

Edited by Amy Quinn



Welcome to the July edition of our monthly newsletter.

Specialised Advisor Emer McCrum joins me on the latest episode of “The Pig Edge” podcast to discuss her insights into what she’s

currently seeing on the ground in terms of breeding and reproduction issues. You can listen to this episode [here](#).

Farm safety week has been running from the 22<sup>nd</sup> to the 26<sup>th</sup> of July and Teagasc is supporting this initiative again this year, with several events and supporting material being produced to focus in on this crucial area in a farming context. Its occurrence always provides an opportune time to review safety standards and practices on your farm as well as continuing to do this throughout the year, and we encourage all clients to take the time to do just that.

According to provisional data from the Health and Safety Authority (HSA), three farmers have lost their lives in farm workplace accidents so far in 2024. Data from the Teagasc National Farm Survey also has shown that about 4,500 farm accidents

occur on farms each year, with 44% putting the victim out of work for at least four days. Furthermore, some 80% of these farm accidents required medical treatment, with 46% of victims attending hospital, a further 18% a doctor and 16% requiring first aid. We continue to strive to improve these statistics for the benefit of staff, our farm businesses and ourselves.

Later in this newsletter, Specialised Advisor Louise Clarke hones in on the area of farm construction and work at heights.

In this month’s newsletter, we also touch on the importance of pellet quality and why it’s important to look at the level of fines in the diet to make sure you are really reaping the rewards of pelleting. We also look at the real cost of excessive empty days and what can you do to minimise them.

#### In this issue:

- The importance of pellet quality
- Empty days - a hidden but very real cost!
- Farm safety: Farm construction and work at height

## The importance of pellet quality

Peadar Lawlor

Typically when dry or wet-dry feeding, pig producers opt to feed pelleted diets to their pigs. Although, pelleting comes with increased cost, it also improves palatability of the feed, feed flowability, reduces feed wastage and ingredient segregation, and can help in reducing microbial counts in the feed. Improvements in feed efficiency, due principally to reduced feed wastage, are expected to more than offset the cost of pelleting the feed. However, the magnitude of the feed efficiency improvement, in response to pelleting, is influenced by the percentage of fines in the pelleted feed at trough level.

Badger et al. 2022 in a Kansas State University [study](#) looked at this. Treatments in three experiments consisted of pelleted feed with varying levels of fines (between 9.6% to ~90%) and meal feed. There was no difference in the ADG or feed intake of pigs fed the meal diet compared to those fed any of the pelleted diets. However, feeding pigs pelleted diets with 12.5, 15.5, and 9.6% fines in Experiments 1, 2, and 3, of the study improved FCR by 4.1, 4.5, and 6.7%, respectively, compared to meal fed pigs. Additionally, increasing the percent fines in the pelleted diets from 12.5 to 90.4%, 15.5 to 86.0%, and 9.6 to 83.6% worsened FCR by 5.9, 8.6, and 6.4% for Experiments 1, 2, and 3, respectively. Furthermore, as a result of increased feed intake and poorer FCR, increasing the percentage of fines

in the pelleted diets increased total feed cost and reduced income over feed cost.

It is evident from the work above that pelleting diets improves FCR and thereby reduces feed cost for finishing pigs. This is very much in line with our own work from Moorepark, which has shown that a pelleted diet is worth up to €25 more per tonne more than a meal diet. Nonetheless, we must pay particular attention to the quality of the pellets delivered to pigs to ensure that the level of fines in the diet are kept to a minimum since the benefits of pelleting diminish as the percentage of fines in the pelleted feed increases.

The advice would be to monitor your pelleted diets for fines at the feed hopper after the diet has been through the auger etc. If you are seeing lots of fines then it is likely that you are not getting the full financial benefit from pelleting your diet. In this instance you could ask your feed provider to run a pellet durability test on your diet after it is manufactured (They are most likely doing this anyway). If this confirms what you are seeing at the feed hopper then it may be necessary for changes in pelleting criteria to be made in the mill. However, it could also be that there are issues on your unit with regard to augers etc. causing excessive pellet damage during delivery that need to be addressed. Either way the issue needs addressing as it is costing you money.

