![All-Party Parliamentary Group on Science and Technology in Agriculture logo](logo)

Notes of a Meeting held on Wednesday 13 March 2024

Committee Room 6, Palace of Westminster

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**Feeding the nation: how innovation in the UK poultry meat industry
is delivering sustainable British food**

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In attendance:
Julian Sturdy MP (chair)
Lord Carrington
Earl of Caithness
Sir Bill Wiggin MP
Earl of Leicester
Helen Morgan MP
Victoria Crosbie MP
Lord Blencathra
Professor the Lord Trees
Daniel Zeichner MP
Baroness McIntosh

Guest speakers:
Andrew Griffith MP, Minister of State for Science, Research and Innovation
Chi Onwurah, Shadow Minister for Science, Research and Innovation
Dr Santiago Avendaño, Director of Global Genetics, Aviagen Group
Dr Anne Richmond, Head of Research and Development, Moy Park
Nick Davies, Group Agriculture Director, 2 Sisters Food Group

Stakeholder attendees:
Dr Richard Lloyd-Mills, Defra; Mark Buckingham, Bayer Crop Science; Janette Aquilina, BPC; Professor Louise Manning, University of Lincoln; Martin Troop, BPC Chair; Kerry Maxwell, BPC; John Powell, Defra; Sue Whitehead, Defra; Chris Morely, Gressingham Foods; Luke Hindlaugh, BPC Member; Muhammed Maliki, Moy Park; Blake Williamson, Managing Director, Aviagen UK Ltd; Daniel Pearsall, Group Co-ordinator.

1. Introduction
Introducing the session, Julian Sturdy MP (JS) welcomed guest speakers, members and stakeholder attendees to the meeting, noting that it was something of a first for the Group: the first time the APPG had hosted a meeting focused on science and innovation in the UK poultry sector – and also the first time the Group had welcomed both a Government Minister for Science and a Shadow Minister for Science as guest speakers at the same meeting. JS briefly introduced the topic for discussion, noting that the meeting had been organised in partnership with the British Poultry Council, the voice of the UK poultry meat sector, and representing over 85% of UK poultry meat production, covering the whole food chain: breeding, hatching, growing, slaughtering, processing, and packaging. Overall, the poultry sector provides half the meat the UK eats, and JS noted that the session was therefore an important opportunity to hear directly

from leading poultry meat businesses about the investments they are making in science and technology to deliver improvements in animal health and welfare, resource use efficiency and reduced climate impact alongside improvements in business productivity.

2. Guest speakers

Andrew Griffith MP, Minister of State for Science, Research and Innovation

Andrew Griffith (AG) underlined the UK Government's ambition to be a science and technology superpower, noting that this year for the first time ever the UK would spend £20 billion of taxpayers' money on science and research, and that a growing proportion of that was targeted at areas such as agri-tech, robotics, genetics and engineering biology.

AG suggested that agri-tech was an area in which the UK was punching above its weight internationally in terms of innovation, technology-based exports and creation of IP, with a clear focus on the twin challenges of food security and sustainability. He paid tribute to the British poultry sector for its contribution to meeting those challenges, and emphasised that his department stood squarely behind the industry in supporting the necessary research and investments to deliver further improvements in areas such as resource use efficiency and reduced climate impact.

Chi Onwurah, Shadow Minister for Science, Research and Innovation

Chi Onwurah (CO) welcomed the meeting as an opportunity to shine a spotlight on the critical role of science and innovation in the UK poultry sector, noting that the adoption of new technologies and innovations is fundamental to so many areas of our every day lives. She emphasised that Labour was in favour of science and innovation in agriculture, including in the poultry meat sector, and wanted to make sure that Britain was a world leader in science and innovation, as had been made clear during the passage of the Precision Breeding Act.

Outlining Labour's policies in relation to science, research and innovation, CO pointed to plans for 10-year research budgets to move away from a short-term, 'sticking plaster' approach, and also highlighted her party's pro-innovation approach to regulation which would seek to pull through more discoveries from researchers, as well as plans for a Regulatory Innovation Office which would look to remove unjustified regulatory barriers to innovation. Labour's ambition was for the Food Standards Agency to be a global leader in safe, sustainable regulation, and a prospective Labour Government would also introduce a new national skills body for England to ensure the workforce was in place to drive a pro-innovation agenda in agriculture. She also highlighted plans to bring down energy bills and to establish a New Deal for farmers which would give them the headroom to invest in the technologies and equipment needed to improve productivity and sustainability.

