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The Previous Generation of Pig Farmers Increased Productivity 50%. Can We Do the Same? And Should We?

Written by:

Gregor Bruce NSch

September 2026

A NUFFIELD FARMING SCHOLARSHIPS REPORT

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ISBN: 978-1-916850-94-1

Published by The Nuffield Farming Scholarships Trust
Bullbrook, West Charlton, Charlton Mackrell, Somerset, TA11 7AL
Email: office@nuffieldscholar.org
www.nuffieldscholar.org

A NUFFIELD FARMING SCHOLARSHIPS REPORT (UK)

Date of report: September 2026

"Leading positive change in agriculture. Inspiring passion and potential in people."

Title	The previous Generation of Pig Farmers Increased Productivity 50%. Can We Do the Same? And Should We?
Scholar	Gregor Bruce
Sponsor	The John Oldacre Foundation
Objectives of Study Tour	• Assess the impact of increased productivity on the environment, people, welfare and economics of pig farming. • Evaluate the options to continue the trend of increased productivity. • Compare these options and recommend methods with the fewest important trade-offs.
Countries Visited	New Zealand, the Netherlands, Denmark, Brazil, Ireland and the United Kingdom
Messages	• Industry should be careful in the pursuit of increased productivity and evaluate any unintended consequences. However, an increase in productivity does not have to result in a decrease in other important aspects of production such as animal welfare. • The use of immunocastration should be reviewed by assurance schemes in light of heavier carcass weights. • A more collaborative approach to national herd health would be beneficial to animals and farmers. • Tools that allow farmers to benchmark against other international businesses are insightful and necessary.

EXECUTIVE SUMMARY

The pig industry in the UK is at a fork in the road. Increasing competition globally, highly volatile market conditions and a heavy reliance on imports have restricted profitability in UK pig farming. To combat this, the previous generation were able to achieve productivity gains of around 50%, largely driven by improvements in genetics, management and system efficiency. This report explores whether similar gains are still possible, and if they are, whether they should be pursued or the trade-offs in animal welfare, environmental or economic terms mean that we should focus our attention elsewhere.

Summarising a study tour covering the United Kingdom, New Zealand, Europe and Brazil, this report evaluates the main options available to increase productivity in pig farming: producing more piglets per sow, increasing growth rates or finishing pigs at a heavier weight. Whilst each offers opportunities, they also carry trade-offs which must be carefully considered. The findings highlight that a change in any system is rarely isolated and often creates challenges elsewhere.

One example of this is the significant increase in litter sizes, which have resulted in sows rearing up to 35 piglets annually. With larger litter sizes comes decreased birth weight, placing pressure on labour and farm infrastructure. This increase in management complexity has been recognised by leading genetics companies who are now shifting breeding focus away from increased litter size towards improving maternal traits such as milk production, functional teat numbers and piglet mortality rates.

Health management emerged as a pillar of performance. In Denmark, the SPF system exemplifies how coordinated national approaches can significantly improve herd health, reduce antibiotic use and enhance growth rates. A healthier herd not only improves productivity but delivers animal welfare and environmental benefits as well.

Increasing carcass weights offers another option for improved productivity, allowing fixed costs to be spread over more output. However, in pig production this poses an issue for meat eating quality in the form of boar taint. Immunocastration presents a viable solution with high effectiveness and welfare benefits. Unfortunately, regulatory inconsistency, cost, and perception limit its adoption in the UK to date.

Further productivity gains are achievable but must be pursued responsibly. Sustainable progress will come, not from maximising a single metric, but from optimising across health, welfare, economic and environmental impact. This report recommends clearer guidance on immunocastration, more organised national collaboration on herd health and improved access to benchmarking

data collated in the InterPig report. Maintaining competitiveness in the UK pig sector requires innovation and cooperation. Productivity growth is essential - but it must be balanced with long-term resilience and industry sustainability in mind.

