PORK Yearbook

2016–2017

AHDB PORK

Key industry statistics, pig performance data and details of knowledge exchange, research and development activity

AHDB's vision is to achieve a world class food and farming industry that is inspired by and competing with the best.

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Preface

The beginning of 2016 saw some tough times for producers but as time wore on things did improve. Average finished pig prices started the year at 112p per kg but rose steadily to hit 150p per kg as 2017 got underway.

There were, as usual, many factors influencing the market but the two key elements were the Brexit vote and exchange rates – both of which were to a great extent linked. The pound had still not recovered by the end of 2016 even though pundits were saying it was under-valued.

That fall in value was, however, of great benefit to exports which continued to grow and have now reached record levels bringing in the equivalent of 35p per kg in export value.

We are increasing our support for exports and will be having trade stands at the major food shows in Europe and the rest of the world. We will be working with government on inward trade missions, gaining access to new markets and expanding access within existing markets.

China is still the major destination for our pig meat and it is a market we are still developing. The country is huge and the people have a growing appetite for meat, with pork being the most popular. This means there is still tremendous scope to expand, not only how much we send, but also in the variety of different cuts.

This is not the only market we are looking at either opening or developing. We are targeting sub-Saharan Africa, the USA, Australia and India to name but a few.

There are, however, still issues and challenges to be faced around domestic consumption which involve making sure pork is relevant to the needs of modern consumers.

A new strategy, covering the next three years, has been drawn up and it contains a very strong focus on continuing to rejuvenate the image of pork which started with the highly successful pulled pork campaigns.

One of the biggest challenges is that of antimicrobial resistance (AMR) and the role pig production has in helping to combat it.

The industry started from a position of not knowing how much was actually used (as compared to how much was prescribed) in production, which is why we launched the electronic Medicines Book for pigs (eMB-Pigs) as part of the AHDB Pig Hub. The value of this service is in our ability to collect and collate nationally, the antibiotic usage data that all assured producers already had to keep. This indispensable information will allow the industry to negotiate effective reduction targets during 2017. The old adage 'if you can't measure it, you can't manage it' has never been so true.

The immediate outlook for the industry looks reasonably favourable, however, the medium term is overshadowed by the potential impact of Brexit on trade relations and on the availability of labour.

AHDB will continue to produce timely analysis of these impacts as they emerge, through the Horizon series of reports.

Whatever happens, it seems clear that the market will become more competitive in the years to come and the industry will need to adapt to deal with this. This Yearbook demonstrates how AHDB Pork is helping the industry meet this challenge.

Mick Sloyan
Strategy Director, AHDB Pork

The AHDB Pork board

The AHDB Pork Board meets six times each year to determine English pig industry strategy and to ensure the English pig levy is efficiently deployed in line with the AHDB Pork strategy.

The AHDB Pork Board for the period 2016–2017 comprised the following Directors, appointed by Defra.

Producers

Meryl Ward, MBE
Chairwoman
Ermine Farms Ltd

Alistair Butler
Blythburgh Free Range Pork

Robert Shepherd
Allenford Farms

Ian Smith
Bedfordia Farms

Richard Hooper
Harper Adams University College

Simon Watchorn
Earsham Park Farm

Adam Cheale
Cheale Meats of Brentwood

Processors

Barry Lock
Cranswick

Andrew Saunders
Tulip UK

William de Klein
KARRO Food Group

Independent

Iain Wylie

Strategy and budget

We started our "Going for Growth" Strategy in 2014 which refocused the work of AHDB Pork into a single team, operating in five strategic areas. Four of these strategic areas covered technical activities, with the fifth being a marketing strategy that focused on rejuvenating the image of pork to stimulate demand and maintain the premium for our English pigs.

During 2016–2017 AHDB Pork continued to deliver this strategy through the five strategic themes:

- Closing the Gap
- Protect the environment
- Enhance welfare
- Encourage safe and traceable pork
- Help sell more pork

Detail of the themes was contained in the 2013–2014 yearbook and an outline of the activity plan to deliver these was shared in the 2015–2016 edition.

The way AHDB was structured changed in the autumn of 2015 as part of a process of reorganisation and in a move towards achieving the "One AHDB" goal. This started with the introduction of a new management structure to improve working and delivery of efficiency savings, with the objective of delivering more value to the levy payer. This work resulted in a revision of job roles and titles for staff, to give greater consistency and transparency across all six sectors.

The AHDB Pork strategy continues to be agreed by the Pork Board and delivered under the direction of Mick Sloyan, Sector Strategy Director.

In 2016 AHDB Pork has taken a look at how it ensures the work undertaken is both relevant and delivers value for money. The Technical Sub Group will become the Knowledge Exchange (KE) sub group with the remit of providing guidance to the Board and ensuring that activity is consistent with the direction received from the Board.

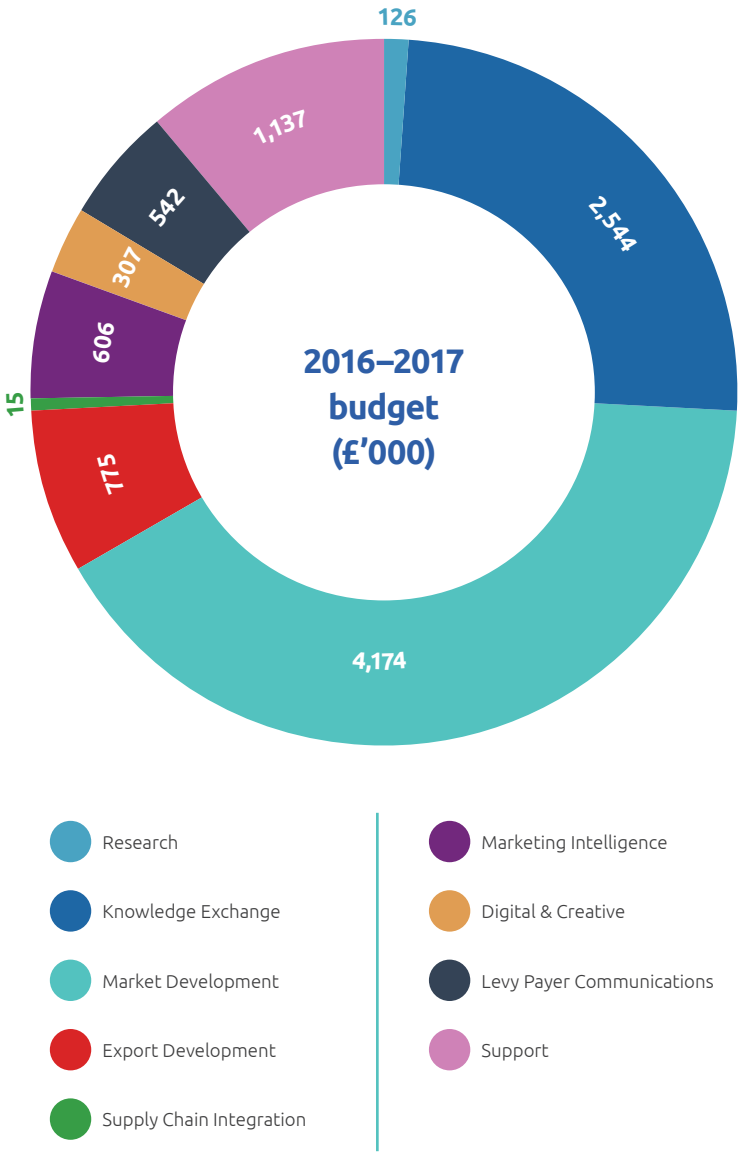
The AHDB Pork Technical Team is now known as the knowledge exchange (KE) team, recognising that its role is not always to simply transfer knowledge but, more broadly, to exchange knowledge in two-way interactions. Some staff have moved out of KE into specialist teams, where their skills in areas such as digital services, media and communications can be developed and delivery improved.

"AHDB Pork has started some important work on the quality of water supplied to pigs and this will be one of the key areas for activity in the next year."

The domestic marketing team continues to work on rejuvenating the image of pork. Trade and product development, again, continue to have dedicated resource while capturing synergies across other livestock sectors where the benefit of enhanced impact and efficiencies are being realised.

While concentrating on delivery, AHDB Pork is always horizon scanning, looking for the next threats and challenges the industry may be facing. Setting up the eMB and leading work on reducing the threat of antimicrobial resistance and regulatory intervention being one example. Understanding how much antibiotic product is used on farm has made the industry re-evaluate its use and focus on attention to detail within production systems. AHDB Pork has started some important work on the quality of water supplied to pigs and this will be one of the key areas for activity in the next year. AHDB Pork will also look closely at gilts and their management, helping producers to recognise their importance as the foundation of the breeding herd.

Looking forward to 2017–2020 we welcome a new three-year strategy: "Capturing the Opportunity". This is the Pork-focused component of the three-year AHDB strategy: "Inspiring Success".



Pork promotion

Two years ago the pork marketing team embarked on a strategy to rejuvenate the image of pork by making pork more relevant to today's consumer. The first marketing campaign of this rejuvenation strategy was the successful pulled pork campaign.

The pulled pork campaign first aired on screen in May 2015 and then again during February, March, April and May 2016, to capture the major 'family dining' occasions of Valentine's Day, Mother's Day and the first Bank Holiday of the year.

The campaign which was independently evaluated and was shortlisted for a marketing industry award, provided a much needed boost to the industry. Not only did the campaign generate an extra £13 million of fresh pork sales, but it struck a chord with the elusive younger target audience, a vital demographic to infiltrate. Growth has been driven by increased frequency and volume per trip from consumers, as an increase in 1.2% households bought pork shoulder (yoy), increasing their frequency of purchase by a third (33.3%) between the pulled pork campaigns. Perhaps, most importantly, it was the light buyers of pork who were heavily influenced by the campaign and converting those who only brought pork once or twice per year is key to long term stability for the pork industry.

The strategy to rejuvenate the image of pork will continue for the next three years, as it remains highly relevant to the pork industry. The marketing team will build on the success of the pulled pork campaign by targeting the midweek meal occasion to increase frequency of fresh pork purchase and stimulate demand.

The team is still battling with the health perception of pork and red meat in general. A Kantar study was commissioned in April 2016 to look into the decline of sausage sales following the World Health Organisation's (WHO) report in October 2015, which suggested an increased risk between high levels of red and processed meat consumption and cancer. Kantar concluded the WHO report was not the primary catalyst for the falling sales of sausages.

The research discovered that from a consumer point of view, the WHO report merely compounded pre-existing negative perceptions of sausages among long-term decliners (who bought less in the last year). In other words, some consumers were already shifting away from buying sausages and the WHO report just gave them another reason not to add them to their baskets.

Other factors which have affected sausage sales include a shakeup of major multiple retailer pricing and promotions structure. A key opportunity for sausage manufacturers lies in the ability to portray sausages as being made using fresh pork, which formed a key message for 2016's British Sausage Week (BSW).

"Not only did the campaign generate an extra £13 million of fresh pork sales..."

"More than 1.5 million page views of the LovePork website and a social community of more than 100,000 regularly interact with the LovePork channels"

The 19th year of British Sausage Week took a very 'quality' message approach. The need was to reassure consumers quality British sausages were made from fresh pork and British Sausage Week was an ideal vehicle to get this message across. Boyband member turned farmer, JB Gill was enlisted as the British Sausage Week ambassador, to reach a younger family audience and to sing sausages' praises. A creative tactic was used to allow the conversation about how the quality of sausages have improved, with the creation of Sausage FM, a radio station which played sizzling sausages.

SAUSAGE FM

Less Talk. More Pork

This is because consumers love the nostalgic sound of sizzling sausages, but due to the increase in quality, our sausages no longer sizzle as they used to. More than 500 pieces of coverage were generated, including 14 national pieces and three TV appearances. For the first time, consumer attitudes towards sausages were tracked, to understand if BSW had had an impact on consumer perception of sausages.

The results showed that by comparing attitudes and beliefs before and after BSW, consumer's perceptions of quality, variety, versatility and taste had all increased post campaign. The research also found BSW had positively affected sausage perceptions and educated consumers about high meat content and quality, as fewer people identified sausages as a processed meat post BSW.

The LovePork website and social channels continue to be the direct communication channel with consumers. More than 1.5 million page views of the LovePork website and a social community of more than 100,000 regularly interact with the LovePork channels which allows the marketing team to remind consumers of how relevant, tasty and versatile pork is, all year round.

JB Gill from JLS, with a BSW Gold Award

Export

2016 has seen the UK pork sector perform strongly on the global pig market, total pig meat export volumes reached 205,000 tonnes, an increase of 10% on 2015 levels. Importantly, the increase in the value of UK exports increase was more marked at 28%.

This is not only due to improved prices on some export markets, but also as a result of UK exporters shipping higher value cuts as we help to develop markets. In addition, offal exports increased massively to **77,000 tonnes**, a business worth **£64 million** to the sector.

Demand from China was a key driver for the global pig meat market during the past year, constrained growth in China's domestic production has fuelled demand for imported pork. The UK's reputation has seen the sector well placed to meet some of that demand, with pork shipments to Greater China increasing by more than a third on the year and accounting for 25% of the total pork export market. Added to this, pig meat offal shipments to Greater China increased by 34% on the year.

"AHDB Pork pavilions provide a great platform from which exporters can build and cement existing business relationships as well as meet new buyers from around the globe."

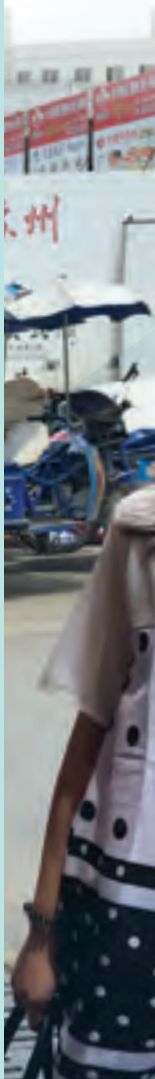
The Export team

Peter Hardwick
Head of Livestock Exports
Trade Development

Jean-Pierre Garnier
Head of AHDB Exports

Jonathan Eckley
Senior Export Manager

Susana Morris
Export Manager



Americas

The UK's production standards have been an asset when marketing high-value, differentiated pork to discerning markets. The United States is a great example of this where shipments in 2016 increased by more than 36% compared to 2015 levels. The Australian market was also strong, particularly in the first half of the year and, as a result, exports increased fourfold on the year.

Key international trade shows play an important role where relationships with the trade are essential to business. AHDB Pork pavilions provide a great platform from which exporters can build and cement existing business relationships as well as meet new buyers from around the globe. AHDB's main presence in Asia was at China's leading meat show SIAL in Shanghai along with shows in Hong Kong and Singapore. AHDB Pork will also take its first pavilion in Chicago, showcasing high-welfare pork to the foodservice sector, an important segment of the American market.

Trade missions to export markets are also an essential area of work where AHDB can support the industry in exploring new and emerging markets. In recent years the team has led exporters to Japan, the Philippines, Central Africa, Western Africa and India. In 2017, the team will be looking at the pork market in Korea and South Africa.

Asia

Europe and Africa

The strong performance of pork and pig meat exports on global markets in 2016 had a positive impact on margin with international demand and higher export values being reflected positively throughout the supply-chain here in the UK. Although volumes have still to reach those reached more than twenty years ago when low Sterling and higher production levels helped exports to Europe, 2016 exports achieved record levels with more than 30% of UK production now exported. **Importantly, in 2016, some 48% of pork and offal exports were shipped to Third Countries**, a huge success and a credit to exporters, especially with Brexit looming on the horizon.

