

Pig Health and Welfare Council



Annual Report 2012

PHWC

Pig Health and Welfare Council



PHWC

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The Pig Health and Welfare Council (PHWC) is a cross-industry alliance representing every stage of pig production from "farm to fork", which aims to promote a co-ordinated and integrated approach to improving pig health and welfare.

The **Members** of the Pig Health and Welfare Council are:

Chairman: Professor Jim Scudamore
Agricultural Industries Confederation (AIC)
Animal Health and Veterinary Laboratories Agency (AHVLA)
Assured Food Standards (AFS)
BPEX – Division of the Agriculture and Horticulture Development Board
British Meat Processors Association (BMPA)
British Pig Association (BPA)
National Pig Association (NPA)
Chair, Pig Health Improvement Project (East)
Chair, Pig Health Improvement Project (Midlands)
Chair, Pig Health Improvement Project (North)
Chair, Pig Health Improvement Project (South)
Pig Veterinary Society (PVS)
Responsible Use of Medicines in Agriculture Alliance (RUMA)
Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Observers invited to attend PHWC meetings:

Chief Veterinary Officer (UK)
Food Standards Agency (FSA)
Quality Meat Scotland (QMS)

The **Secretariat** for Pig Health and Welfare Council is provided by BPEX.

Foreword

I am very pleased to provide the foreword to the 2012 annual report of the Pig Health and Welfare Council (PHWC), especially as it provides an insight into the important work which is being carried out to improve the health and welfare of British pigs. I can see many advantages from the broad representation of stakeholders from across the pig industry in PHWC.

The 20:20 Pig Health and Welfare strategy, published in August 2011, sets out the industry's ambitious objectives and milestones. It is a forward looking and challenging document, which provides a vision for the future of the pig industry. It describes an industry which looks to continually improve the health and welfare of the English pig herd and which recognises the strategy will result in a range of benefits. These include better pig performance, with an important contribution to national food security and safety, along with a sustainable industry, which has a reduced environmental impact and meets society's expectation of good animal welfare.

I am pleased to see the achievements which have been made in taking forward the objectives of the strategy. A number of working groups have been created to establish baselines, set targets and evolve strategies to deliver these specific targets. As well as providing the vision, the strategy highlights the value of cooperation between all parts of the industry and all those with an interest in developing and ensuring a successful pig industry in England for the future. The Pig Health Improvement Project, a core example of the strategy for England, meets one of the key objectives of the strategy and demonstrates how an integrated approach by the whole industry working together can achieve a major improvement to pig health and welfare.

Defra welcome the pig industry's proactive approach in recognising the importance of controlling endemic diseases, while also being very aware of the potential risks posed by exotic diseases, not only to the industry but also to the environment, society and the economy. The control of these diseases is crucial to the success of the industry and is highlighted by the emphasis on the importance of effective surveillance in the strategy. Working together, the Government, farmers and the wider industry can develop the range of controls, surveillance and horizon-scanning activities that are necessary to understand the risks and maintain proportionate responses.

I welcome the publication of the annual report. The report is of great value to me as CVO, as it highlights the state of the industry, details the changes which could potentially have impact on the health and welfare of pigs and describes the progress in a range of different areas towards meeting the objectives of the 20:20 Pig Health and Welfare strategy. In addition, continuing to develop the constructive relationship of PHWC with the Animal Health Welfare Board for England and Defra can only assist in delivering the vision of the Strategy.

I would like to congratulate all those involved with the PHWC and encourage them to meet the challenges ahead. The benefits will be substantial and will help the pig industry to meet all its commitments to improving pig health and welfare.

Nigel Gibbens
Chief Veterinary Officer (UK)
June, 2013

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1 Introduction

The pig industry's health and welfare strategy, "20:20 Pig Health and Welfare, A Vision for 2020" launched in August 2011, recognised that improving the health and welfare of the pig industry is essential to improve its productivity and to differentiate its product in the highly competitive market of the EU. The higher welfare standards in the UK remain a significant point of differentiation but there can be no room for complacency. With the introduction of a partial gestation-stall ban in the EU and plans to reduce castration in several markets, the gap in welfare standards is narrowing. This highlights the foresight of the commitment to continuous improvement in the strategy and the plans to incorporate welfare outcome measures into farm assurance standards.

Pig health has been improving, as noted in the improvements in pig performance and in some figures from the BPEX Pig Health Scheme. However, international competitors have also recognised the importance of improving pig health, eg the Specific Pathogen Free (SPF) system in Denmark, which monitors and reports on the diseases endemic in their herds and the commitment to the elimination of porcine reproductive and respiratory syndrome (PRRS) virus in the US. There is also room for improvement in international competitiveness, particularly when comparisons on the number of pigs produced/sow/year are made. There has been encouraging progress by the regional groups of the Pig Health Improvement Project (PHIP), which have been actively building cooperation between producers on health and biosecurity, to their mutual benefit.

Fortunately, Britain is an island and has been able to keep out some exotic infections, which are present in the EU, such as US strains of PRRS virus and methicillin-resistant *Staphylococcus aureus* (MRSA). The former is reported to cause more severe infections in sows and growing pigs than the European field strains. The latter appears to colonise pigs readily and can be passed on to humans closely associated with pigs, such as stockmen, vets and slaughter-house workers, where it may cause infections but fortunately, does not appear to disseminate into the general community easily.

Notifiable diseases such as Foot and Mouth Disease (FMD), swine fever and both classical (CSF) and African forms (ASF) are a constant threat and extreme care must be taken not to import them. Good biosecurity at farm and national level is essential to maintain freedom from these problems, in spite of free trade within the EU. The quality and safety of the pig meat produced is also essential. EU targets for salmonella control have not been set yet, pending further cost/benefit assessments but developments to improve and reduce the incidence of salmonella are on-going. The emergence and spread of new strains of salmonella (monophasics), similar to *Salmonella* Typhimurium is also of concern and needs to be monitored.

Working together, as producers, allied industries, welfare, assurance groups and other interested stakeholders, as well as with the wider farming industry, it is essential to set common goals. The broadly based PHWC is working collaboratively to establish baselines and to set and monitor realistic targets to ensure the sustainability and competitiveness of the UK pig industry for the benefit of all concerned, including the consumer. I would like to thank everyone who has contributed to the production of this report and to the Secretariat for their support both in the preparation of this report and to the PHWC. I would also like to thank all the members of the Council for their support and their invaluable input into the development and delivery of the Strategy.

Jim Scudamore,
Chairman

2 About PHWC

The Pig Health and Welfare Council was formed in 2004 to drive implementation of the Pig Health and Welfare Strategy, launched in December 2003. Following the review of progress, a new strategy for pig health and welfare in England was developed with the input and support of a broad range of industry organisations, co-ordinated by BPEX, the division with responsibility for the levy collected on pigs by the Agriculture and Horticulture Development Board.

"20:20 Pig Health and Welfare, A Vision for 2020" was launched in August 2011 and a new Pig Health and Welfare Council was appointed by the cross-industry sponsoring organisations – Agricultural Industries Confederation (AIC); Animal Health and Veterinary Laboratories Agency (AHVLA); Assured Food Standards (AFS); British Meat Processors Association (BMPS); BPEX Division of the Agriculture and Horticulture Development Board (BPEX); British Pig Association (BPA); National Pig Association (NPA); Pig Veterinary Society (PVS); Responsible Use of Medicines in Agriculture Alliance (RUMA) and the Royal Society for the Prevention of Cruelty to Animals (RSPCA). Defra, Food Standards Agency (FSA) and Quality Meat Scotland (QMS) were invited to attend meetings as observers. Professor Jim Scudamore was appointed as PHWC Chairman in March 2012.

Animal health and welfare has been a major part of Defra's role and following the advice from the Independent Responsibility and Cost Sharing Group, set up following the FMD outbreak in England, in 2007 that animal keepers could play a greater role in tackling animal disease, the Animal Health and Welfare Board for England (AHWBE) was established in 2011. The AHWBE brought together independent members with the relevant knowledge and skills, covering both farm and companion animals with government officials. The AHWBE can make direct recommendations to Defra Ministers, regarding strategic policy affecting health and welfare of animals.

Species-specific groups represent the interests of each sector. The Pig Health and Welfare Council (PHWC) plays an important role in liaising with AHWBE, Defra and the FSA on common Government and industry objectives to improve health and welfare.

2.1 PHWC – Terms of Reference:

The terms of reference agreed by the Pig Health and Welfare Council are:

- **To advise on** strategic policy and setting priorities for surveillance, research and disease risk assessment, management, elimination and control
 - **To work with** pig keepers, the veterinary profession, the livestock, food and allied support industries, Government, consumers and other stakeholders to foster ownership of the Strategy and a shared commitment to its outcomes
 - **To investigate** any topic falling within the scope of the Strategy and publish such advice, analysis and commentary as considered appropriate
 - **To promote** a co-ordinated and integrated approach to best practice in the prevention and control of disease in order to maintain and/or enhance the health and welfare of pigs in England
 - **To provide direction** and advice to the Chief Veterinary Officer and relevant Government bodies on pig health and welfare matters, including the early stages of policy development and other areas, where appropriate.
-

2.2 PHWC Sub-groups:

There are three sub-groups of the Council.

The Surveillance Sub-group aims to:

- **Provide** evidence based advice to the Pig Health and Welfare Council on proposals for effective surveillance of pig health and welfare in England
- **Work** with pig keepers, the veterinary profession, the livestock, food and allied support industries, Government, consumers and other stakeholders to identify surveillance needs and delivery mechanisms
- **Investigate** issues of relevance to the delivery of surveillance for the pig industry
- **Advise** the PHWC but final decisions on adopting any strategy or recommendations shall rest with the Council and the scope of activity as outlined in the summary document.

The Pig Health Improvement Project (PHIP) National Steering Sub-group aims to:

- **Deliver** an integrated approach to improving pig health management by encouraging collaboration between producers, vets and allied Industry at a local level.

PHIP provides **5 key services** to help producers achieve their health goals – Free BPHS abattoir reports; access to local health mapping; biosecurity action plans; disease testing and BPEX regional support.

