



PIG e:newsletter

Pig Information Group – April 2017 Report

Welcome to the April edition of the PIG e:newsletter.

We have begun 2017 amid a period of change both at home and abroad as the outcomes of elections and referendums begin to take effect. There is however a feeling of optimism within the pig sector helped in no small part by the vastly improved returns compared with 12 months ago. The shakedown from Brexit and how this will affect not only the pig sector but agriculture in general is still largely unknown so it is therefore more important than ever to know your business and identify areas where efficiency and ultimately profitability can be improved.

Benchmarking, discussion groups and the Monitor Farm concept are well established within the pig sector. Areas for improvement can be identified within a group of like-minded individuals sharing opinions and experiences with support from the industry as a whole. While individual gains may be small the cumulative effect can be significant.

Sometimes big decisions need to be taken and depops come into that category. SRUC went down this route with its own unit at Oatridge. Naomi Scott has shared the colleges own experiences of the process, comparing performance both before and after.

Aggression is this edition's Focus Topic and Irene Camerlink discusses how this can impact on herd health and productivity and also offers up tips to help reduce aggression on farm.

Knowledge Transfer and feedback between producers and research is vital for both parties to help drive future research areas. SRUC recently held a research roadshow in Aberdeenshire to boost links and collaboration through the sector with a report on the event in this issue.

Jill Thomson once again brings her veterinarian angle as she discusses mycotoxins and their effects on pig herds.

This e-newsletter gives an insight into the work of the Pig Information Group, which comprises representative experts from SRUC's Research and Education groups and SAC Consultancy who work on various topics relating to pigs. Our primary aim is to enhance communication with those in the pig supply chain.

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Need an expert?

Contact us using the links on page 8.



Prices continue to rise due to currency and a tightening of supplies.

Month end date	EU Spec GB SPP (p/kg)	Change on month (p)	Average Pig Weight (Kg)	UK weekly clean kill-000head	LIFFE wheat futures (£/tonne)	Soyameal 46% Braz. (£/tonne) ex store L'pool
October	144.84	+4.93	82.16	175.8	133.46	343
November	150.74	+5.90	83.31	182.0	139.27	328
December	151.90	+1.16	83.29	118.7	135.33	324
January	150.56	-1.34	84.38	170.3	148.10	343
February	149.59	-0.97	84.29	161.9	145.30	329

Facts and figures calculated from industry sources (AHDB and Scottish Pig Producers)

- The EU Spec GB SPP has kept on rising through the autumn although prices have eased off slightly since the New Year. Prices are still up around 35ppkg on the year (30%). UK slaughterings of clean pigs have been up to 5% lower than the year previous as the effects of the contraction of the breeding herd due to the low prices of 12 months ago and reports of increased disease pressure working through to the finishing herd.
- Short term prospects are boosted by tightening supplies in major pig producing countries within the EU and increasing exports with China the biggest customer.
- The £ having weakened significantly against the € post Brexit, has now strengthened in recent months to almost midway between pre-Brexit and post-Brexit lows. The announcement of a “hard” Brexit has seen further weakening.
- Wheat and barley supplies remain tight in the UK after the smaller crops in 2016. There has also been increased competition from other end-users-e.g. Ensus this year. The mild winter sees crops coming into spring looking well with the potential for high yields. Potentially reduced spring barley sowings combined with greater demand for malting barley this harvest could however see new crop feed barley supplies tight.
- Imports of pigmeat into the UK continued to rise in 2016 with imports from Denmark in particular increasing.
- Despite consumer confidence remaining positive retail sales of pigmeat within the UK continue to contract with consumer demand and sales down in 2016 from 2015. According to Kantor Worldpanel retail volumes of pork had fallen 3% in the 52 weeks to the end of January 2017. Despite this UK pig producers share of the retail price (now at 40.5%) is at its highest level for nearly 3 years.
- Weaner prices are now at record levels in the EU according to the AHDB Pork due to tightening supply and increasing pigmeat prices with (like the UK), export demand being a key driver. In the UK 30kg weaners were £56.24(AHDB) with 7kg weaners at £38.13(AHDB).