## Empty days - a hidden but very real cost!

Louise Clarke & Ciarán Carroll

### Empty days - what are they?

Empty days or non-productive days (NPDs) can be defined as “any day a sow or gilt of breeding age is present in the herd and is not either gestating or lactating”. Non-productive days have one of the most important influences on breeding herd efficiency as they can directly affect unit profitability due to their influence on the number of pigs sold. If overall output is reduced, the number of sales will decrease and therefore the overhead cost per pig will increase. Therefore it is imperative to pay particular attention to NPDs. One factor that affects NPDs is “NIPs”, meaning sows and gilts that are assumed pregnant but actually are “not in pig”.

### Common cause of NIPs

Some of the common causes of a high level of NIPs are repeats and abortions. Repeats should account for less than 10-12 % of sows/gilts served. There are two types of repeats; regular and irregular.

- *Regular repeats*: occur on the cycle; 19-23, 40-44 days after service and should account for 2/3 of total repeats. Some of the factors associated with regular repeats are boar infertility, damaged or dead semen used for AI, single served timed incorrectly and unsupervised services.
- *Irregular repeats*: occur outside of 19-23, 40-44 days after service and are usually associated with sow failure i.e. embryonic mortality. Irregular repeats should not exceed one third of total repeats.

Regarding abortions, there are numerous reasons why a sow may abort but some of the most common are caused by disease, injury and environmental stress. Lameness and pain, particularly from abscesses in the feet or leg weakness can also cause abortions due to stress. Sow mortality in late pregnancy has a major impact on empty days as the entirety of her pregnancy will be classed as empty days because no litter was produced.

### Cost associated with increase in empty days?

There are significant costs associated with empty days, and this can sometimes be ignored or neglected, especially when pig prices are high and farm performance is generally good. Many believe that a good farrowing rate alone indicates good productivity and sow performance. However a sow herd can have a good farrowing rate but still be inefficient especially if ‘repeats’ (NIPs) are occurring late in pregnancy. Table 1 is an example to show the opportunity cost of not identifying NIPs early while still having a good farrowing rate. If we analyse a single week of services through to farrowing on two 600 sow units; unit A has a poor/high number of empty days and unit B has a good/low number of empty days. On both units 30 sows were served and if we assume that they will have a gestation length of 115 days, a lactation period of 28 days and a weaning to service interval of 6 days, this gives a total of 149 days in a sow’s cycle. On both units 27 of the 30 served sows farrowed giving a 90% farrowing rate.

**Table 1.** Opportunity cost of not identifying NIPs early despite having a good farrowing rate.

	Number of Sows	Gestation days/ sow	Lactation days/ sow	Return to service days/ sow	Other empty days/ sow	Total days/ sow/ litter	Farrowed
Unit A "Poor herd"	27	115	28	6	-	149	Yes
	3 NIPS at 80 days	115	28	6	80	229	No
	Ave/sow	115	28	6	8	157	-
	<b>Ave Litters /sow/year</b>						<b>2.32 (365/157)</b>
Unit B "Good herd"	27	115	28	6	-	149	Yes
	3 regular repeats at 21 days	115	28	6	21	170	No
	Ave/sow	115	28	6	2.1	151.1	-
	<b>Ave Litters /sow/year</b>						<b>2.42 (365/151)</b>

This results in litter per sow per year of 2.32 and 2.42 respectively even though both herds have an excellent farrowing rate of 90%. So what will be the cost of this difference?

If we assume the average weaned/litter is 13.2 and each unit had a combined post weaning mortality of 6% then:

- *Net alive per litter:* 13.2 weaned – 6% mortality = 12.4 pigs sold per litter
- *Pigs sold/year @ 2.42 litter/sow/yr:* 2.42\*12.4\*600 sows = 18,005 pigs / year sold
- *Pigs sold / year @ 2.32 litter/sow/yr:* 2.32\*12.4\*600 sows = 17,261 pigs / year sold
- *Difference in pigs sold per year = 744 pigs*

If these missing pigs had been brought to slaughter (89kg dwt. @ €2.36/kg), then this equates to **€156,270** in lost sales revenue on an annualised basis.