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Published by The Nuffield Farming Scholarships Trust
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CHAPTER 1: INTRODUCTION

With three previous generations on our family farm some might assume I felt pressure to follow those well-trodden and muddy footsteps. However, this assumption could not be further from the truth. From an early age my sisters and I were encouraged to imagine ourselves in any occupation. I think I found this more challenging than they did. Nonetheless, on finishing school I undertook a degree in Physics at university and despite my aptitude (and enthusiasm) waning quite considerably somewhere between fresher's week and our final year exams - I graduated. I got a job in data and software engineering in Edinburgh where I stayed for a further four years before deciding that it was time to come home to the farm just in time for the first Covid lockdown.



Figure 1: Author Gregor Bruce. Image credit: Author's own.

I do not feel my route through education and into agriculture has held me back professionally, however I have always felt my network was lacking when compared to that of friends who studied agriculture. It was for this reason that I first became interested in the Nuffield Farming Scholarships Trust.

Six years into full time farming I was awarded my scholarship. It felt like a good time to challenge my own thinking, seek answers to the questions that have formed over the years, and build a clearer vision for the future of our family business. More notably, it gave me the opportunity to travel the world, visiting farmers who have come up against the same or similar challenges to those I am experiencing at home.

CHAPTER 2: BACKGROUND

Little over 20 years ago a pig farmer would have been delighted if they had 11 piglets born alive, weaned 10 of them and had an average of 23 piglets weaned per sow, per year. Today having 20 piglets born alive is more common than 11 and sows on some farms routinely wean 35 piglets per year.

Whilst my study topic title gives credit to the farmers for this increase in productivity, in truth it is the pig that deserves our respect. A pig's natural biology is what allows it to be the food producing powerhouse it is. When compared to a cow or a sheep it all comes down to three things: fecundity (litter size), feed conversion efficiency and growth velocity which are all in favour of the pig. With litter sizes averaging 17, feed conversion ratios of 2:1 and growth rates allowing pigs to grow from a birth weight of 1kg to a marketable 120kg in 5 months, this biased author believes the pig to be the king (or more appropriately, the queen) of efficient and sustainable meat production.

These biological characteristics have also allowed pigs to be farmed intensively, often indoors in controlled environments, with strict phase-feeding regimes and meticulous record keeping. In this environment the pig has thrived and reached new heights of productivity. But as is always the case in farming, a change in one area is rarely isolated and often leads to a trade off in another. If we are seeking a productivity 'Goldilocks zone', could it be that we have passed right through it?

So, with my head full of KPIs to compare, ideas to hear or share and questions to answer I set off on my Nuffield adventure. However, in November 2025, Spain – the largest pork producing country in Europe contracted ASF (African Swine Fever) and China (who had been importing a lot of this pork) reduced its import volume considerably, citing its own trouble with the disease in 2020 (Lu Gao, 2021). This pork flooded the European market, crashing the price which in turn flooded the UK market, crashing ours. What followed was another pig crisis in the UK (Farming Statistics, DEFRA, 2022). With producers having contracts cut and a backlog of pigs beginning to form, it was a challenging time to schedule a Nuffield study tour.

Tentatively, you might say the situation is better now, although at the time of writing the backlog remains and prices are still well below the cost of production. After witnessing the second serious crisis in recent years, my own thinking has shifted from productivity increases to cost-cutting and business longevity. That being said, I have tried to stay true to my topic with the optimistic view in mind that there will be days ahead when we can again invest in our businesses to achieve our full potential.

