PIGS

October 2020

Edited by Ciarán Carroll

Welcome to the October edition of our monthly newsletter.

Teagasc Virtual Pig Week took place from 20th to 23rd of October, and received a great response. Thank you for tuning in and submitting your questions, all webinars from the week are now available to watch again on our website, more details later in this newsletter.

The Pig Edge podcast will be back with two episodes this month; 'Alternative ingredients for pig diets' with Dr. Peadar Lawlor on Friday 6th November and 'Post-mortems and preparedness- pig health through the laboratory lens' with Margaret Wilson, SRO, DAFM on Friday 27th November. All episodes are available on our website, the iTunes store & Spotify, with a new episode released monthly.

The Pig Development Department launched our Skills Series of videos and factsheets in September. Videos on pig inspection & ear tagging have been released to date. The next video will be available on Friday 30th November. A new video and factsheet, focusing on essential skills in pig production will be available fortnightly.

The pig processing sector, has seen good demand and a significant increase in numbers in recent weeks with main export plants having Chinese approval to take advantage of high demand from China and other Asian customers. However, there is still room for improvement in prices.

In this issue

Teagasc
Agriculture and Food Development Authority

Are You Winter Ready?

Louise Clarke

Although it's hard to believe, we are nearing the end of October and it is important that you have your unit winter ready. The following points are a few areas you need to consider as the winter months are rolling in.

Ventilation and temperature

The purpose of a ventilation system is to provide optimum housing conditions for the pigs. Ventilation systems in pig houses are intended to draws fresh air into a building while removing stale air, humidity, dust, and gases. It is vital that the ventilation system and heating system are working in tandem to each other as optimum conditions result in optimum growth. Wet, damp environments or high air movement causes chilling on the pigs and increases the demand for energy. So what can you do to make sure your unit is winter ready?

Maintenance, repairs and cleaning

- Make sure you get your ventilation system serviced at least once a year as a system with incorrect controls is probably worse than no system!
- Check that sensors are correctly positioned, as near to the pigs as possible but out of jaw range!
- Ensure the temperature sensors are working correctly (use an infra-red thermometer on the sensor) and that it is dust/dirt free (dirty sensors will record a higher temperature).
- Check fans to ensure there are no worn fan bearings or that there are no dirty/rusty blades (dirty blades can increase energy usage by 20%).
- Check inlets to make sure they are not blocked or have any rubbish in them, the winch motor is working and the winch cable is not stretched.
- Check to see that all windows seal close correctly and that none are broken/cracked which will cause drafts/chills on the pigs.
- Check the unit for poorly fitted doors and seal/replace them to prevent draughts at floor level- especially farrowing and weaner rooms.
- Check the insulation to see if it has been damaged by pests - holes in the insulation will act as air inlets.
- In weaner housing, ensure the heat source only switches on when the ventilation has reduced to the minimum setting, otherwise you'll be melting the ice-caps and quickly going broke!
- The temperature fluctuation in the pig house should also be checked by using maximum-minimum thermometers to monitor if house temperatures vary considerably between day and night-time. Will the pigs be comfortable at 4am with frost outside?
- Remember that if the tank is deep and empty it may cause under slat air draughts which will not be picked up by min/max thermometer.
- Carry out a smoke test on your unit. By placing the smoke source at various points, e.g. inlets, outlets and within pens, you can check that the ventilation system is working correctly and identify draughts. On a windy day do a smoke test over some of the slats to see if there is upward draft from tank.
- Check the controller's minimum ventilation setting (perhaps 10%) and the bandwidth (perhaps 4^{o}C).

Lighting

We all know the importance of lighting throughout the different stages of production. Low lighting will trigger higher levels of sow repeats and abortions at any time but especially in the autumn as the pineal gland (light sensor) within the sow's brain has an effect on the progesterone hormone.

- Lighting in female pig housing should be at 300 lux. To maintain a viable pregnancy this requires constant daylight length.

• Ideally this should be 12-16 hours per day, beginning at 6am including the farrowing houses as well!

• Make sure you have your lights on timers and check to ensure the timers are working correctly, taking into account the change in the clocks on Sunday the 25th of October.