### What can you do?

There are many causes of NIPs as highlighted above however good management plays a vital

role in reducing the number of NIPs in your herd. Some aspects to consider include:

- *Accurate record keeping:* accurate individual identification of sows & sow groups allows you to concentrate on these pens at 21 & 42 days post service. Some of the information you need to record on your service record card includes; Sow no., date weaned, date served, expected farrow date. Any other observations (e.g. bleeding, previous abortions etc.)
- *Observation throughout gestation:* attention to detail at service must ensure that mating is successful and occurs at the correct time, that semen quality is adequate and that no post-mating discharges occur. Carefully observe sows from day 14-15 after service for signs of slight discharge or sticky mucus and monitor these sows as they are likely to return. Walk a teaser boar through the dry sow house daily to check for served females on-heat/repeating concentrating in particular on served gilt pens and groups three & six weeks post service.
- *Pregnancy testing:* one opportunity to reduce NIPs is by pregnancy testing. Early and accurate identification of pregnant and non-

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pregnant sows and gilts in combination with accurate individual sow recording can allow earlier identification of repeats or abortions which will help to improve reproductive efficiency in your herd.

- **Lighting:** low lighting will trigger higher level of 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 sow/gilt housing should be at 300 lux. To maintain a viable pregnancy requires constant daylight length. Ideally this should be 12-16 hours per day, beginning at 6am. 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%. Review your lighting now as we approach the Autumn.
- **Temperature:** wet, damp environments or high air movement (draughts) cause chilling and increase demands for energy. Ensure that the service house is dry and warm (21-22°C). Use a max/min thermometer to assess the room temperature at night. Remember that if the tank is deep and empty which may cause under slat air drafts this will not be picked up

by min/max thermometer. On a windy day do a smoke test over some of the slats to see if there is upward draft from tank.

- **Aggression:** aggression between unfamiliar pigs is natural and may result in stress and injuries (lameness). High levels of aggression may occur when mixing your sows in the dry sow house and can negatively affect your NIPs. Only move sows and gilts within 2 days or after 28 days post-service. Ensuring that the sows have feed in the trough on entry into the dry sow house may reduce the level of aggression. To help identify if aggression after mixing is having a negative impact pregnancy scan to assess the effect of fighting/mixing – ideally at feeding time to make the job easier.

In conclusion, a high level of NIPs will significantly increase your number of empty days even when you have a high farrowing rate. While the days involved in gestation and lactation are effectively fixed, the key to increasing your efficiency is to improve your NPDs and management plays a vital role in doing this. Minimising NPDs is therefore one of the most important aspect of sow management after breeding.

## Farm safety: Farm construction and work at height

Louise Clarke

A pig farm is a busy place where several tasks are being completed each day and health and safety should not be an afterthought to any of these tasks. Understanding the risks on and around a farm operation makes it easier to avoid dangers, and makes accidents less likely. However, all too often, farmers do not recognise the risks on their

farms, which makes it difficult to manage the problem. As a farmer, you are responsible for the health, safety and welfare of yourself, employees and others that may be affected by what you do. This includes contractors, casual or part time workers, trainees, neighbours, and family members. Health and Safety is relevant to all

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farming businesses including the pig sector and is always an area that warrants our attention.

Farm Safety Week takes place from July 22<sup>nd</sup> to July 26<sup>th</sup> 2024. Unfortunately, the fatality rate in agriculture is far higher than any other economic sector, even though a small proportion of the workforce is employed in farming. Some 16 farm fatalities were recorded by the HSA over 2023, accounting for more than a third of all workplace deaths and representing a rise on the sector's 12 fatalities the previous year.

Thankfully, now that the pig sector is back in a profitable situation it is a good time to catch up on repair and maintenance that may not have been addressed during the financial crisis. However, it is extremely important that when carrying out this type of work you make safety a priority on your farm and take the necessary steps to safeguard yourself and those around you.