Pork by numbers

174 farm visits by KE team

128 pig club meetings

2,061 on-farm tools requested

26% reduction in pre-weaning mortality on the Focus Farm

193 people trained

2,200 training hours delivered

5 scholarship placements awarded

89% of training sessions gave participants ideas to implement on farm

2,263 followers on Twitter and **354** on Facebook

£13 million additional fresh pork sales generated by pulled pork campaign

1.5 million page views of the LovePork website

LovePork social community exceeding **100,000** people

UK clean pig slaughterings increased by almost **1%**, with a total of just over **10.7 million** head

Offal exports increased to **77,000 tonnes**, a business worth **£64 million**

Pork shipments to Greater China accounted for **25%** of the total pork export market

Improvements in pigs weaned over the last 12 months:
+0.71 (indoor) **+0.24** (outdoor)

Change in FCR over the last 12 months:
0.19 improvement (rearing) **0.04** improvement (finishing)

Change in DLWG over the last 12 months:
+21g (rearing) **+33g** (finishing)

Industry statistics

The objective of AHDB Market Intelligence (MI) is to provide relevant, useful, accurate and timely market information to the English pig and allied industries. This should support them in understanding the market and making decisions that maximise their competitiveness and sustainability and also improve supply chain transparency.

Activities undertaken by the Market Intelligence and Farm Economics functions focus on the supply, demand and production sides of the industry and include the following:

- Collection and calculation of weekly pig, pig meat and other red meat price data and market information
- Production of accurate market forecasts of meat production and consumption
- Collection and provision of average pig production costs and performance measurements
- Publication of relevant market information and analysis from the UK, EU and beyond through regular free publications, the AHDB Pork website and other media
- Collation and publication of international cost and physical performance comparisons, which are addressed through the InterPIG project
- Enabling AHDB Pork marketing activity to be based on a sound knowledge and understanding of the market and consumers from research provided by the Market Intelligence function

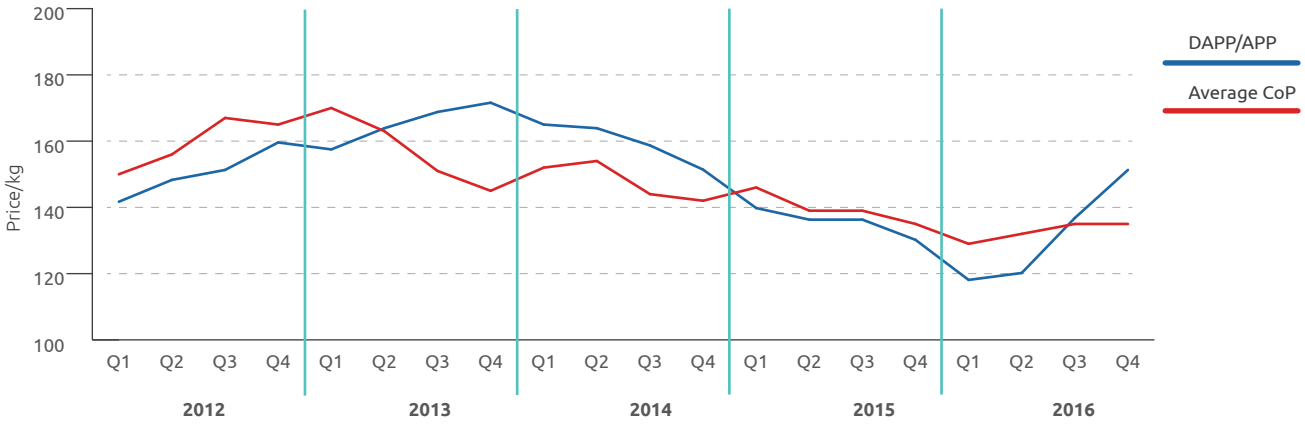
The following sections of the report aim to summarise some of the key market statistics and performance trends from the last year.

Costs of production

According to the data from InterPIG, the cost of pig meat production in Great Britain decreased by 6% in 2015, to £1.33/kg. This was due to a decline seen for all production inputs. The average cost of production in the EU was £1.18/kg deadweight. This was also a 13% decrease on the previous year, again due to all inputs falling. GB production costs have been rising marginally throughout 2016 however, based on provisional estimates, are likely to remain lower than 2015. Once again, this has mainly been driven by small declines across the board.

GB pig prices began 2016 by reaching an eight year low after falling throughout 2014 and 2015, before starting to rise from March 2016. The GB All Pig Price (APP) ended 2016 at 154.81p/kg, and has remained relatively stable in 2017. Despite the rising cost of production in 2016, the increase in the APP has meant that most producers returned to making small profits on a full economic basis in the second half of the year. These profits are larger once non-cash costs, such as depreciation and family labour, are removed. The latest figures show that this continued to end of 2016, with the pig price continuing to rise, while feed costs remained relatively stable.

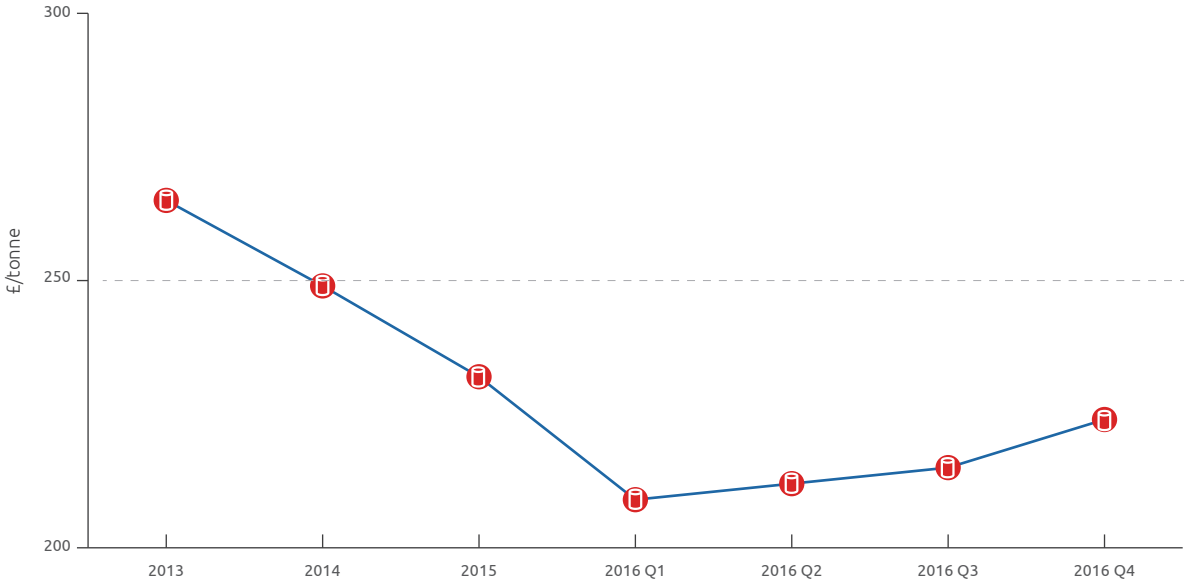
Figure 1: Total cost of pig production compared with pig prices



Source: AHDB

Average quarterly compound feed prices reached their lowest level in Q1 2016 and have been rising since then. However, prices remain below the 2015 average. By the final quarter of 2016, the average price stood at £224/tonne.

Figure 2: Average compound feed prices, GB



Source: Defra

The rise mirrored the increase seen in prices for the main feed ingredients (Figure 3). A fall in domestic wheat output in 2016, combined with strong demand for the feed grain, as well as a weaker sterling, all contributed to the rise in wheat prices in 2016. UK feed wheat futures (nearby) ended the year at around £139/t, nearly £25/t higher than a year earlier.

Figure 3: Prices for feed wheat and soya meal

Source: AHDB

Soyameal prices increased during the first half of 2016, partly driven by weather concerns in the US and strong demand for soyabeans from China. Prices began to come down slightly during the second half of the year partly due to subsiding concerns over the US crop. Nevertheless, the UK soyameal price (spot, Brazilian 48%, ex-store, Liverpool) ended 2016 £48/t above the same point a year earlier, at £307/t. A weaker sterling was also a contributing factor to the rise in prices during 2016.

Performance trends in the British pig herd

Key annual trends in physical performance for the British breeding, rearing and feeding herds from 2012 to 2016 are shown in Table 1. The average of InterPIG EU countries is also displayed for the 2015 calendar year.

Performance continued to improve across many of the physical performance measures in 2016, but still trailed or matched EU counterparts. For example, the number of pigs weaned per sow per year increased by 0.45 pigs, but was still almost 2 pigs behind the EU average. The fact that more than 40% of GB sows are kept outdoors, unlike most InterPIG members (which predominantly house breeding sows indoors), will reduce this figure, as average performance of outdoor kept sows is lower. However, even comparing indoor kept sows in GB with the EU average, the GB average is still lower.

Feed conversion ratios improved slightly for both the rearing herd and the finishing herd. Daily liveweight gain also improved for both the rearing and finishing herd – the latter more significantly.

Table 1: Performance trends in Great Britain

	2012	2013	2014	2015	2016	2015
Breeding herd						**EU avg.**
Sow mortality (%)	3.6	4.5	4.6	5.4	5.1	6.2
Litters per sow per year	2.26	2.29	2.27	2.27	2.28	2.29
Pigs born alive per litter	11.54	11.87	12.12	12.26	12.50	13.50
Mortality of pigs born alive (%)	12.7	13	12.6	12.2	12.6	13.3
Pigs weaned per litter	10.07	10.33	10.59	10.76	10.91	11.71
Pigs weaned per sow per year	22.80	23.63	24.09	24.38	24.83	26.81
Average weaning age (days)	27	26	26	26	27	27
Rearing herd						
Weight of pigs at start (kg)	7.3	7.2	7.1	7.0	7.3	7.3
Weight of pigs produced (kg)	35.9	35.6	37.1	36.9	36.8	29.9
Mortality (%)	2.5	3.3	2.8	2.8	3.6	2.7
Feed conversion ratio	1.77	1.75	1.71	1.89	1.70	1.80
Daily live weight gain (g)	489	495	502	463	484	416
Feeding herd						
Weight of pigs produced (kg)	102.7	104.3	105.4	106.2	107.2	120.0
Mortality (%)	2.5	2.8	3.2	2.7	3.0	2.6
Feed conversion ratio	2.72	2.78	2.67	2.69	2.65	2.83
Daily live weight gain (g)	822	816	801	817	850	814

Source: Agrosoft Ltd, InterPIG

"The long-term upwards trend in carcase weight continued into 2016, with the average weight reaching almost 82kg."

Industry trends

Table 2 shows changes in pig carcases between 2014 and 2016. The long-term upwards trend in carcase weight continued into 2016, with the average weight reaching almost 82kg. A continued reduction in feed costs helped this increase, alongside favourable growing conditions for the year. Probe measurements have remained constant year on year for similar reasons. Therefore, the net result is that the lean meat percentage has shown little change, remaining at just over 61% of the carcase for the last decade.

In 2011, just over 10% of clean pigs slaughtered had dressed carcase weights of less than 70kg. By 2016, that percentage had fallen to 9%. 2016 saw 60% of pigs slaughtered having a carcase weight of over 80kg, compared with 45% in 2011 and more than 18% had a carcase weight of more than 90kg. This was an increase of almost ten percentage points on 2011.

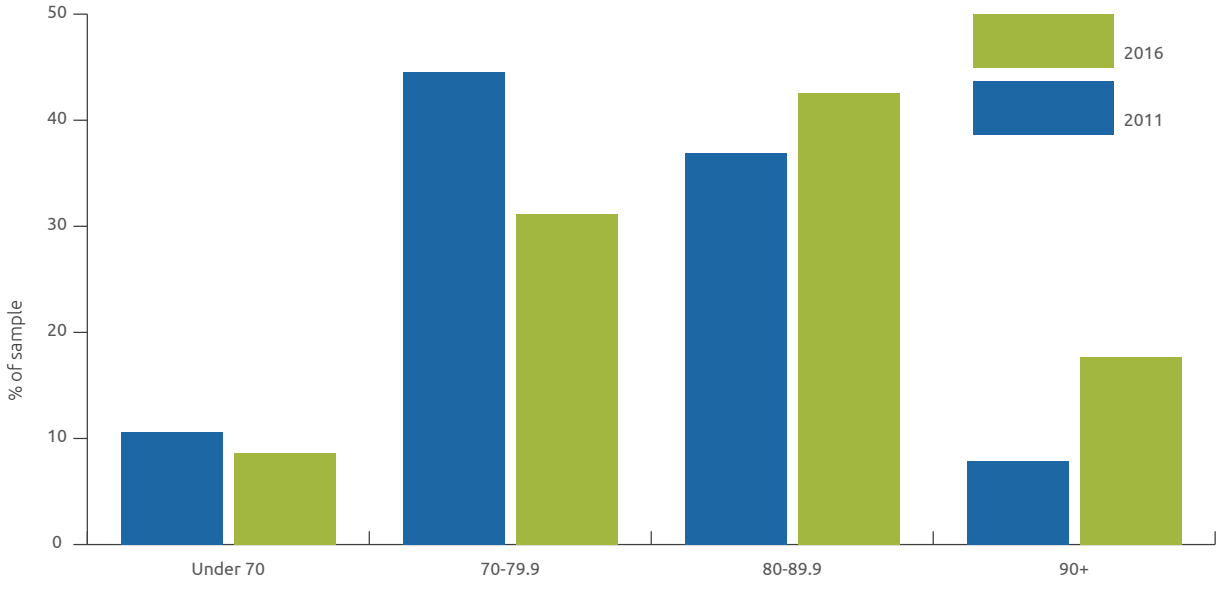
Table 2: Average abattoir results

	2014	2015	2016
Back fat (P2, mm)	11.1	11.3	11.5
Lean meat (%) †	61.4	61.3	61.1
Carcase weight (kg)	80.9	81.1	81.9

† An average predicted lean meat percentage based on the following equation:
Lean meat % = (66.5-(0.95 x P2)+(0.068 x carcase weight))

Source: AHDB

Figure 4: Carcase weight distribution (2011–2016)



Source: AHDB

The UK continued to produce more pork than beef in 2016. UK clean pig slaughterings increased by almost 1%, with a total of just over 10.7 million head, the highest since 2000. This was driven by higher slaughterings in England, with numbers in Scotland remaining stable and numbers falling in Northern Ireland. The increase in production levels, by more than 2% to 919,000 tonnes, was driven by increases in clean pig slaughtering numbers along with heavier carcases and higher sow cullings.

Sow cullings for 2016 increased by just under 5% to 257,000 head on the previous year. Culling increased through the year as a response to the lower prices in the early part of the year. Despite this higher level of culling, the Defra census stated that the breeding herd continued to grow. Cullings remained much lower than volumes seen in 2012, when high feed prices did hit producers' profitability and the breeding herd size did decline.

In 2016, the UK imported more pork, sausages, processed pig meat and offal than the previous year. This came despite the weakness of the pound in the second half of the year making imported products less competitive.

Imports were 18% higher in 2016 at nearly 440,000 tonnes (product weight), driven predominately by increases from Denmark. However, there is some doubt over the validity of the Danish import figures. The official Danish trade figures show exports of pig meat to the UK for 2016 at just over 136,000 tonnes (product weight). Therefore, the UK import numbers should be viewed with caution.

Despite fluctuations in the volume of UK exports during the final quarter, the amount of fresh/frozen pork shipped during 2016 was 10% higher than 2015. At nearly 206,000 tonnes (product weight), this is the highest annual amount the UK has exported since 1999. The annual increase can be partly attributed to a 47% rise in shipments to China, which has overtaken Germany and Ireland to become the UK's largest market in 2016. Exports to Ireland and Germany recorded more modest increases of 8% and 2% on the year respectively. Volumes of bacon shipments increased year-on-year by 3%, while exports of other processed pig meats and sausages fell by 4% and 33% respectively.