• It is important that the covers of the lights are regularly cleaned (every 6 months) as dirty covers can reduce the effective light intensity by 50%.

• Test the intensity of your lights by using a lux meter (ask your Teagasc advisor), remembering to take the reading at the pigs head level.

• While light intensity is of the greatest importance in the sow housing it is also important to check the rest of your unit especially the loading bay and the yard/passageways for broken lighting.

Slurry management

All farmers who supply organic manure/fertiliser produced on their farms to other farms are required to submit records to the Department of Agriculture, Food and the Marine before December 31st 2020. This applies to any farmer who exports any "organic fertiliser" and is a requirement of the "nitrates" regulations (EC Good Agricultural Practice for Protection of Waters Regulation of 2017 - SI 605 of 2017).

The Form 3 is a record of the total volume taken by each recipient farmer in the calendar year and is extracted from the Manure Register which every farmer must record as per Article 23 (g) of SI 605 of 2017. Record 3 Forms (available from DAFM website) must include details of

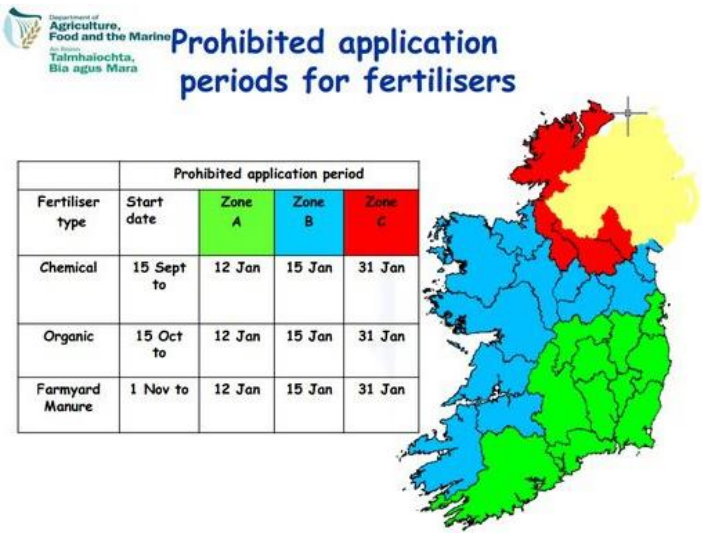
• The total volumes of manure taken from your holding by each farmer,

• Their herd number and address,

• The total nutrients in the manure exported (i.e. Nitrogen and Phosphorus),

• The signature of the recipient farmer and the "exporting" farmer confirming that these details are correct.

From now on farmers who export slurry have to submit one record form 3 for each individual recipient of slurry. You can no longer fill out a record form 3 with multiple recipients on it. You should leave a copy of the signed form with the recipient farmer for his/her own records. These forms must be forwarded to the Nitrates Section of the Department of Agriculture, Food and the Marine, Johnstown Castle Estate, Wexford. They must be submitted by all farmers who "export" animal manure from their holding. The only acceptable proof of postage will be Swift Post Receipt or Registered Post Receipt. This must be submitted before 31st of December, 2020.



	Prohibited application period			
Fertiliser type	Start date	Zone A	Zone B	Zone C
Chemical	15 Sept to	12 Jan	15 Jan	31 Jan
Organic	15 Oct to	12 Jan	15 Jan	31 Jan
Farmyard Manure	1 Nov to	12 Jan	15 Jan	31 Jan

Reference: DAFM

Keeping the 3Ts (Teeth, Testicles and Tails) Intact

Laura Boyle

Worldwide piglets experience pain caused by a variety of husbandry procedures including ear notching and tagging, tail docking, teeth reduction (clipping and grinding) and castration. Obviously male pigs are not castrated in Ireland and this is a major welfare advantage. A recent study showed that piglets demonstrated more pain related behaviours 24h post-castration than at any other timepoint post-procedure showing just how long lasting and painful the procedure is. Furthermore, only 5% of the male pigs surgically castrated across 24 European countries recently surveyed used anaesthesia and analgesia. Nevertheless, tail docking and teeth clipping also cause pain. This is clear from their effect on piglet behaviour. Piglets struggle to escape and vocalise during these procedures. Post-procedural pain is reflected in less activity, more sleeping and less playing, amongst other changes. Aside from measuring changes in behaviour, pain in another species is difficult to quantify. In fact, it is even difficult for us to understand pain in another human. That is why doctors use 'pain face' scales (Figure 1). In recent years, similar scales are available for many species including pigs (Figure 2).