A lot of the work around maintenance and repairs requires us to work from heights. However when doing so it is important to ask yourself if you or your staff are fully competent to do so. Do as much as you can from the ground. If a ladder is deemed to be the best option, the risk assessment should include checking that it is in good condition and that there is a firm, level base to support it to prevent it slipping away or kicking out at the base. It may be possible to secure the ladder by roping it to a suitable support in some situations. If your work involves repairs on a feed silo there should be a ladder on the silo with a fall back cage and the lower portion of the ladder should be removable

and secured to ensure that children don't climb up it after hours. Avoid roof work wherever possible. One of the obvious danger areas here is skylight and asbestos/cement fibre roofs. Overtime skylights may be painted over and when someone is carrying out repairs to the roof they don't realise the skylight is there and the risk is a 15-20m fall through the skylight. Similarly, it is the same for asbestos roof/cement fibre roofs. Overtime these materials can become very thin, and although the roof might look perfectly intact, this may not always be the case. Working on roofs involves several different risks of falls, including a fall climbing to or from the roof, falling through a roof light, treading on a weak part of the roof and falling off the edge. Where maintenance work at heights cannot be avoided, plan ahead to make sure you have the right equipment and training.

Last month Teagasc, in association with FBD Insurance and the Farm Safety partnership launch a [video](#) "Farm Construction and Work at Height". This video is well worth a watch to help you plan any work that may need completing on your unit. This video highlights the responsibility farmers have to manage safety during farm construction and when working at a height. It also provides information on when farmers must legally appoint a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS). The production is part of a 'Managing Farm Health and Safety' series of 18 videos which outline best practice for farm health and safety topics. You should take the time to familiarise yourself and those around you of the dangers in relation to farms.

## Short Course in business strategy

Would you like to enhance your knowledge of key business functions including strategy, finance, negotiation, communication and people management? If so, the Teagasc/UCD Michael Smurfit Business School Professional Certificate in Business Strategy may be of interest.

You will create a practical strategy for your business and family with support from Teagasc mentors. By completing this document you will earn an accredited, Level 8, certificate from UCD.

What's involved? Six contact days: October 15, 16, 17 and December 3 and 4 this year plus one day in January 2025 at the Horse and Jockey hotel in Tipperary. There is also 'homework' on your unique plan. Academic qualifications are not needed to join the course provided you have been managing a business. For further details contact Mark Moore on 087 4179131 or [Mark.moore@teagasc.ie](mailto:Mark.moore@teagasc.ie).

## Farewell Florence

This month we said goodbye to Florence Viard, after nearly four years of working in the Pig Development Department. Florence started out as a visiting intern before coming on board to work with Peadar Lawlor on wet feed trials, followed by work on precision livestock farming, including workshop co-ordination, with Keelin O'Driscoll. Good luck Florence, we wish you all the best in your future career.

## MonoGutHealth project results

The MonoGutHealth project is holding a stakeholder meeting to disseminate the project results both online and in person at the Polish

Academy of Sciences. This meeting will take place on Thursday, November 28<sup>th</sup>, 2024 from 10:00 AM - 12:00 PM Central European Time (so that's 9:00 AM – 11:00 AM here in Ireland). You need to register for this event at the following link: [bit.ly/Register-MonoGutHealth-event](https://bit.ly/Register-MonoGutHealth-event).

The MonoGutHealth project aimed to transform swine and poultry production by harnessing targeted nutrition to enhance gut health, minimize antibiotic reliance, and boost overall animal welfare and productivity. The project tackled the global issue of over-medication in livestock by optimising conditions for healthy animal growth. By using perinatal nutrition, we aimed to influence gut microbiota composition and enhance metabolic and immune responses, focusing on essential growth stages such as gestation, early neonatal, and post-weaning in pigs, and pre- and post-hatch in chickens. Its goal was to develop specific dietary approaches to improve colostrum quality, support low birth weight piglets, and promote robust gut health.

In swine production it addressed challenges such as low birth weight, high pre-weaning mortality, and post-weaning stress through improved nutrition and gut health strategies.

Understanding and implementing these strategies at farm level can significantly enhance long-term health and growth efficiency in livestock, paving the way for more sustainable and effective animal farming practices.

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**For more information:**

Please visit our webpage at:  
<https://www.teagasc.ie/animals/pigs/>

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