The nature of modern, intensive livestock production and its biosecurity measures made my study tour slightly trickier. Most modern intensive livestock

farms will implement at least a 48 hour ‘pig free’ visit requirement. What this means in Nuffield study tour practice is that even a well organised, weeklong trip only allows a maximum of three pig farm visits. One on the day of arrival, assuming I managed to be free of my own pigs for two days prior to catching a flight. A second visit a minimum of two days later and a final visit two days following that, assuming ‘pig free’ status wasn’t required on the first day of my return home. On top of these rules, some farms go further, requiring a 72-hour gap. Others had concerns around international airports and required additional rest days if I had just flown in. Despite all these measures, some were happy to host me in their office and show me detailed figures aided with photographs of their units but would not grant access to the unit. Obviously, these wishes were always respected. Despite what some would have you believe these measures are put in place for the health and welfare of the animals.

This meant on my pig farm ‘rest days’ I tried to visit different businesses, some that felt familiar: poultry units, anaerobic digestion plants and dairy farms, and some that felt far less familiar: cattle ranches, eucalyptus plantations, food recycling plants and even an achiote [1]grower. Every one of these visits opened my eyes to something new or taught me a new lesson. However, due to the limitations of a Nuffield report I felt a duty to use the word count to discuss my study topic to the best of my ability. As such many of these interesting visits and important lessons have been omitted. If you would like to hear a little bit more, you will just have to get in touch!

[1] Achiote or Bixa Orellana is a shrub native to Central and South America. It is predominantly grown as a natural colouring.

CHAPTER 3: STUDY TOUR

Visit	Date	Reason
United Kingdom	February 2025 – November 2026	There is always more on your doorstep than you realise. Travelling from rural Aberdeenshire on trips often meant overnight stays in different UK towns and cities so it was a great opportunity to visit local businesses and institutions.
New Zealand	March 2025	Primarily for our Contemporary Scholars Conference but New Zealand also mimics Scotland in pig farming terms. Similar industry size with a similar island population size combined with access to imports from much bigger global players.
The Netherlands	June 2025	Widely considered the most efficient farmers in the European Union. Domestic pig production in the Netherlands is facing huge challenges from nutrient management to government facilitated buy-back schemes.
Denmark	November 2025	When most people think of pigs they think of the Danish. Most of the innovation, technology and research in the pig world is coming from Denmark.
Brazil	February 2026	Brazil's agricultural output is massive and, at least in terms of pig production, still growing. Dominated, however, by vertically integrated businesses or those

		affiliated to the integrators. Is this a sign of things to come for the UK pig population?
Ireland	May 2026	The landscape of Ireland means that the operation of pig farms is very different to that of Scotland. Yet the industry is growing and the sentiment is positive - another unfortunate difference to the industry in Scotland.

CHAPTER 4: HEALTH

Whilst it could be said that the title of this report was designed to catch the eye during the opening rounds of Nuffield application whittling, based on past performance the idea of increasing productivity by 50% is not as far-fetched as it sounds. The previous generation achieved this on a number of KPIs.

When comparing the breeding herd performance of any pig farm across the world the metric used most often is piglets weaned per sow per year. A generation ago, this metric would have measured about 23 on well performing farms, today those same well performing farms are achieving results well into the 30s. In fact, in Denmark some farmers I visited were achieving results pushing into the 40s.

4.1 Investment

Much of the success of Danish pig farming stems from their cooperative approach. The vertically integrated supply chain recognised in the Danish pig industry stems from the 1800s and farmers are still reaping the benefits today. Most pig farmers in Denmark are owner-operators with a stake in the processing and slaughtering capacity of the co-op that markets their pigs. This means there is almost total alignment of goals, with the profits from processing finding their way back to primary producers. This allows market demands for quality or higher welfare to be quickly communicated and change adopted.

Innovation and improvement are the result of this fairer and more transparent supply chain. The investment Danish farmers are able to make in their farms are immediately apparent, with modern solutions being integrated into refurbished and new buildings more frequently than UK farmers could afford. One such example is slurry-source heat pumps. Waste heat from slurry stores can be recovered and delivered to the vulnerable weaned pigs in the nursery accommodation. The additional heat allows the ventilation systems to cycle more air through the accommodation. The result is cleaner, healthier, and therefore faster growing stock. With a lower cost of production, the vertically integrated reinvestment continues to cycle. Whilst the incorporation of heat into nursery accommodation is not uncommon in the UK, solutions are often retrofitted, temporary and less circular than Danish examples.



