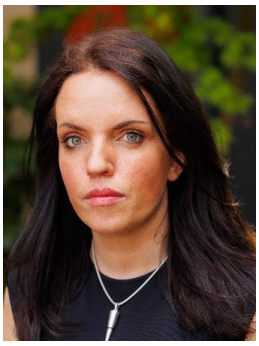
Pigs

August 2024

Edited by Amy Quinn



Welcome to the August edition of our monthly newsletter. In the latter days of this month, producers have received two significant drops in pig price totalling 12c which is very disappointing news.

In this month's newsletter, we reveal some of the wet chemistry crude protein results from several feed samples provided to the Feed Nutrition Lab at Moorepark, which highlights the financial implications of differences in crude protein. We also look at the results from the assessments of the AHI tail-biting scheme, which reveals some of the main risk factors on Irish farms.

We are currently looking for any farms considering enrolling a student into either the Farm Technician or Farm Manager Apprenticeship programmes to enrol their farm as a host farm without delay so that the registration process will be completed in time for their students to start. Details on both programmes can be found in this newsletter and if you need any more information please contact your Teagasc Specialised Advisor and we would be happy to help you with this process.

The National Ploughing Championship 2024 takes place from the 17th to 19th of September at Ratheniska, Co Laois. Members of the Pig Development Department (PDD) will be in attendance in the Teagasc marquee on all three days. This event is a great opportunity to promote our industry and we encourage all those in attendance to call in to us as we always enjoy seeing familiar faces throughout the event.

Preparation is also underway for this year's Teagasc Pig Farmers' Conference, which will take place on October 22nd in the Horse and Jockey Hotel, Co. Tipperary and on October 23rd in the Farnham Estate Spa & Golf Resort, Co. Cavan. We have finalised our programme and it will be made available shortly.

In this issue:

- Is your crude protein costing you?
- A twist in the tail
- Apply now for the Farm Technician & Farm Manager Apprenticeships

Teagasc
Agriculture and Food Development Authority

Is your crude protein costing you?

Kieran Keane

The pilot Feed Nutrition Lab at Moorepark has been operational for the last number of months. During this time we have been sourcing feed ingredients samples from a number of nearby farms for analysis. So far we have concentrated on the main bulk feed ingredients such as wheat, barley, soya and maize and most of our wet chemistry results have been on crude protein (CP) content of these raw ingredients. Table 1 below shows the results of over 500 samples.

Table 1: Crude protein results from wet chemistry analysis.

	Formulation CP	Average CP	Highest 10% CP	Lowest 10% CP
Barley	10.00%	9.87%	11.22%	9.21%
Wheat	10.50%	10.50%	11.60%	9.33%
Soya	47.20%	46.78%	47.50%	45.71%
Maize	8.15%	7.30%	7.97%	6.80%

The blue percentages are the crude protein values for these ingredients that we would normally use to formulate diets. The orange percentages are the average crude protein values across all samples of that analysed ingredient. The green percentages are the averages of the highest 10% of results and the red is the averages across the lowest 10% of results. As you can see there is considerable variation. However it's important to preface these results by highlighting that they are from a relatively short period of time and are subsamples taken from the farmer's own spot samples.

To demonstrate the difference these values make during diet formulation please see the Moorepark Finisher diet below. This diet is formulated using the blue values from Table 1 and comes in at an ingredient cost of €281.18/t and 16% dietary crude protein.

Table 2: Moorepark finisher diet.