SRUC's research team hit the road to spread the word about their current activities.

SRUC's Pig Information Group recently held a **Research Roadshow at Lochter near Inverurie**. The meeting was an opportunity to highlight SRUC's current pig research and also engage with both farmers and representatives from the wider industry to seek future areas for research. The main speakers were Veterinary Epidemiologist Dr Carla Gomes and Researcher Dr Emma Baxter.

Carla Gomes presented an overview of several ongoing projects run by the **Epidemiology Research Unit (ERU)** in Inverness. These projects focus on the monitoring of endemic diseases, such as the industry-based endemic disease surveillance schemes operating in many abattoirs across UK. The benefits of continuous standardised monitoring of lesions in terms of monitoring disease prevalence and the early detection of changes were highlighted to the audience. (see **Focus Topic in the November 2016 edition of the PIG e-newsletter for more details**)

The ERU is also part of the **Scottish Government Centre of Expertise in Animal Disease Outbreaks (EPIC)**. While EPIC focuses mainly on exotic diseases, work in the pig sector has explored the use of animal movements for disease spread and modelling both classical and African swine fevers spread in Great Britain.

Since April last year ERU has also become part of a project lead by **Wholesome Pigs Scotland** which aims to improve the efficiency of Scottish pig production using results to inform both industry and government environmental, health & welfare policies and in doing so help improve the competitiveness of Scottish pig meat.

For more information on any of these projects please contact Carla Gomes (Carla.Gomes@sruc.ac.uk)

Emma Baxter then presented a summary of the many research projects currently being carried out at SRUC's Edinburgh-based research centre which span the whole life-cycle of the pig.

Sow research focuses on-

- Pre-natal stress
- Sow satiety
- Alternative farrowing and lactation systems.

Piglet research centres on-

- Improving piglet survival- particularly in large litters, artificial rearing systems and the use of nurse sows.

SRUC is also studying tail-biting including-

- Docking pain
- Effective non-straw enrichment material
- Development of early warning systems for tail-biting outbreaks

SRUC's animal health and nutrition team are also involved in:-

- Looking at strategies to combat E Coli infection in weaners by boosting natural defences using probiotics and different diets rather than relying on antibiotics.
- Finding suitable home-grown protein sources to reduce industry reliance on soya.
- Looking into the growing incidents of gastric ulcers in finishing pigs with our behaviourists and vets also studying whether they can detect pain from ulcers of different severities so there can be targeted interventions.

Finally there was an extended discussion on social aggression; Simon Turner, an expert on aggression in pigs, and his PhD student Rachel Peden used an interactive approach to gauge farmer opinion on how much of a problem aggression is on farm and how they perceive different levels of aggression between pigs.

If you would like any more information on any of the topics introduced here please contact Emma Baxter (Emma.Baxter@sruc.ac.uk).

Ross MacKenzie

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FOCUS TOPIC



Aggression- a significant influence on both health and productivity- top tips to help reduce incidences on farm.

Why is aggression so important?

When unfamiliar pigs are grouped together they fight to establish dominance relationships. This natural behaviour can, under farm conditions, escalate to the extent where both health and productivity are affected.

What are the signs of extreme aggression?

- Newly mixed pigs will show some skin lesions (image 1).



Image 1. Moderate skin lesions

- Every lesion is the result of a bite. **Patches of lesions can signify around 50-100 bites.** This goes together with high levels of exhaustion.
- Aggression should subside around 24h after regrouping. Lameness and death at regrouping indicate very extreme aggression.
- In stable groups aggression should be minimal. Recently, cases of deaths due to aggression in stable groups seem to be increasing. If you encounter repeated issues with this then please contact **SRUC (contact details at end)**, as we are investigating the causes of this.