Table 3: Industry Trends

	2012	2013	2014	2015	2016*
UK breeding herd ('000 head)					
June	425	421	406	408	415
December	400	398	390	401	409
UK sow productivity (a)					
Pigs per sow	22.5	23.0	23.9	25.3	25.9
Pig meat per sow (kg)	1,761	1,824	1,933	2,062	2,129
UK production and consumption					
Clean pig slaughter ('000 head)	10,035	10,050	10,227	10,627	10,733
Total pig meat production ('000 tonnes)	825	833	863	900	919
UK trade ('000 tonnes)					
Imports (cwe)	942	928	948	968	1,048
– Fresh/Frozen	387	392	396	410	490
– Bacon	302	292	300	294	284
– Processed	254	244	252	264	274
Exports (cwe)	203	227	231	237	251
Total pig meat consumption ('000 tonnes)	**1,564**	**1,532**	**1,578**	**1,631**	**1,716**
Per capita consumption (kg/head)	**24.6**	**23.9**	**24.4**	**25.1**	**26.2**
Self-sufficiency in pig meat (b)	**53%**	**54%**	**55%**	**55%**	**54%**

Source: AHDB, Defra. **Notes:** cwe = carcase weight equivalent. (a) Not survey results. Based on a relationship between adjusted clean pig slaughter (slaughterings minus live imports plus live exports). (b) Production as % of consumption.

*Defra reporting period changed in February 2016 from statistical months to calendar months

"The UK continued to produce more pork than beef in 2016. UK clean pig slaughterings increased by almost 1%, with a total of just over 10.7 million head, the highest since 2000."

Retail pig meat purchases

Retail data from Kantar Worldpanel shows that, in the 52-week period ended 1 January 2017, purchases of fresh and frozen pork declined by nearly 3% from the same period a year earlier. There were declines for most pork cuts, with shoulder roasting joints, mince and loin roasting joints showing the sharpest decreases of -6%. Value declined even more sharply: by 9% for fresh and frozen pork and almost 14% for loin roasting joints. All other cuts recorded decreases in value in excess of volume declines. In other words, despite pork products being cheaper on the shelves, consumers were still not purchasing them. One positive that can be taken is a slight rise in the volume of leg roasting joints sold.

Processed and cured pig meat products fared a little better than their fresh counterparts. Bacon volumes were up by 1%, while sausages saw retail purchases remain stable in 2016. However, sliced cooked meat sales fell by -2%. As with fresh pork, value for all three products fell, meaning that any gains in volumes were outweighed by falling prices.

Over 2016, only lamb fared worse than pork in terms of retail sales, while volumes of both beef and poultry sold both increased by 2%. In value terms, an increase in the price of lamb meant that pork saw the largest fall in value of any meat.

Table 4: Trends in retail pig meat purchases

'000 tonnes	2012	2013	2014	2015	2016
Fresh and frozen pork	182.2	178.7	177.4	167.8	163.0
Pork belly	21.5	19.5	19.0	17.3	16.9
Pork frying/grilling chops	72.5	71.1	66.9	63.0	61.7
Pork leg roasting joint	23.2	22.6	23.3	20.7	21.9
Pork loin roasting	15.1	15.9	16.0	15.3	14.2
Pork shoulder roasting joint	28.6	26.4	28.0	27.3	25.6
Pork mince	5.6	7.2	8.7	8.4	7.9
Bacon	227.6	218.1	216.5	212.2	212.0
Pork sausages	172.5	165.9	166.5	163.0	162.9

Source: Kantar Worldpanel

International cost of pig production

This report examines the relative costs of production in selected countries. This is a joint project currently involving 17 countries, which are known collectively as InterPIG.

Summary of the Key findings:

- The cost of pig meat production in Great Britain reduced by six per cent in 2015, to £1.33/kg. The average cost of production in the EU was £1.18/kg deadweight, a 13 per cent decrease in sterling terms compared to 2014
- All EU countries experienced a decrease in the costs of production (in sterling terms) compared to 2014
- Average producer prices were also lower in 2015 than in 2014, with no EU countries having production costs below the EU average reference price
- Average feed prices were lower in 2015 than in 2014, falling by 15 per cent, on average, across the EU countries
- In 2015 as a whole, EU feed costs per kg fell by 14 per cent compared with a year earlier, in sterling terms. The fall in Great Britain was five per cent, one of the lowest falls in the EU. All InterPIG member countries experienced a fall in feed costs compared to 2014
- The overall average number of pigs weaned per sow per year in the European InterPIG countries showed a one per cent increase in 2015, up from 26.40 in 2014 to 26.81, with Denmark achieving 31. There was a one per cent increase in pigs weaned per sow in Great Britain to 24.38 overall. Indoor sow production achieved 26.0, an increase of one per cent compared to 2014
- The main reason Great Britain has a below average number of pigs weaned per sow lies in the number of pigs born alive per litter, with Great Britain still performing below the EU average of 13.5. The 2015 Great Britain average at 12.3 (indoor sows 12.8, outdoor sows 11.5) was an increase compared to 12.1 in 2014
- The average number of pigs finished per sow in Great Britain again increased in 2015. At 23.05 pigs per sow, average performance was 0.39 pigs higher than in 2014 but lower than the EU average of 25.38
- Great Britain produced 1.87 tonnes of carcase meat per sow in 2015, nearly three per cent higher than in 2014 due to a combination of the increase in the number of pigs finished per sow and an increase in finishing weight

More details

The full report is published each autumn and is free to English levy payers and can be obtained from AHDB Market Intelligence. For non-levy payers the report has a cover price of £160. An electronic version is available free on the AHDB Pork website.

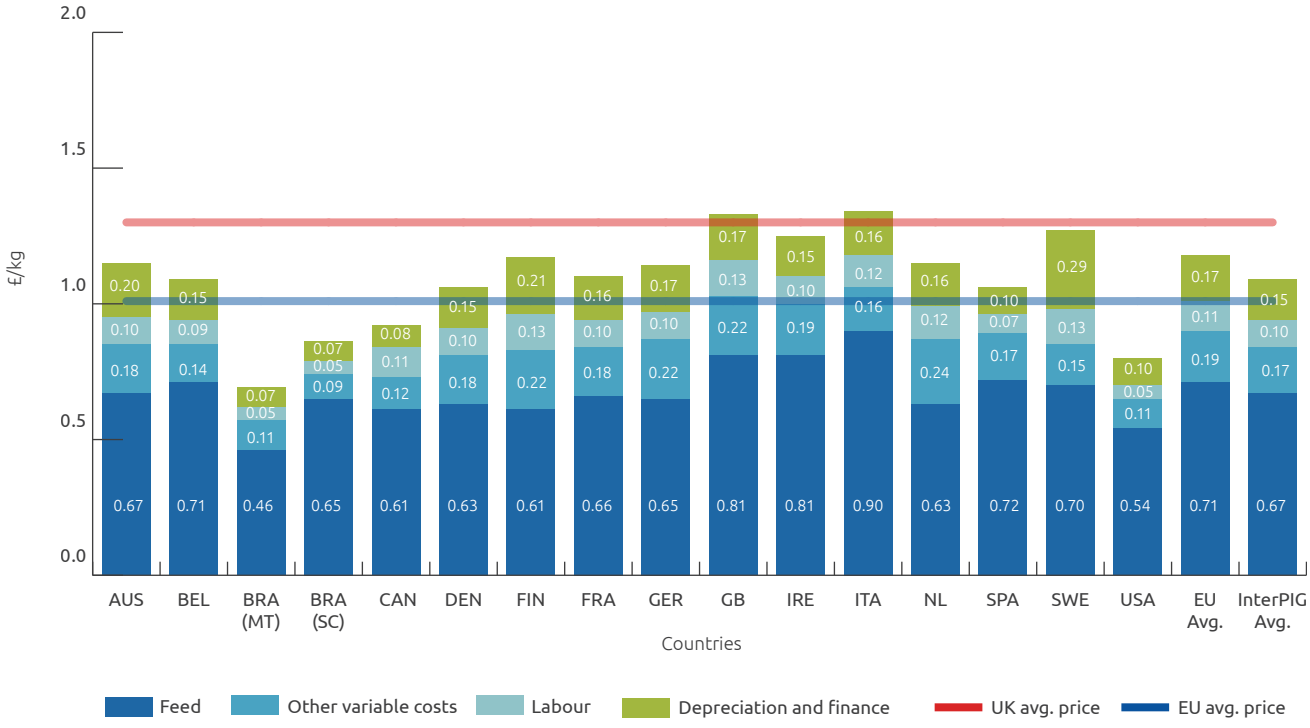
Table 5: Average costs of production in 2010–2015 (£/kg deadweight)

	2010	2011	2012	2013	2014	2015	2015/14 % change
Country							
Austria	1.38	1.47	1.46	1.54	1.35	1.16	-14
Belgium	1.27	1.41	1.42	1.48	1.26	1.08	-14
Brazil (MT)	0.88	1.03	0.95	0.96	0.84	0.70	-18
Brazil (SC)	0.95	1.18	1.19	1.13	1.04	0.87	-16
Canada	0.95	1.13	1.18	1.20	0.98	0.92	-6
Denmark	1.22	1.39	1.37	1.44	1.24	1.06	-14
Finland	na	na	na	na	1.35	1.18	-13
France	1.22	1.44	1.39	1.49	1.29	1.10	-15
Germany	1.33	1.55	1.49	1.56	1.33	1.15	-14
Great Britain	**1.41**	**1.51**	**1.55**	**1.61**	**1.41**	**1.33**	**-6**
Ireland	1.30	1.50	1.47	1.63	1.40	1.25	-11
Italy	1.54	1.70	1.61	1.71	1.58	1.34	-16
Netherlands	1.22	1.40	1.36	1.50	1.32	1.14	-14
Spain	1.22	1.40	1.34	1.39	1.20	1.06	-12
Sweden	1.48	1.71	1.70	1.77	1.47	1.27	-13
USA	0.97	1.01	1.08	1.04	0.83	0.80	-3
EU	**1.33**	**1.50**	**1.47**	**1.56**	**1.35**	**1.18**	**-13**

Table 6: Summary of financial performance 2015 (£/kg deadweight)

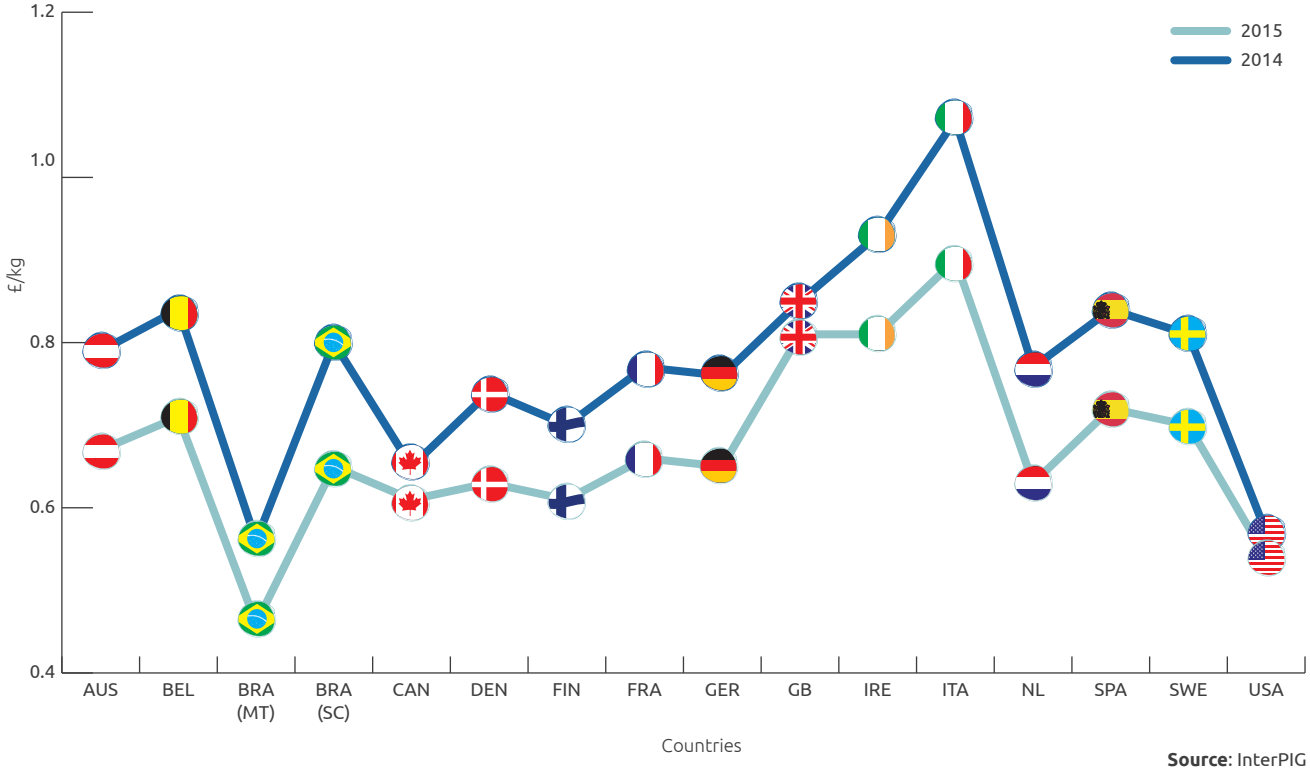
	GB	EU
Feed	0.81	0.71
Other variable costs	0.22	0.19
Total variable costs	**1.03**	**0.90**
Labour	0.13	0.11
Building, finance and misc	0.17	0.17
Total fixed costs	**0.30**	**0.28**
Total costs	**1.33**	**1.18**

Fig 1: Costs of production in selected countries, 2015 (cold weight)



