moorepark is a 200-sow farrow-to-finish farm working in 3-week batches of 28 sows each. Pregnant sows and gilts are fed with Schauer ESF stations and by a Big Dutchman Dry Pro Exact system in lactation and service. Growing-finishing pigs are fed with 2 different systems; the Big Dutchman Dry Pro Exact systems for dry feed (with wet-dry single space feeders) and the Big Dutchman Hydro Air system for liquid feeding (with short troughs). These systems have worked perfectly during the last 5 years despite the high number of trials carried out and the systems are currently being calibrated and the software has been updated to obtain the highest level of precision which is required research.

Figure 1. Image of the kitchen room for the Babyfeed piglet feeding system in the Moorepark Pig Research Facility.

In the case of piglets, one of the technologies that is becoming more popular on pig farms is supplementary milk systems. In the last month, we have commissioned in the Teagasc PRF a Babyfeed piglet feeding system (Figure 1) as part of project PigNutriStrat (Peadar Lawlor). This system allows not only the supply of milk but also liquid feed. The system has been installed in half of the farrowing rooms (28 places) and 1 of our 3 weaner rooms (30 pens). The Teagasc PRF is currently producing 15.5 pigs born alive per sow each farrowing, thus this system may not make a big difference in the number of pigs weaned. However, we would expect the new system to improve growth of the piglets pre- and post-weaning. The economic analysis of using this system will be key for decision making in Irish farms.

New farrowing systems

The Teagasc PRF is equipped with 56 conventional farrowing crates with a pen size of 1.850m x 2.500m = 4.625 m^2 and 6 loose crates (figure 2)

with a pen size of 2.150m x 2.500m = 5.375m^2. Having some loose crate pens has allowed us to get used to this system and test to what extent these crates are competitive compared with the conventional farrowing crates in research carried out by Keelin O'Driscoll and Orla Kinane. The loose crate pens have proven to be as good as the conventional ones in terms of pre-weaning mortality and piglets have shown better performance. This better performance may be due in part to the bigger size of the pens, but loose crates also favour better welfare for the sow which can benefit milk production and result in better piglet growth.

Figure 2. Picture of the loose farrowing crates installed in the Teagasc PRF currently.

At the moment, piglets are weaned at 28 days of age with and average weight above 8kg. The pen size in our conventional farrowing crates is becoming too small and we are considering moving half of our farrowing pens to a bigger pen size of 6.0 m^2 (2.500 x 2.400) and loose crates. This would indeed reduce the number of pigs produced in each batch and will affect our management of the unit, but we have increased our productivity in the last two years from 25 to 30 pigs/sow/year and the finisher rooms are often at capacity, even though we had future proofed our space requirements for increased productivity at design stage. The new size of pens would also allow a 30d lactation according to the longer gestation length that we are observing in our sows, closer now to 117d, and the weekly management would be more convenient.

Low emission finishing facilities

The finisher stage is probably the section in pig farms facing the biggest challenges to comply with European regulations. The pressure at EU level to produce pigs with intact tails according to current regulations and the need to reduce ammonia emissions requires changes in finisher facilities that, at the moment, are not well defined. Some of the options available have prohibitive cost, may not be suited for Irish conditions and farmers cannot be sure that they would achieve the outcomes they need.

It would be unfair to expect farmers to test these changes in their farms, thus in the Teagasc PRF we are planning to build a pilot facility in near future including slurry scrappers and partially slatted floors among other changes to explore options for the Irish pig sector. We are using Schauer's NatureLine design as a loose framework for discussion but with more affordable costs and adapted to the reality of our situation in Ireland.

The need for a dynamic space

The technologies described in the previous sections require big investments and are installed as part of the farm. However, there are items of equipment that could be tested in separate facilities before going to full scale in the farm. For this, Teagasc are looking at developing a dynamic space in an old building of the PRF that can be easily modified to test different equipment or facility design. As an example of this, we are discussing testing different types of equipment for euthanasia of pigs on farm and see which one is more suited for commercial farms. We are also discussing new facilities for gilt development and management.

This is the list of improvements that we are considering at the moment in the Teagasc Pig Development Department. It obviously depends on funding available, and it may not be possible to test all these technologies next year. However, we are cognisant of the need to be ahead of what is happening in Irish commercial farms and provide farmers with the best information via our advisory team. Again, let us know if there is any technology out there that you think we need to try?

Weaning Age - not just a number

Emer McCrum

With new EU regulations on veterinary medicines taking effect from January of next year followed closely by a ban on the use of zinc oxide at therapeutic levels in June, a renewed focus on top class management and care of newly weaned pigs will be at the heart of adjusting to these significant changes. This necessitates a multifaceted approach with emphasis on health, hygiene, nutrition, welfare, environment and weaning management amongst others. Weaning age is an important component of weaning management and has become more topical in recent times as strategies to cope with the impending legislative changes are explored.