Effects on production

Aggression has many effects including:

- increased stress
- skin lesions
- injuries
- reduced immunity and growth.
- in sows it can even lead to abortion.

The time spent on fighting comes directly at the cost of the time spent feeding. Growth rate is therefore most often reduced at the first days after regrouping. Extreme aggression can result in more substantial losses due to lameness, infections and death.

When to take action

It is advised to take preventive measures to reduce aggression in any case but especially if extreme aggression occurs. Monitor the occurrences of extreme cases to assess the impact of management changes. Note down any pigs with extreme numbers of lesions and monitor them as they have a higher risk of reduced immunity.

7 Tips to reduce aggression

Solutions to reduce aggression often require investment. Here we list some of the most promising steps that can be taken to reduce aggression without necessarily bringing additional costs. We encourage exploring what is feasible within the existing situation.

Optimize regrouping

Mixing pigs helps to optimize group formation and allows precision feeding.

Disadvantages such as stress, aggression and disease spread can level out the benefits.

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7 tips to help reduce aggression in your herd



Tip 1. Avoid regrouping when possible. If needed, then regroup pigs as young as possible. The older and heavier pigs are, the more likely that growth will be reduced and injuries occur.

Tip 2. Try to keep the number of unfamiliar pigs per pen as low as possible. The higher the familiarity- the fewer the fights. **Caution: Do not put one or two unfamiliar pigs in an established group.**

Careful selection of sows

Aggressiveness is heritable. Careful selection of the sows can thus reduce aggression in the population.

Tip 3. Score gilts on aggressiveness (e.g. 0 not aggressive – 5 aggressive) and take this score into consideration when selecting replacements.

Co-mingling litters pre-weaning

Co-mingling, or socialization, involves putting two or more litters together before weaning. This increases pigs' abilities to resolve dominance relationships quickly with limited long-term aggression.



Image 2. The younger pigs are mixed the better.

Tip 4. Let litters co-mingle from either two weeks of age or a few days before weaning by removing barriers between crates. This will reduce aggression and stress at weaning.

Pen conditions

When space is limited, pigs cannot properly retreat.

Tip 5. Providing plenty of space at mixing allows pigs to signal their intent and thereby establish their hierarchy quickly.

Tip 6. Provide an obstacle behind which a pig can hide its head (e.g. straw bale) as this can substantially reduce injuries.

Tip 7. Enrichment material occupies pigs and keeps them from continued fighting. **Caution: items can also be a resource to fight over- increasing aggression.**



Image 3. Provision of an enrichment material- straw in this case.

What does it really cost?

Aggression is known to reduce profit, but the actual costs of aggression are unknown. In a recently started project we calculate the costs and benefits of strategies to reduce aggression, based on farmers' perspective on aggression and opinion on different strategies. This does however require farm information. We would highly appreciate your participation in this study. You can join in the initial 10 min survey via

<https://www.surveymonkey.co.uk/r/pigaggression>

Please get in contact if you would like to receive the survey by post or if you are interested in joining in the upcoming stakeholder meetings.

For more information on any of the above, please contact Irene.camerlink@sruc.ac.uk

Irene Camerlink



The great depop debate- SRUC shares its experiences of before, during and after making the big decision.

In 2011, with mortality figures ever rising SRUC's Oatridge Farm began an investigation into carrying out a de-population or a re-population (de-pop/re-pop) on their 130 sow, farrow to finish unit.

The piggery was experiencing difficulty in controlling:

- **Enzootic Pneumonia (EP)**
- **Porcine Reproductive Respiratory Syndrome (PRRS)**
- **Pleurisy**
- **Post-Weaning Multisystemic Wasting Syndrome (PMWS).**

Disease pressure was believed to be contributing to a pre-weaning mortality of **up to 21%** (vs UK av. 12.35%, AHDB Pork), and post weaning mortality of **2.1%** (vs. UK av. 0.9%, AHDB Pork).