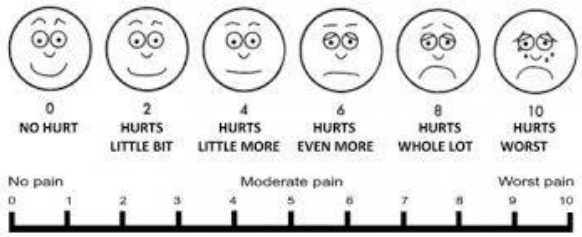


Figure 1. Human pain face scale (Wong Baker faces foundation)

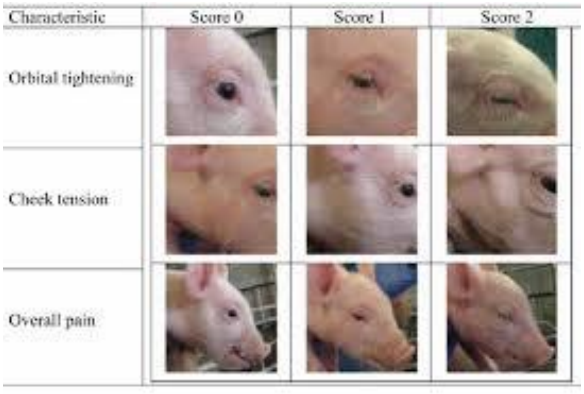


Figure 2. Piglet pain face scale (photo from Gottardo et al., Journal of Animal Science 2016)

In March 2019, World Animal Protection brought a voluntary global group of experts and stakeholders together from across the international pig industry to explore the practicalities of ending painful management procedures for pigs including teeth reduction, physical/surgical castration and tail docking. The Alliance is named 3Ts (teeth, testicles, tails) to highlight the ultimate goal to keep these tissues intact, removing a source of pain to piglets and other associated welfare and antibiotic use issues. The purpose of the 3Ts is to discuss mitigation of barriers (technical, financial, regulatory, cultural) raised in some circumstances (e.g. countries, regions, product types, production systems, other) and to encourage solutions used by others in practice. The ultimate purpose is to use this information to develop an evidence-based approach to encourage industry globally to support the phasing out of painful procedures. The main benefit of the 3Ts Alliance is that it brings all stakeholders together with a common goal. It is currently composed of scientists, veterinarians, swine specialists, NGO and industry representatives from several European countries, USA, Australia, Vietnam, Thailand and Brazil. JBS and Brasil Foods, two of the largest Brazilian companies in the food sector, are members of the 3Ts Alliance.

Indeed Latin America is making considerable progress on ending painful procedures, with 65% of male pigs in Brazil and 90% in Colombia immuno- rather than surgically castrated. Immunocastration is growing in Mexico and Argentina too. In the EU, Belgian retailers are leading the way by accepting pork from either intact males and/or immunocastrated males. However, in spite of the severity of the pain caused by castration, the 3Ts Alliance members agree that stopping tail docking would have a much greater beneficial impact on pig welfare (because it is performed on all piglets and not just males). Unfortunately, there is also agreement that tail docking is also the most challenging procedure to end with Finland and Sweden being the only countries in the world producing undocked pigs.

I was invited to join the 3Ts Alliance earlier this year and in recent months, we focused our discussions on piglets' teeth. Currently we are surveying pig farmers internationally about teeth reduction (clipping or grinding) practices. Preliminary findings are interesting though only 38 pig producers responded so far (Table 1). The majority of respondents (65%) do not reduce piglets' teeth. Of the 13 respondents that were reducing the teeth, three were clipping, nine were grinding and on one farm they were doing both. On ten farms, the procedure was performed in piglets less than 48 hours old and on the others, piglets were between 3 and 7 days of age. On seven farms, all piglets were done in all litters, on three farms all litters were done but teeth of the small piglets in each litter were not clipped/grinded. The other farms did 'most' litters.