Figure 2: Heat recovering pipes being laid in the foundations of new pig accommodation. Source: Klimadan.

4.2 Health Programmes

The Danish cooperative approach to pig farming does not begin with the supply chain. During a visit to Danish Pig Producers Association board member Kristoffer Hald's farm, we discussed the topic of collaborative health programmes. Kristoffer mentioned SPF (Specific Pathogen Free) which has aided farmers with production limiting disease control and in some cases disease eradication. Essentially a national database of the health status of almost every herd in Denmark, the SPF applies a colour coded system to each unit depending on the health status and the remit of the farm – i.e. their sensitivity to disease breakdowns. With strict rules on the transportation, handling and housing of pigs, the scheme ultimately increases the collective health of all pigs in Denmark.

Around 95% of the pigs in Denmark are housed on farms signed up to the voluntary scheme – it is essentially the default. If this was not proof enough of the payback from the operational protocols, then perhaps the lowest cost of production in Europe is (AHDB, 2025)? Or the fact Denmark were able to greatly reduce antibiotic use in the sector (National Food Institute, Technical University of Denmark, 2025) without incurring the increased mortality rates usually associated with a reduction, proving that tightened biosecurity can replace the antimicrobial crutch without reducing output.

CHAPTER 5: GENETICS

A huge part of Denmark's success not only in pig performance (Agri Benchmark, 2025) is the hyper-prolificacy of their dam line genetics.

5.1 Breeding Herd

The desire for these highly productive traits stems from the volatility in pig market prices. Where margins are tight, an extra piglet or two from each sow makes the margin over sow feed cost more palatable for commercial farmers. However, no two farms are the same and farm workers struggled with the high numbers of piglets that were being produced.

Time-tested strategies such as cross-fostering no longer cut the mustard with every sow producing more piglets than she had teats. Nurse sows can be used to rear the extra piglets, but only if farm infrastructure allows. Otherwise, more novel ideas must be tested. A variety of solutions came to the fore including milk cups and transition feeders. These systems have been installed on units across the world however, their effectiveness in solving the extra piglet problem is best summed up by the fact that half the systems I saw on my travels were not in regular use. To encourage the piglets to use them when hungry, milk should be provided from day one (Icely, 2025). This increases the opportunity for waste, and thus cost, dramatically. Unfortunately, they also provide a breeding ground for bacteria if not routinely checked, emptied and flushed out. The labour costs of which prohibit their use even further. Again, all farms are different and operational and successful systems were also observed.



Figure 3: Observed examples of supplementary milk systems. Source: Author's own.

Whilst travelling in Europe I met with representatives from some of the genetics companies responsible for these hyper-prolific sows. Each one assured me that whilst still selecting for litter size, far more important to them is piglet rearing ability, teat numbers and milk production.

