

Edited by Amy Quinn



Welcome to the June edition of our monthly newsletter.

Pig prices have risen slightly over the past month, despite greater expectation based on significant increases in countries like Spain and France. However, they are going in the right direction and market indications are that they will continue to rise in the months ahead.

Feed prices remain a challenge, having risen €24 per tonne since the start of the year (Teagasc Monthly Monitor). Market information in relation to planting and harvest forecasts are positive so we expect to see some reductions post-harvest. Until then, it is very important to keep focused on feed costs and look at ways to reduce them. Sometimes when pig prices are good we tend to accept rising feed prices without giving much thought to how we can reduce feed costs. This month we have an interesting article on why we should keep our eye on reducing feed costs and what we can do to achieve that.

There are also some other very interesting articles this month. Peadar Lawlor and Florence Viard evaluate the use of three varieties of field beans in growing-finishing pig diets and Gerard McCutcheon looks at how much energy is required to produce a pig in Ireland?

Finally, our Level 5 Pig Course which has been on hold due to Covid-19 restrictions will resume shortly. Watch this space for more details or contact your Advisor for further information.

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Field beans in growing-finishing pig diets; evaluation of three varieties

Peadar Lawlor & Florence Viard

Producers always ask about alternative feed ingredients that may reduce the feed cost per kg dead-weight on their units. There is growing interest in field (faba) beans currently in the Irish feed sector from a carbon foot-printing perspective. We previously fed propionic acid treated field beans in finisher pig diets and achieved excellent growth performance.

Last year we sourced three varieties of field beans from the 2020 harvest. Two of these varieties LYNX and VICTUS (a low vicine/convicine variety) were grown in Ireland while the third (TAUFIN; a zero tannin variety) was grown in Germany and will be introduced to Ireland in the next few years. We looked at the effect of including the three different varieties of field beans in the diets of growing-finishing pigs on their growth and carcass quality. All beans were

dried post-harvest and stored until they were milled at the time of diet manufacture.

The treatments were:

1. Control cereal / soy bean diet
2. Diet with a 40% inclusion of field beans (LYNX)
3. Diet with a 40% inclusion of field beans (VICTUS)
4. Diet with a 40% inclusion of field beans (TAIFUN)

All diets were formulated to contain 9.8 MJ NE / kg and 10g SID Lysine /kg. The diet composition is shown in Table 1. Pen groups (9 pens per treatment) were fed their respective diet during an 84 day trial. Pigs started on trial at ~27 kg and weighed ~118kg at the end of the trial. Diets were liquid fed using an *ad-libitum*, short-trough, sensor controlled feeding system.

Table 1. Composition of Experimental diets (kg/tonne).

	Diet			
	1	2	3	4
Bean variety	-	LYNX	VICTUS	TAIFUN
Faba beans	0	400	400	400
Soybean meal	186.9	0	0	0
Wheat	400	327.6	327.6	327.6
Barley	381.7	237	237	237
Soya oil	7.1	9	9	9
Lysine HCl (78.8)	3.9	3	3	3
DL-Methionine	1.3	3.2	3.2	3.2
L-Threonine (98)	2	2.2	2.2	2.2
L-Tryptophan	0.2	0.7	0.7	0.7
Limestone flour	11	11.5	11.5	11.5
Mono DiCal Phosphate	0.8	0.7	0.7	0.7
Salt	3	3	3	3
Vitamin & trace mineral mix	2	2	2	2
Ronozyme HiPhos (GT)	0.1	0.1	0.1	0.1
Chemical Composition				
NE (MJ/Kg)	9.8	9.8	9.8	9.8
SID Lysine (g/kg)	10	10	10	10

The health of pigs and their growth performance was excellent during the trial. The results are shown in Table 2. ADFI and ADG were unaffected by treatment when calculated on the normal live-weight basis. However, FCE tended to be poorer when the LYNX based diet was fed compared to the control and TAIFUN based diets.

Carcass weight on all field bean diets was up to 2.8kg lighter than that for the control diet.