In the last decade, the national average weaning age recorded on the Teagasc ePM has increased from 28 days in 2010 to 30 days in 2020. When compared to some of the larger pig producing countries in Europe, Ireland is at the upper end of the scale and just behind Denmark at 31 days. The graph below indicates the average piglet weaning ages in a number of European countries.

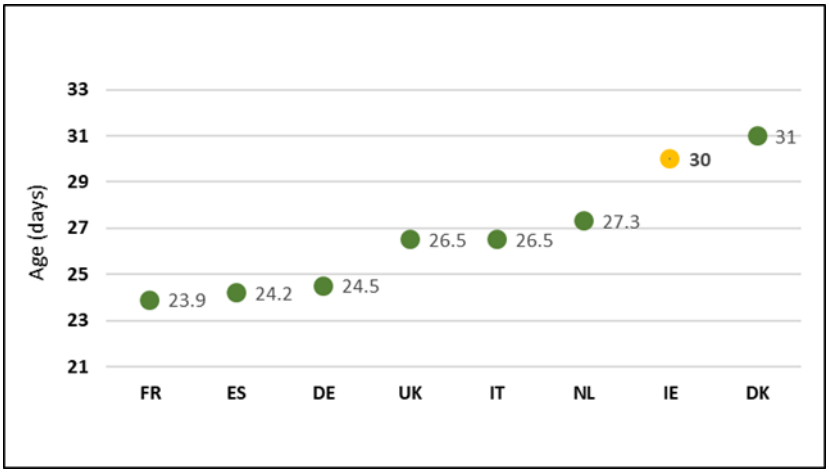


Figure 1: Source Interpig 2019

The table above illustrates the seven day variation in weaning ages that exist between some countries in Europe. Even in Ireland the age at weaning ranges from 24 days right up to 34 days. Minimum EU welfare standards stipulate that pigs should not be weaned at less than 28 days unless the welfare or health of the piglets or dam will be adversely affected. In such cases, pigs may be weaned into specialised housing at no less than 21 days, hence there is a minimum weaning age in place across Europe. Individual factors such as genetics, health status, productivity, management, available farrowing and weaner facilities etc. each influence the weaning age and are farm specific. Therefore, a sweeping recommendation on ideal weaning age isn't possible and instead the purpose of this article is to discuss some of the main considerations and implications of weaning age on farm.

Weaner performance

As we know, weaning age plays a key role in preparing young pigs for the nursery, growing and finishing stages. The housing, feeding and management must be impeccable for earlier weaned pigs if problems with thrive and health are to be minimised or avoided. That said however, younger pigs have a less developed gut with poorer appetites, lower daily liveweight gain and inconsistent growth rates post weaning a common feature. A more exacting weaner environment is also required to sufficiently manage and care for these animals. Research has shown far fewer problems when pigs are weaned at 28 days as heavier pigs at weaning show better post weaning adaptation, have greater feed intakes, lower removal rates and are more efficient in terms of growth and feed conversion during the next four weeks. Research has also found that this benefit follows pigs through to sale as every 1kg of

additional weaning weight equates to 3kg at sale, with animals quicker to slaughter weight or heavier at sale. The table below details the effect of weaning age on growth performance to 10 weeks of age.

	Weaning age (weeks)		
	3	**4**	**5**
Mortality	14%	1%	4%
Average Daily Gain	363g	402g	476g
Average Daily Feed Intake	560g	621g	680g
Feed Conversion Ratio	1.57	1.55	1.43
Weight @ 10 Weeks of Age	24.4kg	24.7kg	26.7kg

Figure 2: Source Lawlor et al. (2003) & Leliveld et al. (2013)

Antibiotic usage

A study comparing farms across Europe found that units weaning at a younger age often used more antibiotics between birth and slaughter. It was concluded that when weaned at a higher age, the animal is more resilient and therefore less susceptible to pathogens resulting in a reduced need for antibiotics. In Scandinavia for instance the weaning age is typically higher, with Finland at 31.4 days and Sweden at 31.1 days, and these countries are the most modest users of antibiotics in Europe. Research from the US found similar results and concluded that increased weaning age had a significant impact on the wean-to-finish closeout, marginally decreased overall losses and increased the capacity to reduce antibiotic usage in the grower stage. Research by Peadar Lawlor on post weaning gut microflora found more undigested feed in the less developed gut of younger weaned pigs, and higher E. coli counts in 3 week compared to 4 week weaned pigs. This is significant for both antibiotic and zinc oxide usage.