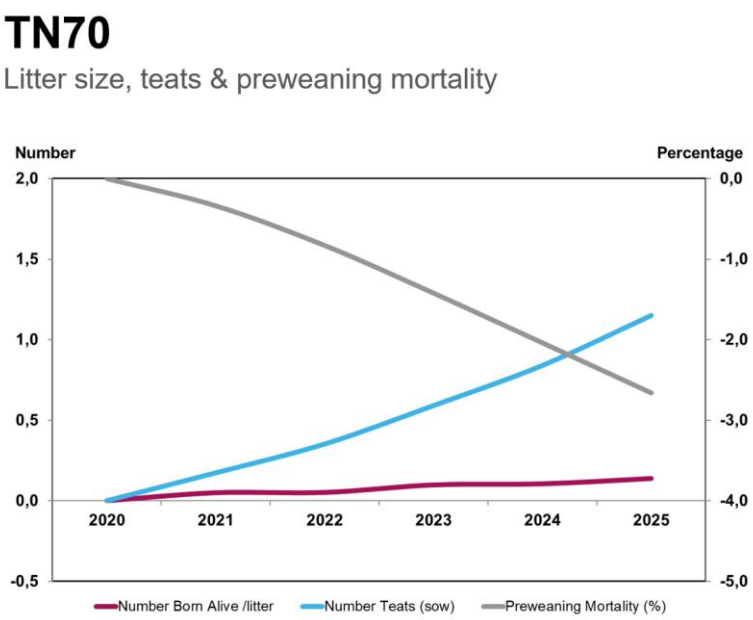


Figure 4: Breeding sow selection criteria changes over time. Source: Topigs Norsvin.

Despite these decisions to prioritise other characteristics over simple litter size, each of the breeding companies I spoke to took the long-term view that sows would be rearing more piglets in the future. The decisions they are making now are to prepare the sow for that eventuality.

That said, they are predicting more change in the physical appearance of the sows of tomorrow. Likely taking on a longer shape to accommodate more teats. With technology including CT scanning, machine learning and NIRS (Near Infrared Spectroscopy) these companies can also select for traits that would have previously been impossible, such as uterine capacity. With rises in the number of IUGR (Intrauterine Growth Restricted) piglets born in litter sizes of 18+ it is no surprise the breeding companies realise this is where their focus should be.

5.2 Feeding Herd

The breeding herd figures provide a good basis for assessing a farm, region or nation on their prowess in pig production. As with any animal, the care and management of pregnant or newly farrowed pigs and the early stages of piglet life are the most vulnerable and easiest to get wrong. Success with these delicate and intricate moments require an attention to detail that is likely to predict accompanying success in the later stages of growth. Despite this, it is usually high performance in the feeding herd that predicts financial success.

Whilst visiting the Topigs Norsvin headquarters in Den Bosch, during a presentation by Felix Bruijnen and his colleagues they revealed that Topigs are now selecting their Tempo pigs (sire line) on social behavioural interactions as well. A pig which chooses to ‘hog’ the feeder and act aggressively towards pen

mates who try to eat at the same feeder will not be used for further genetic multiplication.

Topigs theory being that, although the most aggressive pigs may also be the lead pigs in a group, their outperformance causes a divide in the group's growth capability, in turn causing more work managing the pigs further down the line. By selecting these traits out, they hope to produce pigs that allow the group to grow successfully together whilst increasing the ease with which they can be managed. The other obvious benefit being that by breeding these aggressive traits out the stress levels and instances of fighting and bullying all decrease as well.

CHAPTER 6: FEEDING

Making up 60% of the cost of producing pork, getting the feeding of a pig right is obviously paramount to high performance. Feeding regimes and mechanisms by which they are delivered seemed to be one of the largest variables even on high performing farms I visited. A mixture of dry, wet and wet/dry systems exist with all systems producing good results when managed well.



Figure 5: JBS wagon delivering feed to a farm in Brazil. Source: Author's own.

In general, farms that are part of vertically integrated businesses, or at least affiliated with vertically integrated businesses, run dry feed systems. The economies of scale mean that, for businesses like JBS which I visited in Brazil, it is far more efficient to have one feed mill with massive capacity to prepare rations and then transport the feed in bulk wagons to each nearby farm. This also gives JBS control over the quality of feed used on their affiliated farms. Jiló Anderson, a pig producer with a JBS contract sees himself as a 'pig farmer, not a mechanic and nutritionist'. As such, Jiló was content with JBS organising the feed for the pigs. It is delivered to his various sites – some housing 11,000 finishing pigs – once a week and some pigs finish with a FCR (Feed Conversion Ratio) of 1.91 in the last 100 days.



Figure 6: The author pictured with Jiló Anderson and his son, on one of their farms with fellow 2025 scholars. Source: Author's own.