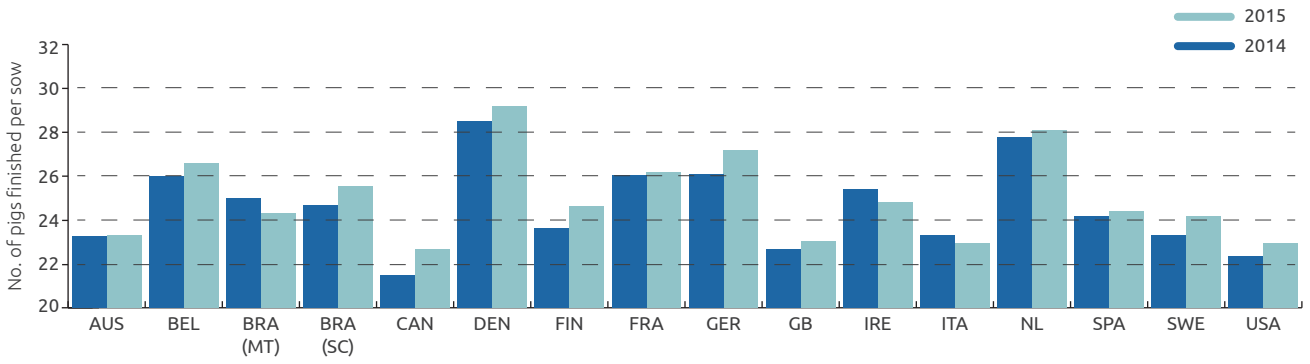
Source: InterPIG

Fig 2: Changes in feed costs



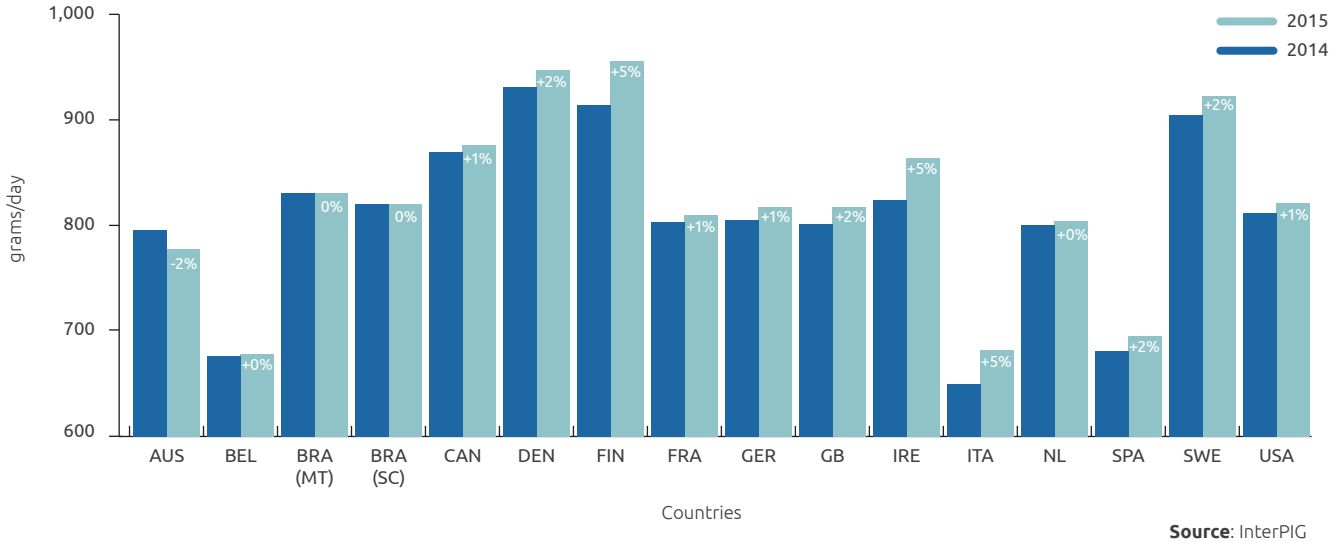
Source: InterPIG

Fig 3: Pigs finished per sow per year



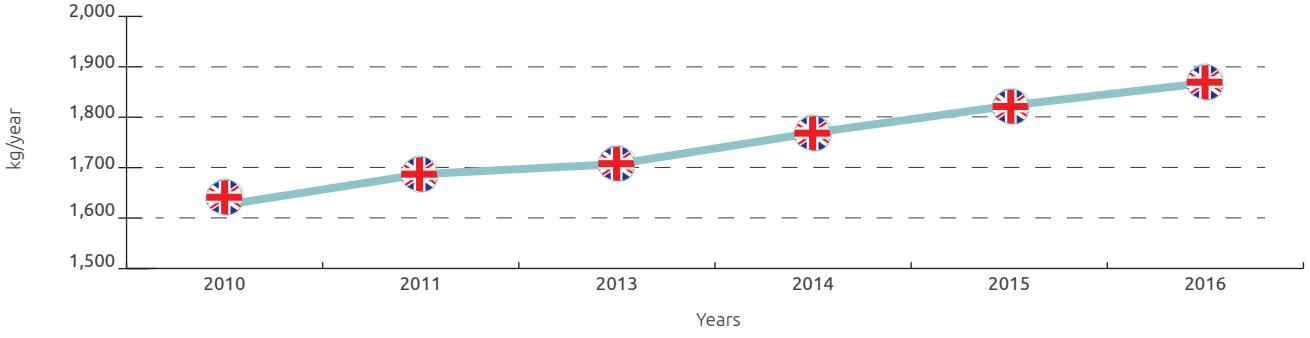
Source: InterPIG

Fig 4: Finishing daily liveweight gain (g/day)



Source: InterPIG

Fig 5: Carcase meat per sow



Source: InterPIG

Cost of production

The impact of changes in feed prices and key performance indicators

The following tables report the relationship between physical production performance and feed prices and total costs. All tables use figures for the period from 1 January 2016 to 31 December 2016 inclusive.

The physical performance figures are taken from Agrosoft data relating to the twelve months ending 31 December 2016. Cost of production (CoP) is estimated using the model operated by AHDB and takes account of a range of financial cost estimations for 2016.

The CoP estimations are expressed in pence per carcase kilogram and include variable and fixed costs. An explanation of the CoP model can be found on the AHDB Pork website under Prices and Stats: Costings and Herd Performance.

Table 7: Change in CoP for change in feed price (£ per tonne)

The average CoP was estimated at 132.7p per kg of carcase weight. The following table indicates how much an increase in each of these feed prices would change the CoP estimate.

		Feed price			
	Base CoP (p/kg)	+£5	+£10	+£15	+£20
Sow feed	**132.7**	133.1	133.5	133.8	134.2
Rearing feed	**132.7**	133.0	133.4	133.7	134.0
Finishing feed	**132.7**	133.9	135.0	136.2	137.4

Source: AHDB

Table 8: Change in CoP for change in pigs weaned per sow per year

The number of pigs weaned per sow per year is a result of three different elements: pigs born alive per litter, litters per sow per year and pre-weaning mortality. The following table indicates the change in CoP for different numbers of pigs weaned per sow per year. The Agrosoft average, bottom third and top third are based on all farms included in the Agrosoft database. The model average is based on weighting the average performance of indoor and outdoor sows, using a weighting of 60% indoor and 40% outdoor.

	Bottom third	Mid-point marker	Agrosoft avg.	Model avg.	Mid-point marker	Top third	Mid-point marker
Pigs weaned per sow per year	**21.93**	23.29	**24.64**	**24.83**	26.17	**27.70**	29.23
CoP (p/kg)	**138.3**	135.5	**133.0**	**132.7**	130.5	**128.3**	126.4

Source: AHDB

The relationship between FCR and the CoP is direct and impacts on the quantity and, therefore, cost of feed consumed in producing each carcase kilogram of pig meat. FCR relates to feed efficiency but using less feed can result in lower DLWG and a longer feeding period. It is therefore important for farms to optimise their FCR and DLWG according to their farm situation and system.

The following tables indicate various levels of performance for FCR and DLWG, on the assumption that by varying one trait there is no change in the other. All farms are represented in the average, but the farms in the top third for FCR may not be the same farms in the top third for DLWG as these figures have been independently calculated for each trait.

The following table indicates the change in CoP (p/kg) for a change in FCR for different feeding periods.

Table 9: Feed conversion ratio (FCR)

	Bottom third	Mid-point marker	Average	Mid-point marker	Top third	Mid-point marker
Rearing FCR	**1.84**	1.77	**1.70**	1.60	**1.49**	1.39
CoP (p/kg)	**134.0**	133.4	**132.7**	131.7	**130.7**	129.7
Finishing FCR	**3.03**	2.84	**2.65**	2.51	**2.36**	2.22
CoP (p/kg)	**139.4**	136.1	**132.8**	130.2	**127.7**	125.2
Combined FCR	**2.55**	2.44	**2.33**	2.19	**2.04**	1.89
CoP* (p/kg)	**138.9**	136.0	**133.2**	129.3	**125.3**	121.4

Source: AHDB

*Not all rearing and finishing units are used in the Combined average performance data, resulting in a different base CoP

The following table indicates the change in CoP (p/kg) for a change in DLWG for different feeding periods.

Table 10: Daily liveweight gain (DLWG)

	Bottom third	Mid-point marker	Average	Mid-point marker	Top third	Mid-point marker
Rearing DLWG (g/day)	**371**	428	**484**	531	**577**	623
CoP (p/kg)	**133.8**	133.2	**132.7**	132.4	**132.2**	132.0
Finishing DLWG (g/day)	**700**	761	**821**	878	**934**	991
CoP (p/kg)	**133.9**	133.4	**132.9**	132.5	**132.2**	131.9
Combined DLWG (g/day)	**600**	652	**704**	750	**796**	842
CoP* (p/kg)	**134.3**	133.5	**132.8**	132.2	**131.8**	131.3

Source: AHDB

*Not all rearing and finishing units are used in the Combined average performance data, resulting in a different base CoP

Technical performance data

Table 11: Distribution of herd size in Agrosoft recorded breeding herds 2008–2016

No sows	2008	2009	2010	2011	2012	2013	2014	2015	2016
					(% of herds)				
100–249	9	15	16	14	11	10	13	11	9
250–499	25	32	26	26	25	26	23	26	25
500–749	26	32	29	28	29	25	29	27	25
750–999	24	12	15	17	18	20	10	13	17
1000–1500	14	8	12	11	13	17	20	19	19
1500–3000	2	1	2	4	4	2	5	4	4
>3000	0	0	0	0	0	0	0	0	1
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Agrosoft Pig Recording System. **Note**: Totals may not add up due to rounding up of data

Table 12: Trends in weaning age 2006–2016

Age at weaning (days)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						(% of herds)					
<19	0	0	0	0	0	0	0	0	0	0	0
20–25	37	28	31	30	29	27	29	49	37	34	28
26–32	62	70	65	66	68	69	68	48	60	63	68
33–39	1	0	2	3	1	1	1	1	3	3	4
>39	0	2	2	1	2	3	2	1	0	0	0
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Agrosoft Pig Recording System. **Note**: Totals may not add up due to rounding up of data

Table 13: Results for all breeding herds, year ended December 2016

	Average*	Top 1/3*	Top 10%*
Herd structure			
Average number sows and gilts	740	722	599
Average number unserved gilts	72	60	60
Replacement rate (%)	51.91	56.61	51.29
Sow sales and deaths (%)	52.49	57.63	54.49
Sow mortality (%)	4.94	5.81	6.12
Sow performance			
Successful services (%)	82.98	85.41	86.23
Litters per sow per year**	2.28	2.34	2.37
Non-productive days per litter##	18.34	13.85	12.02
Pigs born per litter			
Alive	12.39	13.30	13.95
Dead	0.65	0.68	0.82
Mummified	0.23	0.25	0.27
Total	**13.04**	**14.13**	**14.94**
Pigs born alive per sow per year	28.22	31.11	32.99
Pre-weaning mortality (%)	12.68	10.91	10.15
Pigs weaned per litter	10.82	11.84	12.53
Pigs weaned per sow per year**	24.64	27.70	29.61
Average weight of weaned pig (kg)	7.02	7.39	7.27
Average weaning age (days)	79.95	86.45	87.94
Feed usage#			
Sow feed per sow per year (t)	1.421	1.324	1.434
Feed per pig weaned (kg)	59.04	47.93	48.53

Source: Agrosoft Pig Recording System. **Note**: *Selected on the basis of pigs weaned per sow per year. **Per sow data excludes unserved gilts. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval

Table 14: Trends in performance and feed costs in the breeding herd, 2006–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Herd structure											
Average number sows & gilts	662	631	583	545	605	682	580	591	714	697	740
Sow sales and deaths (%)	44.6	41.6	46.5	46.0	49.2	47.6	51.5	53.3	51.6	58.7	52.49
Sow mortality (%)	5.8	3.4	4.3	4.0	3.6	3.3	3.6	4.6	4.5	5.2	4.94
Sow performance											
Litters per sow per year*	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.28
Pigs born alive per litter	11.7	11.1	11.2	11.2	11.2	11.4	11.5	11.8	12.1	12.2	12.39
Pre-weaning mortality (%)	13.3	12.6	12.6	12.5	12.7	12.6	12.7	13.1	12.7	12.4	12.68
Pigs weaned per litter	9.5	9.7	9.8	9.8	9.8	10.0	10.1	10.3	10.5	10.7	10.82
Pigs weaned per sow per year*	21.5	21.6	22.1	22.2	22.1	22.5	22.9	23.5	23.9	24.1	24.64
Average weaning age (days)	26	27	27	27	26.7	26.4	26.7	26.4	26.3	26.4	26.59
Sow feed											
Sow feed per sow per year(t)#	1.338	1.343	1.456	1.278	1.230	1.169	1.280	1.529	1.401	1.466	1.421
Sow feed cost per tonne (£)##	102.40	131.08	155.14	178.49	162.87	207.63	207.72	238.02	199.60	184.77	182.02

Source: Agrosoft Pig Recording System. **Note**: *Per sow data excludes unserved gilts. #Per sow data includes unserved gilts from 2013. ##Per tonne compound feed cost from AHDB since 2014 (weighted outdoor, indoor, dry and lactating)

Table 15: Breeding herd results by herd size, year ended December 2016

Number of sows	100–249	250–499	500–749	750–999	1K–1.5K	1.5K+
Herd structure						
Average number sows and gilts	213	411	677	971	1,387	2,326
Average number in-pig gilts	27	62	100	149	202	377
Average number unserved gilts	20	29	61	84	153	125
Replacement rate (%)	47.80	50.52	55.38	52.34	52.17	49.40
Sow sales and deaths (%)	50.66	51.43	52.75	53.28	51.53	55.10
Sow mortality (%)	4.02	4.55	5.16	4.41	4.61	6.34
Sow performance						
Successful services (%)	83.16	83.96	84.01	81.12	83.32	83.00
Non-productive days per litter##	18.34	18.82	16.21	19.05	18.35	19.36
Litters per sow per year*	2.25	2.26	2.31	2.26	2.27	2.27
Pigs born per litter:						
Alive	12.05	12.85	12.71	11.99	12.21	12.56
Dead	0.86	0.75	0.71	0.56	0.60	0.62
Mummified	0.09	0.23	0.23	0.19	0.27	0.23
Total	**13.01**	**13.72**	**13.49**	**12.43**	**12.76**	**13.33**
Pigs born alive per sow per year	27.33	29.10	29.42	27.16	27.80	28.58
Pre-weaning mortality (%)	11.55	11.74	11.49	12.72	13.56	13.10
Pigs weaned per litter	10.66	11.34	11.25	10.47	10.56	10.93
Pigs weaned per sow per year*	24.10	25.52	26.04	23.72	24.04	24.87
Average weight of weaned pig (kg)	7.58	7.31	7.31	7.29	6.82	6.43
Average weaning age (days)	28.29	27.25	26.26	26.91	26.41	26.03
Feed usage#						
Sow feed per sow per year (t)	1.275	1.288	1.457	1.659	1.490	1.270
Feed per pig weaned (kg)	52.82	48.44	55.56	71.67	65.00	42.77

Source: Agrosoft Pig Recording System. **Note**: *Per sow data excludes unserved gilts. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval. Data includes both indoor and outdoor herds

Table 16: Breeding herd results by age at weaning, year ended December 2016

Age at weaning	Less than 26 days			More than 26 days		
	Top 10%	Top third	Average	Top 10%	Top third	Average
Herd structure						
Average number sows and gilts	1,211	1,071	1,051	552	700	748
Average number in-pig gilts	186	197	165	94	119	111
Average number unserved gilts	79	83	97	41	47	60
Replacement rate (%)	49.11	59.73	53.96	55.97	55.04	50.45
Sow sales and deaths (%)	50.88	61.47	53.50	58.65	56.67	52.19
Sow mortality (%)	7.15	7.11	5.40	5.89	5.08	4.68
Sow performance						
Successful services (%)	85.57	83.05	83.01	88.08	86.71	82.97
Non-productive days per litter##	13.50	15.77	19.15	10.90	12.86	18.01
Litters per sow per year*	2.38	2.34	2.29	2.38	2.34	2.27
Pigs born per litter:						
Alive	13.62	13.26	12.55	14.04	13.29	12.28
Dead	0.81	0.67	0.63	0.72	0.67	0.65
Mummified	0.14	0.21	0.18	0.27	0.25	0.25
Total	**14.57**	**14.11**	**13.21**	**14.89**	**14.07**	**12.92**
Pigs born alive per sow per year	32.40	31.05	28.74	33.34	31.06	27.90
Pre-weaning mortality (%)	11.63	12.02	13.60	9.86	10.41	12.27
Pigs weaned per litter	12.03	11.66	10.85	12.65	11.90	10.78
Pigs weaned per sow per year*	28.59	27.29	24.83	30.03	27.81	24.47
Average weight of weaned pig (kg)	7.21	7.13	6.71	7.32	7.47	7.15
Average weaning age (days)	25.31	24.60	24.68	27.46	27.82	27.54
Feed usage#						
Sow feed per sow per year (t)	1.493	1.362	1.519	1.356	1.410	1.433
Feed per pig weaned (kg)	49.59	51.61	57.37	44.02	50.66	60.41

Source: Agrosoft Pig Recording System. **Note**: *Per sow data excludes unserved gilts. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval. Data includes both indoor and outdoor herds

Table 17: Comparison of results for outdoor and indoor breeding herds, year ended December 2016

	Outdoor herds	Indoor herds
Herd structure		
Average number sows and gilts	1,050	703
Average number in-pig gilts	144	116
Average number unserved gilts	91	62
Replacement rate (%)	50.01	53.56
Sow sales and deaths (%)	48.56	57.16
Sow mortality (%)	3.81	5.99
Sow performance		
Successful services (%)	82.11	83.67
Litters per sow per year**	19.69	17.31
Non-productive days per litter##	2.26	2.29
Pigs born per litter		
Alive	11.72	12.98
Dead	0.49	0.76
Mummified	N/A	0.24
Total	**12.08**	**13.92**
Pigs born alive per sow per year	26.44	29.77
Pre-weaning mortality (%)	13.84	11.75
Pigs weaned per litter	10.09	11.45
Pigs weaned per sow per year**	22.77	26.23
Average weight of weaned pig (kg)	7.26	7.30
Average weaning age (days)	26.5	26.7
Feed usage#		
Sow feed per sow per year (t)	1.575	1.265
Feed per pig weaned (kg)	67.90	48.29
Feed costs#		
Sow feed cost per tonne (£)	179.98	183.38