Sow reproductive performance

The age at which pigs are weaned influences not only the performance of the weaned pig but also the subsequent reproductive performance of the sow. The minimum weaning age in Europe ensures the sow has sufficient time to recover from the previous pregnancy as uterine conditions are optimal from 21 days post farrowing onwards. Consideration therefore must be given to implications at the upper end of weaning age. Lactation is the most taxing phase of a sow's productive life and an extended weaning age puts the sow under additional pressure to produce milk for larger piglets. Without careful nutritional management, the sow may struggle to do this resulting in a higher risk of bodyweight loss, slower return to oestrus and a reduced subsequent pregnancy rate. A thorough review of lactation intakes and sow milking ability is required before any adjustments are made to the weaning age.

Some farms favour earlier weaning because it can enhance overall farm output. As weaning age goes up, litters per sow per year and pigs produced is reduced. For instance, a 500 sow farm increasing the weaning age from 28 to 34 days will shift the litters per sow from 2.36 back to 2.27 and reduce the numbers sold by 525 pigs per year. The heavier and more efficient older pig at weaning however will maintain these benefits through to sale and compensate for the reduction in throughput with an additional 141,558kg DW sold per annum.

The ideal weaning age is essentially a balance between the sow and her piglets. This delicate balancing act should ensure the sow's subsequent reproductive performance is not compromised while for her litter, the goal is to ensure as smooth a transition as possible at weaning with minimum check to help maximise post weaning growth potential.

EU Veterinary Medicines Regulations and What They Mean For You and Your Farm

Melanie Hall

Department of Agriculture, Food and the Marine

New Regulations on veterinary medicines (2019/6) and medicated feed (2019/4) will apply from January 2022 and will have a marked influence on antimicrobial prescribing and usage throughout Europe into the future. The main focus of the new Regulations is to protect human health and addressing the challenge of antimicrobial resistance (AMR) has been the key driver for much of the content in these new Regulations.

EU Regulation on Medicated Feed (EU 2019/4)

Medicated feed is one of the oral routes to administer veterinary medicinal products to animals and is generally used to treat and prevent disease in large groups of animals, in particular pigs.

The aim of Regulation EU 2019/4 is to harmonise at a high safety level the manufacture, marketing and use of medicated feed and intermediate products in the EU and to reflect technical progress in this field. It seeks to support EU actions to fight antimicrobial resistance by

a. Banning the use of antimicrobials in medicated feed for prophylaxis and growth promotion;
b. Restricting the veterinary prescriptions for medicated feed containing antibiotics ;
c. Establishing harmonised limits to control cross-contamination of antimicrobials into non-target feed;

Changes in how medicines can be prescribed for medicated feed

The term veterinary written direction (VWD) will no longer be used and you will require a veterinary prescription for medicated feed. Before a prescription for medicated feed can be issued, a veterinary practitioner will need to perform a clinical examination or other proper assessment of the health status of the animal(s). Medicated feed can only be prescribed for a diagnosed disease.
The Regulation states that a prescription for medicated feed containing antibiotics must be filled within 5 days of being issued, which means you have 5 days from the date on the prescription to get the medicated feed dispensed by the mill. Practicalities as to how this will be implemented have yet to be finalised.

Use of antimicrobials in medicated feed

Animals can no longer be treated with antibiotics in feed as a preventive measure in case they get sick. Animals can only be treated with feed medicated with antimicrobials as “in-contacts” following diagnosis of bacterial disease in the group by a vet when the risk of spread of an infection is high and the consequences of the infection are likely to be severe. These changes are significant and will require the sector to change how antibiotics are administered currently.

EU Regulation on Veterinary Medicinal Products (EU2019/6)

This Regulation sets out rules for the sale, manufacture, import, export, supply, distribution, advertisement, control and use of veterinary medicinal products. It applies across the EU from January 2022. Its main aims are to strengthen EU action to fight antimicrobial resistance (AMR) through specific measures ensuring prudent and responsible use of antimicrobials in animals, including reserving certain antimicrobials for the treatment of infections in humans in line with a ‘One Health’ approach for the benefit of animal and public heath and every EU citizen. It also aims to reduce administrative burden, stimulate innovation and reduce barriers to trade of VMPs between Member States.