It would be remiss not to mention when covering the topic of feeding and specifically mentioning production figures from Brazil, that in both North and South America the use of ractopamine is permitted. Whilst not a growth hormone, ractopamine triggers beta-receptors to redirect nutrients from fat to muscle (Michigan State University, 2022). In pig production its use is typically limited to late-stage growth when the pigs are at their least efficient in terms of feed conversion. This relates to huge increases in efficiency for systems that have access. Ractopamine has been prohibited by the UK and Europe for both domestic use and in imported products.

Smaller operations might have their own on-site mill and mix operations and, location depending, might have access to byproducts. The introduction of byproducts lends itself to wet feeding due the perishable and flowable nature of such products. Whilst in Waikato, New Zealand I visited a farmer feeding waste cheese from a nearby cheese factory to his Waratah Duroc pigs. It added complexity to the process with nutritional balancing and quality checks but it is an environmentally sound method of getting high quality diets at a lower cost.



Figure 7: Pictured at the Waratah farm office with a fellow 2025 scholar. Source: Author's own.

CHAPTER 7: CASTRATION

At the other end of the pig production cycle, carcass weight has seen significant change over the past decade. A trend upwards is obvious, in fact in the last 10 years carcass weight has increased 15% (AHDB, 2026). This is another story of success in the genetics of modern pig farming. Breeds of the past would have put on too much weight as fat when climbing towards 120kg liveweight, thus fallen out of processor specifications. This would lead to heavy penalties, killing profitability. Consistently, feed prices have meant that putting these extra kilos on to animals has paid. Moreover, the fixed costs of a breeding herd are then divisible by more kilos produced and the whole enterprise is more profitable. The problem, however, becomes obvious to 75% of the population whilst cooking pork products.

7.1 Surgical

Boar taint is an unpleasant odour or taste caused by the accumulation of androstenone and skatole in the fat of pigs (Reed DR, 2010). It is noticeable in about 20% of boars. Most women can detect the chemical compounds responsible for boar taint whilst little over half of men notice it. Sensitivity to it varies due mainly to genetics but to all who recognise it, it presents as an unpleasant experience. In the UK we are surprisingly relaxed about boar taint, in the EU for example 18 countries surgically castrate 80% of their combined boar populations (De Briyne, 2016). As androstenone is a sex pheromone, removal of the testicles removes the pheromone and drastically improves the pig's ability to remove skatole.

In the UK, surgical castration is legal however with 90% of the pigs in the UK reared to meet Red Tractor (or equivalent) standards, which prohibit surgical castration, estimates suggest only 2% of pigs in the UK are castrated (ADAS, 2019).

7.2 Immunological

In 1998 the first immunocastration vaccine was approved and launched for use on commercial farms. The vaccine stimulates the pig's own immune system to produce specific antibodies against gonadotrophin (GnRF). This temporarily inhibits the function of the testes and stops the production of the boar taint causing compounds. In practical terms two doses of the vaccine are required – the first dose at 4-6 weeks of age with a second dose 4-5 weeks prior to slaughter. Its first use on farm was in Australia and New Zealand and following their success its spread across the globe has been slow but steady. The vaccine is now common in South America and Southeast Asia with European nations and the USA slower in uptake (despite some outliers, namely Belgium and Sweden).

There seems to be confusion around the permitted use of immunocastration vaccines in the UK. Whilst surgical castration is prohibited by the Red Tractor standards, an amendment in 2021 to these standards added clarification around

the use of immunocastration vaccines. Standard HP.2.a states 'Use of immunological products that temporarily suppress testicular function is permitted, but only upon receipt of permission in writing from the member's processor customers.' (Red Tractor Certified Standards, 2026). However, in June 2024 the NPA (National Pig Association) released a briefing (NPA, 2024) on the castration of pigs which stated 'In the UK, immunocastration is not allowed on Red Tractor assured farms, although use of [these vaccines] may be permitted if the farmer has sought permission to use it as part of a trial.' Whether you require written permission from processor customers or it can only be used as part of a trial there appears to be some uncertainty around its use in the UK. In Scotland we have our own assurance scheme run by QMS (Quality Meat Scotland) which widely aligns with the Red Tractor standards; however, they differ on the matter of castration, quite clearly stating 'Any form of castration is not permitted. This includes the use of vaccines to control boar taint.' (QMS, 2023).