However lean meat yield was higher for all bean based diets compared to the control diet. When we look at carcass FCE, which is the kilos of feed required for each kilo of saleable carcass weight produced, we find that TAIFUN was the only bean variety that was as feed efficient as the control diet. The LYNX and VICTUS based diets were both ~4.5% less feed efficient than the TAIFUN and control diets.

Table 2. Effect of including the 3 bean varieties in the diets of growing-finishing pigs.

	Treatment				se	P-value*
	0	LYNX	VICTUS	TAIFUN		
No pens per treatment	9	9	9	9		
Duration (days)	84	84	84	84		
Weight (kg)						
Day 0	27.4	27.6	25.9	27.0	1.17	0.29
Day 84	121.2	118.4	114.8	118.0	2.66	0.36
ADFI (g/day)	2611	2678	2624	2576	43.7	0.36
ADG (g/day)	1109	1090	1079	1113	23.8	0.72
FCE (g/day)	2.36 ^A	2.46 ^B	2.44 ^{AB}	2.33 ^A	0.042	0.09
Carcass weight (kg)	90.8 ^a	88.1 ^b	87.6 ^b	88.0 ^b	0.96	<0.001
Lean meat yield (%)	58.8 ^a	59.5 ^b	59.4 ^b	59.8 ^b	0.20	<0.001
Carcass FCE (g/g)	3.01 ^a	3.15 ^b	3.14 ^b	3.01 ^a	0.028	<0.001

* A p-value less than 0.05 (≤ 0.05) is statistically significant

From this work we can conclude that when feeding a field bean based diet that TAIFUN will result in the best feed efficiency of all field beans tested and will have similar feed efficiency to that of a cereal-soybean meal diet. However when pigs are slaughtered at the same age, feeding a field bean based diet will reduce carcass weight compared to a cereal-soybean meal based diet.

Field bean diets did, however, result in increased Lean meat yield.

Acknowledgement: Thanks to Tim O'Donovan from Seedtech, supported by Legumes Translated, for sourcing and organising delivery of field beans for this trial.

How much energy is required to produce a pig in Ireland?

Gerard McCutcheon

Fuel costs are rising. Each time you pass your local garage you can see that petrol and diesel prices are staying high. Energy is required in pig production. Do you know how much energy is required to produce a pig on your farm?

In 2006 a Teagasc survey of 8 Irish Pig Farms with a total of 4701 sows (approximately 3% of the National Pig Herd) showed an average usage of 27kWh per pig produced (with a range of 17 to 37 kWh/pig produced). These were farms whose sole energy was supplied by electricity.

In 2012 SEAI energy audits were done on 23 pig farms, and showed a huge variation in the energy usage ranging from 18 up to 45kWh /pig produced with an average figure of 28kWh/pig produced. These audits for 23 farms included over 20,000 sows (or approximately 14% of the national herd). The high variation from one farm to another suggests that a greater emphasis needs to be put on energy efficiency.

Another source of data available is from 88 pig farms recording on the Teagasc ePM system. The most recent (2020) energy cost (heat, power and light) is €3.79 per pig produced (or €104/sow /year based upon 27.5 pigs produced/sow/year). This ePM data covers approximately 50% of the national pig herd.

The figures above do not include the energy used in feed milling. Energy on pig farms is mainly used for the following purposes:

- Heating the farrowing & first stage weaner houses
- Ventilation systems & fans
- Lighting throughout the buildings
- Feed delivery and mixing, power-washing
- Manure pumps to mix & agitate slurry tanks

The proportion used for each purpose will vary from farm to farm.

Energy is a resource that must be used efficiently and effectively. There is a high variation between farms in the kWh required to produce a pig. Every farm has different ventilation, feed, heating and lighting systems. Is this variation due to the system of energy use on the farm, or is it an inefficiency of the system?

It makes no sense to waste energy at a time when energy costs are rising. Ask yourself the following questions:

1. Has a recent energy audit been done for your farm?
2. How closely is energy use monitored on your farm?
3. Can you reduce the cost of energy on your farm?