Measures to assist in fight against AMR

The new Regulations aim to reduce antimicrobial usage in food animals and include a reinforced ban

on the use of antibiotics as growth promoters. It also legislates that antimicrobials must **not** be:

- applied **routinely**,
- used to **compensate** for poor hygiene, inadequate animal husbandry, or poor farm management.
- used for **prophylaxis** (preventive treatment to a healthy animal) except for individual animals or a restricted number of animals in very exceptional circumstances,
- used for **metaphylaxis**, (treatment of healthy cohort animals) except when the risk of spread of an infection or of an infectious disease in the group of animals is high, the consequences are likely to be severe and no other appropriate alternatives are available;
- Restrictions will be in place regarding the use of certain types of antibiotics such as the highest priority critically important antibiotics;
- Veterinary prescriptions should be based on clinical examination or other proper assessment, and are limited to the amount required for the treatment concerned;
- Veterinary Prescriptions for antimicrobials are only valid for 5 days i.e. they must be filled within 5 days from their date they are written;
- Veterinary prescriptions for antimicrobial medicinal products for metaphylaxis shall only be issued after a diagnosis of the infectious disease by a veterinarian;

The new Regulations will force us to change the way we use antimicrobials and practices such as prophylactic/metaphylactic use of in feed antibiotics to alleviate the threat of disease in production systems will no longer be an accepted 'norm'.

Data Collection on Antimicrobial Usage

There is also an obligation on each Member State to collect and report data on antimicrobial usage to the EU. There is a gradual approach to the reporting of the usage data, beginning with data from cattle, pigs (distinguishing fatteners from other production categories) and poultry by 2024; all other food-producing animal species by 2027 and data from companion animals (dogs and cats) will have to be reported on by 2030.

The Department of Agriculture, Food and the Marine (DAFM) is working to meet this data collection requirement through the development of a Secure National Veterinary Prescription System (NVPS) to allow for the digital generation of a prescription to collect prescription level usage data electronically with the plan to allow for real time recording and reporting of all prescription based medicines being used in animals in Ireland.

National Veterinary Prescribing System

The NVPS with be developed in line with the objectives of the Government's National Digital Strategy.

The objective of the system is to provide for a digital mechanism, most possibly via a web application, to allow registered veterinary practitioners generate prescriptions for Veterinary Medicines and Medicated Feed which will then be saved directly to a centralised cloud service. Department officials indicate it is anticipated that once uploaded by the Vet or their Practice, the animal owner will receive an email or SMS message with a unique prescription pin or barcode. This new service will potentially allow the animal owner to have their prescription dispensed anytime at any participating pharmacy, licenced merchant or feed mill if they choose not to have it dispensed immediately by the visiting prescribing veterinarian.

Development of the proposed system is in its infancy and the Department of Agriculture is currently carrying out a number of stakeholder engagements across the various sectors, including veterinary practices and their current software package providers, farming organisations, feed mills, pharmacies and also licenced merchant operators to gather all business requirements, issues and concerns. System design and development is expected in the middle of 2021 with testing to commence thereafter.

Any queries in relation to the incoming Regulations can be directed to **vetmedregs@agriculture.gov.ie**

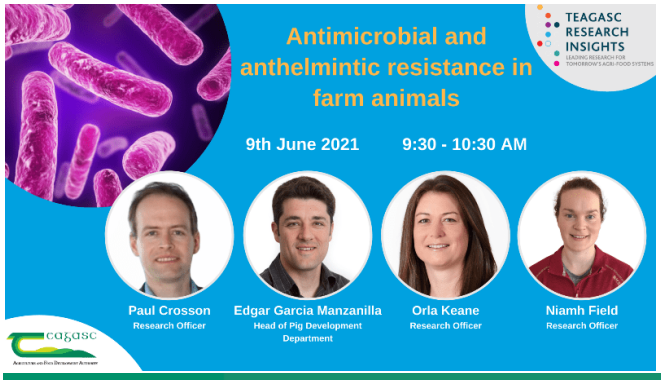
Research Insights Webinars

Webinar 19 in the Research Insights Webinar Series took place on Wednesday, 26th May and focused on 'Increasing the welfare of farm animals'. The webinar discussed the most recent Teagasc research on improving the welfare of dairy cows, beef cattle and pigs.

Dr. Laura Boyle spoke about farm practices to increase the welfare of pig production.

A recording of the webinar will be available soon here.

The next Research Insights Webinar will take place om Wednesday, 9th June at 9.30amand will look at 'Antimicrobial and anthelmintic resistance in farm animals'. Dr. Edgar Garcia Manzanilla will speak about reducing antimicrobial resistance. Register for the webinar here.



Digital Media

Our digital media resources have been growing, with our Let's Talk Pigs webinars and new episodes of The Pig Edge available every second Friday, as well as new posters and infographics on a range of subjects. All available here.

Welcome!

Shiv Vasa joined the Pig Development Department this month. Shiv is a PhD student on the EU Marie Curie ITN project MonoGutHealth. He will work on sow nutrition and milk replacer feeding to suckling and weaned pigs. Shiv is a native of India and has recently completed his Masters in Animal Sciences at Wageningen University.

For more information visit our website
www.teagasc.ie/animals/pigs

This newsletter was edited by Ciarán Carroll
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