Ingredient	Inclusion Kg/t
Barley	572.10
Wheat	249.20
Soya Hi-Pro	145.50
Limestone flour	10.95
Fat, soya oil	9.00
Lysine	4.68
Salt feed grade	3.00
L-Threonine	2.03
DL-Methionine	1.23
Vit-Min Mpk Finisher	1.27
MCP (22.7% P & 16% Ca)	0.96
L-Tryptophan	0.03
Ronozyme HiPhos GT	0.05
	1000.00
Price	€ 281.18
Crude Protein	16%

However, if we use the orange column from table 1 this diet now comes out at 15.82% crude protein, 16.96% for the green column and a 14.99% with the red column. So in summary there's about a 2% swing in crude protein between the highest and lowest values used. That is a substantial difference in crude protein not to mention the effects on amino acid ratios. While it is overly simplistic to

suggest that you would have either all the lowest or all the highest value ingredients in your silos at the same time, I have shown the extremes to highlight the potential financial implications. Smaller differences and imbalances could still be costing a lot in either underperformance of the animals, or oversupply of protein in a diet that could have been made cheaper.

However, if you know the CP content of what you have in your silos you could reformulate accordingly to correct for these differences. To tweak the diet above to get back to 16% CP and a balanced amino acid profile: The ingredients with the orange CP values would cost €281.74/t, the green figures would give a cost of €279.84/t and the red figures would end up costing €284.16/t. The difference between the highest and lowest figures would translate to over €18,000 per year on finisher feed on an average 700 sow herd. As this is based on crude protein, then the higher the price of soya, the greater the cost differential of the diets.

Again this is slightly simplistic as **all** ingredients above have been allowed to change when in practice a lot of the lower inclusion ingredients would already be blended into a premix. In fact if all ingredients from lysine down on the recipe in Table 2 are left unchanged there will still be a price difference when using the green or red values (€280.51 vs €283.66) but the dietary crude protein will not return to 16%. It would be 16.66% for the green values and 15.36% for the red values. So we can get nearer to our targets but not quite hit them. The practicalities of dealing with varying qualities of ingredients on farm may just come down to being able to separate different loads and using them accordingly.

After all we can only '*manage what we can measure*' and at the moment we simply don't know what the quality of each ingredient on each truck is. While it is our hope to be able to roll out more testing in the feed lab we are not quite there yet. Your supplier of feed ingredients should be able to provide you with some of this data on request as they will have results on file for various tests carried out particularly on imported ingredients. While the examples above highlight the cost differences of manipulating diets when values are known, the hidden cost differences in the unknown could have much more impact on your bottom line.

A twist in the tail

Keelin O'Driscoll & Roberta D'Alessio

Since 2019 Animal Health Ireland (AHI) have managed a tail biting risk assessment scheme which all producers in Ireland have the opportunity to avail of free of charge. This was in response to European Recommendation 336 (2016) which required that each EU Member State ensures that tail-biting risk assessments are carried out on farms, and that corrective measures for each identified risk factor are recorded. This is because tail biting has many different risk factors, and the triggers can be farm specific; thus to identify where these triggers are, it is necessary to examine each farm individually, rather than just applying general advice.

Development of the risk assessment tool

The assessment tool that is currently in use by AHI was developed by a team from DAFM and Teagasc. It was adapted from a pre-existing published tool that was developed in the UK – the Husbandry Advisory Tool. This is published online and provides guidance on the main risks associated with tail biting, with many links to further information available on the website (https://webhat.ahdb.org.uk/). Because UK pig systems differ considerably from Irish, the team refined and cut down the length of the tool, so that only measurements relevant to Irish systems were included. Following this, all Irish pig private veterinary practitioners (assessors) underwent training on how to carry out the assessments. Each time they complete an assessment, the results are then uploaded to the AHI database.

The risk assessment protocol

Six pens are assessed during the assessment (two early stage weaner pens, two late stage weaner pens, and two finisher pens), which was designed to only take 15 minutes per pen. The first part of the assessment considers pig housing and management; pen area, the proportion of solid flooring, the sex of the pigs, the estimated weight of the pigs, tail length (docked, undocked or mixed length), whether pigs can all feed at the same time, the number of drinkers, and whether the assessor considered the vaccination protocol to be appropriate. The type and amount of environmental enrichment present is also recorded.