The Welfare Sub-group aims to:

- **Achieve** consensus on the key pig welfare issues to be investigated and on the ultimate aims for each issue. It is expected these will include, tail biting/docking, teeth clipping and indoor free farrowing.
 - **Gather and analyse** all relevant information on all aspects of the welfare issues to be addressed – welfare science, practical experience, commercial, economic – and identify crucial gaps in knowledge.
 - **Facilitate** cooperation and collaboration between stakeholders with relevant expertise to enable development of strategies and feasible timelines for addressing each welfare issue, including undertaking initiatives aimed at effective support mechanisms and knowledge transfer.
 - **Facilitate** on-going activities and set measurable milestones and objectives for each issue being addressed.
-

3 The Pig Industry Structure

3.1 Size and Distribution of the Industry

3.1.1 Size of the UK pig herd

The total number of pigs recorded in the UK June Agricultural Census rose slightly in 2012, for the first time since 2006. The total was up by 0.9 per cent, to stand at 4.48 million head. The female breeding herd on the other hand fell by 1.5 per cent to 425,000 head.

Figure 3.1: Total pigs on agricultural holdings in the UK, 1990-2012

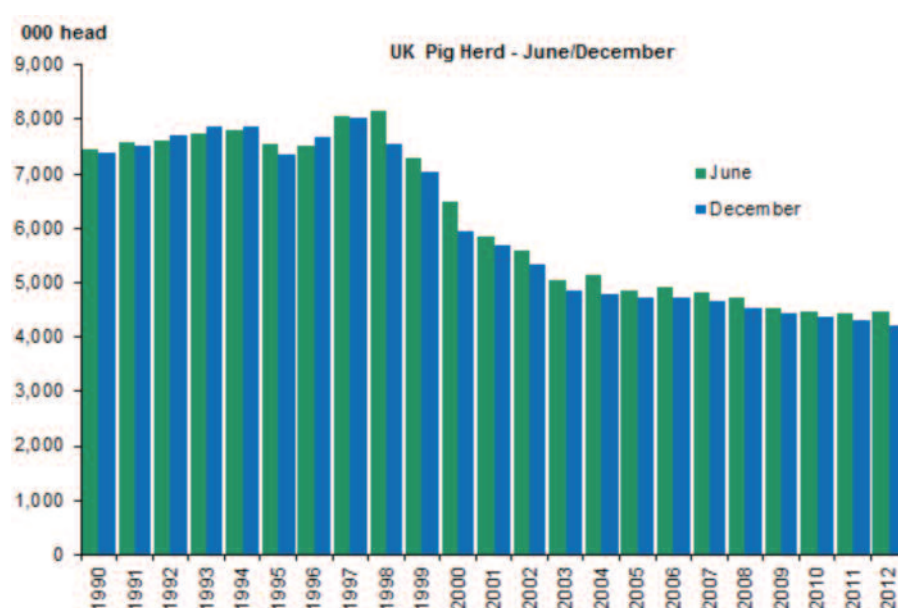


Figure 3.2: Female breeding pigs on agricultural holdings in the UK, 1990-2012

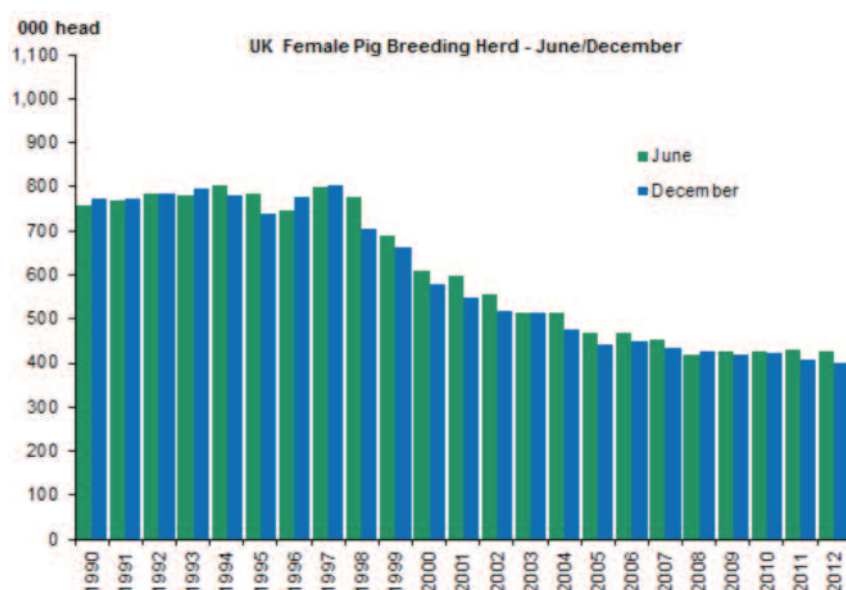


Table 3.1: Pigs on agricultural holdings in the UK, June 2010 – 2012

Thousand Head	2010	2011	2012
Breeding Pigs	518	523	523
Female breeding herd	427	432	425
Sows in pig	281	279	292
Gilts in pig	67	70	69
Other sows (suckling or dry)	79	83	64
Other breeding pigs	91	92	98
Boars for service	17	16	16
Maiden gilts	75	75	82
Fattening pigs (incl. barren sows)	3,942	3,917	3,960
Total pigs	4,460	4,441	4,483

Source: Defra June Survey of Agriculture

The total breeding pig herd was virtually unchanged between 2011 and 2012 and stood at 523,000 head. On the back of improved sow productivity, the number of fattening pigs rose by one per cent to 3.96 million head. The number of in-pig sows increased by nearly five per cent but the number of suckling or dry sows fell sharply. This may reflect increased replacement levels since maiden gilt numbers were up by nine per cent. The increase in the UK pig herd was also reflected in the English, Welsh and Northern Irish herds, all of which were slightly larger than in 2012. In contrast, the Scottish herd suffered a further decline, falling by seven per cent to just 363,000 head. The Scottish breeding herd fell even more sharply. Since the June census was undertaken, feed prices have increased sharply. This is thought to have led to a fall in the size of the breeding herd of perhaps as much as five per cent. This will be clarified when results from the December census are published in March 2013.

3.1.2 Number and size distribution of commercial holdings

There were 10,900 commercial agricultural holdings¹ with pigs in the UK in 2011 (figures for 2012 are not yet available), 6,000 of which had female breeding pigs and 9,000 of which had fattening pigs. This implies that just over 4,000 holdings had both breeding and fattening pigs. The average number of female breeding pigs on each commercial holding was 72. However, excluding those holdings with five or fewer breeding pigs, the average number was 153. The average size of breeding herds has fallen steadily over the last decade from a peak of 92 in 2002. The average number of fattening pigs on each holding was 437. Excluding holdings with fewer than ten pigs, the average was 768. This average has also fallen over the last decade.

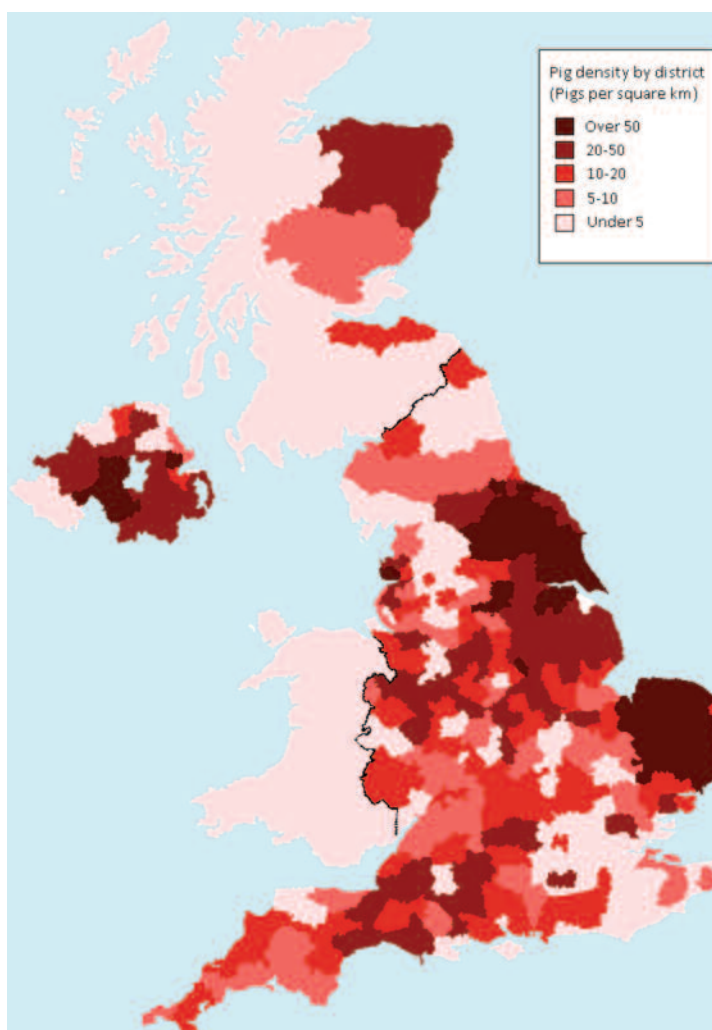
The numbers above include many holdings which keep pigs but which are also engaged in other agricultural activities. When holdings were classified based on their predominant activity (>67% output) there were 5,600 specialist pig holdings in the UK in 2010 (the latest year for which figures are available). Of the specialist pig holdings, only 1,600 were in England. These holdings accounted for 71 per cent of pigs on commercial holdings in England. The 1,100 specialist pig holdings with breeding pigs had an average of 300 breeding pigs. Pig holdings with other pigs had an average of 1,500.

¹ Commercial holdings are defined as those with significant levels of farming activity, defined as one or more of the following holdings with more than five hectares of agricultural land, one hectare of orchards, 0.5 hectares of vegetables, 0.1 hectares of protected crops, 10 cows, 50 pigs, 20 sheep, 20 goats or 1,000 poultry. Note: Not all commercial holdings with pigs will have 50 pigs or more, since many will meet one of the other criteria instead.