Questions to Ministers

Daniel Zeichner MP highlighted the importance of getting on with better, more enabling regulation, for example in relation to the FSA approval of black soldier fly larvae as a potential source of poultry feed in the UK, as had already been approved in some competitor countries.

As an FSA Board member, Lord Blencathra paid tribute to the work and activities of the All-Party Group in providing briefings and updates in relation to the Precision Breeding Act, which had certainly helped move the FSA's position towards a more science- and evidence-based approach to the authorisation process for precision bred food and feed products.

However, he raised concerns in a personal capacity over the environmental impact of the UK poultry meat sector, particularly in relation to the River Wye which he suggested was being destroyed by large amounts of phosphates leaching into it from the high concentration of poultry farms in the catchment area.

Subsequent discussion revealed that while this was a significant issue of concern, a potential solution lay in the application of available technology to process the poultry manure into a product capable of being transported to farms in other areas whose soils were in need of phosphate application.

Local MP Sir Bill Wiggin indicated that a potential solution lay in phosphate stripping of anaerobic digestate, already proven at scale in the Netherlands, but which required the proper permits from the Environmental Agency to take the technology forward in the poultry sector. He suggested that a major barrier to the uptake of these greener technologies was regulation, not ill-will. Incentive schemes along the lines of the Renewable Heat Incentive would also support poultry producers in the uptake of these cleaner alternatives.

AG undertook to investigate and pursue the issue from a Government perspective, recognising that this was not a 'discovery science' issue but rather the permitting of existing solutions.

CO added that pan-UK policies were needed to understand and address the challenges facing the land in different parts of the country, and this was a good example of where a more joined-up approach was needed.

This also prompted a discussion focusing on the need for clearer definition of the term 'sustainable', balancing the need for production of affordable, high quality protein while making sure circular economies are not damaging the environment. This would require the input of science and technology, and a dynamic regulatory environment, to optimise resource use, eliminate wastage and ensure the conversion of feed to protein is as efficient as possible, drawing on advances in areas such as genetics, precision engineering, data science and AI.

In addition to environmental sustainability, Lord Caithness highlighted the importance of genetic innovation and biosecurity in tackling the spread of infectious diseases in poultry to safeguard bird health and welfare and to prevent the potential for future zoonoses.

Discussion also centred on the need for a level-playing field for imported poultry meat to ensure the high welfare and environmental standards demanded of UK poultry producers were not undermined by cheap, substandard products from abroad.

Martin Troop, BPC chair
Introducing expert speakers from the UK poultry industry, BPC chair Martin Troop (MT) noted that safe, affordable, nutritious poultry is half the meat the UK eats, and is the cornerstone of our national food security. The poultry meat industry's role as food producers is to ensure the sustainability of a UK food system that feeds people and tackles the inequalities defining a changing climate. This matters now more than ever, with 15% of households facing food insecurity. Scaling up production to meet increasing demand for poultry meat includes a commitment to bolstering productivity while reducing inputs and impacts. The use of science and technology has a key role to play in achieving this

MT added that the poultry industry does not receive any Government subsidy. For many businesses, funding pathways such as ELMS and SFI are not applicable, which means BPC members understand the importance of innovation in supporting profitable and productive businesses. The benefits are far-reaching, from reducing food waste to improving animal welfare to bolstering business viability.

Dr Santiago Avendaño, Director of Global Genetics, Aviagen Group
Santiago Avendaño (SA) introduced Aviagen as a UK-based company with a global footprint, responsible for providing the genetics behind approximately half the world's poultry meat production. He explained the contribution of selective breeding to improved industry-wide performance in terms of productivity, sustainability, health and welfare, describing a four-year timetable for the development of new genetics, so chickens currently on the supermarket shelves are the result of selections four years ago.