Following this the assessor counted the pigs, and then counted the number of pigs that had injured tails, injured ears, flank lesions, and aggression lesions. They also counted the number of pigs with dirty flanks and tucked tails. Finally, they observed the pen for the following pig behaviours for 5 minutes: tail biting, ear biting, damaging biting of other parts of the body, investigation of fixture and fittings, investigation of enrichment material, and aggressive biting.

At this stage the assessor determined whether or not they considered there was an overall risk of tail biting occurring in the pen (Yes/No). They also considered in more detail the level of tail biting risk in relation to six risk categories: 1) the enrichment materials provided; 2) cleanliness; 3) thermal comfort and air quality; 4) health status; 5) competition for food and space; 6) diet.

What we measured

To evaluate how well the results of the assessment reflected the risks for tail biting, Dr. Roberta D'Alessio, who carried out her PhD with Teagasc and UCD, followed up 27 risk assessments with a trip to the slaughterhouse to determine the level of tail damage on a batch of pigs from these farms, during 2020-2022. She then compared the level of tail damage on each farm with the risks that were identified using the tool.

Farm management data

The results of the assessments allowed us to get an average picture of environmental conditions on the 27 farms assessed. Overall, the assessments identified that the main areas requiring improvement on farm were inadequate enrichment provision and space allowance. All producers should assess these factors on a continual basis, as the benefit of provision of ample space and enrichment is well documented

from both an increased production and welfare standpoint.

Tail damage and level of risk on farm

Overall, 58% of pens were classified as being at risk for tail biting. Of the six risk assessment categories, in the majority of cases enrichment provision was determined to be a major risk. However, the other 5 categories were most often assigned as 'minor risk'. A positive result was that the proportion of tail injuries observed at farm correlated with the proportion of each batch in the abattoir that were categorised as severely damaged (partial or complete tail loss, or an open wound). This indicates that even given the difficulty of assessing tail damage from outside the pen, the assessors were correctly identifying when there was a severe level of damage on farm.

Tail damage at slaughter

Positively, we found that just under 70% of the pig tails presented no tail damage. Minor damage was observed in just over 15% of tails, 11% had evidence of teeth marks, 3% had moderate damage (broken skin with redness and swelling), and under 1% presented severe tail skin damage.

Farm management and pig behaviour

In general, enrichment directed behaviour increased as the number of enrichment items provided increased – this demonstrates how sufficient enrichment can absorb pig exploratory behaviour. There was also less exploration of 'fixtures and fittings' as the number of enrichment items increased. We also found that as the proportion of drinkers per pig increased, so did exploratory behaviour. Thus adequate enrichment provision also has important implications for issues such as pigs dominating use of drinkers in particular, which has knock on effects for water wastage (see newsletter from May 2022);

Relationship between risk level and tail condition

In all cases assessors consistently reported that all 6 pens on each farm were either at risk, or not at risk, for tail biting. Thus each farm was classified as being either at risk or not. Unfortunately, we found that there was no difference in tail damage at the factory between farms considered at risk, or not at risk of tail biting.

Take home message

Overall, the tail biting risk assessment tool that is currently in use provides valuable insight into conditions on Irish farms; we found that our results from this selection of farms are similarly reflected in the wider database that AHI has collected. However, unfortunately the tool does not appear to support assessors in accurately determining the actual level of risk on each farm, or where these risks lie, relative to the evidence of tail biting observed at the factory. This is likely due to the subjective nature of some of the measurements, and the lack of detail involved. A novel tool has been developed and is currently undergoing refinement to address this issue.

For any further questions on this project you can contact Keelin O'Driscoll by email at keelin.odriscoll@teagasc.ie.

Apply now for the Farm Technician & Farm Manager Apprenticeships

Amy Quinn

Good news for those looking to further their education in pig production and those wishing to upskill their farm staff. Both the Farm Technician (Higher Certificate Level 6) and Farm Manager (Ordinary Degree Level 7) Apprenticeship programme are open for applications and are expected to commence in late September. They are open to applications from various agricultural sectors however the Teagasc PDD are heavily involved in delivering the pig specific content. Each apprenticeship is two years in length and leads to a major award on the National Framework of Qualifications. Informative videos are available here.