Source: Agrosoft Pig Recording System. **Note**: **Per sow data excludes unserved gilts. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval

Table 18: Comparative results for INDOOR breeding herds, 2006–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		2016	
											Top third*		Top third*
Herd structure													
Average number sows and gilts	482	501	548	440	492	586	481	549	598	592	611	703	673
Average number unserved gilts	n/a	22	54	36	95	37	37	85	36	28	38	62	59
Sow replacements (%)	49.5	47.7	45.5	49.2	47.6	49.2	51.8	53.0	52.9	52.37	55.79	53.56	55.34
Sow sales and deaths (%)	49.2	46.7	47.2	47.5	41.5	47.9	52.9	55.4	54.0	62.28	65.23	57.16	58.85
Sow mortality (%)	6.1	3.9	3.9	3.9	1.4	2.9	3.2	5.2	5.15	6.19	6.84	5.99	5.94
Sow performance													
Non-productive days per litter##	21.0	21.0	44.0	20.2	19.9	20.8	18.9	16.2	16.9	17.39	12.16	17.31	12.56
Litters per sow per year**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.29	2.37	2.29	2.36
Pigs born per litter													
Alive	11.2	11.4	11.5	11.5	11.6	11.9	12.1	12.4	12.6	12.79	13.41	12.98	13.51
Dead***	0.9	0.9	1.0	1.1	1.0	1.1	1.1	0.9	0.7	0.72	0.71	0.76	0.73
Total	**12.0**	**12.4**	**13.1**	**12.5**	**12.6**	**12.9**	**13.1**	**13.2**	**13.5**	**13.68**	**14.28**	**13.92**	**14.42**
Pre-weaning mortality (%)	12.9	13.0	12.3	12.3	12.2	12.8	12.4	12.3	11.5	11.46	10.48	11.75	10.1
Pigs weaned per litter	9.7	10.0	10.1	10.1	10.2	10.4	10.6	10.8	11.2	11.31	11.99	11.45	12.14
Pigs weaned per sow per year**	22.0	22.4	22.9	22.8	23.0	23.4	24.1	24.9	25.7	25.99	28.40	26.23	28.61
Average weight of weaned pig (kg)	7.2	7.4	7.2	7.5	7.4	7.5	7.4	7.3	7.1	7.17	7.27	7.30	7.38
Average weaning age (days)	26.1	27.1	27.0	26.9	27.0	27.0	26.9	26.9	26.6	26.38	26.51	26.70	27.04
Feed usage#													
Sow feed per sow per year (t)	1.367	1.362	1.334	1.256	1.168	1.059	1.217	1.476	1.345	1.353	1.367	1.265	1.436
Feed per pig weaned (kg)	63.3	66.0	62.3	60.2	51.2	46.1	49.8	50.2	47.3	51.20	47.97	48.29	50.01
Feed costs###													
Sow feed cost per tonne (£)	102.22	127.73	164.99	180.59	164.32	215.23	210.28	212.31	201.94	186.15	n/a	183.38	n/a

Source: Agrosoft Pig Recording System. **Note**: *Selected on basis of pigs weaned per sow per year. **Excludes unserved gilts. ***Includes mummified pigs born. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval. ###Per tonne compound feed cost from AHDB since 2014 (weighted dry and lactating)

Table 19: Comparative results for OUTDOOR breeding herds, 2006–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		2016	
											Top third*		Top third*
Herd structure													
Average number sows and gilts	806	783	777	645	735	771	676	932	928	867	845	959	870
Average number unserved gilts	n/a	21	80	57	45	84	70	66	55	30	42	91	111
Sow replacements (%)	57.6	45.8	46.4	46.0	39.2	52.4	51.3	52.9	51.0	48.86	50.27	50.01	53.21
Sow sales and deaths (%)	42.6	36.9	45.6	43.8	38.6	47.0	49.1	46.7	48.5	54.71	51.91	48.56	47.25
Sow mortality (%)	5.4	3.1	4.6	3.8	1.1	3.5	4.0	3.4	3.8	4.19	4.91	3.81	4.03
Sow performance													
Non-productive days per litter##	19.0	25.0	45.6	20.4	19.2	21.0	19.9	19.4	21.5	22.95	16.01	19.69	16.00
Litters per sow per year**	2.3	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.22	2.32	2.26	2.32
Pigs born per litter													
Alive	10.8	10.9	10.9	10.9	10.7	10.8	11.0	11.1	11.4	11.47	12.03	11.72	12.21
Dead***	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.43	0.54	0.49	0.62
Total	**11.4**	**11.4**	**11.7**	**11.5**	**11.3**	**11.4**	**11.6**	**11.6**	**11.9**	**11.91**	**12.60**	**12.08**	**12.76**
Pre-weaning mortality (%)	13.6	12.3	12.9	12.6	13.1	12.4	13.0	14.0	14.2	13.41	12.61	13.84	13.03
Pigs weaned per litter	9.3	9.5	9.5	9.6	9.3	9.5	9.6	9.6	9.8	9.92	10.50	10.09	10.61
Pigs weaned per sow per year**	21.1	20.9	21.3	21.6	21.0	21.3	21.7	21.7	21.8	22.06	24.32	22.77	24.61
Average weight of weaned pig (kg)	8.1	7.6	7.6	7.7	7.0	7.9	7.7	7.0	7.0	6.85	6.84	7.26	7.34
Average weaning age (days)	26.0	26.5	27.0	26.5	26.0	27.0	26.5	25.8	26.1	26.36	26.06	26.5	25.80
Feed usage#													
Sow feed per sow per year (t)	1.298	1.296	1.584	1.300	1.330	1.345	1.365	1.601	1.547	1.666	1.559	1.575	1.620
Feed per pig weaned (kg)	68.0	70.2	79.0	72.9	64.5	63.0	64.3	76.1	72.5	75.48	64.62	67.90	65.93
Feed costs###													
Sow feed cost per tonne (£)	102.63	133.36	180.72	153.53	160.34	194.44	204.31	226.82	196.10	182.72	n/a	179.98	n/a

Source: Agrosoft Pig Recording System. **Note**: *Selected on basis of pigs weaned per sow per year. **Excludes unserved gilts. ***Includes mummified pigs born. #Per sow data includes unserved gilts. ##Non-productive days excludes gestation, lactation and a six-day weaning to service interval. ###Per tonne compound feed cost from AHDB since 2014 (weighted dry and lactating)

Table 20: Overall rearing herd results, year ended December 2016

	Top 10%*	Top 1/3*	Average
Herd structure			
Average number of pigs	1,473	1,534	2,195
Pig performance			
Average weight of pigs at start (kg)	7.7	7.3	7.5
Average weight of pigs produced (kg)	29.6	31.6	36.8
Rearing mortality (%)	1.2	3.6	3.6
Feed conversion ratio	1.32	1.49	1.70
Daily gain (g)	468	463	484
Days in herd	43	51	60

Source: Agrosoft Pig Recording System. **Note**: *Selected on feed conversion ratio

Table 21: Trends in performance and feed costs in the rearing herd 2000–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Herd structure											
Average number of pigs	1,377	1,192	1,994	2,083	3,345	1,984	2,237	2,607	2,523	2,983	2,195
Pig performance											
Average weight of pigs at start (kg)	7.2	7.4	7.7	7.3	7.4	7.4	7.4	7.2	7.5	7.6	7.5
Average weight of pigs produced (kg)	35.1	35.3	38.5	36.6	34.6	36.8	35.9	31.5	37.1	36.9	36.8
Rearing mortality (%)	2.5	2.7	2.4	2.5	2.7	2.6	2.5	4.0	2.8	2.8	3.6
Feed conversion ratio	1.71	1.82	1.73	1.80	1.75	1.71	1.77	1.84	1.71	1.89	1.70
Daily gain (g)	493	453	478	492	486	489	489	479	502	463	484
Feed usage and costs*											
Feed cost per tonne (£)	192.04	213.63	272.83	277.40	297.11	261.95	346.89	352.17	282.15	252.56	249.25

Source: Agrosoft Pig Recording System. **Note**: *Per tonne compound feed cost from AHDB since 2014

Table 22: Overall herd results ranked on Daily Liveweight Gain, year ended December 2016

	Rearing			Feeding			Combined Rearing/Feeding[1]		
	Top 10%	Top third	Average	Top 10%	Top third	Average	Top 10%	Top third	Average
Herd structure									
Average number of pigs	1,647	2,462	2,226	1,882	1,617	1,535	3,752	3,486	3,911
Pig performance									
Average weight of pigs at start (kg)	7.5	7.7	7.5	41.1	39.7	36.3	8.5	8.2	7.7
Average weight of pigs produced (kg)	41.1	42.5	36.8	108.5	110.0	109.1	109.6	111.8	108.5
Mortality (%)	2.2	2.7	3.6	2.1	2.4	3.0	6.8	4.4	4.8
Feed conversion ratio	1.71	1.66	1.68	2.54	2.56	2.65	2.15	2.28	2.33
Daily gain (g)	601	566	483	967	929	823	849	794	697
Days in herd	56	62	61	70	76	91	119	131	145

Source: Agrosoft Pig Recording System. **Note**: [1]Rearing; Feeding; and Combined Rearing and Feeding do not necessarily directly correspond

Table 23: Overall finishing herd results, year ended December 2016

	Top 10%*	Top 1/3*	Average
Herd structure			
Average number of pigs	2,112	1,788	1,554
Pig performance			
Average weight of pigs at start (kg)	30.8	31.9	36.3
Average weight of pigs produced (kg)	108.7	109.5	109.8
Finishing mortality (%)	2.6	3.0	3.0
Feed conversion ratio	2.15	2.36	2.65
Daily gain (g)	762	812	850
Days in herd	74	75	75

Source: Agrosoft Pig Recording System. **Note**: *Selected on feed conversion ratio

Table 24: Trends in performance and feed costs in the finishing herd, 2000–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Herd structure											
Average number of pigs	1,992	2,016	1,811	1,881	1,788	2,066	1,764	1,660	1,733	1,828	1,554
Pig performance											
Average weight of pigs at start (kg)	27.2	26.6	35.9	38.8	38.0	39.8	38.4	38.9	35.0	37.2	36.3
Average weight of pigs produced (kg)	98.2	98.8	101.6	103.3	103.9	103.0	102.7	99.4	106.1	107.9	109.8
Finishing mortality (%)	5.6	4.8	3.3	2.8	3.0	2.9	2.5	3.1	3.2	2.7	3.0
Feed conversion ratio	2.75	2.73	2.87	2.77	2.95	2.82	2.72	2.80	2.67	2.69	2.65
Daily gain (g)	655	673	757	819	766	784	822	786	801	817	850
Feed usage and costs*											
Feed cost per tonne (£)	119.87	132.75	184.12	183.99	177.46	261.83	241.52	248.06	231.70	205.56	198.78

Source: Agrosoft Pig Recording System. **Note**: *Per tonne compound feed cost from AHDB since 2014

Table 25: Analysis of pigs born, weaned and re-service rate by parity, year ended December 2016

Parity	% of Total	Born Alive per litter	Born Dead per litter	Total Born incl. Mummified	Weaned per litter	Weaned per Sow per Year
Gilt	23.2	11.81	0.51	12.41	11.07	24.95
2	20.4	12.25	0.46	12.75	11.07	25.12
3	17.2	12.90	0.59	13.58	10.96	25.10
4	14.3	12.91	0.66	13.69	10.76	24.75
5	10.9	12.77	0.74	13.63	10.68	24.42
6	7.2	12.48	0.81	13.41	10.31	23.44
7	3.9	12.05	0.80	12.96	10.03	22.50
8	1.8	11.60	0.82	12.53	9.89	21.29
9	0.7	11.29	0.80	12.16	9.51	20.19
10	0.3	10.69	0.89	11.64	9.43	17.78
11< 13	0.3	10.72	0.89	11.68	9.44	19.20

Source: Agrosoft Pig Recording System

Table 26: Analysis of total services and returns by parity, year ended December 2016

Parity	% of Total	Farrowing Rate%	Re-Service Rate%	Farrowing Index	Percentage Share of Dead & Culled
Gilt	23.2	83.5	8.03	161.77	16.43
2	20.4	81.5	9.59	161.52	10.80
3	17.2	84.1	7.49	160.04	10.05
4	14.3	84.3	6.95	159.51	10.35
5	10.9	84.0	6.30	160.58	11.18
6	7.2	83.5	6.42	162.26	12.33
7	3.9	81.9	6.76	164.15	10.30
8	1.8	80.5	7.40	168.26	8.87
9	0.7	79.1	8.58	169.06	4.53
10	0.3	74.4	16.17	171.18	2.58
11< 13	0.3	74.8	16.44	169.92	2.58

Source: Agrosoft Pig Recording System

Knowledge exchange

This chapter outlines some of the key activity in which the AHDB Pork research, development and knowledge transfer team has been involved over the past 12 months and looks at some of the plans for the forthcoming year.

Skills and training

Engagement with the AHDB Pork training courses continued during the year with a number of courses running in most regions. The Stockman courses, which provide a two-step approach to training and allow stockpeople to advance and continue their development, remained popular. Now the training is becoming established in the industry, there is a nice balance between businesses repeatedly using the training courses and those who are newly involved.

During the training year September 2015 to June 2016, AHDB Pork ran ten full training courses and three ad hoc sessions. The reach of these training courses was wide, with at least one training course running per region, reaching 193 people.

A new training evaluation strategy was implemented to build on the quality and level of feedback already collected during training sessions. The aim was to record feedback from learning in sessions, understand behavioural changes as a result of training and measure the increase in the level of knowledge gained during the session. Evaluation criteria and assessment processes were also established for trainers, to ensure that training is delivered to its full potential. Courses were held for AHDB Pork trainers to build on their delivery methods and provide guidance on better engagement with trainees, this was well-received by attendees.

Some results from the new training evaluation work:

- **72%** of training sessions were scored as 'excellent'
- **89%** of training sessions gave participants practical ideas to implement on farm
- **80%** of trainers scored as 'excellent'

The five new scholars: Bryony Farrington, Loretta Holder, Bethany Gardner, Sian Southwell, Oliver Ashton

Pig Industry Scholarship

The fourth year of the Pig Industry Scholarship at Harper Adams University saw the success of the scheme continue, with five more scholars (pictured) secured for placement into industry in 2017. The scholarship scheme has provided 20 scholars to date, who will benefit from a bursary and a year working in the pig industry. The aim of the scheme is to increase student awareness of the variety of career opportunities in the industry and in turn for the industry to attract and recruit new talent.

Pig Industry Scholarship

"50% of 2014 scholars returned to sponsoring companies upon graduation"

Pig Pro

Following a review of the Pig Industry Professional Register (PIPR), which started in December 2015, a new online training recording system for pig producers and stockpeople is in development. The review highlighted that the needs of the industry had changed in terms of CPD and training recording since PIPR was created in 2006 and so a new approach was needed.

The new system will be an easy-access tool for businesses to keep records of staff training and development, or for individuals to access and keep their own records. To ensure uptake when the system goes live in autumn 2017 the industry has been consulted on many aspects of the new proposal and feedback will continue to be considered during the ongoing development process.

PIG PRO
ONLINE TRAINING RECORD

Producer engagement

Getting on farm and helping producers make improvements to their performance is a key part of what the Knowledge Exchange team is all about.

