

**Edited by Ciarán Carroll
and Orla Kinane**



Welcome to the July edition of our monthly newsletter.

Temperatures have risen significantly during the past month and as pigs are particularly sensitive to heat stress Louise Clarke writes about how best to manage heat stress on your farm this summer and make sure it does not affect performance.

Michael Mc Keon gives an update on African Swine Fever. With recent outbreaks continuing in Eastern Europe and Germany, Michael gives tips on how producers in Ireland can help ensure no outbreaks occur here, and shares some useful resources later in this newsletter.

Keely Halpin, Gillian Gardiner and Peadar Lawlor share results from a study which found that the

implementation of an optimised hygiene programme in farrowing rooms increases piglet weaning weight and reduces the need for medicinal treatment in suckling piglets.

In the latest Teagasc Pig Research Facility Farm Update Video, Tomás Ryan, Farm Manager, updates us on what has been happening in the unit recently. He talks about performance, breeding of replacement gilts, ongoing research and plans for the future. More information and how to watch the video later in this newsletter.

In this issue

- Heat stress
- African Swine Fever Update
- Implementing an optimised hygiene programme in farrowing rooms increases piglet weaning weight and reduces the need for medicinal treatment in suckling piglets

Hot under the collar

Louise Clarke

As summer temperatures soared earlier this month we were all getting a little hot under the collar. We should consider the effect these high temperatures have on pigs. Pigs are particularly sensitive to heat stress because they lack functional sweat glands and use the panting mechanism to maintain normal/desired body temperature. However, they have relatively small lungs and despite decades of intense genetic selection, still have a thick layer of subcutaneous adipose tissue that acts as an effective insulation layer. Although the weather is returning to normal the high temperatures that we have been experiencing the last number of weeks may have affected your pigs more than you think. The bulk of heat stress-induced financial burden occurs through reduced and inconsistent growth, feed intake and poor sow reproductive performance but is also realised through increased mortality and morbidity, and decreased carcass value.

Signs of stress in pigs include:

- open-mouth breathing (panting),
- vocalization,
- blotchy skin,
- stiffness,
- muscle tremors,
- the reluctance to move,
- reduced feed intake,
- increased water consumption
- reduced milk production in lactating sows
- loss in weight
- diarrhoea
- increased urine output
- mortality

There are simple ways to try and reduce temperatures to prevent heat stress in pigs:

- Ensure ventilation systems are regularly checked and serviced to keep them in good working condition.
- The obvious solution is to try and to increase ventilation and airflow.
- Remember, opening doors is not ideal as it decreases the air speed and therefore reduces

‘wind-chill’ effect on pigs thereby reducing the evaporation rate off the skin.

- If the daytime temperature is forecast to be very hot, switch the fans & vents to max ventilation early in the morning, this will reduce the initial room temperature and therefore move the period of high temperatures to later in the day. Don’t forget to reset the temperature to normal in the evening/night.
- Try to keep pigs out of direct sunlight during the day in pens by windows or cover any ceiling windows.
- Review your stocking densities and if possible try to reduce stocking densities by making use of all empty pens available.
- During extreme heat it is recommended to abstain from feeding during the hottest part of the day, using a higher energy feed or supplementing diets with antioxidants and vitamins will also help to maintain condition.
- Dosing waterlines with antioxidants and electrolytes can also prevent dehydration and help prevent infections from setting in during heat stress.

Transporting pigs in the heat:

Pigs should be loaded and transported as early in the day as possible to avoid the heat of midday. Stress at loading can be minimised by appropriate design of the loading ramp. If transport in the heat of midday is unavoidable, increase the individual space by at least 30%, increase headroom above the animals, and keep the vehicle moving to maintain a constant air flow. Adequate ventilation of the pigs is essential to minimise the increase in temperature within the vehicle. The vehicle must be fitted with sufficient ventilation apertures which can be opened as necessary. The lorry must be stationary for as little time as possible as temperatures in a fully loaded stationary vehicle can increase rapidly regardless of weather conditions. When the vehicle is stopped it should be parked in the shade away from other vehicles.

African Swine Fever Update

Michael Mc Keon

Recent outbreaks of African Swine Fever (ASF) continue in Eastern Europe and Germany. It is estimated that the number of ASF outbreaks in Germany alone has reached over 4,000 since September 2020. What is particularly worrying over the last few weeks are the cases in Lower Saxony, Germany and the outbreaks in Italy. Lower Saxony is in the north west of Germany and is the 'heartland' of German pig production with a high concentration of pig units and approximately 6 million pigs. It is also very close to the Dutch border and therefore poses a serious risk of transmission into the Netherlands. The Italian cases are also worrying due to the geographical distance that the disease has spread from other outbreaks. Italian investigations are continuing to investigate how the disease arrived in Italy but initial reports seem to suggest it may have been by human transmission/mechanical transport and then spread further by the indigenous wild boar population.

These recent cases show the need for heightened vigilance in the Irish pig sector. The distance from Lower Saxony to Dublin is much shorter than from Berlin to the Rome outbreaks, therefore distance while a help, is not a guaranteed defence.