The farm manager programme creates a pathway to a managerial career in the agricultural sector, equipping the apprentice with the latest research and best practice management knowledge to successfully run a commercial farm business. It will lead to a Level 7 degree and will be available through Kildalton Agricultural College. Full details of the programme can be found here.

The Farm Technician programme is for those who wish to pursue a career in the agricultural industry as a farm technician or for existing personnel in the industry who would like to gain a qualification. It trains apprentices to operate successfully within Irish farming systems, gaining skills in daily operations, compliance with industry standards and regulatory measures. It will lead to a Level 6 Higher certificate. This year the Farm Technician apprenticeship will be available in both Clonakilty Agricultural College and Ballyhaise Agricultural College if there is enough demand. Full details of the programme can be found here.

The next steps for those interested would be to;

1. Register the farm to become an apprentice employer/host farm here. After this there will be a number of follow up steps to complete registration, including a phone call and a site visit. Only after this is complete and the farm has been approved by SOLAS can the potential student (e.g. identified employee) apply to become an apprentice.
2. Read the relevant programme guides detailing the course content and requirements.
3. Identify which programme you or your staff member is interested in; Level 6 Farm Technician or Level 7 Farm Manager Apprenticeship.

If you do not have a member of staff interested but are interested in hosting an apprentice then you can apply solely to be a host farm. You will be able to advertise an apprentice position on your farm and you may receive a farm apprentice to work on your farm. This is a route to formal pig education for those that have been already involved in the industry but do not have a host farm or also those who would like to get involved in the pig sector.

We encourage all farms interested to apply to be a host farm ASAP at the link provided to ensure they will be set up in time for students to commence the course. To find out more or to discuss further please contact your Teagasc Specialised Advisor.

Pigs

Teagasc Pig Farmers' Conference 2024

The Teagasc Pig Farmers' Conference 2024 will take place on October 22nd in the Horse and Jockey Hotel, Co. Tipperary and on October 23rd in the Farnham Estate Spa & Golf Resort, Co. Cavan. Preparations for this event are well underway with a great line up of speakers, both guest and from our own PDD. A full detailed line up will be available in the coming weeks. Make sure to mark it in your diary. We look forward to seeing you there.

Congratulations Elisa & Roberta

The PDD would like to extend its congratulations to Dr Elisa Arnaud who successfully defended her PhD thesis at South East Technological University (SETU), Waterford on August 7th last. Elisa's thesis title was "Pre- and post-weaning nutritional and management strategies to increase piglet growth and reduce antimicrobial usage". Her examiners Dr Giuseppe Bee (Agroscope, Switzerland) and Dr Siobhan Walsh (SETU) complimented Elisa on the quality of her work. Elisa's PhD was supervised by Prof Gillian Gardiner (SETU), Dr. Peadar Lawlor (Teagasc), Prof. John O'Doherty (UCD) and Prof. Torres Sweeney (UCD). Well done Dr Arnaud!

Congratulations to Dr Roberta D'Alessio, who recently defended her PhD thesis 'Development and Implementation of a tail biting risk assessment tool on commercial pig farms'. Many of you may know Roberta, as her work prioritised collaborating with pig industry stakeholders in addressing the highly challenging industry issue of tail biting. Best of luck to Roberta in all her future endeavours!

ESPHM & IPVS poster presentation

The joint congress of the European Symposium of Porcine Health Management (ESPHM) and the International Pig Veterinary Society Congress (IPVS) took take place in Leipzig, Germany between the 4th and 7th of June 2024. Shane McAuliffe presented some of his research masters results as a poster at this event titled "Associations between disease status and performance, respiratory lesions and antibiotic use in Irish pig farms". Shanes supervisors for his Masters were Dr. Edgar Garcia Manzanilla of Teagasc, Dr. Maria Costa, formerly Teagasc and Prof. Steven Van Winden of the Royal Veterinary College.

For more information:

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

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