3.1.3 Location of pig producers

Pig producers are highly geographically concentrated. Of the 4.5 million pigs in the UK, around 81 per cent are in England, with 10 per cent in Northern Ireland, nine per cent in Scotland and less than one per cent in Wales. In 2010, well over half of England's pigs were concentrated in just four counties: Norfolk, Suffolk and North and East Yorkshire. There are also significant concentrations in Northern Ireland, to the South & East of Lough Neagh and the East of Scotland.

Figure 3.3: Geographical locations of pig production in the UK, June 2010



3.1 4 Abattoirs slaughtering pigs

The number of abattoirs slaughtering pigs has declined considerably over time, as many small plants have stopped trading, to be replaced by fewer, larger ones. During 2011, there were 121 English abattoirs killing pigs, around half the number in the late 1990s. Only 16 of these specialised in pigs, with the remainder also handling other species. The decline in abattoir numbers has led to a high degree of concentration. The 14 specialist pig abattoirs accounted for around 70 per cent of all pigs slaughtered during 2010. In fact, the seven largest plants (including one non-specialist) killed around two-thirds of all pigs. The four largest companies, with nine sites between them, killed around three-quarters of English pigs.

3.1 5 Workforce on pig farms

Detailed figures are available on the workforce in England's 1,600 specialist pig farms for 2010. At that time, they employed a total of 5,300 workers, an average of 3.3 per holding. This represents an increase over the last few years from an average of just over 4,000 workers through much of the last decade. Just over half of workers on specialist pig farms were farmers, partners, directors and spouses, working either full-time or part-time. About 30 per cent were regular full-time workers. The remainder were made up of managers, part-time and casual workers.

On non-specialist pig farms, it is estimated an additional 3,000 and 4,500 full-time workers are employed. In reality, the workforce will be significantly higher than this, as many of them will work part-time or will only devote part of their time to pig production.

3.1 Production Systems

3.2.1 Housing systems

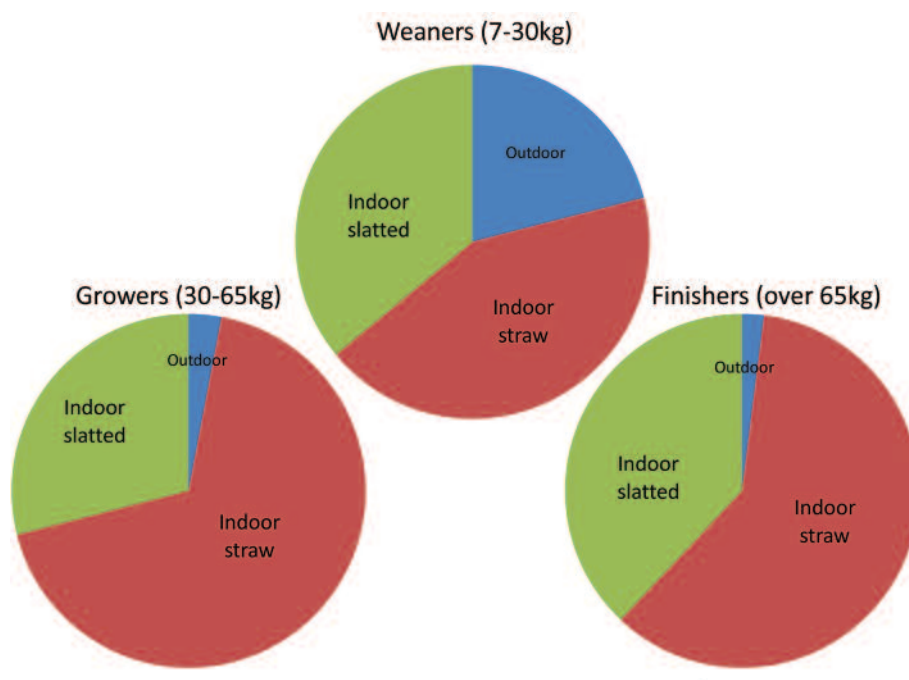
In England, around 40 per cent of the commercial pig breeding herd are kept outdoors. This percentage varies little between different stages in the breeding cycle and has risen from under 30 per cent five years ago. The remaining 60 per cent of sows and gilts are kept in indoor systems but here there are differences across the breeding cycle. During farrowing and while sows are suckling piglets, most are kept on fully or partly slatted floors, although a significant minority are kept on straw. However, for the remainder of the breeding cycle, most indoor sows are kept on straw-based systems. Almost all indoor maiden gilts are kept on straw.

Outdoor breeding pigs are typically housed at a density of around about 24-25 sows/gilts per hectare with the national average in the Defra Farm Practices Survey of 2009 being 15 sows/gilts per hectare (including very small producers). In around 80 per cent of cases, outdoor pigs are used as part of a rotation system, with pigs spending typically 24 months, (average in Defra Survey of 17 months) in a paddock before they are rotated. Most outdoor producers provide pig arcs for shelter, with some using cabins or tents as well as or instead of arcs.

Once piglets have been weaned, they are less likely to be kept outdoors. Only around one in five weaners (between 7 and 30kg) are housed outdoors, with stocking densities much higher than for breeding pigs, typically close to 400 per hectare. The Pig Meat Supply Chain Task Force Pork Provenance Voluntary Code of Practice sets down the minimum standards for terms relating to pig production methods, including free range, outdoor bred and outdoor reared, which supporting businesses will use when labelling pork and pork products (www.porkprovenance.co.uk). Where weaners are housed indoors, over half are on straw with the remainder mainly on fully-slatted floors.

At later stages in the feeding process, pigs are much less likely to be housed outdoors. Only 3% of commercial growers (between 30 and 65kg) and finishers (over 65kg) are kept outdoors, although these figures are likely to be higher for smaller producers, for whom equivalent figures are not available. The majority of pigs, which are housed indoors, are on straw, a proportion which has increased in recent years. Finishers are more likely to be on slatted floors than growers.

Figure 3.4: Housing systems for English feeding pigs



Source: Defra Pigs and Poultry Farm Practices Survey, 2009

3.2.2 Feeding systems

A variety of different types of feed are used by pig producers. All contain a mix of components designed to provide all of the nutrients required by pigs. Different mixes are used for pigs at different stages of their life cycle. Major components of feed in the UK include cereals (mainly wheat, barley or distillery by-products) and oilseed cake and meal (mainly soya or rape). A wide variety of other ingredients are used less frequently. Just over half of producers report that they home-mix some or all of the feed they use. Others buy in ready mixed feed.

There are three main forms of feed used by pig producers: pellets, meal and wet feed. Pellets are the commonest form for all stages of the lifecycle. They are used by around 80 per cent of producers to feed weaners, about 60 per cent for rearers and finishers and about 40 per cent for sows. Meal is used by around 30 per cent of producers to feed rearers, finishers and sows but only 10 per cent for weaners. Wet feed is most frequently used to feed finishers, with around 20 per cent of producers using it. For sows, it is only used in 10 per cent of cases and for weaners around six per cent. A small number of producers use other feeding approaches.

During 2011, just less than 1.5 million tonnes of compound pig feed were produced in the UK, fractionally lower than in 2010. About 40 per cent of this was finisher feed, just over a quarter was sow feed and just under a quarter was grower feed. The remainder was made up of feed for piglets and early growers, along with protein concentrates.

3.3 Key Facts

- Since the peak of production in 1998, the total number of pigs on UK agricultural holdings has fallen from 8.2 million to 4.5 million in 2012, a fall of 49%
- The number of female breeding pigs has fallen from 800,000 to 425,000 (47%) over the same time period
- There were 10,900 commercial agricultural holdings with pigs and 6,000 had breeding female pigs (ave number 72) and 9,000 had fattening pigs (ave number 437) in 2011. With the very small units of 5 or less breeding pigs, or 10 or less finishing pigs taken out, the average number of breeding females in a herd rises to 153 and finishing pigs to 768
- Of the 4.5 million pigs in the UK, 81% are in England, 10% in N. Ireland, 9% in Scotland and 1% in Wales. Over half of the pigs in England are in E. Anglia and Yorkshire
- The number of abattoirs slaughtering pigs in England has halved over the last 14 years down to 125 and the 16 specialist ones that only handle pigs account for 70% of pigs killed
- Approximately, 8,300 to 9,800 people work on specialist and mixed pig farms on a full-time equivalent basis but a larger number would be employed on a part-time basis
- Approximately 40% of the commercial pig breeding herd is outdoors but only 20% of weaning pigs are reared outside. Over 90% of growers and finishers are reared indoors but 60-70% of them are reared on straw rather than slats
- Just under 1.5 million tonnes of pig feed was produced in the UK, 40% for finishers, 25% for growers and sows and 10% for piglets and early growers.

4 20:20 Pig Health and Welfare, A Vision for 2020

4.1 Vision

The **Vision** in 20:20 Pig Health and Welfare for 2020 was "An English pig herd where health and welfare are continually improving, which results in better pig performance, the production of a safe and quality product, reduced environmental impact and increased sustainability of an industry that contributes fully to national food security."

4.2 Objectives

The main **objectives** of the 20:20 Pig Health and Welfare Strategy for England are to:

- **Support** pig producers in delivering their objectives for continual improvements in pig health and pig welfare
 - **Eliminate or control** significant enzootic pig diseases locally, regionally and nationally
 - **Eliminate or control** significant infections of food safety and public health concern (eg Salmonella)
 - **Develop and promote** new knowledge on the assessment of welfare outcomes
 - **Promote** the open exchange of information on the disease status for herds and regions
-

4.2 Objectives *(continued)*

- **Promote and encourage** responsible and appropriate use of antimicrobials
- **Maintain** freedom from notifiable exotic and emerging diseases of pigs
- **Deliver** an integrated approach to improving pig health and welfare with all stakeholders, allied support industries, retailers, foodservice and Government.