Table 5: Regional splits of engagement and visits during the year

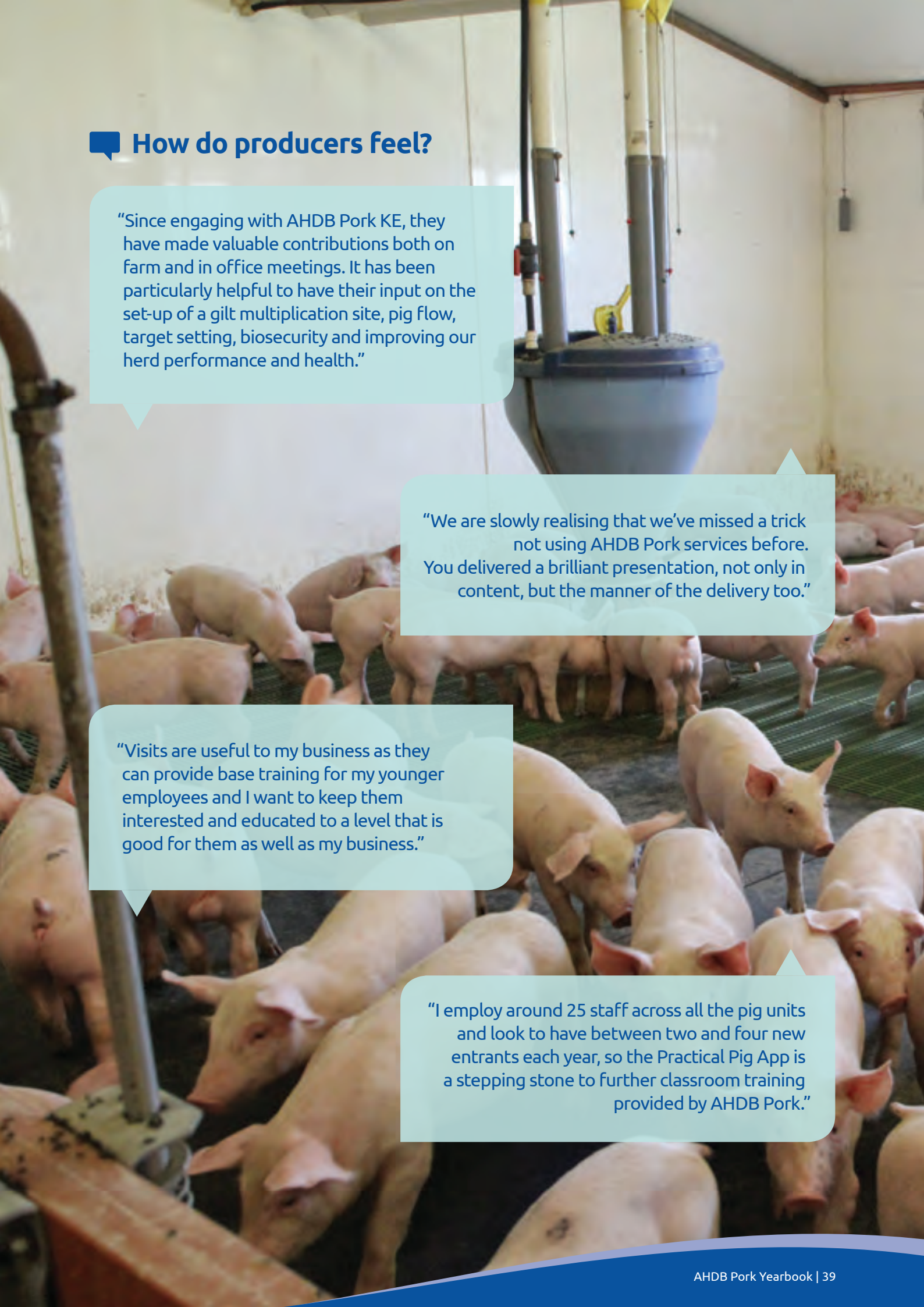
	Visits	Businesses
Region		
North	82	42
East	31	20
South	37	22
Central	24	15
Total	**174**	**99**

During farm visits the team addressed some of the following key areas:

- Performance analysis using the AHDB margin maximiser tool to help businesses focus on the areas that have the most significant potential performance gains
- On-farm training, including using the AHDB Pork Practical Pig app, on specific topics to help people grow in confidence and assist businesses that are struggling to find time to release staff to attend training courses
- Assisting with data entry onto the electronic medicines book (eMB), allowing businesses to review antibiotic usage and make management decisions based on the reports created
- Ventilation reviews, to improve lying patterns, health and behaviour of pigs
- Pig flow
- Target setting

Reviewing the routines and needs of individual businesses has provided an excellent opportunity for face-to-face engagement between producers and AHDB Pork. This contact has allowed very specific issues to be discussed enabling greater measuring and understanding to drive improvements in productivity. On-farm visits have also provided levy payers an opportunity to feedback on activities and share their views on which areas should be a focus for AHDB Pork.

KE visit: Mark Hayward, Dingley Dell, and Andrew Palmer, KE manager AHDB Pork



How do producers feel?

"Since engaging with AHDB Pork KE, they have made valuable contributions both on farm and in office meetings. It has been particularly helpful to have their input on the set-up of a gilt multiplication site, pig flow, target setting, biosecurity and improving our herd performance and health."

"We are slowly realising that we've missed a trick not using AHDB Pork services before. You delivered a brilliant presentation, not only in content, but the manner of the delivery too."

"Visits are useful to my business as they can provide base training for my younger employees and I want to keep them interested and educated to a level that is good for them as well as my business."

"I employ around 25 staff across all the pig units and look to have between two and four new entrants each year, so the Practical Pig App is a stepping stone to further classroom training provided by AHDB Pork."

Study Tours

AHDB Pork runs a number of study tours every year, both in the UK and overseas. The tours are aimed at looking at new technologies and/or production systems and are usually 50% funded by AHDB Pork with the remaining cost being met by a commercial company. Producers who are interested in viewing a particular system or technology overseas, or have an idea for a study tour, can contact their KE manager to discuss opportunities.

Scotland

Activity: The trip included a visit to a high performing outdoor Karro unit, as well as presentations about the Karro Food Group.

Participants also listened to presentations from Dennis Bridgeford (pig producer), Grace Webster and Allan Ward (Quality Meat Scotland), that covered the benefits and financial implications of a partial de-stock, along with how Dennis Bridgeford had been able to improve the cost of production (CoP) through conducting a partial de-stock. QMS also presented on how they support producers in Scotland.

Who: Seven outdoor producers and three indoor producers

Sponsored by: AHDB Pork

The first trip to Scotland included a visit to a high-performing outdoor unit

Scotland

Activity: A visit to a salmon farm and a poultry business to look at vaccination efficiencies and how the pig industry could apply similar techniques.

Who: Six producers

Sponsored by: MSD & AHDB Pork

Spain

Activity: Participants looked at high performing pig businesses and also had a tour of the Hipra facility.

Who: Eight producers, representatives from Garth Pig Practice, Scotlean and Hipra

Sponsored by: Scotlean, Garth Pig Practice, Hipra and AHDB Pork

Germany

Activity: A visit to Eurotier (the world's leading trade fair for animal production) to look at the latest technologies available to the English pig industry.

Who: Six producers, representatives from Garth Pig Practice

Sponsored by: Garth Pig Practice and AHDB Pork

Netherlands

Activity: Participants looked at high performing pig businesses, with a focus on using milk cups and understanding their benefits. Presentations were given by a Dutch vet on reducing antibiotic usage on farm.

Who: Six producers

Sponsored by: AHDB Pork and Zarkos-Smith Associates

Denmark

Activity: Participants visited two high-performing pig business, one new pig farm under construction and a finishing unit. The focus of the visit was on pH reduction of slurry, to see the Intellifarm® ventilation system and meeting the building designer. The trip concluded with a visit to Agromek (Northern Europe's largest agricultural fair) where participants saw the latest technologies available to the pig industry.

Who: Six producers and a representative from Newcastle University

Sponsored by: AHDB Pork

Agromek

Sweden

Activity: Participants visited two farms as well as an agricultural university, and met Swedish producers for a pig club-style meeting. The focus of the trip was to look at welfare in Swedish production systems, including building design, equipment and environmental systems.

Who: Seven producers and representatives from Garth Vets, AHDB Pork and Zoetis

Sponsored by: AHDB Pork and Zoetis

Pig clubs and workshops

The Knowledge Exchange team run a series of pig clubs across England and sponsor nine pig discussion groups.

Region	Number of groups	Total number of meetings per year	Average meeting attendance
North: Pig clubs	7	25	15
North: Corporate grower meetings	1	3	50
East: Pig clubs	6	40	16
Central: Pig clubs	7	26	15
South: Pig clubs	6	32	20
South: Regional forum	1	2	24

Research and innovation

The aim of research and field trials is to generate new knowledge about pig production and demonstrate this new knowledge in commercial environments, to remove some financial risks when investing on farm.

The Focus Farm Initiative

The Focus Farm initiative, brings farmers, vets and industry experts together to discuss challenges facing the pig industry through open discussions and tours of commercial units. The aim is that, using real situational experiences studied at the Focus Farm, AHDB Pork can help improve physical and financial performance on units across the country through knowledge exchange engagement and networking among producers.

The first Focus Farm host is David Goodier who runs a 250-sow unit near Blackpool, Lancashire. The first open meeting was held in June 2016 and was followed by two further meetings. The first welcomed 50 interested industry members to his unit for a guided tour including other farmers, vets and nutritionists. This was followed by group analysis of his data and productive and open discussion around the very real challenges he faces.

The areas agreed upon by the wider group for further study included, reducing pre-weaning mortality, investigating the marking up of weaners and simplifying service routines. The AHDB Pork innovation team consequently UHF tagged 1000s of piglets, set up cameras in the weaner buildings, sampled and tested the water, made practical changes to the service routines and analysed airflow before Tim Miller (ventilation expert) explored the condition of the ventilation system in the weaner building and suggesting areas for improvement. One initial and significant outcome has been the reduction in pre weaning mortality from 15% to 11.09%. Further results will be published as they become available.

The Focus Farm initiative will continue to be an integral part of the 2017-2020 strategy with further farms being enrolled. Rising to the challenge of improving pig industry productivity is being addressed as the Focus Farm team finds practical solutions to some of the biggest challenges facing today's modern unit.

"AHDB Pork is committed to assisting the industry in all areas of maintaining and improving welfare and will continue to provide evidence-based technical information, research and trials where and when necessary."

EU PiG Project

EU PiG is a four-year project to look at health management, precision production, animal welfare and meat quality. The project team is made up of a consortium of 19 organisations from across 13 European counties and led by AHDB Pork.

The consortium represents member states that together accounted for 93% of the EU's pig meat production in 2015. The EU PiG consortium consists of, or will have links to, national and regional pig producer groups, researchers, rural development boards and innovation practitioners, including a number of Small and Medium Sized Enterprises (SMEs).

EU PiG will improve the connection between producers and the latest science, husbandry techniques and technologies from within their industry via fellow producers, academics and advisors connected through thematic and regional platforms. It is funded by the European Commission's research and development programme, 'Horizon 2020'.

Over the next four years' tools will be created and practical guidance provided to all parts of the industry. Innovative best practice combined with scientific knowledge will be identified and shared via the EU PiG website (www.EUPIG.eu). It also explains the project objectives and how to get involved.

Health and welfare

Enhance Pig Welfare

Objective: To help pig producers comply with existing and emerging legislation and achieve recognition for progress made.

AHDB Pork has maintained its commitment to pig welfare, recognising the need to maintain the consumer confidence in and reputation of English pork across UK and global markets. AHDB Pork continues to manage the Real Welfare monitoring scheme, regularly measuring outcome-based welfare measures on all Red Tractor assured holdings. AHDB Pork is committed to assisting the industry in all areas of maintaining and improving welfare and will continue to provide evidence-based technical information, research and trials where and when necessary.

To achieve this, AHDB Pork will:

- Continue to deliver the Real Welfare scheme in conjunction with AFS, NPA and PVS and provide peer reviewed feedback to industry to benchmark progress of the continued welfare improvements
- Collaborate with the industry to review and refine Real Welfare measures, promote the benefits of Real Welfare to our customers and build a base of firm support among producers and vets
- Develop the AHDB Pork Real Welfare outputs with peer-reviewed publications on the outcomes from the first three years of the project
- Provide technical support on the practical implementation of regulations, engage with Government, EU, industry and NGOs on technical evaluation and impact assessment of emerging welfare regulations
- Investigate new technologies which may promote better welfare at slaughter, such as the tail biting Husbandry Advisory Tool (HAT) and environmental enrichment guide

Encourage Safe and Traceable Pork

Objective: Help producers and processors produce pork meat that continues to be safe and fully traceable from farm to finished product to ensure consumer confidence.

AHDB Pork maintains a focus on the areas of food safety, disease monitoring and provenance. These areas are the subject of several large trials and project work and encompass both the animal health and the food safety aspects of the business. AHDB Pork has been instrumental in developing one of the first 'industry led – government assisted' notifiable disease strategies within the UK.

AHDB Pork is leading the way in the area of antimicrobial resistance by developing the first electronic database for collection of on-farm antibiotic use to allow the commitment of the UK pig industry to responsible use of antibiotics to be demonstrated.

To produce safe and traceable product, AHDB Pork will:

- Support processors and their trade associations on the implementation of new regulations through continued monitoring, assessment and close engagement with policy makers
- Collaborate with the Food Safety Agency (FSA) and industry partners to ensure that food chain information is accurate, pertinent and delivered effectively
- Promote and deliver effective risk profiling that will minimise red tape
- Develop more efficient methods of data capture in abattoirs
- Deliver reliable Collection and Communication of Inspection Results (CCIR) information on post-mortem slaughter lesions and ensure that information reaches producers
- Work with the Animal and Plant Health Authority (APHA), producers and processors to share outcomes from the field-based study of control measures for Salmonella to provide a better understanding of the effect on endemic disease and productivity
- Demonstrate cost benefits from interventions for health, food safety and production efficiency, which will lead to reduced need for therapeutics while still maintaining production efficiencies and reducing food safety risks
- Support the Responsible Use of Medicines in Agriculture (RUMA) Alliance strategy for responsible antimicrobial use and on replacement, reduction and refinement of usage through health planning and tools to monitor and benchmark usage
- Engage with APHA on the development of an integrated surveillance plan to monitor new and emerging high impact diseases that present a risk to pig and/or public health and to long-term business sustainability
- Operate a programme of Stable Isotope Reference Analysis (SIRA) testing of pork, bacon and ham that will enhance the existing paper-based traceability and auditing process used in the British Meat Processors Association (BMPA) schemes that underpin Red Tractor

"AHDB Pork is leading the way in the area of antimicrobial resistance by developing the first electronic database for collection of on-farm antibiotic use"

Pig Health and Welfare Council

The Pig Health and Welfare Council (PHWC) has been working in its current format since 2015 and has been instrumental in driving the development of the national contingency plan for Porcine Epidemic Diarrhoea virus (PEDv) and it gaining notifiable status. The council and its subgroups have also been working on behalf of the pig industry on a wide variety of critical areas:

The PHWC subgroups are now investigating:

- **Welfare Subgroup**
  - Welfare implications of larger finishing weights of pigs
  - Promotion of better training in best practice euthanasia of pigs
  - Identification of key areas within the existing welfare codes that need updating
- **Pig Meat Food Safety Subgroup**
  - Monitoring the emergence of potential zoonotic threats to public health and developing strategies to mitigate these risks
  - Facilitating ongoing research into areas such as Salmonella and Hepatitis E
- **Disease Surveillance Subgroup**
  - Monitoring the status of new, emerging and endemic diseases
  - Developing systems for improved disease surveillance
  - Identifying and advising on key threats to pig health within the UK
- **Antimicrobials Subgroup**
  - Providing case examples of good antimicrobial stewardship
  - Developing strategies to aid and assist the pig industry to meet the demands of using antibiotics more strategically
  - Identifying knowledge gaps in the research relating to Antimicrobial Resistance

Disease Surveillance

The Disease Surveillance Subgroup of the Pig Health and Welfare Council coordinated the activity to develop the first industry-led, government assisted, notifiable disease contingency plan in the UK. This plan was developed to mitigate the potentially catastrophic impact of the highly pathogenic strains of PEDv.