SA explained that breeding objectives were clearly defined based on feedback from producers, consumers and NGOs. He noted that today's broiler has a 55% lower carbon footprint than the equivalent bird in the 1970s, and projected that by 2030 that will be reduced by a further 10% as a result of improved genetics. On a global basis, this equates to some 13 million tonnes less carbon emissions each year.

SA described some of the technologies used to refine the breeding and selection process, including monitoring of individual bird's feed intake and feed conversion rate, whole body CAT scanning to check welfare-related factors such as skeletal strength and bone density, as well as to predict meat yield and quality. The company also uses UK-developed technologies such as imaging, AI and machine learning to identify clinical or sub-clinical issues with skeletal defects or any other developmental issues. Checks on cardio-vascular function and gait scoring are also central to the breeding and selection process, with a zero tolerance policy for any potential health or welfare problems. SA indicated that health and welfare account for around 35-40% of the breeding goals in modern selection programmes.

SA also highlighted the importance of advances in genomic information over the past 10 years in predicting breeding values, based on better understanding of genomic function and traits associated with naturally occurring variations in DNA.

In terms of challenges facing the UK poultry breeding sector, SA concluded by underlining the need to improve post-Brexit SPS arrangements for exporting birds from the UK to the EU, more streamlined arrangements for dealing with AI outbreaks, and the difficulties of recruiting scientific talent to work in the sector.

Dr Anne Richmond, Head of Research and Development, Moy Park
Dr Anne Richmond (AR) introduced Moy Park as a poultry producing business, which at anyone time has more than 30 million birds on the ground to look after, working with more than 700 individual farmers throughout the UK.

The company is highly R&D focused, working closely with academic colleagues and institutions, supporting six PhD studentships, publishing peer-reviewed papers and actively participating in Innovate UK and Horizon Europe research projects. Bringing industry and academia together to work collaboratively and transparently is seen as key to driving sustainable and effective innovation.

AR explained that Moy Park initiated a benchmarking exercise in 2018 with SRUC and their Agrecalc carbon footprinting tool to quantify the end-to-end sources of carbon emissions from the company's poultry production operations.

At each stage she described the research taking place to seek reductions in emissions, including alternative feed sources, disposal of litter via AD to produce a source of energy, and future housing design. She described the company's state-of-the-art Beech Farm project in Lincolnshire which has been built from the ground up with sustainability in mind and can reduce Scope 1 and Scope 2 emissions by 100%, effectively taking the farm 'off grid' when all systems are operating at capacity.

Technologies used on the farm include ground source heat pumps to generate heating, heat exchanger systems to reduce overall heat usage, rainwater harvesting and solar technology capable of generating 1MW of electricity, which works in tandem with lithium battery storage.

AR concluded by describing the innovative plastic-alternative products the company is researching as a way of recycling waste products such as litter ash and eggshells.

Nick Davies, Group Agriculture Director, 2 Sisters Food Group
Nick Davies (ND) explained how 2 Sisters is using technology to improve production systems and support growers by providing information that they cannot see, using algorithms and machine learning to understand the influence of different environmental factors or inputs on performance or welfare outcomes.

ND demonstrated how the company is using advanced cameras and imaging technology to monitor behaviour, activity levels and growth rates of individual birds within different zones of a shed, allowing management and/or environmental changes to me made to optimise performance. The technology is allowing the company to measure 40,000 birds by weight every hour, as well as welfare factors such as gait scores and even how many steps each individual bird has taken.

This information is then being used to predict the onset of challenges, whether bacterial, viral or environmental, and enable appropriate management changes to be made.

With advances like this, ND emphasised that the poultry meat sector is demonstrating a long-term commitment to high levels of welfare and sustainability, and he expressed regret that even so-called farming programmes such as BBC Radio 4's *Farming Today* persist in using emotive terms such as factory farming to describe modern poultry production facilities. He also highlighted the importance of the industry being vocal in pushing back on such misrepresentation.

Concluding the meeting, JS thanked guest speakers and attendees for their contribution to an informative and thought-provoking session, which had helped showcase the great work that the poultry meat industry is doing to drive improvements in production efficiency, sustainability, health and welfare.