Fuel costs are rising and there is concern that they will become an even more significant cost in the future. Typically a 1000 sow integrated pig unit (i.e. rearing pigs from birth to slaughter) will spend over €100,000 each year on fuel and electricity for the production of pigs. This is worth reviewing more regularly.

Keep your eye on reducing feed costs

Ciarán Carroll

We usually tend to focus on feed costs when there's a crisis; when feed prices rise and pig prices are low (or start to drop!). This was the case in 2018. However, pig prices have improved since then and when pig prices are good we tend to roll with and accept the punches (of rising feed prices). However, feed costs account for 70% of production costs so we should always be focused on reducing them and keeping them to the minimum!

Based on the Teagasc e-Profit Monitor data, the feed cost in 2020 averaged €1.05 per kg dead weight with a corresponding margin over feed of €0.71 per kg dead weight. However, since January 2021 feed costs have risen to €1.18 per kg dead weight (based on the Teagasc Monthly Monitor for pig & feed prices). This is a 13 cent per kg rise in feed costs and a corresponding 25 cent per kg drop in margin over feed (at €0.46 per kg). This is the result of a combination of increasing feed prices and decreasing pig price. Thankfully, pig price is increasing again but the feed price remains unchanged.

So let's focus! What are your current feed costs? At a minimum each farm must know what it's current feed cost per kg is. This has to be based on current feed prices and up-to-date reliable information on feed usage and efficiency, i.e. through accurate record keeping! At current prices a 0.1 improvement in finisher FCE is worth €2.33 per pig (almost €40,000 per year for a 600 sow integrated pig farm with average pig

productivity). So, what are the key areas to look at?

Finishers

Finisher feed costs account for 60% of total feed costs, so let's start there.

1. **Feeders:** an average finisher feeder will have a throughput of 12 tonne feed annually. At 5% waste that's equivalent to 0.6 tonne per year or €184 per feeder. For an average 600 sow farm with average pig productivity this could amount to €34,400 per year. Feeder management is crucial; adjust your feeders regularly so they don't waste feed (being careful not to restrict them too much when doing so) and repair or replace broken feeders immediately.
2. **Improve Average Daily Gain (ADG):** a 25g per day increase in ADG is worth €0.80 per pig (€13,200 for a 600 sow farm with average pig productivity). Improving feed intakes will improve ADG. Of the many factors that can affect feed intakes (diet, health, genetics, feeder space, room temperature, feeder management, etc) stocking rate is one of the more important ones, and can be an invisible cost. A 3% reduction in floor space can result in a 1% reduction in feed intake. Work out your available floor space and take necessary action.

3. Two Finisher Diets: Average weaner transfer weights were 39.2kg in 2020 (Teagasc e-Profit Monitor). Many farms would be feeding weaner diets to this weight. There is no justification for this. Pigs can go onto a high spec finisher diet from 25kg without affecting pig performance. There are savings of at least €1 per pig to go onto high spec finisher diets earlier, and by switching to a lower density diet from 65-70kg you could save almost €2 per pig. However, the key here is to get the full breakdown of your diet spec and make sure it's appropriate for the category of pig being fed.

4. Examine Slaughter Weights: slaughter weights have increased substantially in recent years. However, there may be scope for some farms to increase them further. A 5kg increase in live weight from 110kg to 115kg is worth approximately €0.90 per pig (assuming floor area available and your processor will allow the increase).

If you're already selling heavy pigs (125-130kg) you may be at your optimum sale weight, and may even consider reducing sale weight to improve FCE and reduce feed costs (while feed prices are high).

5. Premixes: Schothorst Feed Research Centre have shown that omitting the vitamin/mineral premix from finisher diets in the last month prior to slaughter can result in 1% feed cost savings without affecting pig performance.

Other Areas

1. Gilt Pool: gilts will consume on average 210kg feed each (€66 at current prices). Carrying excess gilts costs money! Aim for a gilt pool of 12% of herd size. What is your current gilt pool size?