So what can a pig producer in Ballyjamesduff, Buncrana or Bandon do to help ensure our country & their pig unit remain pig free? The following few suggestions may help.

1. Firstly educate themselves and their staff as to the risks and signs of ASF. DAFM have a [website with useful information](#)
2. Use signage to remind staff and visitors as to the risk. Download a printable [Teagasc infographic](#)
3. Ensure no pigmeat products are brought onto your unit
4. **DO NOT** sell any weaners to non-commercial pig units. Pigs produced in 'back-yard' facilities may be fed on domestic human food waste. This waste (pigmeat off-cuts and rinds) could contain viable ASF virus, especially if processed pigmeat from Eastern Europe or Germany. Pig consuming this product may develop ASF.

In summary everybody associated with the Irish pig sector needs to 'do their bit' to help protect us against ASF. Ireland is 232% self-sufficient in pigmeat, with annual exports worth €932 million. An ASF outbreak in Ireland and an 'import ban' by our main export markets would have a very serious effect on our sector.



Implementing an optimised hygiene programme in farrowing rooms increases piglet weaning weight and reduces the need for medicinal treatment in suckling piglets

Keely Halpin^{1,2}, Gillian Gardiner² and Peadar Lawlor¹

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There is concern that high use of antibiotics in pig production can promote the spread of antibiotic resistance (AMR) from animals to humans. Hence, the current drive to reduce on-farm antibiotic usage. Furthermore, therapeutic levels of in-feed zinc oxide are banned in the EU from June 2022. A multifaceted approach will now be required to maintain post-weaning piglet health and growth. We believe that implementing an optimised cleaning and disinfection routine in farrowing rooms to provide a hygienic environment for piglets to be born into, should be part of that strategy.

As part of the PigNutriStrat project we recently tested an optimal cleaning and disinfection routine and compared it with a sub-optimal routine. The optimal routine was as follows:

1. Pre-soaking of pens with water overnight (18 hr).
2. Detergent application (Blast Off; Biolink Ltd, Hull, UK) with a contact time of 20 min. Thorough washing of pens with cold water. Pens allowed to dry overnight with a blow heater used to speed up the process.
3. Application of a chlorocresol-based disinfectant (Interkokask®; Interhygiene GmbH, Cuxhaven, Germany).
4. Pens allowed to dry for 6 days (note that 3 days drying produces equivalent results), with a blow heater used for the first 24 hr.
5. Sows were washed with cold water and disinfected (Virkon S; Lanxess, Köln, Germany) before they entered the farrowing crates.

The sub-optimal routine consisted of thoroughly washing pens with cold water and allowing pens to dry overnight (≤ 18 hr) before introducing sows. Sows were not washed or disinfected before entering the farrowing crates.

To determine the efficacy of the optimal cleaning and disinfection routine we took swabs from

various locations in the farrowing pens. From these, we obtained total bacterial counts and *Enterobacteriaceae* counts per cm² of each area swabbed. *Enterobacteriaceae* are a group of bacteria that act as indicators of faecal contamination. An example of the results obtained can be seen in Figure 1, where total bacterial counts are displayed for the floor area behind the sow before washing and again at entry of the sows to the farrowing pens. It can be seen that after using the optimal cleaning and disinfection routine, the total bacterial count decreased by more than 400,000-fold in this area of the pen, while it decreased only ~30-fold using the sub-optimal regime. This trend was consistently observed for each area of the pen swabbed, both for total bacterial and *Enterobacteriaceae* counts.

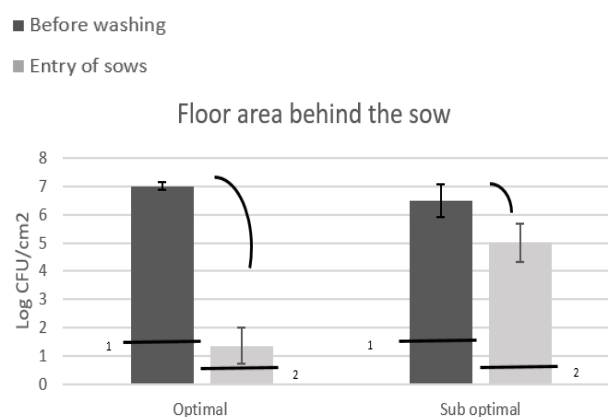


Figure 1 Total bacterial counts on the floor area behind the sow in Log CFU/cm²

1 Limit of detection before washing of pens

2 Limit of detection after washing of pens

As a result of implementing the optimised cleaning and disinfection routine in the farrowing rooms we found that the number of clinical cases per litter was reduced by 86% (Figure 2).

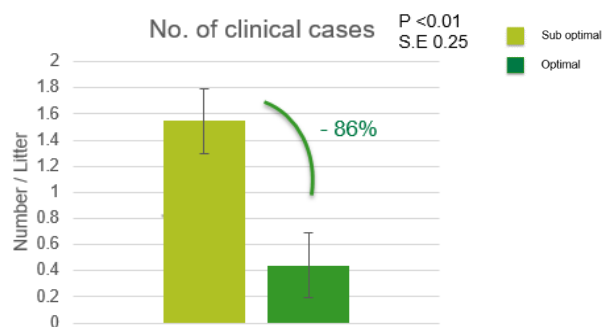


Figure 2 Effect of the optimal cleaning and disinfection routine on the number of clinical cases recorded per litter.

