



PIGe:newsletter

Pig Information Group – Spring 2018 Report

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

As the days lengthen and the worst of the winter weather is hopefully behind us, the pig sector continues to enjoy a spell of good prices. Although back from the highs seen in the summer, good margins are still being made.

It is encouraging to see a number of producers taking the opportunity to invest in their businesses. While this may increase borrowings and the cash outflow of the business, the projected gains in efficiencies, whether it be FCR, DLWG or reproductive performance should see the investment more than repaid in extra profit and also help ensure the business is better placed to face times when the outlook is not so favourable.

This issue looks at several areas of the sector including an update on a collaborative project between SRUC and Teagasc on enrichment, a reminder on how important it is to ensure litters receive adequate colostrum, how to obtain the optimum value from pig slurry and also the results of a UK wide survey on dry sow housing and management.

Finally- can you help? Are you having problems with aggression in stable groups of pigs?

We are collecting information on this as part of studies to combat aggression. Please take part in the survey by visiting:

<https://www.surveymonkey.co.uk/r/77LNFKN>

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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Prices continue to fall as pig production increases.

Month end date	EU Spec GB SPP (p/kg)	Change on month (£)	Average Pig Weight (Kg)	UK weekly clean kill-000head	LIFFE wheat futures-nearby contract (£/tonne)	Soyameal 46% Braz. (£/tonne) ex store L'pool
September	160.44	-3.30	84.65	220.1	141.67	304
October	156.03	-4.41	84.66	214.3	138.96	301
November	153.24	-2.79	83.65	224.6	137.34	309
December	149.78	-3.46	84.12	138.4	137.01	315
January	146.83	-2.95	84.77	214.3	135.99	312

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

- Prices have continued to decline as production has increased after the highs reached in summer. By Christmas prices reached the point whereby they were below that of 12 months previous with prices now below 150p/kg for the first time in 12 months. Indeed the market had seen over 20 weeks of continuous price decreases since the summer.
- UK production figures increased 1% year-on-year (AHDB) from late summer onwards after the first half of 2017 had seen production back on the year. This situation was mirrored across the EU. Production is also expected to continue increasing into 2018.
- Feed wheat prices have been fairly flat over the winter with recent global estimates of supply and production having been revised upwards (USDA).
- Straw prices have climbed through the winter as demand from livestock sectors and renewables far outstrips supply. Harvest difficulties have also led to further concerns about quality in particular the risks from mycotoxins.
- AHDB's latest survey has reported that UK producer margins are at their highest since records began in 2009 with an estimated net margin of £23/hd reported for Quarter 3 of 2017. This is in sharp contrast with the £10 negative margin reported less than 18 months earlier in Quarter 2 in 2016.
- Despite the number of clean pigs slaughtered decreasing by just over 1% in 2017, the continuing trend to increased slaughter weights meant that overall UK pigmeat production was only marginally less than 2016 (AHDB).
- Exports of fresh and frozen pork continued to increase in 2017, up 5% on the year at 216000 tonnes. While the EU remained the biggest outlet, China was the largest single country market. Exports of processed pork products were also up on the year with offal exports also increasing (AHDB).



Providing enrichment materials in slatted floor systems- what are the options?

Enrichment is important to prevent tail biting in pigs but loose materials are not easy to provide on slatted floors. Are there alternatives that will be good for the pigs and also be economically feasible?

Tail biting remains a problematic issue in commercial pig farming. Although an EU directive prohibits the use of tail docking as a routine measure to prevent tail biting, many farmers still need to dock the pigs' tails on a regular basis for its control. In November 2017, the European Commission Directorate-General Health and Food Safety Department (DG SANTE) organised a three-day meeting on rearing pigs with intact tails. Stakeholders including farmers, researchers, government officials and NGOs brainstormed ways forward to rear pigs with intact tails. One of the key issues raised was the problem of finding alternative and effective enrichment materials in situations where loose bedding is not possible.

A collaborative PhD project between SRUC and Teagasc in Ireland has been investigating possible strategies to control tail biting in fully-slatted systems. This was begun by evaluating 4 different wood types: spruce, larch, beech, and Scots pine. It was found that spruce was consumed much more quickly than other wood types (Fig. 1) as pigs interacted with this species more often than the other 3 types. The price for different wood types was similar per kilogram however due to the different rate of wear, using spruce costs over 4 times more than Larch and Pine and over 8 times more than Beech. There was no difference in the frequency of injurious behaviours (tail/ear/flank-biting), although levels were low in all treatments.