The vaccine claims to be 99% effective (Zoetis, 2026) in eliminating boar taint, making it at least as effective as surgical castration. In Europe a commitment to abandon the surgical castration of pigs by 2018 was signed by stakeholders in 2010. This commitment has been widely missed although it has encouraged the shift to the use of anaesthesia and analgesia (European Commission, 2010).

In the UK, our slaughter weights are already in the danger zone for boar taint but reducing the possibility of boar taint means farmers and processors can be more confident in taking pigs to a higher weight (Asanger S, 2025). Finishing pigs heavier is not just positive on the bank balance but a positive outcome for the sustainability of pork as well. If you consider the same kilo output; due to the environmental over heads of the breeding herd, producing more kilos is more sustainable than producing more pigs.

Aside from the fact that immunocastration almost eliminates the possibility of marketing tainted meat, allowing pigs to be marketed at higher weights makes a kilo of pork more sustainable and reduces the amount of aggression between boars. In the later stages of growth boars can become increasingly aggressive and fighting between them causes fight marks and can cause lameness. Castration also often results in less instances of mounting being observed, another cause of lameness.

Farmers I met in both New Zealand and Brazil considered their use of immunocastration vaccines a matter of improved welfare. Certainly, when compared to surgical castration but also, when considering the reduction in fighting marks and lameness, when compared to rearing entire boars.

The drawbacks of immunocastration are the cost and the perception. At a rough cost of £3.50/pig without recognition of this extra investment in pork eating quality by the market price it is not feasible to suggest UK farmers swallow the cost despite the other potential benefits that might come with vaccination. The other issue – and the issue blamed for slow European uptake – is the perception.

Supermarkets are concerned about the optics of vaccinated meat, and despite factual inaccuracy the perception of the treatment is that it is a hormonal vaccine.

CHAPTER 8: CONCLUSION

There are a limited number of options available to increase productivity in pig farming; we can produce more pigs, produce more kilos on those pigs or we can produce faster. However, most of these options have trade-offs.

In the last generation we have seen huge increases in the productivity of the breeding herd. Sows routinely wean 30 piglets a year, but these advances have not been achieved without issue. Management of these large litters has become far more complicated and with higher numbers of IUGR piglets born it would be irresponsible for the industry to continue pursuing ever more piglets. This seems to be a message the genetics companies have received loud and clear with all of them shifting their focus away from litter size. Instead, these companies are focusing their attention on the mothering ability of the sows, allowing farmers to rear high numbers of piglets without the same management headache and its impact on the mental health of farm workers.

Some might find the idea of animals reaching finishing weight faster troubling, but if the increase comes, not from pushing the animal, but from an improvement in collective health it can only be considered progress. Schemes like the Danish SPF scheme force sensible rules onto producers resulting in a healthier national herd. Without production limiting diseases, pigs live healthier lives and, as a consequence, grow faster.

Increasing animal weight could be an issue in terms of meat-eating quality. As the age (and weight) of boars increase, the chances of boar taint also increase. In the UK we have a culture of not castrating pigs, historically this was because our finishing weights were lower compared to that of Asia, South America and Europe. However, the trend is for heavier pigs, and with average carcass weight in the UK now at 90kg we are likely to be selling tainted boar meat. Not many successful food businesses sell 10% of their product knowing it might lead to a negative eating experience for the end consumer. With other benefits including reduced aggression and lameness, there is an argument that farmers in the UK should be considering the use of immunocastration as a measure of controlling boar taint already, but if the increase in carcass weight trend continues, we must consider this option. Rarely does a solution for increased productivity come with environmental, eating quality and animal welfare benefits.