4.3 Milestones for 2012

Key Milestones for 2012	Comments
Establish baselines for health and welfare outcomes.	On-going Scottish Rural College (SRUC)/AHVLA contract on health and welfare monitoring to be completed in mid-2013.
Agree specific targets for 2020 health and welfare outcomes	PHWC to discuss target setting when baseline information available.
Extend Health Improvement Project to all of England.	PHIP extended to all of England in April 2012
Complete development of system for measuring Welfare Outcomes	Development complete and to be included in Red Tractor Assurance Standards for finisher pigs from April 2013.
Develop National Control Programme for salmonella in pigs that is approved by the European Commission for introduction in 2013.	EC has not yet set target nor provided guidelines for National Control Plans.
Establish robust mechanisms for routinely evaluating and scoring biosecurity practices on pig farms and establish baseline national biosecurity status on pig farms.	Biosecurity scoring tool developed. To be made available online in 2013.
Review health and welfare research and agree a roadmap for research in this area from 2013 to 2020.	BPEX developing an industry Research and Development Strategy.
Develop accredited health and welfare training modules.	Rural Development Programme for England (RDPE) funding sought for health and welfare training. Initial modules available as part of stockperson training.
Review of progress towards the objectives and targets of the strategy.	PHWC to publish annual report for 2012 in 2013.

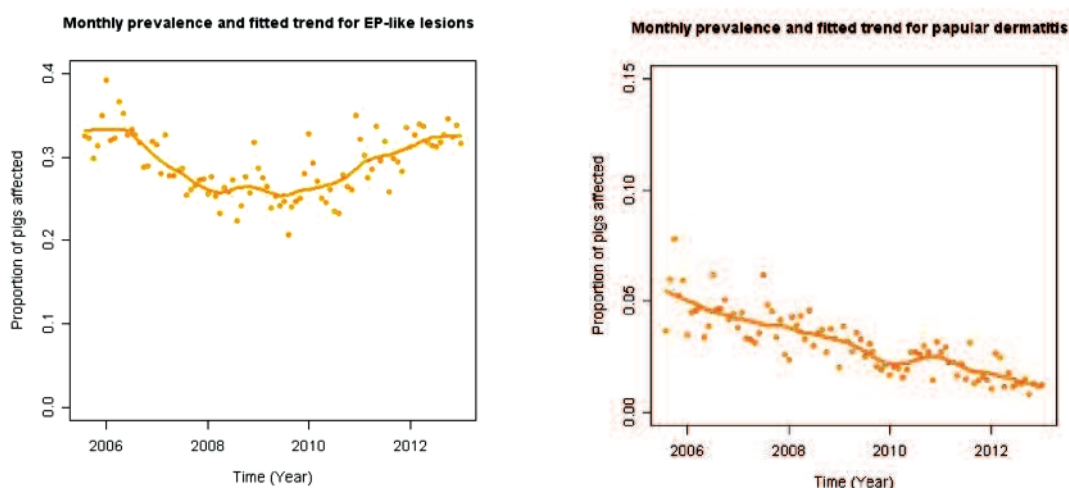
4.4 Pig Health

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Help** producers to form groups and to work together on health improvement. The programme (www.pighealth.org.uk) started in 2009 with pilots in three areas: Yorkshire and the Humber (YHH), East of England (EPH) and East Midlands (EMPH). There has been a very high level of buy-in to the concept of collaborative disease management and mitigation across the whole sector – producers, vets, abattoirs, feed companies and pig marketing groups
- **Help** these producers share information on the complete health status of the pigs on their unit
- **Map** the location of units, their health and biosecurity status and movements in order to control enzootic and exotic diseases

4.4.1 Pig Health Improvement Project – PHIP



The Pig Health Improvement Project (PHIP) was expanded in 2011 to encompass all pig production sites across England. To aid delivery, regional managers and the vet consortium, RAFT Solutions Ltd, were appointed to provide technical and administrative support to producers in the pig dense north, east and south regions of the country. Underpinning the success of nationwide health improvement is the willingness of producers to share and review their health status.

By establishing 20 health cluster groups across the country in 2012, PHIP has set the precedent for open, honest and collaborative working styles between producers, veterinarians and the wider pig industry. These groups regularly share health information (using the personal and online infrastructure that PHIP provides) but more than this are willing to set and strive towards targets for change in biosecurity and health management as a collective.

Biosecurity and health information is collected on sign-up to PHIP (which now has a membership of over 1200 units) and is reviewed regularly. A control plan has been developed that highlights key areas for improvement and how this may be achieved. The PHIP mapping system has and continues to be developed to best utilise the information now available via e-AML2 on pig herd locations and their disease status. Efforts continue with improving lorry washing facilities across the country, with research focusing on what constitutes an effective wash.

4.4.2 BPEX Pig Health Scheme (BPHS)

Members of PHIP are eligible for free BPHS abattoir reports to help them identify subclinical disease, which may not otherwise be obvious. An analysis of the results from BPHS in 2012 by SRUC has shown some interesting findings. Enzootic pneumonia-like (EP-like) severe lesions and pleurisy continued to increase over 2012. *Actinobacillus pleuropneumoniae*-like (APP-like) and viral-like lesions appear to be unchanged in 2012. There was a decrease in both the proportion of individual pigs affected and batches affected by pleurisy until 2008. After which, although the proportions fluctuated for some years – around 12% for pigs and around 25% for batches (with a within-batch prevalence of at least 15%), there was an increase in the proportion of pigs and batches affected. BPEX has commissioned an investigation to establish the reasons for the increase in EP-like lesions and pleurisy in recent years.

The proportion of tail-damage lesions showed an increasing trend over the last two quarters of 2012. The proportion of abscess and pericarditis lesions seems to show a decreasing trend but the next report will confirm this. There appears to have been a general decrease in the prevalence of papular dermatitis, milk spots, hepatic scarring, peritonitis, and pyaemia over the seven year period.

4.5 Welfare

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Evaluate** a system of measuring welfare outcomes on-farm by 2012, incorporate into farm assurance standards from 2013, review annually and use to earn recognition for progress made and to provide a clear focus on on-going improvement.
- **Achieve** progress in improving pig welfare that is not at the expense of deterioration in other areas, eg production costs that are unsustainable; reductions in tail docking should not be at the expense of an increase in pigs that are tail bitten.
- **Promote** high welfare standards to consumers and work with retailers to create a virtuous cycle of investment and reward that should become the driver of progress in improving pig welfare.

Improving the welfare of pigs is a key aim of the English Pig Industry, as set out in the 20:20 Pig Health and Welfare Strategy. In 2012, the formation of the Welfare Sub-Group was agreed. During 2013, the group will embark on work to further progress improvements in pig welfare, with focus on those key areas identified within the 20:20 strategy, notably tail biting, tail docking, teeth clipping, freedom around farrowing and lameness, in addition to other topical issues that may arise. A key aim of the sub-group will be to gather and analyse all relevant information on all aspects of the welfare issues to be addressed – welfare science, practical experience, commercial and economic – to identify crucial gaps in knowledge, to facilitate on-going activities and to set measurable milestones and objectives for each issue.

With regards to welfare outcomes, progress has continued across the industry towards the objective of measuring welfare outcomes on farm. The industry has supported the Real Welfare project, which has been fully funded by BPEX since 2010. Real Welfare finalised its protocols in 2012, following development work by the University of Bristol and AssureWel, which also involved substantial field trials. The system has been incorporated into the Red Tractor farm assurance scheme from April 2013, which involves detailed outcome assessments three or four times a year by veterinarians. A similar project (AssureWel) is being led by the RSPCA, the Soil Association and the same research team in Bristol. It is intended to incorporate the measurement of similar welfare indicators in annual pig farm assurance assessments by Freedom Food and the Soil Association. This has also continued to make progress in 2013 and the roll-out for the Freedom Food scheme's inclusion of welfare outcome measures for pigs is scheduled for late 2013.

4.5 Welfare *(continued)*

Concerns remain that a failure by the EU to fully enforce the partial ban on sow stalls in all Member States will continue to undermine the competitiveness of the pig industry in England.

4.6 Food Safety and Public Health

20:20 Pig Health and Welfare

The Vision specifies the need to:

- Co-ordinate the industry and engage with Government in developing an agreed National Control Programme for salmonella in pigs that is approved by the European Commission for introduction in 2013. The programme will aim to meet the European Commission target for salmonella by the specified deadline.

4.6.1 Zoonoses National Control Programme (ZNCP)

The objective of the UK Zoonoses National Control Programme for Salmonella in Pigs (ZNCP) is the reduction of risk to consumers from salmonella in pig meat products. ZNCP is focused on increasing understanding of salmonella risk and control throughout the pork chain. In 2012 new terms of reference for the programme extended the remit of ZNCP to reducing the risk to food safety and public health from all high risk pig zoonoses.

Changes to the ZNCP from July 2012 were designed to make the programme more effective on farm and to help investigate the links between primary production and public health. ZNCP suspended meat-juice ELISA testing for salmonella in July 2012, following problems with the test. Results from meat-juice testing over the previous decade had suggested that the salmonella antibody status was relatively stable throughout the period. The ZNCP programme aims to ensure that all stages of the supply chain are taking effective action to stop the spread of salmonella, re-focusing resources away from routine salmonella sampling.

A new, on-farm salmonella risk assessment tool designed to help identify the most effective salmonella control methods for each farm was made available through the ZNCP website (www.bpex-zncp.org.uk). The farmer or veterinarian can use the outcomes of the risk assessment to create a meaningful on-farm salmonella control plan, which is a requirement of Red Tractor farm assurance standards.

Positive cost-effective results of an in-depth, on-farm salmonella control programme were published in Pig World in January, 2013, showing a drop in clinical cases in growing pigs. Steps taken included deep cleaning, sow vaccination and rodent control. BPEX is funding carcass meat juice ELISA (MJE) testing on this, and one other farm that used sow vaccination, as a salmonella control tool. Results of these MJE tests will be made available to industry during 2013.

In 2012, Defra committed support to a 4 year field-based study of control measures for salmonella on pig farms and their effect on endemic disease and productivity, which is being led by AHVLA.