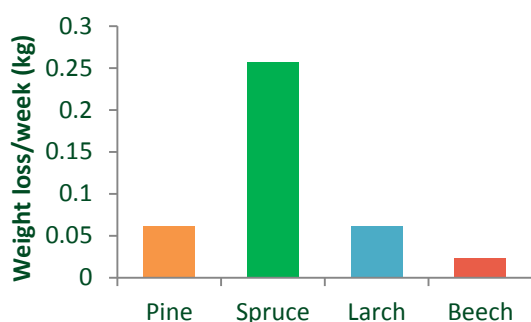


Fig. 1. Comparison of weight loss of wood posts per week in a pen of 25 finisher pigs

No damage (gum/tongue/visceral) to the carcass due to wood use was found in the slaughterhouse. **We concluded that wood is a safe and appropriate enrichment material to use for finisher pigs, and pigs prefer to use a softer wood type like spruce.**

Another study compared different fibre contents in the diet, coupled with two enrichment strategies employed at the current commercial standard (1 item for 14 pigs / pen). Pigs with intact tails were used in this study. **The results are still being analysed but tail biting outbreaks happened frequently and the tail damage at the end of the experiment was quite severe.**

Quantity, quality and timing of enrichment provision can be crucial to control tail biting at a manageable level. Our most recent pilot study, where multiple enrichment items were provided from farrow to finish to undocked pigs, concluded late last year. The results showed a great improvement over the provision of only a single material; only 1% of pigs had amputated tails by the end. **All enrichment items used were compatible with slatted systems, which shows promising potential for rearing pigs with intact tails when loose bedding is not yet practical.**



Pen of pigs with multiple enrichment items provided.

A follow-up study will begin next month, and more commercially practical strategies to provide multiple enrichment items will be tested. Detailed cost analysis will also be conducted to ensure the materials used will not only be effective at managing tail biting, but also feasible under commercial management. We look forward to the results and bringing new ideas for farmers to phase out tail docking on slatted systems.

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FOCUS TOPIC



Quality, Quantity and Quickness- the golden rules of Colostrum

The importance of ensuring that the piglet receives a good, early feed of high quality colostrum cannot be understated. Colostrum has a vital role in protecting the piglet from infection and also providing the piglet with an utilisable form of nutrients to get it up and going. With the above in mind what are some of the golden rules regarding colostrum?



Young piglets getting that important early feed of colostrum.

Colostrum is produced in the sow's udder prior to farrowing and secreted for several hours, after which it changes composition to that of sow's milk. To make sure that piglets get the best start in life lets look at the three Qs of colostrum delivery.

Quality, Quantity and Quickness!

Quality:

Good quality colostrum contains:

- **Antibodies which protect the piglets against disease-causing bacteria and viruses and offers**

specific protection passed from the sow to her piglets. These antibodies are absorbed through the gut wall by the piglet during the first 24 hours of life. For this short period following birth, a piglet's intestinal wall is fairly permeable, allowing large proteins such as antibodies to pass into the bloodstream.

- **A highly digestible nutrient supply containing whey and fat.** New born piglets lose heat quickly, they're wet at birth and have little energy reserve. Colostrum can be digested readily by a new-born's stomach so is ideal for providing energy to generate body heat and preventing hypothermia in the first hours of life.

Piglets receiving insufficient colostrum at birth are far more likely to succumb to diseases such as scour or respiratory disease later in life. Optimising colostrum production by good management and feeding of the sow prior to farrowing is therefore essential.

Quantity:

When piglets receive the right amount of good quality colostrum in the first few hours of life it will:

- **Reduce the need for antibiotic use**
- **Improve lifetime productivity**

Making sure that piglets get an adequate share of colostrum means close supervision of sows during and after farrowing. Factors influencing a piglet's ability to ingest colostrum include:

- **Piglet vigour and ability to suck**
- **Birth order**
- **Litter size**
- **Birth weight**

Piglets need a minimum of 100mls of colostrum in the first 16 hours of life and 200mls by 24 hours to supply sufficient natural immunity.

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Why colostrum is so important



Vaccines given to sows and gilts help to ensure piglets get the best possible protection from colostrum. Sow vaccination boosts antibody levels in the colostrum. That is why piglets who receive good levels of colostrum early will also be the healthiest at weaning.

Quickness:

Preferably, the first feed should be within 30 minutes of birth to boost energy and help prevent hypothermia.