Table 1 Number of respondents performing teeth reduction (clipping and/or grinding) and number leaving the teeth intact on pig farms internationally.

Country	Clipping/grinding teeth	Intact teeth	Total
Australia	3	0	3
Brazil	1	0	1
Chile	1	0	1
France	1	0	1
Ireland	0	3	3
Italy	2	0	2
Mexico	1	0	1
Netherlands	4	5	9
Philippines	0	1	1
Spain	3	0	3
Taiwan	1	0	1
Thailand	6	4	10
United Kingdom	2	0	2
	13 (34.2%)	25 (65.8%)	38

When asked what was the main reason for performing teeth reduction most responded that it was to prevent piglet face and sow udder/teat lesions. Others responded that it was standard operating procedure on their farm, or that it was for ease of management, or to cope with poor milk production.

We also looked at the scientific literature on risk factors for piglet facial lesions and sow udder/teat lesions. Teeth clipping certainly reduces the prevalence of piglet facial lesions but findings are inconclusive for sow teat lesions. Large litter size increases the risk of both lesions. There is some evidence that environmental enrichment provided to piglets in the farrowing crate may help reduce both types of lesions but there is very little research in this area. Nevertheless, there is growing evidence from research in other areas of major benefits to piglet health and welfare of having environmental enrichment in the farrowing crate. Similarly, excessive cross-fostering increases piglet facial lesions and we know that it also has a detrimental effect on piglet health and performance.

EU legislation states that teeth clipping should only be carried out where there is damage to the sows' teats. Given how labour and time consuming the procedure is, many units would probably be happy to stop doing it. There could also be beneficial implications for weaning weights.

Keelin O'Driscoll carried out a study at Moorepark a few years ago and found that while leaving the teeth intact had a short-term negative effect on daily gain, these piglets weaned heaviest. She discussed that sows might initially be more reluctant to nurse piglets with intact teeth but that

in the long run, pain caused by tooth splintering and exposure of nerves, as well as damage to the gums in piglets with clipped teeth reduced their weight at weaning. See Teagasc Pig Newsletter from October 2016 for more on this work https://www.teagasc.ie/media/website/publications/2016/Teagasc_Pig_Newsletter-October_2016.pdf

On the other hand, another pilot trial conducted more recently at Moorepark resulted in such severe facial necrosis in some of the piglets with intact teeth that we had to recommence teeth clipping (see photo).

It would be great to know the current situation on Irish farms and what your experiences are with leaving teeth intact or teeth reduction practices. Currently there are only three responses to the 3Ts survey from Ireland. If you would like to contribute to the survey, it takes about 10 minutes and is at this link: https://docs.google.com/forms/d/e/1FAIpQLScNZ0e26PV5RiSmCuhRCLPbTtm64Y99zG9A-DnCEcLobQw8EQ/viewform

Removing Zinc Oxide from Irish pig farms - First steps

Edgar Garcia Manzanilla, Juan Manuel Ortiz & Daniel Ekhlas

With legislation already approved by the EU, pig farms will have to stop using therapeutic zinc oxide and reduce the use of in-feed antibiotics drastically in 2022. Project ZINCO is already working with volunteer farmers to understand the best way to achieve these changes on commercial pig farms in Ireland. Our intention is to study the differences between those farms that successfully remove zinc oxide from diets compared to those that fail. The approach is not expected to be the same on all farms but hopefully all farmers will find something that works for their farm.

So far, we have completed hygiene profiles in 6 of the volunteer farms and some of the results are quite interesting. To check how effective cleaning is around the weaning period we have sampled walls, floors, feeders, and drinkers in farrowing and weaner rooms. You can see an example of the results in the figure. In this farm, we can observe how the cleaning in the weaner room is quite effective, reducing the numbers of E. coli in the environment to around 100 for the swabbed area ($1m^2$) and less than 100 for feeder/drinker. However, the farrowing room was not as clean. In fact, the levels of E. coli found in the farrowing room after cleaning were as high as those found in dirty weaner rooms. This is probably related to the lack of time allowed for the disinfectant to act or insufficient drying period in the farrowing house. Weaning on this farm takes place on Thursdays first thing in the morning, rooms are then cleaned, and sows are brought in Friday morning. In fact, we can see how E. coli populations in the farrowing room are relatively low before weaning but, with the cleaning, the use of warm water is probably activating/spreading bacteria and increasing counts.