PEDv has been notifiable in England and Scotland since early spring 2016 and AHDB Pork has continued to support screening testing of all diarrhoea samples submitted to the government APHA labs in England and Wales. England remains free from the new strains of PEDv, but continued vigilance as well as testing the contingency plan has remained an ongoing process for the subgroup and affiliated organisations.

In addition to the work on PEDv, the disease surveillance group has been looking at wider threats to the health of the UK pig herd.

The group has delivered the following in 2016:

- Notifiable Disease status achieved for PEDv within England and Scotland
- Development of a disease contingency exercise for PEDv
- Continued testing and monitoring of all porcine diarrhoea samples through APHA for suspected PEDv
- Diagnostic testing of wild boar samples (by APHA funded by AHDB Pork) for endemic diseases and disease of significance to the UK pig herd
- Delivery of a syndromic surveillance round table meeting in September 2016, to scope if syndromic surveillance was a possible addition to pre-existing surveillance in the UK
- Creation of a 'top ten' set of questions for pig producers to give an indication of the profile of the UK pig industry, as well as vital epidemiological information in the event of an outbreak
- Maintaining open global communication channels to promote exchange of knowledge and to ensure the latest understanding of the disease situation

The Disease Surveillance Subgroup is now focusing on the delivery of an effective surveillance system within the UK, looking at the systems that are already available, or could be used on a trial basis, as well as the opportunities that 'data sharing' may bring. The group continue to monitor the international disease situation and is ready to respond to any diseases that may pose a risk to the UK pig herd.

Measuring Antibiotics

The topic of antimicrobial resistance has continued to move up the agenda of animal health. The outcome of the O'Neill report in May 2016 and the subsequent Defra response has the pig industry (and other livestock sectors) facing fresh challenges. Defra has charged the livestock sectors to reduce total sales of antibiotics to 50mg/kg by 2018. Figures currently stand at 62mg/kg in 2014 and have dropped to 56mg/kg in 2015, marking a 20% reduction in overall antibiotic sales. Defra has also committed to setting species specific reduction targets, which will run for 10 years and be in place by 2018.

The pig sector has demonstrated its commitment to reducing antibiotic usage by signing up to the National Pig Association (NPA) Antibiotic Stewardship Programme. In addition, the electronic Medicines Book for Pigs (eMB-Pigs) was made available in April 2016, marking the launch of the first fully digital antibiotic data capture system for any UK livestock sector. AHDB Pork has placed considerable resource into entering data (2015 and 2016) onto the eMB-Pigs system in order to benchmark the industry so that realistic species-specific targets can be set.

Key Achievements:

- Data entry of 2015 and 2016 data onto the eMB-Pigs system to meet the benchmarking requirements and commitment to publish the 2016 industry total on-farm use
- Providing evidence-based responses to media and communication enquiries
- Delivering technical information on water, disease management and biosecurity to help reduce the need for antibiotics by industry
- Delivery of applied research trials to assist in a more judicious approach to antibiotic use, as well as identifying gaps in the current research
- Production of advice in the form of practical steps which can be used to reduce reliance upon antibiotics while maintaining productivity and mitigating additional costs

AHDB Pork continues to work with the industry to assist in the delivery of targets set by Government, as well as providing evidence-based, reliable data on methodologies that can be used to reduce the use of antibiotics. AHDB Pork also recognises that antibiotics remain a powerful tool in maintaining animal health and welfare and are working to ensure that these medications remain available to be used by the industry when appropriate.

"The electronic Medicines Book for Pigs (eMB-Pigs) was made available in April 2016, marking the launch of the first fully digital antibiotic data capture system for any UK livestock sector"

Environment and Buildings

Activity continues to be based upon the key aspects of the AHDB Pork business plan as follows:

- Providing business support, focusing on aspects of building performance and environmental legislation in order to improve production efficiency
- Working to reduce environmental impacts by helping producers to comply with relevant environmental legislation and planning requirements
- Monitoring, interpreting, and helping to inform environmental policy and regulations in both the UK and EU on behalf of the English pig industry
- Developing a sustainable industry
- Capturing the progress made by the English pig industry and using this insight to provide valuable contribution to informing on the Government's greenhouse gas and ammonia emissions targets

Environmental Permitting

Pig farms operating in accordance with an environmental permit (EPR/IPPC), issued by the Environment Agency, have to comply with permit conditions governing operation and management. These conditions are derived from a series of Best Available Techniques (BAT) and were updated in February 2017.

The European Commission produces best available technique reference documents (BREF) for each of the regulated sectors. BAT have been determined by a group of technical experts from across Europe who review scientific evidence to determine which techniques deliver better environmental performance.

The BREF for Intensive Rearing of Pigs and Poultry (version 2) is expected in late spring 2017. The Environment Agency will then revise the guidance document for permit holders, entitled 'How to Comply with your Environmental Permit'.

All farms obtaining a permit for the first time have to be fully compliant with BAT. Failure to obtain a permit and abide by it can mean a criminal offence has been committed.

AHDB Pork will be assisting in running training events on BAT and providing support to producers. Once updates have been published the Environment and Buildings team will also be available to answer any queries with regards to the BREF and translate what this may mean to individual businesses.

The Environment and Buildings team continues to provide bespoke on-farm training workshops for farm managers and stock people to help them understand their responsibilities and how they can avoid non-compliances and fines. The workshops cover subjects such as typical permit breaches, site and accident management plans and how to deal with odour complaints.

In addition, a module entitled 'Balancing Profitable Farming with Environmental Protection' has been piloted for the new Stockperson Pro course for aspiring managers. Aspects included considering the environmental impacts of pig production and staff responsibilities to comply with an environmental permit.

Feedback

"I was concerned that we wouldn't pass an EPR audit, and needed help. Richard and Susan from AHDB Pork helped me with the paperwork and training, and we passed with no issues!"

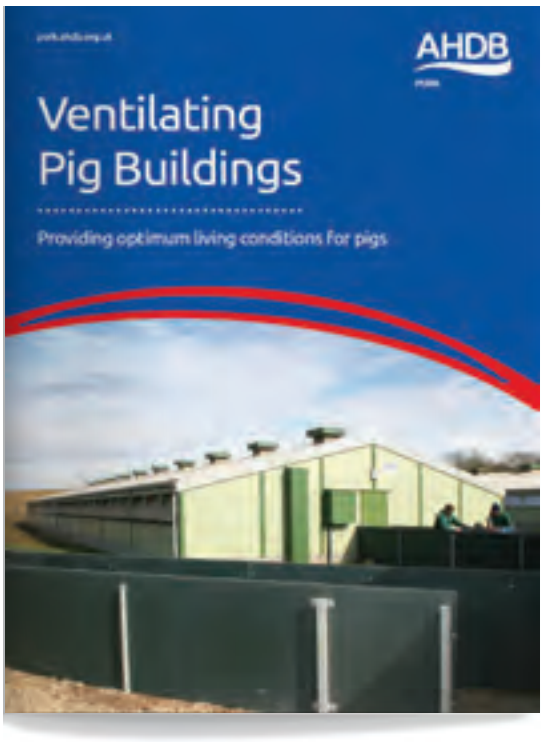
– Ken Hornshaw, Farm Manager

Improving building performance

Improving the performance of buildings can help production efficiency and also reduce the incidence of disease and in turn, the need for antibiotics and other medications.

Ventilation

Produced in 2016, the AHDB Pork's 'Ventilating Pig Buildings' guide covers a wide range of aspects relating to ventilation and how to optimise the performance and efficiency of ventilation systems. The guide includes explanations of how to calculate ventilation rates and optimise function, as well as case studies demonstrating common issues seen on farm and how to overcome them. The guide is available both online and in hard copy.

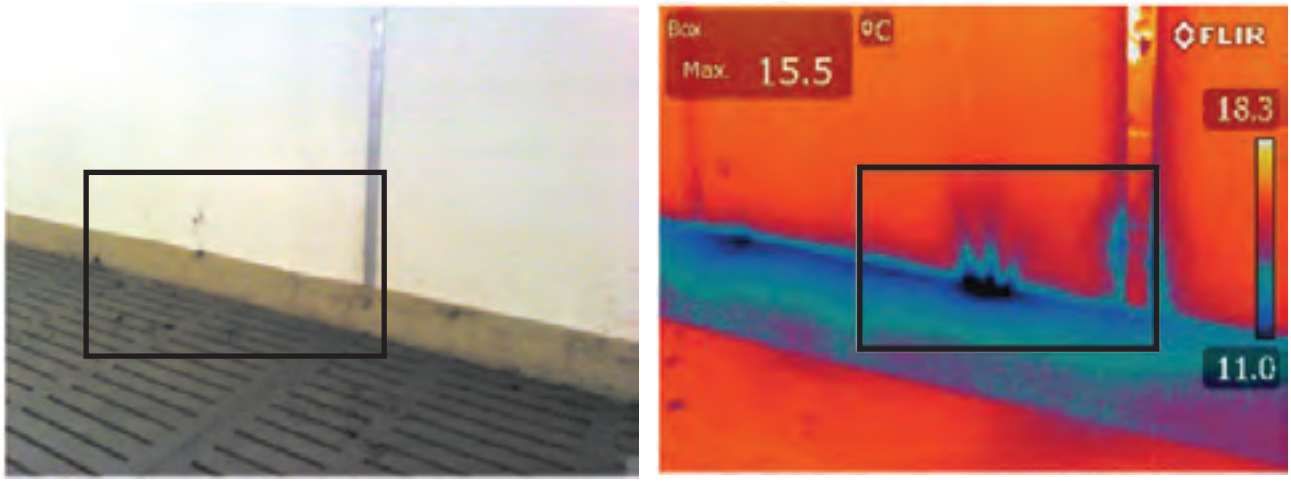


The Environment and Buildings team has also been conducting basic thermal imaging surveys on pig buildings to identify areas of energy loss that aren't easy to capture visually. The objective is to help owners and managers understand how their buildings are performing, to highlight opportunities for improvement and to help quantify investment decisions. Contact AHDB Pork if you need more details or feel a survey would be beneficial to your unit.

Other resources that you may find useful include:

- A variety of short videos demonstrating practical management techniques related to maintaining ventilation systems (available on the Practical Pig App)
- A booklet entitled: Providing pigs with good ventilation in straw-bedded general purpose buildings
- Action for Productivity factsheet 21: Ventilation

In 2017 AHDB Pork will be publishing an updated version of the highly regarded guide 'Controlled environments for livestock' (Farm Electric handbook), explaining how ventilation and control systems work and how the latest technological improvements can bring benefits to both livestock and producers.



Thermal imaging surveys can identify areas of energy loss

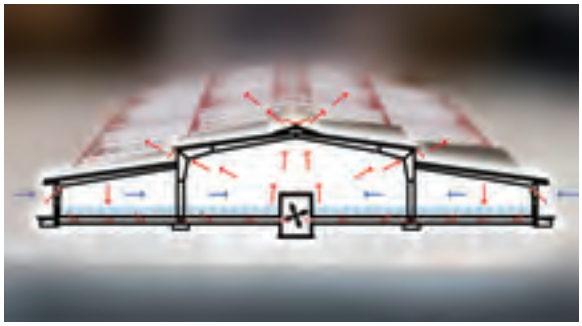


Diagram showing air movement in the Intellifarm® concept (courtesy of Agrifarm)

Photo showing Intellifarm® concept in a Danish pig building (courtesy of Agrifarm)

Reducing odour and emissions

Odour has long been an issue for pig farms and ammonia emissions are now becoming an important environmental issue. It is important that producers are equipped with the knowledge and technology they need to comply with new reduction targets and environmental legislation. AHDB Pork aims to help the industry achieve a 10% reduction in emissions by 2020.

A study tour to Denmark enabled producers find out about the impact of pH reduction of slurry and the Intellifarm® concept first hand. The techniques are proving of great interest to a number of producers in England to reduce ammonia, odour and improve the environment for pigs and workers. The addition and mixing of sulphuric acid is recognised as a Best Available Technique (BAT) for environmental permitting and can be added in the house, slurry store and at point of spreading, to reduce emissions by up to 65%. The Intellifarm® concept is a hybrid ventilation system and one of the potential tools for reducing emissions of ammonia, dust and odour on farm. The system was originally designed for dairy cows but has been adapted for use on pig units.

The system combines Automatically Controlled Natural Ventilation (ACNV) with fans, to provide crossflow ventilation underneath the slats; it is also possible to add an air cleaning system. The process has been reported to have removal rates of 90% for ammonia and 74% for odour. The dirty air is removed from underneath the slats and the removal of ammonia, dust and odour provides a good air quality for both the pigs and employees.

Some advantages of the Intellifarm® system include:

- Low energy requirement compared to full fan ventilation
- Reduced emissions of ammonia and dust to the atmosphere
- Improved conditions for staff and stock due to part of the exhaust air being extracted below the slats
- Potential for reduced levels of disease due to the improved environment
- Remote control through computer, tablet or smart phone
- Automatic slurry plugs to empty the pits
- Option for heat recovery which can be used for heating the solid floor lying areas

More pictures and information on the Intellifarm® concept are available on the AHDB Pork website.

Air cleaning to reduce ammonia and odour release from pig farms

In many parts of Europe, ammonia and/or odour is removed from the air being exhausted from pig buildings by means of air cleaners or "scrubbers". These will treat either all of the exhaust air or a proportion sufficient to provide the degree of cleaning required to satisfy local conditions.

Producers with particular issues related to odour or ammonia are increasingly considering the use of end-of-pipe solutions as a means of mitigation. During study tours, AHDB Pork has looked at various examples in operation.

There are a number of common types of scrubber, some are very simple, others more complex. They all have the disadvantage of increasing operational costs. The pressure required to drive the exhaust air through them increases energy cost, there is also the maintenance, replacement and disposal of the media and liquids used to maintain them; capital costs can also be significant. Air cleaning using the techniques described are also specified in the BREF as options for achieving BAT.

Water hygiene and availability

As part of the antimicrobial resistance (AMR) agenda, it is anticipated that in-feed medication will be phased out in the near future, therefore it is likely that, increasingly, medications will have to be delivered through water lines. By targeting individual pens of pigs, instead of blanket feeding antibiotics in dry food, producers will be able to reduce the amount of antibiotics used. However, this means that water systems need to be able to provide an adequate supply of good quality water and be capable of administering in-line medications.

To help prepare the industry for this, AHDB Pork has been working with RAFT Solutions Ltd to:

- Understand water quality and systems found on farm at present
- Provide guidelines for optimum drinking water quality for pigs
- Help producers provide adequate water by reviewing their infrastructure
- Provide guidance on how best to test, maintain and clean water systems
- Highlight considerations when using water as a delivery vehicle for medication

Example of the range of water colour (quality) seen across samples taken from an extensive water supply system, with components of various ages and materials

Water quality is key: If given the choice, pigs will always drink clean water before contaminated or dirty water

Key messages from the work to date:

- There is a big variation in water quality across pig farms in England
- Methods are now available to clean farm water systems successfully
- More understanding and attention to flow rates when multiple drinkers are in use is required on some farms
- Inappropriate drinkers will reduce intake, impacting negatively on pig growth and/or increase wastage, increasing the volume of slurry and costs
- The pig industry should expect more water delivery of medication and will have to build the infrastructure to achieve this
- Do not test for anything unless you are prepared to do something with the results
- Producers should have a plan of their water infrastructure and should then plan a phased approach for improvements

AHDB Pork will be working with veterinary surgeons and allied industry to support producers and help them recognise where water quality and availability can be improved. A planned programme of work will be delivered through pig clubs and other activities during 2017-2018.

Carcase cooling

On-farm evaluation of carcase cooling containers

In other countries, carcase cooling containers have led to a reduced number of visits by fallen stock collectors, decreasing the potential risk to biosecurity of them visiting the unit.

A field trial was therefore conducted to evaluate the operation and performance of cooling containers for the on-farm storage of fallen stock on pig farms in England.

The trial:

Two carcase cooling containers were placed on two separate farms and data loggers were placed inside and outside to monitor internal and ambient temperatures. Power consumption was also monitored for each cooler.