4.6.2 Revision of meat inspection

Following the publication of a Scientific Opinion and Report by the European Food Safety Authority (EFSA) in 2011 the EU has been developing proposals for the revision of meat inspection (MI) of pigs. EFSA identified Salmonella, Trichinella, Yersinia and Toxoplasma as the key public health risks associated with pig meat and for which controls should target improvements in risk management. Proposals for revised legislation on meat inspection should be published in 2013.

4.7 Surveillance and Monitoring

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Establish** robust mechanisms for routine monitoring of the prevalence of key endemic diseases and baseline national health status, including engagement with smallholders and non-commercial pig keepers by the end of 2012
- **Generate** a national pig herd register that maps active pig units and provides real-time knowledge of pig movements by the end of 2012
- **Develop** risk-based industry standard protocols for health assessment of imported stock to minimise introduction of novel and emerging diseases by the end of 2012.

Robust surveillance mechanisms are required within the pig industry. These are essential to ensure the accurate and prompt diagnosis of exotic disease and to provide reliable information on enzootic disease status on-farm, which is critical for health planning and management.

The first priority of the Surveillance Subgroup was to document the needs of the pig industry and the scope of surveillance required and, in particular, the needs which are not being met by the current arrangements. It was recognised that stakeholders, eg producers, vets, and government, may have different needs. A list of data currently available at different levels within the industry – at farm level such as marketing groups, corporates, cooperatives; vet practices; AHVLA and government level was prepared.

In parallel with the work to identify information requirements, a separate project was funded to consider the development of an effective methodology for monitoring the animal health and welfare status in the pig industry and to establish the current baseline health and welfare status of pigs in England.

The major questions were:

- Are sufficient data available to pursue a project to accurately establish the current baseline health and welfare status of pigs in England?
- Have we any estimate of the baseline health and welfare status of pigs in England based on currently available data sources?

A preliminary report from Stage 1 of the project was delivered in November 2012. The project team concluded that the availability of baseline measures in relation to the health issues in the 20:20 Vision were very limited, with only post-mortem lesions at slaughter reported by the BPEX Pig Health Scheme (BPHS); and EFSA surveys of methicillin-resistant *Staphylococcus aureus* (MRSA) and salmonella in or on pig meat, as the key areas. Similarly, the only credible and adequate monitoring systems existed for post-mortem lesions were reported by BPHS and, possibly, salmonella on pig meat through repeated EFSA surveys and AHVLA/Defra annual salmonella reports.

In Stage 2 a framework will be developed for linking different data streams, so that information can be brought together for comparison or analysis, with the capacity for other streams to be added or to replace current data streams. The objective is to improve capacity to set baselines, monitor changes and identify emerging trends.

4.8 Biosecurity

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Establish** robust mechanisms for routinely evaluating and scoring biosecurity practices on pig farms and baseline national biosecurity status on pig farms by the end of 2012. Biosecurity on pig farms would be scored routinely thereafter on an annual or more frequent basis, depending on risk to the holding, to other pig farms and, where appropriate, to wider society
- **Develop** a mechanism for recognising that high standards of biosecurity demonstrate good stewardship by the end of 2013
- **Ensure** that compliance with biosecurity standards will be a condition of participation in the Pig Health Improvement Programme (PHIP)
- **Develop** appropriate standards as a mechanism for recognising best practice for lorry washing by the end of 2011. Work with hauliers, transport assurance, British Quality Assured Pork and abattoirs to improve facilities available for lorry washes
- **Work** with Government and its agencies to ensure that the risk of incursion of exotic disease is minimised.

The recognition on the importance of biosecurity resulted in two key milestones in the 20:20 Pig Health and Welfare Strategy for 2012.

These were to:

- **Establish** robust mechanisms for routinely evaluating and scoring biosecurity practices on pig farms
- **Establish** baseline national biosecurity status on pig farms.

In order to meet these milestones, a biosecurity survey was carried out starting in 2011 but mainly in 2012, when a questionnaire was completed by the farmer and their vet using a set of questions which were developed with the help of a panel of leading UK pig vets. The questionnaire was split into three important areas for biosecurity: A) Direct pig contact, B) Contact with fomites and pests and C) Contact with people.

A scoring system was developed which reflected the different levels of risk related to each question. Examples were provided to highlight the importance of different levels and types of biosecurity. Examples quoted included the very high risk of pig to pig contact, where the beneficial, mitigating factors included isolating all incoming pigs and testing their disease status before integrating them with the main herd. Application of these measures would result in a high score. Another example was the movement of equipment onto the farm. Although cleaning and disinfection of all equipment being brought onto a farm is recommended, the risk when compared to bringing live pigs onto a farm was much less. As a consequence the score would be lower. The results from over 350 farms act as a baseline and other farmers can now compare their score to this baseline.

For biosecurity, the two milestones for 2012 have been achieved.

4.9 Facilities and infrastructure

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Facilitate** and encourage investment in new pig facilities that reduce environmental footprint and improve welfare through industry Knowledge Transfer activity.

4.9.1 Buildings

Where pigs are housed, the physical aspects of the building and its ventilation play a significant role in the health and welfare of them. Poor health is often linked to ineffective or badly designed ventilation systems. Identifying constraints and implementing solutions can deliver quick improvements for both the pigs and financial state of the business.

The Pig health Improvement Project (PHIP) has focused on **ventilation** for these reasons. An independent assessment was carried out on buildings on selected farms in most PHIP clusters and improvements recommended and graded for impact and cost. Findings were discussed in cluster meetings. An encouraging rate of uptake has followed and ventilation is currently a focus on many units. The momentum achieved will be built upon within BPEX activity going forward.

A survey of farmers has established levels of recent investment in buildings and the barriers or incentives to investment (www.bpex.org.uk/environment-hub/pig-housing-development/). This work is helping formulate activity, where BPEX can assist producers quantify the benefits and identify the most suitable buildings for the needs of their businesses going forwards. This includes satisfying anticipated pig welfare requirements also.

4.9.2 Life cycle assessment

Life cycle assessment, the process of quantifying the environmental impacts of an activity, requires the acquisition of data for processing. The results or output, which often includes measurement of the global warming potential or Carbon Footprint of a product, can be used to improve performance. BPEX worked with Scottish Rural College to make assessments of a number of pig production facilities in order to understand the data collection process and how performance improvements translate to a reduction of 'Footprint'. This information can be used to assess the impacts of improved pig health. By understanding the process better, we can make this more effective.

A new PhD studentship project at Harper Adams University (HAU) has commenced, investigating climate-change adaptation of pig buildings and development of novel designs and energy conservation strategies to reduce the carbon footprint. This work will help identify how to improve the environment within buildings, to achieve good health and production efficiency for modern genotypes and minimise the effects of localised weather systems, especially those induced by climate change.

4.10 Medicines

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Agree** a mechanism with Government for monitoring antimicrobial resistance patterns in animals and humans by 2013 and aim for a reduction of resistance by 2020
- **Aim** to reduce overall usage of antimicrobials in pigs by 2020, through improving pig health and disease control and elimination
- **Support** Government in calling for a review at EU level of the current process for registration of medicines, with a view to streamlining the requirements and reducing the barriers to investment and development.

Veterinary medicines are used in pig production to treat, control and prevent disease. The **responsible use** of veterinary medicines is beneficial to the animals, as it helps keep them healthy and maintain good welfare and the farmer, who wants to keep medicine costs to a minimum, has better performing animals. A short definition of responsible use is – managing the farm to reduce the risk of disease and then treating ill animals in accordance with veterinary advice. It is recommended to use medicines “*as little as possible but as much as necessary*”.

The Pig Health and Welfare Strategy includes three commitments designed to help combat the threat of antimicrobial resistance and to ensure that veterinary medicines continue to be developed for use in pig production. The Strategy sought the agreement of a mechanism with Government for monitoring antimicrobial resistance patterns in animals and humans by 2013. Since preparing the Strategy, it has become clear that many international groups share this aim and have recognised that much work needs to be done to ensure that harmonised surveillance programmes are introduced. It is not possible or indeed sensible, for the UK pig sector to try to do this alone. There is, however, strong support for improved surveillance of antimicrobial resistance patterns and the pig sector will contribute positively to the discussions to achieve this.

In the meantime, the pig sector will continue to contribute to national and EU surveys of antimicrobial resistance in pigs so that any resistance in the UK herd can be established and efforts introduced to reduce it. EFSA have been monitoring antimicrobial resistance to zoonotic bacteria such as *Salmonella* and *Campylobacter* species and AHVLA is planning to look at resistance in endemic infections, such as *Brachyspira hyodysenteriae*.

The Strategy includes the aim to reduce overall usage of antimicrobials in pigs by 2020, through improving pig health and disease control. This is a long-term aim. Clearly, a good system is required for measuring the usage of antimicrobials in pigs and other species. The UK's Veterinary Medicines Directorate (VMD) has been publishing antimicrobial sales figures annually since 1998 but these figures do not provide a good indication of antimicrobial usage in pigs because many of the products are authorised for use in more than one species. The VMD is actively involved in an EU project to improve this data (ESVAC) and it is likely that new EU veterinary medicines legislation will require vets and/or farmers to report how antimicrobial drugs are actually used on farm. This should provide reliable data to establish a baseline on usage in pigs and to monitor reductions. It is thought that the new system could be introduced by 2015 but details are still awaited from the European Commission. In the meantime, BPEX has initiated its own project in 2012 to look at the current use of antimicrobials in pigs, to help establish a baseline and to see where improvements can be made. Much of the data will be collected in 2013.

The final medicine commitment is to support the Government in calling for a review at EU level of the current process of registration of medicines, with a view to streamlining the requirements and reducing the barriers to investment and development. The European Commission has announced that one of the aims of its review of the Veterinary Medicines Directive is to reduce the administrative burdens associated with the registration of veterinary

4.10 Medicines *(continued)*

medicines, while maintaining the safeguards for human and animal health. This is very positive and, through their membership of RUMA (the Responsible Use of Medicines in Agriculture Alliance), the pig sector has endorsed the need for proportionate controls on the development and registration of new medicines. As before, the Commission's proposals are awaited.