The most interesting thing is that we are doing similar analysis in poultry farms and the results in clean facilities are consistently 0 bacteria after cleaning. Something to learn from the chickens!

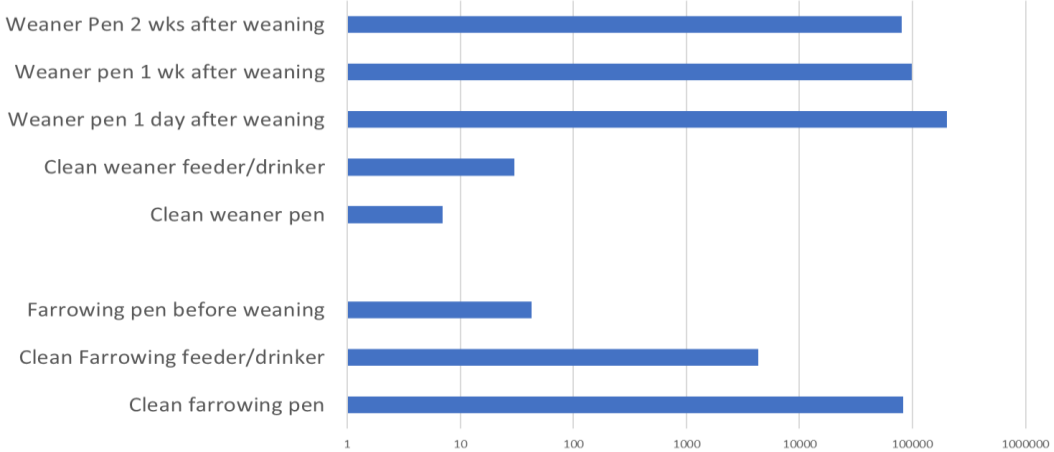


Figure 1. E. coli levels in samples taken from weaner and farrowing pens at various times after cleaning

Virtual Pig Week 2020

The Teagasc Virtual Pig Week ran from October 20th – 23rd with contributions from Teagasc researchers and farm staff, pig producers and international experts. Recordings of all live events broadcast during Virtual Pig Week are now available at https://bit.ly/VirtualPigWeek

EU PiG Webinar

EU Pig and AHDB hosted a webinar on October 6th discussing the legacy of the EU PiG programme with case study examples to showcase the valuable resources that have been generated by the EU PiG programme. The webinar is available to watch at https://www.youtube.com/watch?v=ngAfO8VpeTg

We would like to hear from you

The Pig Development Department is conducting a feasibility study for PigInvest (formerly known as the Teagasc Pig Production Model) in collaboration with Enterprise Ireland and we would like to hear about your experience with farm management software for decision making. Please visit the following link to hear more about PigInvest and to complete a short survey https://www.surveymonkey.com/r/QTLSDMX

Flu Vaccine

The seasonal flu vaccine is recommended, and available free of charge, for those in regular contact with pigs. You can get the flu vaccine from your GP or pharmacy. For more information visit https://www.hse.ie/eng/health/immunisation/pubinfo/flu-vaccination/about-the-vaccine/

Welcome

The Pig Development Department welcome PhD candidates Florence Viard, Keely Halpin and Elisa Arnaud, who have joined the department recently and will work on the WetFeed2 and PigNutriStrat projects with Dr. Peadar Lawlor.

Best of Luck Hazel

After four years in Moorepark with the Pig Development Department, Hazel Rooney will take up a new position at Alltech in November. Hazel completed a PhD in swine nutrition in 2019 with Teagasc Pig Development Department and University College Dublin, and has since worked as postdoctoral researcher in the Pig Development Department. Hazel has been a fantastic colleague and we wish her the very best of luck in this new chapter and her future career.

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

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