Remember, piglets are able to absorb colostral antibodies most effectively in the first six hours of life, by 24 hours absorption has stopped so as well as providing vital nutrition this early feed precipitates a change in gastric acidity, increasing protection by making the environment less favourable for colonisation by the disease causing “unfriendly bacteria”. The gut quickly becomes populated with a variety of normal intestinal flora and this range and diversity prevents the unfriendly bacteria getting a predominant foothold.

Although ill-thriven sows or those on a poor plane of nutrition will produce too little, or low quality colostrum the more common problem is that piglets just don't get enough colostrum quickly enough after birth.

All producers have the potential to ensure that piglets receive the right amount of good quality colostrum within a few of hours of birth. That extra care in the first few hours of life can really make a difference. Increasing colostrum intake is a golden opportunity to reduce antibiotic use and improve the health and productivity of pigs for their lifetime.

The key points regarding colostrum have been highlighted in the wordle below.

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Wordle summarising the key points of colostrum intake.



Slurry- a problem waste material or a valuable resource?

Pig slurry is a valuable by product of modern pig production and can provide essential nutrients for the crops grown by an arable farmer.

Details of the typical nutrient content can be found in the SRUC technical Note "TN650: Optimising the application of bulky organic fertilisers" see link below: https://www.sruc.ac.uk/downloads/file/1276/tn650_optimising_the_application_of_bulky_organic_fertilisers

Within this technical note the typical nutrient content of various organic manures and slurries are found and includes the following values for pig slurry (Table 1). **It should be noted that the nutrient content of slurry can be variable and to get the best value from the slurry it is recommended that slurry from the different parts of the production system be analysed to provide definitive values.** These values are expressed in terms of Nitrogen (N), Phosphate (P₂O₅), Potash (K₂O), Sulphate (SO₃) and Magnesium Oxide (MgO).

Typical dry matter (DM) and nutrient contents of livestock manures						
kg/t (solid manures) or kg/m3 (liquids/slurries)						
Manure Type	Total N	Readily Avail. N	Total P ₂ O ₅	Total K ₂ O	Total SO ₃	Total MgO
Pig Slurry @ 4% DM	3.6	2.5	1.8	2.4	1.0	0.7

Table 1. Typical nutrient values contained in 4%DM pig slurry

The quantity of nutrient applied to the land will depend on the volume of slurry applied; Table 2 below indicates the amount of nutrient applied at various application rates.

Slurry Application rate	Applied Nutrient (kg/ha)				
Litres per hectare	Total N	Readily Avail. N	P ₂ O ₅	K ₂ O	SO ₃
15,000	54.0	37.5	27.0	36.0	15.0
25,000	90.0	62.5	45.0	60.0	25.0
35,000	126.0	87.5	63.0	84.0	35.0

Table 2. Amount of nutrients relative to application rate

However not all the nutrients are available in the year of application, around **50% of the Phosphate, 90% of the Potash but eventually all the nutrients will become available.** Depending on timing and method of application between 10% and 65% of the Total Nitrogen is available to the following crop. The best time to apply pig slurry is during the spring and summer to obtain the maximum amount of Nitrogen for the following crop. Band spreading or shallow injection methods of application maximise the amount of Nitrogen for the following crop compared to surface spreading.

Based on these efficiencies the value of an application of slurry at the correct time and using the best equipment can be seen in Table 3 below. The values have been calculated using current values for Ammonium Nitrate (£243/T), Triple Super Phosphate (£305/T) and Muriate of Potash (£280/T).

Slurry Application rate	Applied Nutrient (£/ha)			
Litres per hectare	Total N	P ₂ O ₅	K ₂ O	Total
15,000	£22.82	£12.43	£15.12	£50.37
25,000	£38.03	£20.72	£25.20	£83.95
35,000	£53.25	£29.01	£35.28	£117.54

Table 3. Financial value of different application levels at current values.

As all the Phosphate and Potash will become available and the value of the Sulphate has not been included then total benefit to the farm will be slightly higher than the value in the table above.

It should also be noted that slurry is a bulky material and has a higher application cost compared to manufactured fertiliser. This means it is essential that it is applied when and where it will provide the maximum benefit to the arable or grass crops.

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UK Dry Sow Management- a review of current husbandry and management practices.

The UK produces around 9.1million pigs each year, from a breeding herd of ~415,000 sows (2016 figures). Breeding females spend the majority of their time in dry sow accommodation however little information is available about:

- Common husbandry practices
- Housing conditions
- Other important management factors

With this in mind, SRUC (funded by Defra) conducted a UK wide postal survey of dry sow management with the following details:

- A questionnaire was sent to the managers of every pig unit in the UK with at least 100 sows.
- 155 replies were received
- 81% of respondents had more than 20 years experience managing pigs
- 87% of farms were farrow to finish units.