4.11 Research

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Review** health and welfare research with a view to setting out a roadmap by end 2012 for research in this area from 2013 to 2020.
- **Encourage** relevant industry partners to explore the potential value of an Animal Health Research and Technology Club with the Biotechnology and Biological Sciences Research Council (BBSRC) that would seek to exploit recent advances in genetics and genomics for the advancement of pig health and welfare between 2011 and 2016.
- **Support** research on non-invasive diagnostic testing, eg saliva analysis for groups of pigs, colostrum, etc.

Investment in research should focus on the areas that yield the most cost-effective and important or significant improvements in health and welfare. BPEX plans to publish a research and development (R&D) Strategy in 2013 and to help identify and prioritise areas of greatest focus. BPEX held a strategy development workshop in mid-2012. This was attended by 40 people, split evenly between levy payers, allied industry and academic/government representatives. Together they identified over 20 priority areas out of which 'better stock people', 'health management' and 'maximising exploitation of current genetics' were the highest priority.

Continued efforts are directed towards supporting research on non-invasive diagnostic testing methods for groups of pigs. Funding was awarded to AHVLA for the project 'development of tools and/or techniques for the detection and identification of pathogens and antibodies in oral fluids of pigs'.

BPEX has also funded a PhD studentship at Newcastle University to investigate tools for the detection and identification of pathogens and antibodies in oral fluids. A study tour to Iowa State University and the University of Minnesota, USA provided an opportunity to share experiences and learn valuable new techniques.

Funding was also awarded to SRUC for "the development of tools and/or strategies for providing a robust herd health score and/or cost calculator for pig breeding and finishing herds". In a Stage 1 report SRUC made specific recommendations to be applied in the 2nd stage of the project in which a Herd Health Score (HHS) and a Cost Calculator will be devised and tested. Key parameters to be included in Herd Health Score would be:

- Breeding herds: 1. Number of returns per sows, 2. Number of pigs per sows per litter born alive, 3. Number of pigs per sow per litter weaned, 4. Treatment of sows (vaccine and antimicrobial), 5. Treatment records of piglets, 6. Sow mortality.
- Finishing herds would be: 1. Mortality 2. Average live weight gains, 3. Antibiotic usage, 4. Abattoir data, 5. Veterinarian consultations, 6. Vices.
- At abattoir level (carcass lesions) would be: 1. Percentage of pneumonia (EP like lesions, APP like lesions and viral like lesions), 2. Skin lesions (papular dermatitis), 3. Percentage of other pathology, 4. Tail bites, 5. Arthritis (not measured in the BPHS), 6. Pericarditis, 7. Colitis (not measured in the BPHS).

4.11 Research *(continued)*

Data that is already collected under various schemes could be merged, centralised and used in designing an integrated HHS and cost calculator. Ideally, the process should be automated with results reported to producers and vets with the regular BPHS reports. The cost calculator to be devised based on HHS in the second stage needs to be generic, avoid double counting and have enough flexibility to represent different systems.

In 2012, the first research call (worth £4.5m across all livestock sectors) of the BBSRC Animal Health Research Club was seen. The focus was on four research themes in the area of livestock resistance to pests and disease. The Animal Health Research Club provides an excellent platform for basic research in strategic areas bringing the research community and industry together, with BBSRC (£8m), industry (£1m) and the Scottish Government (£0.5m) all contributing to funding. BPEX is one of its 12 company members, which also includes other divisions of AHDB, animal health and breeding companies. Funding for the first projects will be approved in 2013.

4.12 Knowledge Transfer and Training

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Develop** training modules specific to the Pig Health Improvement Project that will be available from 2012 and expanded thereafter on the basis of needs identified by a training subgroup.
- **Maintain** awareness of international advances in research, nutrition, micro-nutrition and husbandry and develop effective mechanisms for promoting rapid uptake.
- **Promote** and encourage detailed and accurate farm recording and exchange of information.
- **Encourage** "first-adopter" farms in the Pig Health Improvement Project to act as a network of demonstration farms to allow new techniques, products and technologies to be tried, tested and improvements in health and welfare to be showcased. The target is to have two demonstration farms in each participating region by 2015.

BPEX knowledge transfer activity is focused on helping businesses improve herd performance through delivery of the **Two-Tonne Sow Campaign (2TS)** – which aims to help the English pig industry achieve an overall average of 2000kg of pig meat per sow per year (www.bpex.org.uk/2ts/).

Figures from the AHBD/BPEX 2011 Pig Cost of Production report show that the top 10% of producers (indoor and outdoor herds combined) are now averaging two tonnes of pig meat per sow per year and, in the indoor herd, the top third of producers are averaging two tonnes.

BPEX is re-focusing its efforts on the breeding herd in 2013 with a '**Breed +3**' initiative to help each herd wean an extra three pigs per sow per year, because the figures also show that English pig producers need to wean more pigs per sow, if the industry is to achieve the 2TS target.

4.12 Knowledge Transfer and Training *(continued)*

The following range of services is now on offer from BPEX to help producers achieve its target:

- On-farm reviews
- On-farm investigations and field trials
- Innovation grants
- Staff development and training
- Business insight trips
- Regional producer events
- Pig Health Improvement Project
- Environment and building services
- Media and publications.

4.12.1 Staff development and training

The opportunities for training and development in the pig industry include:

- Certificates of Competence
- Stockman Development scheme
- Stockman Plus (introduced in 2012)
- Institute of Leadership and Management (ILM) Award
- BPEX Professional Managers Development Scheme (PMDS)
- Local workshops and training groups

BPEX has linked with other organisations to develop a pig industry training strategy to be launched in 2013. The objective is to **recruit, retain** and **reward** highly motivated and enthusiastic people and provide training in a format that is practical, relevant and easy to access.

4.13 Integrated Approach

20:20 Pig Health and Welfare

The Vision specifies the need to:

- **Address** issues of co-ordination and integration in annual reviews of progress towards the objectives and targets of the strategy
 - **Ensure** that where the 20:20 Pig Health and Welfare strategy, other industry initiatives and Defra's Structural Reform Priorities (Defra Business Plan 2011-2015) are aligned, then activity can be integrated for mutual benefit.
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4.13.1 Agricultural Industries Confederation (AIC)

During 2012 significant strides have been made in the application of more precise nutrient descriptions of raw materials and specifications of diets (eg Net Energy – Adult, Grower and Piglet, Digestible amino acids, absolute levels and ratios). The move to nutrients which better describe the use by the pig of the various age classes improves efficiency and has both cost saving and sustainability benefits but also reduces any stress on the pigs excretory system, as it has less imbalances and excesses to deal with. The more precise meeting of nutrient requirements also minimises pressure on the immune system and helps pigs cope with health challenges, as does the removal of antinutrients (progress chiefly with Phytate reduction in 2012; yielding savings of 30-40p/pig).

As pressure builds to reduce antibiotic use to minimise the chances of antibiotic resistance (AMR), feed manufacturers continue to look for ways of supporting the pigs natural immunity with non-antibiotic feed additives, including acids and pre- and probiotics to improve gut environment. Acids are also used for ammonia reduction.

In 2013/2014, the feed industry expects to be able to modify diets in a way which enables the maximum benefits from pharmaceutical levels of **Zinc Oxide** to be achieved at lower levels of inclusion. This can only be included by a Veterinary Surgeon through a Medicated Feedingstuffs Prescription (MFSp). A reduction in the use of a heavy metal additive like zinc oxide will reduce diet cost, benefit the environment and significantly reduce the likelihood of a ban on zinc oxide in the future, thereby safeguarding this valuable medicinal additive for the British pig producer.

As aggression increases in some pig populations, feeding patterns are being modified as a counter measure.

As Bioethanol plants come on line in the UK, opportunities to utilise the resulting co-products to reduce the costs of production will be explored in the years ahead.

Increasing litter size is requiring improved diets, creep feeding and other management and stockmanship skills to prevent increases in mortality. Feeding the lactating sow in the Freedom Farrowing crate may require changes in feeding patterns and possibly even nutrient requirements.

4.13.2 Animal Health and Veterinary Laboratories Agency (AHVLA)

The Animal Health and Veterinary Laboratories Agency (AHVLA) supports the Pig Health and Welfare Council's work and is pleased to participate in the Council and provide input to assist the Council in working towards improvements in health and welfare in British pigs. AHVLA plays a wide ranging and key role in pig health and welfare through its involvement in notifiable disease surveillance and contingency planning, disease diagnosis and scanning surveillance, animal welfare, international trade, salmonella and antimicrobial resistance monitoring and other activities. AHVLA's scientific expertise in pig pathogens, such as classical swine fever, swine influenza, porcine reproductive and respiratory syndrome (PRRS) virus and salmonella and disciplines such as epidemiology and pathology, is also highly relevant to the Council's work.

Disease surveillance activities are currently being reviewed. Close liaison between AHVLA, the Council, representatives from the pig industry and the veterinary community will be important in achieving prompt identification of potential threats to pig health and welfare. Future research and training initiatives will also benefit from discussion and collaboration, with advice on priorities for the pig industry from the Council.

4.13 Integrated Approach *(continued)*

4.13.3 Assured Food Standards (AFS)

Assured Food Standards has undertaken a review of the Red Tractor Farm Assurance Pig Scheme standards followed by stakeholder consultation and the resultant changes mean that its standards assist in the delivery of the Pig Health and Welfare Council's objectives for improvements in pig health and welfare. The review proposed the incorporation of the BPEX Real Welfare protocol as a means of developing the on-farm assessment of welfare outcomes; the revision of methods used for the euthanasia of sick and fallen stock; additional requirements on monitoring herd performance data and new requirements for practical training on animal welfare skills for staff handling livestock, including a method for monitoring and managing the on-going competence of those employees.

Revised standards which deliver the changes, including the assessment of Real Welfare, will be introduced on farm with effect from 1 April, 2013 and form part of on-going work being undertaken by AFS to deliver improved livestock welfare and productivity through raised awareness of issues. This work also includes an objective that assessors spend more time looking at livestock rather than livestock management systems (paperwork) and helps in the delivery of an integrated approach to improving pig health and welfare.