On weighing up the options of both partial or full de-pops, it was decided to plan for a full de-pop, as a partial de-pop would not eliminate disease prevalence amongst the breeding herd. Anticipated payback was calculated based on estimated costs of de-stocking, and weighted against an estimate of sales following restocking, with a conservative improvement in herd performance. This payback period was estimated at 1.3 years, and allowed for 10 weeks of down-time, however increased downtime puts a more realistic payback period at just under 2 years.

How was it done?

The entire unit was emptied of stock, with pigs being sent away at first saleable weight. With the unit emptied, work then began on emptying slurry receptacles, and deep cleaning all buildings. Each building on site had a total down time of 16 weeks, with repair work being carried out, but no modifications.

New breeding stock was then introduced and it was also decided to revise farrowing policy. A move from weekly farrowings to fortnightly has proven beneficial to both stock and stockmen, with Malcolm Ogilvie (Oatridge stockman) stating that there was far less pressure on staff as there is now a 6 day turn around for rooms. It has also proven beneficial for the fertility of the herd, with extra scrutiny falling on sows returning

to service out with service weeks. Feeding of lactating sows has also evolved since the re-pop, with these sows now receiving up to four feeds staggered throughout the day in order to improve intake and support a longer lactation. This in turn has led to less lean sows leaving the farrowing house, and improved farrowing rate.

	Weekly farrowing	Fortnightly farrowing
No.sows/ Farrowing	6	10
Weaning	4 weeks	5 weeks
Weaning Weight	7 - 7.5kg	8.5 – 9kg

Table 1: Comparison of Farrowing Policy pre- and post- de-pop/re-pop

Did it work- and are the effects long lasting?

Three years on, improvements are holding strong, with Malcolm describing the change on farm like "night and day". As well as an increased farrowing rate, there is 23% more pigs per sow sold than in 2011. Pre-weaning mortality has fluctuated across the years, but

	2015 vs. 2011
Farrowing rate	+3.4%
Litter/ sow/ year	+7%
Pigs born live	+3.3%
Pre-wean mortality	-2.3%
Weaning Weight	+20%
Pigs sold per sow/year	+23%

Table 2: Comparison of KPIs 2015 vs 2011

is showing a general downward trend, and weaning weights have increased by up to 20%. Having heavier and healthier pigs coming through to the feeding herd has also improved feed efficiency, with days to finish down to 154, in comparison to the 167-170 DTF seen pre-de-pop, and cost of feed/pig sold down by 15%.

Have you been considering a de-pop/re-pop on your unit? Please feel free to contact the Pig Information Group if you would like to discuss options for your own herd.



Mycotoxins- Could your herd be affected? What are the symptoms and what are the options?

What exactly are mycotoxins?

Mycotoxins are toxic substances that are produced through growth of certain fungal species on grains and other materials in the environment and have the potential to adversely affect animal and human health if eaten in sufficient quantity.

In the UK, contamination by the fungi *Fusarium* species is common, especially in moist, cool conditions. These species produce:

- **Zearalenone (commonly referred to as ZON or ZEA)**
- **Deoxynivalenol (commonly referred to as DON)**

Fusarium species need high relative humidity (more than 70%) or grain moisture of more than 22% for growth. The fungi can contaminate growing crops (mainly wheat and barley- with the risk highest when there is high rainfall at flowering (GS59) or pre-harvest) or stored grain that has a high moisture content. They can also contaminate finished feed that is stored in unsuitable conditions or when left to go stale in feeders in warm, humid buildings.

Other fungi can contaminate grains and feed under such conditions with the *Aspergillus* species and *Penicillium* species also producing toxins but there are many other species that grow as moulds but don't produce toxins.

Farmers should never take the risk of feeding mouldy feeds.

Part of the problem is that contamination with mycotoxins is **not** always obvious and **it can be a 'hidden' problem in finished feed and feeding systems unbeknown to farmers.**

So how do they affect pigs?