2. Unproductive sows: do not keep unproductive sows in your herd. Avoid re-serving second repeats. Cull on time and sell early. Sows have an FCE of almost 7:1 so it's not worth holding onto them to try put condition on before sale.

3. Pelleting diets will improve FCE by 1-2% and easily offsets the cost of pelleting.

4. Feed additives: review your inclusion of feed additives in all your diets. What are you including them for? Are they cost beneficial?

Welcome!

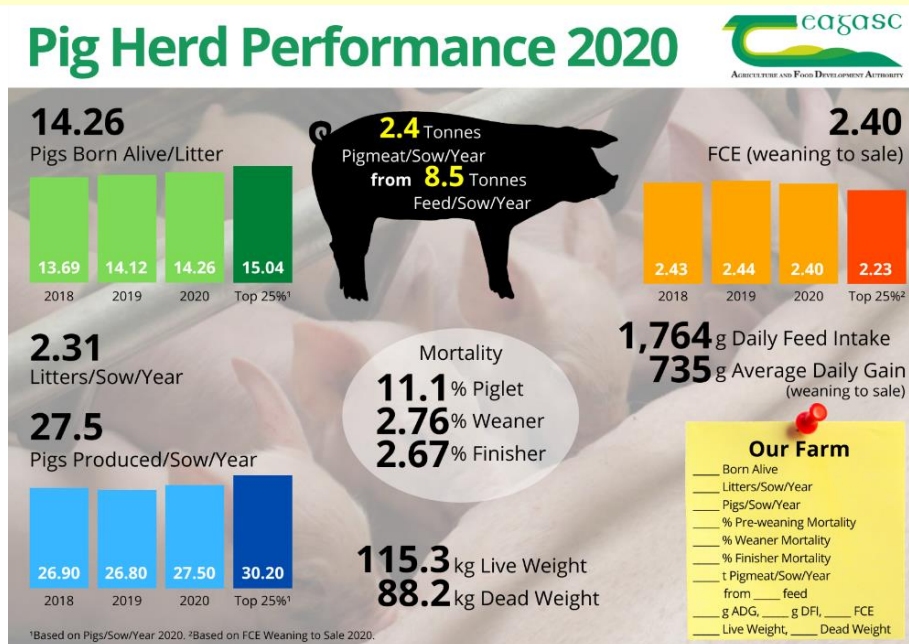
We would like to welcome Pauline Lichou to the PDD team. Pauline will work on The MonoGutHealth project. This EU funded project includes 6 countries and 11 separate projects to explore nutritional strategies and bioactive ingredients to optimise perinatal development of the microbiome and the immune response of monogastrics to ultimately reduce antimicrobial usage. Pauline will look at the early identification of at risk pigs and will conduct sow feeding studies. We also welcome Mário Ornelas back to the PDD. Mário studied Veterinary Medicine at University of Lisbon and will work on the BM-FARM Project, Biomarkers and Microbiome in Farms for Antimicrobial Resistance Management.

Congratulations!

The PDD send congratulations to Dr. Jen-Yun Chou, who completed her PhD in Moorepark, as she was recently awarded the Universities Federation for Animal Welfare (UFAW) Early Career Researcher of the Year 2021 for her contribution to animal welfare.

After Jen finished her PhD in 2019 she worked for World Animal Protection, coordinating the 3T's (tails, teeth and testicles) alliance. At the moment she is a postdoctoral researcher at the University of Pennsylvania looking at the welfare of gestating sows, particularly in early pregnancy.

National Pig Herd Performance Report 2020



The National Pig Herd Performance Report for 2020 and the accompanying infographic are now available on our website ([click here](#)). The report includes a detailed analysis of the performance of the pig farms that participated in the Teagasc e-Profit Monitor (ePM) recording system in 2020. The data available and included in this analysis is from a total of 88 herds representing over 70,000 sows or 48% of the total Irish sow herd. The average herd size included in this database is 799 sows and ranged from less than 100 sows to over 2,500 sows.



For more information:

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

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