4.13.4 BPEX – Division of the Agriculture and Horticulture Development Board

Responsible pig production is at the core of all BPEX activity. A focus of BPEX activity is to help producers and processors become more efficient and to reduce costs per unit of production. Improving pig health and welfare is the key to sustainable development of the pig industry, by developing opportunities for driving costs down and improving performance efficiencies and also for generating growth.

Working with the industry, BPEX helped to make the Pig Health Improvement Project available to all pig producers in England in 2012. The success of PHIP in improving pig health will be measured in the outcomes of producer collaboration and without real engagement there can be no success. There was very positive interest and engagement through PHIP cluster groups on assessing and improving ventilation of pig farms. Boehringer Ingelheim, Elanco Animal Health, MSD Animal Health and Pfizer Animal Health (now Zoetis) provided valuable support for the delivery of the BPEX Pig Health Scheme in 2012.

New and emerging pig diseases remain among the most significant threats to the pig industry and BPEX commissioned research on current health and welfare monitoring, with a view to establishing baselines against which progress can be measured and realistic targets agreed. This work will also help to scope out the surveillance needs of the industry and to identify how these might be addressed.

BPEX worked with the Universities of Bristol and Newcastle and industry representatives to develop a practical set of welfare outcome measures and has continued to support the implementation of Real Welfare through farm assurance scheme standards.

Working together, Defra, the Food Standards Agency (FSA) and the pig industry have planned for 2013 a prevalence survey of potentially zoonotic pathogens that can cause human illness. Isolates from the study will also be used for evaluation of antimicrobial resistance in *Campylobacter* and *E. coli*. This is both saving money, avoiding duplication of work and providing essential information for effective food safety risk management. A similar collaborative approach is a feature of the delivery of a 4-year study on improving the control of *Salmonella* in pigs being led by AHVLA.

BPEX is working with BMA and the industry to improve the standards of lorry washing at abattoirs to reduce the risks to biosecurity. A tool highlighting biosecurity risks on-farms has been developed in collaboration with members of the Pig Veterinary Society and is available online for use by farmers and vets. BPEX will also be collaborating with PVS and RUMA on evaluating antimicrobial use on farm in 2013.

4.13.5 British Meat Processors Association (BMPA)

New lorry wash standards for abattoirs were included in the BMPA's animal welfare, slaughter and carcass dressing standards for the production of British Quality Assured pig meat, which was published in June 2012. Sites have since been audited against this standard. It was anticipated that some funding support may be available to plants to help with the costs incurred in meeting the new biosecurity requirements but unfortunately this has not proved to be the case.

Recognising the cost implications for abattoirs of compliance with the new standards, the line initially being taken with those scheme participants, who are not yet fully compliant with the biosecurity requirements is that they provide: -

- Evidence of the site's gap analysis and proposed action plan along with timescales for completion
- Agreed capital expenditure (CAPEX)
- Quotations for the proposed works, followed by agreed contracts for completion
- In the case of required planning applications, evidence of correspondence with the relevant planning office/councils.

In each case, progress will be monitored at subsequent scheme audits.

Considerable investment is being made by several of the main abattoir groups in **electronic kill line data capture systems**. This allows FSA meat inspectors to log their carcass inspection results directly into the FSA's INOVA system as well as each processor's proprietary system. The potential for this data to become useful as a source of disease surveillance information and to inform decision making on disease control on pig farms, currently remains an aspiration.

4.13.6 British Pig Association (BPA)

During 2012, the British Pig Association has been developing an accreditation scheme for small-scale producers designed to raise awareness of the legal requirements for pig keepers and the importance of biosecurity for even the smallest pig herds. The Association has also worked with AHVLA and Defra to address issues around the conservation of rare breeds during exotic disease outbreaks. The aim has been to develop policies to ensure that control measures are not delayed or compromised while protecting Farm Animal Genetic Resources (FAnGR) where possible. The Association has also worked with the Council to raise awareness of the Pig Health and Welfare Strategy among Agricultural Show organisers and reminds them of the importance of biosecurity at these events.

In 2013, the Association will launch the **Accreditation Scheme for Small Scale Producers**. We will continue to work with AHVLA and Defra to ensure that concern for the conservation of rare breeds and FAnGR does not affect the implementation of control measures for exotic disease. We will also continue to stress the importance of biosecurity protocols to pig keepers who exhibit pigs at Agricultural shows.

The Association has identified the threat of importing non-notifiable diseases such as Highly Pathogenic (HP)-PPRS and will work with the Council and other sectors to ensure that pedigree breeders and small scale pig keepers are aware of the need for additional testing of imported animals.

4.13.7 National Pig Association (NPA)

The NPA is the representative trade association for British commercial pig producers and works closely with the other 20:20 Pig Health and Welfare strategy cross-industry sponsoring organisations. NPA will tackle any difficult issue that faces their producer members, looking for practical solutions. We previously developed cross-industry working groups for manipulable materials and tail docking, resulting in industry advice, as well as working with Defra and AHVLA on a vast range of policy areas including preventing and limiting damage from exotic disease incursion, wild boar, pet pigs and Bovine TB in pigs. NPA is also on the Board of the RUMA Alliance which is working across Government and in Brussels to jointly tackle the issue of antibiotic resistance and promote responsible use of medicines in agriculture.

Most recently, the NPA Breeding Companies Committee, which comprises the main UK pig breeding companies and their veterinarians, have developed harmonised import protocols for live pigs entering the country. One of the principal threats to the health of the UK pig herd is via imported pork products, whether in the form of live animals, ova/semen or meat and meat products. As responsible businesses, the primary breeding companies already employ health protocols that exceed the statutory requirements. However, it is incumbent on any individual importing products to protect the health status of the National herd by adhering to a formal protocol. The guidance and protocols are designed to include stock from both new and existing sources and aims to monitor all major pathogens of concern to UK pig health. It is important that any party intending to import live pigs or semen to the UK does so using an imports protocol, incorporating the following considerations as a base; legal requirements, a pre-import and post-import protocol, transportation of stock and finally a pre- and post-import testing regime. In future the imports protocol will be incorporated as a guidance document within the Red Tractor farm assurance standards

4.13.8 Pig Veterinary Society (PVS)

The optimisation of health is often rated among the highest priorities of profitable and sustainable pig raising. Farmers working closely with their veterinary advisors provide health inputs to British farmed pigs. This farm advice can cover specific inputs to vaccine and medication requirements, biosecurity and hygiene measures, slaughterhouse and blood-check monitoring, farm autopsy and other diagnostics and inputs to management investment decisions.

A second level of veterinary and farmer cooperation exists in broader objectives towards implementing the PHWC's pig health and welfare strategy and 20:20 vision that cover the English industry. This level will cover inputs to current topics such as British and EU disease surveillance requirements, regional health improvement plans and farm assurance programmes aimed for consumers.

The 250 members of the British Pig Veterinary Society discuss these issues and are kept informed on all these and other issues via a twice-yearly national scientific meeting and the expanding professional website (www.pigvetsoc.org.uk).

4.13.9 Responsible Use of Medicines in Agriculture Alliance (RUMA)

The responsible use of medicines plays a key role in maintaining the health and welfare of pigs and RUMA is delighted to participate in the Pig Health and Welfare Council. The Council's work is important in implementing the 20:20 Pig Health and Welfare Strategy, which provides extensive and challenging targets for the pig industry. It is good to see the wide ranging membership of the Council working well together to deliver positive results for the health and welfare of pigs.

RUMA has produced guidelines for farmers and vets on the responsible use of antimicrobials in pigs and is currently working with colleagues across the pig sector to update them. The revised guidelines will be published in 2013. We expect to see proposals to amend European veterinary medicine and medicated feed additive legislation also in 2013 and RUMA will provide advice to the Council and seek members' views on how the proposals are likely to affect the health and welfare of UK pigs and the ability to achieve the medicines targets in the Strategy.

4.13.10 Royal Society for the Prevention of Cruelty to animals (RSPCA)

The RSPCA has long supported the aims and work of the Pig Health and Welfare Council. We welcomed the re-launch of the group in 2012 as an industry initiative owned by all of the organisations that support the 20:20 Pig Health and Welfare Strategy. The new Council is appropriately representative of the wider industry and associated stakeholders, comprising relevant expertise in a number of fields including health, surveillance, welfare and the research sector.

So far, the work of the Council has focused primarily on health and disease issues. While these are of course very important areas of concern, impacting directly on welfare, there are many key welfare issues that are unrelated to health and to date, there has been less emphasis on these. The RSPCA is, therefore, delighted that the Council agreed to establish a welfare sub-group to investigate and tackle these non-health welfare issues. The Society looks forward to working with other members of Council and the wider pig industry in 2013/14 on this exciting and important new initiative.

5 Horizon Scanning

A number of potential disease threats could be considered on the horizon, primarily due to imports of infections from pig products, such as live animals, semen in particular and possibly by uncooked meat products, such as salami.

5.1 Potential Threats

Threat	Comment
African swine fever (ASF)	Although ASF has been reported in Russia and Ukraine, bordering the EU and in Sardinia, it is still considered of negligible risk of introduction to the UK because of import rules to the UK (Defra, 2012). (http://www.defra.gov.uk/animal-diseases/monitoring/poa/)
Classical swine fever (CSF)	Recent outbreaks have been reported in wild boar and also backyard pigs in Latvia, neighbouring Russia and Belarus. Vaccination will commence soon in the area. The risk of introduction of CSF into the UK is considered negligible, because of current import rules and control measures in the region (Defra, 2012).
Foot and mouth disease (FMD)	There have been recent outbreaks in Turkey, the Middle East and N. Africa, where although disease is endemic, incursions of new strains, such as FMD SAT2 have occurred. Defra considers there is a constant low risk of introduction of disease into the EU and UK, principally through illegal trade of products or the movement of fomites from any affected region (Defra 2012).
US PRRS virus	A number of countries in the EU introduced a live-virus vaccine against PRRS and it was reported to be more pathogenic than the original EU strains circulating at the time. This virus is still circulating in the EU and to date has been kept out by the low level imports of live pigs and semen into the UK. Similarly, US-PRRS field virus has not been introduced. This is a much more severe virus, causing increased mortality in growing pigs, similar to PCV2B, in its chronic phase. Stringent controls over the import of live pigs, semen and embryos from the US should be introduced to prevent it being brought into the EU and UK.
Aujeszky's disease (pseudorabies)	A case in wild boar was reported in Belgium in 2012. Although the import risk is low, care must be taken when importing live animals from the EU, even for rare breeds.
MRSA	Currently, MRSA CC398 has a high prevalence in many countries of the EU. It is easily spread from pig to pig, so the import of live pigs is a considerable risk. It has been shown to pass down breeding pyramids. Great care must be taken when importing live pigs from the EU or N. America and they should be screened for carriage of this bacterium.