From the survey the following results were reported.

Social Mixing

A key area of interest in the survey related to social re-grouping strategies. Social mixing at some stage is an inevitable feature of group housing. Aggression (**Image 1**) between mixed sows can be a problem; both for the sows themselves, but also for their developing piglets.



Image 1. Mixing sows during pregnancy can cause aggression and social stress for the sow, and may have long-lasting effects on her offspring.

Around two-thirds of farms operated a static group system for gestation, which limits the possible harm to developing offspring caused by stress during pregnancy. 27% however operated a dynamic system (where new animals are mixed into gestation groups regularly) with 8% using a build-up group system. Animals on these units may experience social stress whilst pregnant as a consequence of aggression. Two thirds of farms using dynamic or build-up grouping added animals to their gestation group in small pre-created groups. This may help to reduce aggression.

The majority of farms (94%) keep in-pig gilts separate to sows, which also minimises the possible social stress to the younger animals.

More than half (54%) of farms had had to remove an animal from its group due to aggression in the previous year.

10% of farms had a boar present in their gestation groups in order to reduce aggression between sows. Research studies in this area suggest that boar presence can reduce aggression but that the overall effect is small.

Housing & Feeding systems

Flooring type can affect lameness incidence in sows; on respondent farms, the annual incidence of lameness in sows was reported as 3%. Of the survey respondents

- 82% operated straw bedding systems
- 4% had fully slatted flooring
- 14% had partly slatted floors

On-farm surveys of sow lameness (based on gait scoring) suggest that ~15% of sows suffer from lameness on average, so farmers appear to not be recognising all lame sows, or may only consider severely lame sows to require treatment.

Managers were asked about their feeding systems with the following responses received:

- 30% used voluntary stalls
- 28% operated Electronic Sow Feeders (ESF)
- 20% Floor feeding

Overall, it could be seen that sows could displace other animals at feeding on 55% of the farms, which suggests

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UK wide survey on dry sow management and housing



stress as a consequence of feed competition could be a problem. This issue is limited on ESF farms, however, ESF systems have large (~100) group sizes on average and dynamic grouping is the norm. In contrast, voluntary stall systems, which also minimise feed competition, have small (~10) average group sizes and mixing during gestation is rare (**Image 2**). Drop/trickle or floor feeding systems are intermediate; they have a small (~6 for drop) or medium (~25 for floor feeding) average group size, tend to use static grouping, but the possibility of feed displacement is high.



Image 2. A typical voluntary stall system with small group size, and straw-bedding lying area. In this system mixing is limited and sows can access feed without competing with other animals.

ESF systems operated with an average of 47 animals per feeding station, and the average farm has 3 feeder breakdowns per year. Almost half of ESF farms used an automatic shedding facility, which allows for easier management of animals requiring movement (e.g. for farrowing) or treatment. 11% of those using ESF have a pre-access gate, which can improve the flow of animals through the feed station and reduce aggression by preventing animals which have already fed from entering the feeder.

Nutrition

Nutrition is clearly an important area of focus for pig producers. The survey revealed the following:

- **80% of farms consulted a nutritionist when drawing up dry sow rations**
- **8% of farms surveyed used the same diet for both dry and lactating sows,**
- **51% of farms had the capacity to adjust the amount of feed given to individual gilts/sows**
- **84% of farms altered the amount of feed provided over the course of pregnancy**
- **15% of farms did not provide any additional dietary fibre in dry sow diets.**

The survey also revealed that 15% of farms did not provide any additional dietary fibre in dry sow diets. Of those that do, the majority did so as bedding (e.g. straw). Only 13% provided additional fibre mixed into feed and only one farm provided a fibre source separately as feed.

UK pig farmers are clearly generally aware of the relevance of assessing gilt/sow body fat reserves via condition scoring (83% do so). However, only a handful used any methods beyond informal assessment by eye.

Conclusion

Although farms with more than 100 sows represent only 14% of all UK pig farms, they contain 88% of the UK's breeding sows.

This survey therefore provides a useful overview of how most sows are managed in the UK.

Management practices, husbandry and housing conditions etc are highly variable between farms and surveys such as this can help the industry by identifying both positive aspects of current practice and areas for improvement.

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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.

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