Findings to date:

The temperature inside the carcase coolers was significantly lower than the ambient temperature, with the coolers being able maintain a stable temperature (largely between 2 and 7°C) even when outside temperatures exceeded 30°C.

The running cost (in terms of electricity consumption) is approximately 80 pence per day during warmer months and less during cooler periods. Anecdotally, the coolers also reduced odour and flies around the dead stock bin.

Conclusion:

In Denmark, where the usage of these containers has been widely adopted, a reduction in the fallen stock collectors' fee of around 15% has been seen. This is due to a reduced number of collections and an improvement in the quality/quantity of the renderable product available from the chilled carcases. While adoption of such a system in the UK would be more complex to achieve, it does highlight an opportunity for collaboration within the supply chain which could lead to reduced on-farm costs, increased biosecurity and the improved utilisation of 'waste'.

Establishing ammonia emission factors for straw-based and slatted finishing pig buildings

Duration: 14 months

Aims and objectives: To collect and evaluate data for ammonia emission levels within pig sheds. This information is valuable for estimating the environmental impacts and is often required for permitting and planning applications.

The trial: The ammonia concentration in the inlet and exhaust air was measured on two sites, using the ammonia analyser developed by AHDB Pork in conjunction with other organisations. In addition, the number of pigs, weights, feed intake, protein content of diets, ventilation rates, external and internal temperature and relative humidity were also recorded, as per the internationally recognised VERA protocol standardisation.

Expected benefits: More accurately quantified ammonia emissions will assist producers in obtaining consents and permissions for new buildings and in making investment decisions.

Findings to date and next steps:

- Initial analysis of data from the first farm (a straw flow based system) has been conducted and results will be available by summer 2017
- The second machine is currently sampling on a fully-slatted unit, with the first two full sets of data being analysed and sent for external verification
- Plans are in place to position a machine on another unit in spring 2017 in order to establish a factor for a part-slatted (low emission design) building and explore the effectiveness of some nutritional interventions on ammonia emissions from part-slatted buildings
- Another unit will also have a machine installed to gather further data on fully-slatted housing and the effects of electronic particle ionisation (EPI)

Ammonia analyser in a pig building

Ammonia analyser in a bespoke shed designed to protect the equipment

Building Suppliers Forum

The Environment and Buildings team chairs and coordinates the Pig Building Suppliers Forum which discusses issues of relevance to the pig industry at a pre-competitive level. This is open to all companies which supply pig buildings and associated equipment in England. Topics include new and emerging technologies, evolving regulations, AHDB Pork KE activity and matters of importance to their customers.

The forum provides an opportunity for a two-way exchange, aiming at keeping participants up to date with issues, relevant legislation and guidance. One meeting in 2016 included a presentation from the Environment Agency on the changes to the regulations affecting the storage of slurry and manure under the Silage, Slurry and Agricultural Fuel Oil (SSAFO) regulations, which is very applicable to buildings with underfloor storage.

The next meeting will involve a site visit to look at three new pig buildings and the monitoring and recording technologies incorporated at the University of Newcastle's Cockle Park research and demonstration facility.

Production efficiency

The UK industry has a large varietvy of production systems ranging from indoor units, outdoor units, straw-based accommodation and slatted accommodation. This mixture makes the industry very different from our global counterparts.

There are some 30,000 premises with pigs on (including pets) and 10,000 pig farms. However, 92% of production comes from about 1600 assured farms including 10 corporate companies which account for 35% of our breeding sows. The UK is also unusual in that 40% of our herd is outdoors.

AHDB Pork aims to narrow the technical performance gap between English pig producers and our competitors.

Strategies for the optimisation of pig finishing places

Research partner: Harper Adams University

Sponsor: AHDB Pork **Duration:** 2014–2016

Aims and objectives:

- To investigate the effect of drawing pigs for slaughter on the performance of remaining pigs in the pen
- To determine whether size-sorting at finisher entry was beneficial to performance

Findings to date:

- An additional slaughter draw had no effect on the performance of the remaining pigs compared to keeping the pen intact
- The second slaughter draw reduced the economic output of the batch due to the reduced slaughter weight and meat sold
- All groups of pigs (light, medium and heavy) performed similarly, whether in mixed-weight or uniform-weight pens
- From 110d of age, all sizes had similar ADG and FCR and analysis of feeding behaviour demonstrated that light pigs were not disadvantaged in mixed-weight pens in accessing the feeder

Strategies to optimise finishing pig places (STOMP)

Research partner: Production Performance Services Ltd

Sponsor: AHDB Pork **Duration:** 2014–2016

Aims and objectives:

- To monitor growth rates and feed and water usage per pen using in-pen weighers, electric pulse meters and feed bin load cells
- To determine an optimal management system that maximises the number of carcases achieving the highest grade at slaughter while balancing space availability

Findings to date:

- The project has demonstrated that rolling seven-day averages, in terms of pen-level data, are more meaningful than daily data
- If all pigs were sold at draw four (instead of only 68%), four subsequent weeks of production could have been gained
- If all pigs were sold at or before draw two, a reduced margin of -£11.70 per pig place per year would have been incurred through not optimising sale weight
- If all pigs were sold prior to, or at, draw five, an additional margin of £13,544 per year, £2,348 per batch (£1.34 per pig) or £6.70 per pig place per year could have been achieved, relative to selling full-weight pigs; this was the most profitable outcome

Knowledge of variation and other factors, such as costs of production and market prices, enables the optimal number of weekly sales draws to be identified. The optimal number of sales draws is not fixed and will vary in accordance with relative changes in pig price, feed costs and limitations imposed by transport and housing availability.

Sorting pigs at weaning in order to reduce variability and improve the efficiency of pig production systems

Research partners: Newcastle University

Sponsors: AHDB Pork-funded studentship (Anne Huting), Primary Diets

Duration: 2016–2019

Aims and objectives:

- To reduce variability within pig groups through management and by doing so improve the efficiency of production systems
- To investigate the consequences of different management strategies on lifetime performance of light, normal and heavy pigs
- To develop cost-effective feeding regimes

Findings to date:

- Cross fostering resulted in heavier weaning weights
- Piglets born heavy and raised in uniform litters had lower weaning weights than heavy piglets raised in mixed litters; this body weight difference at weaning was sustained throughout production
- Heavy piglets raised in uniform litters consumed more creep feed than heavy piglets raised in mixed litters; creep feed provision did not contribute to a heavier weaning weight
- Piglets classified as good creep feed eaters were generally the lightest of their litter but were able to catch up during the last week before weaning, resulting in similar weaning weights to those that ate less
- Creep feed consumption is highly variable, both between and within litters

Conclusion

When developing management strategies for small piglets it is important to take into account the consequences on heavy piglets.

Creep feeding

The contribution of oocytes and follicular fluid to pig fertility

Research partners: The Roslin Institute, University of Edinburgh

Sponsors: AHDB Pork-funded studentship (Selene Jarrett) **Project duration:** 2014–2018

Aims and objectives:

- To determine whether a high fibre diet alters the protein composition of porcine follicular fluid and whether any of these proteins are associated with later fertility
- To identify potential molecular pathways implicated in the nutrition-dependent reproductive benefits
- To optimise oocyte (egg cell) maturation environment in vitro and in vivo

Findings to date:

- The high fibre diet and in vitro fertilisation outcome are associated with altered protein composition in porcine follicular fluid, indicating a nutritional influence on protein composition
- Pathways have been identified which could be inhibited or activated by the addition of chemicals to in vitro maturation culture

The results of this study could provide novel approaches to assess the characteristics of a healthy and fertile pig ovary and lead to the development of management strategies to enhance pig fertility and increase litter sizes in UK herds.

Finding an alternative to antibiotics for the treatment of the enteric pig pathogen Salmonella

Research partners: University of Leicester

Sponsors: AHDB Pork **Project duration:** 2015–2016

Aims and objectives:

- To isolate a set of natural viruses, known as bacteriophages, that specifically infect the common Salmonella serotypes associated with pigs
- To characterise the bacteriophages and select those that have properties that facilitate their future development for use as an alternative to antibiotics to treat Salmonella infection in pigs.

Expected benefits:

The goal of this study was to investigate whether it would be feasible to use bacteriophages to treat Salmonella infection in pigs. Not only would this give the industry an alternative to the traditional antibiotic treatment, but as bacteriophages are specific to bacterial species, they could also be developed as a diagnostic tool to be used to identify Salmonella infection on pig farms.

Findings to date:

Preliminary laboratory-based studies demonstrated that using combinations of bacteriophages could significantly reduce Salmonella levels in two hours.

The effective use of bacteriophages to treat pigs requires them to remain stable before their use. Experiments were carried out to determine their stability at the high temperatures that are needed in order to spray dry them to form a stable product. The data has shown that they can survive this process and it is undergoing further optimisation.

The future plans from this research are to investigate whether bacteriophages can be given to pigs, either in their feed or water, to reduce levels of Salmonella contamination. Interest from industrial partners to develop this project further is welcomed, contact Charlotte Evans (charlotte.evans@ahdb.org.uk).

Field Trials

The AHDB Pork field trials programme is a series of on-farm studies aimed at solving herd performance problems. They are protocol-based, scientifically robust and are driven by adaptation of global knowledge.

The trials are run across a range of different facilities, from large commercial production sites to dedicated university and college research and trial farms.

Electrostatic Particle Ionisation

Electrostatic particle ionisation (EPI) has been developed in the USA. A high voltage, low amperage, current is connected to a corona bar, this imparts a static charge to microbial, gas and dust particles in the atmosphere, causing them to fall to the ground or stick to walls, pipework or other parts of the environment where they are no longer available for inhalation by stock or staff.

The trial:
EPI equipment was installed in one finishing room (fully slated) on a commercial-scale research unit. Environmental microbial pathogens (E.coli and gram negative bacteria), dust and ammonia were measured, alongside some odour sampling. Pig performance (DLWG and FCR) were also monitored on a pen-level basis and when pigs went to slaughter their health was assessed via the BPHS scoring system.

Findings to date:

- No impact was seen on growth or FCR
- Pigs finished in the EPI room were 4.5 times less likely to have enzootic pneumonia-like lesions at slaughter; there also appeared to be a reduction in the incidence of pleurisy
- Results indicate that EPI equipment could play an important role in improving pig health; it may also have a positive impact on the respiratory health of staff
- The equipment only consumed around 2 pence worth of electricity per pig throughout the finishing period (14 weeks)
- More work is planned for 2017 to investigate the impact the equipment has on ammonia emissions and whether there is any significant impact on growth and FCR
- A significant reduction in gram negative bacteria falling onto “settle” plates at floor level was observed
- A significant reduction in all respirable dust was observed

Evaluation of ultra-high frequency (UHF) electronic ear tags to optimise marketing strategies on farm

Aims and objectives:
To test the practicalities of using UHF technology on farm, integrating this data into existing management systems (on farm and at the abattoir) and using this data to inform better management decisions.

The trial:
The trial is looking at individual tagging of piglets so that performance data can be tracked on a pig-by-pig basis throughout the production system. Crucially, the project has also involved co-operation with a large-scale abattoir in which a UHF tag reader has been installed. This allows slaughter data to be sent back to the farm and attributed to individual pigs. More than 1,800 pigs have been tagged and weighed individually at birth.

Findings to date:
Since last year's report, further progress has been made with the UHF tag reader and developing supply chain buy-in; this is crucial to ensure that tags are not removed until the end of the line. After some minor changes to the abattoir hardware, the system will soon be considered "fully operational" and discussions are underway with regard to rolling the system out on a second site.

Frequently asked questions about the project

How easy is it to tag pigs?

Very easy, when tagging at processing (teething, tailing, etc) tagging adds 3–4 minutes to each litter. When tagging and individually weighing, using the right method, the whole process takes around 6–7 minutes per litter.

Do tags stay in pigs during their life on farm?

Yes, very well. More than 98% of tags have been retained and were readable at the abattoir.

Do tags stay in carcases throughout the abattoir processes?

Yes, so far no tags have been pulled out or fallen out during the abattoir processes. The main area for concern was the "tumbler" post scalding and the brushes post singing; neither of these processes has presented an issue.

Is the data from the abattoir easily integrated with the UHF ID data?

There have been issues surrounding integration of the data back into the abattoir system. This is a result of the large number of different software components, a new piece of hardware and a lot of people being involved. Considerable momentum has however been gained through the year and this has been finalised in 2017. Currently the abattoir system produces a custom report that includes ear tag number, kill line number, weight, P2, condemnations and any other slaughter data required.

Does the data provide value to the farmer?

The data returned from the abattoir enables farmers to calculate individual daily liveweight gain (DLWG) using a fixed killing out percentage (KO%). If some pigs are weighed on farm before slaughter, this allows more accurate KO% to be used.

Individual DWLG and P2 data can be linked back to a variety of factors, genotype, sow age, finishing accommodation, ration alterations etc. The tags allow for far more effective and accurate trials to be run by farmers on farm and for accurate assessment of current variables in existing operations.

Supplementation with omega-3 PUFA and effects on reproductive performance of sows

Aims and objectives: To address seasonal infertility and increase piglet viability.

The trial: This project spanned two full production cycles of 400 sows, across two university herds. The treatment sows were supplemented with a commercially-available source of omega-3. All sows were monitored throughout the period of supplementation (both treatment and control) and during the following gestation and lactation, to determine whether there was any carry-over effect of the supplementation.

Findings to date: Supplementation with omega-3 had no significant impact on born alive or mortality/survivability figures. The only significant impact was on sow condition, where those fed the omega-3 diet were found to be significantly fatter (P2 or condition score) than sows on the control diet at first farrowing and throughout the second gestation and lactation.

The cost of adding the omega-3 supplement to the diet was C.£21/T.

Blue lighting

Aims: To look at the impact of predominantly blue light, produced by LEDs, on pigs in grower/finisher and weaner accommodation.

The trial: One weaner room and one grower/finisher room were equipped with commercially-available blue LED light panels and pig performance was monitored.

Findings to date: Performance data has been variable and shown no conclusive differences between using blue lighting or not. While the amount of data available does not allow for any significant relationships to be established, it is evident that there is no obviously negative impact of blue light on performance. Anecdotal feedback from the farm staff is that the pigs appear calmer and less vocal in the LED environment. The main drawback cited by staff is that the pigs are so "relaxed" that they have become more difficult to move eg when being loaded into a lorry.

Lighting is likely to be a future focus area for AHDB Pork field trials and innovation studies.

Important note: As a word of caution, some literature reports links between permanent eye damage and blue lighting. It is, therefore, important to ensure any alternative lighting used on farm is safe and has passed any relevant safety standards. The company that provided the lights for this study is aware of the potential health and safety issues and the lights were tested to ensure they met appropriate standards.

Development of an outdoor farrowing tent

The aims and objectives of this field trial were to increase the production potential of outdoor farrowing by providing more control at farrowing time, to reduce pre-weaning mortality and to provide a better environment for the staff to work in at farrowing.

The work showed no consistent impact on mortality or weaning weight, however the tent remained significantly cooler in the summer and significantly warmer in the winter than traditional arcs, which could have potential environmental benefits to the pigs.

The project has now finished, with some producers choosing to develop further the designs, including making the tent easier to move, as this was one of the major drawbacks with the original design.

Unit staff consider the farrowing tent an invaluable management system, especially over the winter period, both for processing piglets and collecting data (as a nucleus unit).

Tent type	Arcs under tent	'Arc-less' tent
Number of places	12	4
Cost per farrowing place	£724 (including new arc @ £300)	£625
Reduction in straw usage?	3 less bale slices per batch per tent	40% per groups of four sows
Reduction in mortality?	No noticeable difference	Anecdotally lower
Time to move	Approximately two days for two people	5 minutes
South: Pig clubs	6	32
South: Regional forum	1	2

There is a walkway within the tent to provide access to the back of the huts

Want to know more?

If you want more information about AHDB Pork you can contact us in the following ways…

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AHDB Pork is a division of the Agriculture and Horticulture Development Board (AHDB).