As a result of this, the volume of antibiotics and anti-inflammatories administered per litter was reduced by 77% and 75%, respectively (Figure 3 and Figure 4)

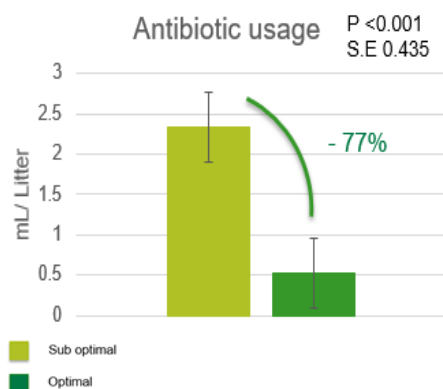


Figure 3 Effect of the optimal cleaning and disinfection routine on anti-inflammatory usage in mL/litter

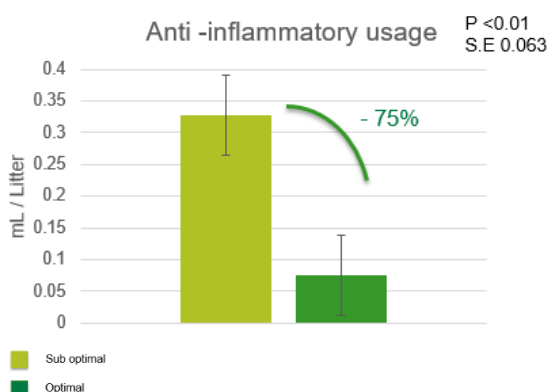


Figure 4 Effect of the optimal cleaning and disinfection routine on antibiotic usage in mL/litter

Not only did the optimised cleaning and disinfection routine reduce the need to use antibiotics and anti-inflammatories, it also increased piglet weaning weight. Pigs were

weaned at ~28 days and on average piglets were 320g heavier at weaning for the optimised cleaning and disinfection routine (Figure 5).

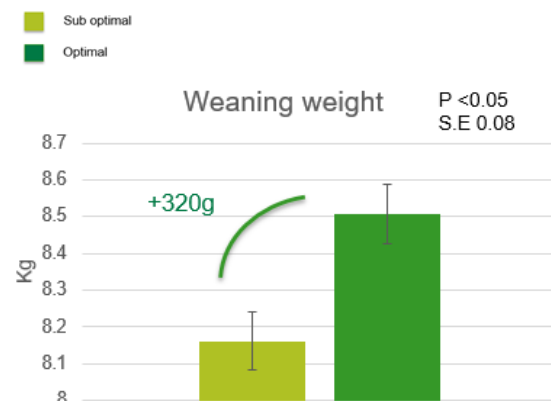


Figure 5 Effect of the optimal cleaning and disinfection routine on weaning weights

In summary, implementing the optimised cleaning and disinfection routine described above reduced the number of clinical cases recorded per litter, leading to a reduction in the volume of antibiotics and anti-inflammatories that needed to be administered per litter. As a consequence, piglet weaning weight was also significantly increased.

Implications: It might be considered that the sub-optimal hygiene routine implemented here was quite basic. However, when compared with the current routine on our unit it yielded similar numbers for clinical cases and volume of antibiotics and anti-inflammatories administered per litter. Therefore, we believe it to be a good representation of the effect of current on-farm hygiene routines.

Implementation of the optimised cleaning and disinfection routine certainly takes more labour, but particularly more time. Implementing it will necessitate there being sufficient accommodation to allow it to be implemented correctly. However, the results speak for themselves with regard to its potential to reduce antibiotic use and its benefit in increasing piglet weaning weight.

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Teagasc Pig Research Facility Farm Update Video



In the latest Teagasc Pig Research Facility Farm Update Video, Tomás Ryan, Farm Manager, updates us on herd performance, with a 1.5 kg birth weight and 9kg weaning weight at 27 days. He tells us about developments such as the introduction of breeding of replacement gilts on the unit. Tomás also talks about research work that is being carried out on the unit at present throughout the growing phases, including the babyfeed system, different hygiene protocols, wetfeed, long tail, behaviour and different forms of enrichment. Tomás also tells us about a new 200 finisher place low emissions, high welfare building which is planned for the unit.

[Watch the video here](#)

Teagasc News and Information App

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Improve your farm performance with the latest news & technical information updated DAILY from Teagasc!



Teagasc have launched a new exciting app which will provide regular news and information updates to the farming, agricultural and food communities directly to users' phones. These daily updates are being provided 7 days a week through a phone APP which is available for both Android and iPhone. This new communication channel will complement the existing flow of updates through traditional, digital and social media channels.

[Download the app here](#) or scan the QR code



DCU Survey seeking participation

DCU are conducting a study on 'The Prevalence of Mental Health Issues and Associated Factors among Farmers in Ireland' and seeking your participation in an anonymous online survey. See @[FarMHealthP](#) for more information

[Complete the survey](#)



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

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