The effects of these two toxins are quite different.

Consider possible ZON contamination when there is:

- Unexplained infertility, problems of anoestrus, pseudopregnancy or 'not in pig'
- Swelling of the vulva and signs suggesting premature puberty in growing pigs (feminising Effects (see below)) - often initially indicated by boars being unduly active (riding) in mixed sex groups



Normal (left) and example of ZON vulva swelling in gilts (right)

- Prominent vulvas in baby pigs suckling sows
- An 'outbreak' of rectal prolapses especially in growing pigs. This occurs due to recto-anal oedema causing discomfort and straining.

Consider possible DON contamination when there is:

- Reduced feed intakes in the absence of any obvious illness
- Feed refusal and evidence of vomiting
- Lower growth rates than expected without any obvious explanation
- General restlessness among the pigs and increase in vices
- Young piglets not suckling well and failing to thrive

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Health Matters



All the above happen because DON is a vomitoxin and it affects the palatability of feed. Some pigs are more affected by it than others. Within groups some pigs retain a near-normal appetite while others eat much less or might refuse feed altogether, depending on the level of contamination. The effects can be subtle in low-grade contamination but it can adversely affect growth performance and lead to management problems due to over-crowding etc. If sows and gilts receive DON-contaminated feed in late pregnancy, the toxin circulating in the blood stream crosses the placenta, into the foetuses and gets stored in foetal tissues. When the piglets are born, DON is released gradually into the piglets' blood stream and has an appetite-suppressing effect for about the first 4 – 5 days. Baby pigs are very sensitive to these effects whereas sows and gilts might be unaffected by the low levels that they are consuming in the dry-sow ration.

Can we test for mycotoxins?

Yes, feed samples can be tested but the distribution of toxins can be patchy so 'representative' sampling is needed. Pigs can be tested by your vet taking blood samples while pigs are on the suspect feed. Both ZON and DON can be tested in serum. DON is largely excreted in urine so that is a good sample (for example, checking sows in the farrowing house where urine samples are easier to obtain). For general screening of finishing pigs or cull sows for ZON, bile samples can be collected after slaughter (arrange this with Allan Ward, QMS). ZON is mainly excreted in bile and this gives a good indication of feed contamination in the week before slaughter.



ZON mycotoxins columns close up in the lab.

How do mycotoxin binders work?

There are different types of mycotoxin binders that work in different ways. It is a complex subject and there are an increasing number of products on the market. Basically, they include feed adsorbents or chemicals that are intended to keep the toxin within the

bowel, and reducing the amount that gets absorbed into the pig's blood stream. The main groups of compounds are:

- **Clay-based products (bentonite or zeolite)**
- **Charcoal-based products**
- **Hydrated sodium calcium aluminosilicates (HSCA's)**
- **Yeast-based glucomannan polymer adsorbents (GMA's)**

All of these products are thought to help in reducing absorption however this can be variable. Experimental studies have shown that they do not reduce the loss of appetite associated with DON.

What can I do on farm to prevent mycotoxin problems?

- Use good quality feed from a reputable supplier and store it in the correct way (cool, dry conditions).
- Home mixers growing their own cereals need to ensure that grain is harvested with a low moisture content, dried, cooled with storage free of infestation, vermin and weather tight to allow the grain to be stored safely.
- Remember to inspect grain storage bins, mixing equipment, feed lines and feeders for caking, moulding or musty odours.
- On a regular basis, make a point of removing all contaminated feed, clean the equipment and decontaminate storage areas with hypochlorite (laundry bleach) to kill off fungal contamination.

Jill Thomson

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The PIG e:newsletter was produced by the Pig Strategy Group at SRUC through funding from the Universities Innovation Fund, from Scottish Funding Council. Should you wish to know more about any of the articles featured or wish to find out more about SRUC pig related activities please contact the following or click on the links below.

http://www.sruc.ac.uk/info/120196/pig_research_centre

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