5.1 Potential Threats *(continued)*

Threat	Comment
Partial gestation stall ban in the EU	It is considered that until the ban has been fully implemented in the EU, there is a risk of importing pork from non-compliant farms into the UK. Currently, the EU is chasing up countries which have not complied but procedures against countries and farmers may take a number of years to enforce.
Antimicrobial resistance	In the UK, the pig industry has been relatively fortunate that antimicrobial resistance has not been a dominating issue with regard to MRSA or extended-spectrum beta-lactamase producing bacteria, associated with the use of 3rd and 4th generation cephalosporins. These products are not extensively used, as piglets are not castrated and possibly 40% of sows and piglets are reared outside. However, multi-resistant strains of <i>Brachyspira hyodysenteriae</i> have appeared, resulting in the need to depopulate herds. This is one of the reasons that PHWC has made the elimination of swine dysentery a key measure for their 20:20 strategy. The European Commission is reviewing the situation in the EU and legislation or at least guidelines are expected in due course.
Climate change	Because 40% of the UK's breeding herd is kept outdoors it could be susceptible to major changes such as drought, heat stress and even flooding. Rising energy prices may threaten sustainability. Industry may be required to measure and demonstrate improvements in environmental impact.
EU Animal Health Law	The European Commission is undertaking a revision of the regulatory framework surrounding animal health. Like all these major changes, there is concern regarding unintended consequences that might arise from this legislation. There is already a disparity between the UK and the EU disease situation, eg US-PRRS, MRSA, so it is of concern should capacity to protect the health status of the UK pig herd be limited.
EU Animal Welfare Framework Law	The European Commission is looking to harmonise the legislation around animal welfare and has published its strategy for 2012-2015. There is concern that unintended consequences may arise from conflicts in requirements of future legislation on welfare, health, trade, environment and other areas.

5.2 Potential Positive Influences

Influence	Comment
20:20 Pig Health and Welfare Vision and Strategy	The vision to improve the health and welfare of the national pig herd has to be the way forward for the industry to compete in the future and become more economically sound and profitable. Reduction of disease by their elimination, such as mange, swine dysentery and even enzootic pneumonia, must be a first line approach to improve herd health. Other diseases such as PRRS, Streptococcal meningitis and Actinobacillus pleuropneumonia is more difficult but in some cases may be achieved. The PHIP project will be a major factor here.
Improving productivity of the sow	An increase in piglets born live is achievable but the difficulty in keeping them alive has been the stumbling block, especially in freedom-farrowing systems and outdoor arcs. A greater focus in these areas would be of benefit.
Improving training	Knowledge transfer can play a key role in improving pig management and increasing productivity.
Improved housing and management	Investment in improving pig housing is difficult when profitability is low. Improvement of the ventilation has been one popular positive aspect to come through PHIP. Better biosecurity – improved defences from bringing diseases on to the farm will also bring better protection and sustainability.
Assurance schemes	To monitor and thereby improve the health and welfare of the pigs, working closely with the farm vet to achieve these objectives is a key opportunity to improve performance and profitability.
Welfare outcomes	Although it is sometimes difficult to quantify the benefits in financial terms, superior welfare has enabled the UK pig industry to obtain a 7% premium over EU competitors. Extension of the welfare outcomes is hoped to maintain this differential but also improve the quality of life for the pig.
Surveillance	Surveillance is critical to give an early warning of exotic diseases entering the UK but monitoring of endemic diseases via the BPHS is invaluable to demonstrate trends in disease management on farm and nationally. These schemes can be used to improve the health and productivity of a herd.
Genetic improvement	Selection for tolerance or resistance to disease offer significant opportunities to improve the health and welfare of pigs.
Export opportunities	Export of breeding stock, with our high health status will present further opportunities in Europe and the rest of the World.

6 Milestones for 2013

Key milestones for 2013

- Establish key baselines and evidence gaps for health and welfare outcomes
- Agree specific targets for health and welfare outcomes by 2020
- Develop a surveillance system that is fit for purpose and which can integrate existing data sources
- Adoption of routine biosecurity scoring and evaluation on all pig farms in the Pig Health Improvement Project, with robust mechanisms for doing so available to all pig farms
- Support development of long-term health plans by PHIP clusters
- Implement effective delivery of a system for monitoring Welfare Outcomes in pigs through farm assurance
- Establish prevalence of key zoonoses in pigs through an abattoir prevalence survey
- Review health and welfare research and agree a roadmap for research in this area to 2020
- Develop accredited training modules for ventilation control, rodent control and cleaning and disinfection
- Develop benchmarking for antimicrobial use on pig farms
- Review of progress towards the objectives and targets of the strategy.

6.1 Pig Health Improvement Project (PHIP)

Plans for 2013-2014 are to centre the PHIP campaign on the **elimination of swine dysentery**. This will be supported by efforts to improve on farm cleaning and disinfection, rodent control training for stockmen and vets and support with diagnostic techniques to establish potential transmission routes of infection. Lorry wash improvement will be integral to this campaign. In order to tackle issues faced in achieving this goal (such as a limited supply of clean-down facilities for those needing to depopulate) a working group will be formed of interested industry parties to think of innovative ways to approach old problems. PHIP will continue to work with groups at local level to build on the trust and momentum achieved to date.

6.2 Surveillance

The 2012 milestones have been partially met but future work will need to address the gaps in the baseline information and in the data sources. There is need to consider the design requirements for the diseases of interest, investigate how to improve data collection and to evaluate analytical methods. In the next year, further work will be carried out to meet the overall objective, which is to develop a surveillance system that is fit for purpose and which can integrate existing data sources. Work will continue in order to meet the five surveillance objectives listed in the 20:20 vision.

6.3 Biosecurity 2013/14 Milestones

During 2013 the milestones will include:

- Adoption of routine biosecurity scoring on all pig farms in the PHIP scheme on an annual or more frequent basis, depending on risk to the holding, to other pig farms and, where appropriate, to wider society.
- Publicise the scoring system to persuade other pig farmers and their vets to adopt the system and to assess their own biosecurity.
- Develop appropriate standards as a mechanism for recognising best practice for lorry washing, which is a continuation of previous work.
- Work with hauliers, transport assurance, British Quality Assured Pork and abattoirs to identify the current facilities available for lorry washes and work to improve these where necessary.

The aim of this work is to prevent and minimise the potential for disease spread by identifying and adopting best practice in relation to biosecurity.

7 Conclusions

Establishing the 20:20 vision must be considered a major breakthrough in coordinating the improvement and sustainability of the pig industry in England. The active support and participation in the PHWC from all of its members is tribute to this endeavour.

A great deal has already been achieved but there remain many challenges to be faced in the coming years. As the table of key milestones for 2013 demonstrates, one of the most important issues is to establish the current performance baselines in a number of areas, especially in relation to health and welfare outcomes. Once the baselines are agreed and are scientifically sound, the next stage will be to agree practical, cost-effective, clear and achievable targets to improve health and welfare. It is important to develop clear targets and to describe how those targets will be measured. This will be an important activity for the PHWC in 2013.

The Pig Health Improvement Project is the core driver for health and welfare improvement. The establishment of local, regional cluster groups have been successfully rolled out across the country and more farms are expected to join in 2013. The scheme has a wide range of activities necessary to achieve success. As well as establishing baselines and setting future targets for health, improving biosecurity to keep diseases out, improving training, monitoring welfare and introducing new welfare outcomes in grower pigs from April 2013 are also important. Improving infrastructure on farms, by adapting existing buildings and ventilation improvements to reduce respiratory disease has also been introduced. This proved extremely popular and take-up was very positive.

The responsible use of medicines, in particular antibiotics, will be an important issue in 2013, especially if new European Commission guidelines are introduced. However, there is already an understanding that eradication of some major diseases, such as swine dysentery, can help reduce antimicrobial use and thereby resistance development, which is also spurring on interest in reducing or eliminating other diseases.

Knowledge transfer is also key, to improve training and stockman skills. It is introducing advances in all aspects of management, both with local ideas from early adopters and also best practices from overseas, such as in Denmark and the US.

The BPEX Pig Health Scheme, now part of the Pig Health Improvement Project, has monitored endemic disease and the changes that have taken place over the last seven years and identified areas for review. Good surveillance of disease via BPHS can also give early warnings of disease levels which are increasing so that prompt responses can be implemented

Horizon scanning can identify a number of threats from exotic disease, some which have penetrated into the EU, like CSF and other infections that we do not currently have here, such as US-PRRS, MRSA and Aujeszky's disease, which are just the other side of the Channel. However, it can also identify opportunities for improving the success of the pig industry, such as improving sow productivity and piglet survival, improving training, housing and management. Improved welfare can also improve the productivity of our pigs, as well as differentiate them from overseas competition. Export opportunities, especially for high health, highly productive breeding stock has almost never been brighter and the toolkit for making genetic progress in tolerance or resistance to disease is expanding rapidly.

The PHWC participates in the work of the Animal Health and Welfare Board for England through the Sector Council meetings, which are chaired by a non-executive member of the AHWBE. The meetings are attended by members from a wide range of groups and councils similar to the PHWC, which represent the livestock industries, companion animals, equines, fish, camelids, zoos, etc. This provides an invaluable forum for discussion, while at the same time, enabling the PHWC to have an input into the development and implementation of policies for animal health and welfare. In addition, the members of the AHWBE are able to brief the various representatives on the issues, which are of increasing importance.



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