UK pig production has been in decline. Keeping productivity in line with global pig farming leaders allows us to remain competitive in the market. Without this, we will lose the critical mass required for processors to see their own fixed costs spread over enough pork. A fact often forgotten by farmers is that processors must be profitable as well for there to be a future for the industry. Otherwise, we will offshore the production of our pork to other countries and have no control over the standards to which it is produced.

CHAPTER 9: RECOMMENDATIONS

1. **For the assurance schemes:** review the use of immunocastration vaccines and be clear about the review's results in future versions of scheme standards. These products could improve farm productivity but also eating quality, animal welfare and pork's sustainability.
2. **For national industry:** establish mechanisms to assess collective national herd health. In Scotland we have the opportunity to build on the back of a PRRS Eradication scheme. This opportunity should not be squandered.
3. **For the AHDB:** do not underestimate the value of the InterPig report. It provides great insight and facilitates benchmarking of the UK industry against our peers globally. The Sector Council's reduction in the accessibility of this report and its findings for UK producers is a great shame.

CHAPTER 10: AFTER MY STUDY TOUR

During my study tour our industry was unfortunately cast into another crisis where once again the cost of production outweighed the market price, contracts were cut and pigs backed up on farm. In this kind of climate there is an obvious mindset shift to one far more frugal and rooted in survival. This mindset is incompatible with one of investment and innovation.

However, the Nuffield network and my individual travels have opened my eyes to opportunities I had not ever considered before. The mindset I have now is one of hope, that the opportunity to invest in some of the innovation I have witnessed all over the world might be just around the corner.

On a more personal note, Nuffield has allowed me to make a great network of farming connections both in the UK and abroad. I have visited places I likely would have never ventured without the excellent excuse of a scholarship and in the years to come, I cannot wait to welcome future scholars to the UK, to Scotland and onto our farm.

CHAPTER 11: ACKNOWLEDGEMENTS

Firstly, I would like to take the opportunity to thank the team at home on the farm for picking up any slack I left behind whilst travelling for weeks at a time. Additional thanks must go to those who encouraged me to apply for a Nuffield scholarship in the first place.

Secondly, I would like to thank my sponsor, the John Oldacre Foundation, for their exceedingly generous support. Whilst lacking a figurehead of the foundation - for Nuffield purposes - the history of the man (and family) behind the foundation is wonderfully told in a book that John Oldacre scholars pass down from one generation to the next. I thoroughly enjoyed the read. Whilst work may be going on behind the scenes to rectify the figurehead issue I hope we can keep the book passing tradition going. I also received additional sponsorship from Harbro and JSR Genetics, who provided flights, accommodation and great sounding boards for the ideas my study tour prompted.

Thirdly, I would like to thank the 2025 Nuffield year group. For a group of people with such a variety of opinions (often contradictory) we seem to get on incredibly well. Your questions and challenges have put me on the spot and allowed me to view our own business from the outside and often prompted a change of opinion or a different course of action.

Fourthly, to those that let me visit their farm, home or business. Answered my questions and showed me around when I'm sure they had more pressing things to do. I appreciated every single conversation.

Finally, I would like to thank my wife, Chloe. Without whom, I am sure my application would never have been accepted. You have been incredibly supportive even when you do not know or care what I am talking about. You have made our home a welcoming stop off for these strangers I refer to as scholars. And you have smiled beautifully throughout.

CHAPTER 12: REFERENCES

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ISBN: 978-1-916850-94-1

Published by The Nuffield Farming Scholarships Trust
Bullbrook, West Charlton, Charlton Mackrell, Somerset, TA11 7AL
Email: office@nuffieldscholar.org
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