



## All-Party Parliamentary Group on Science and Technology in Agriculture

**To: Danielle Hamm, Director, Nuffield Council on Bioethics**

Dear Danielle

### **Nuffield Council on Bioethics urged to correct misleading and factually inaccurate information about UK livestock farming and genetics**

As a vice-chair and member of the All-Party Parliamentary Group on Science & Technology in Agriculture, and in our respective roles as a veterinarian and livestock farmer, as well as on behalf of the many organisations and individuals across the scientific, veterinary, breeding, farming and input supply sectors listed in support of this letter, we are writing to urge the Nuffield Council on Bioethics to update and revise its report on '*Genome editing and farmed animal breeding: social and ethical issues*', first published in December 2021, to more accurately reflect ongoing and long-term positive developments in farmed animal breeding and welfare standards on Britain's farms, as well as to take greater account of the wider ethical implications of adopting a disproportionately restrictive approach to the future regulation of genome editing in animals.

In October 2022, the All-Party Group co-ordinated an [open statement](#) to highlight the high standards of animal health and welfare on UK farms, pointing to evidence that the direction of travel for animal welfare is positive and improving, for example in terms of issues such as stocking densities, antibiotic use, live transport, housing conditions, biosecurity and training. Since that open statement was published, the evidence of improvement has continued, including a further reduction in use of antibiotics in food-producing animals to their lowest ever level, having more than halved over the past decade, as [reported](#) by the Veterinary Medicines Directorate in November 2023.

By contrast, however, in characterising the current state of our food production system as 'morally indefensible and unsustainable', and in presenting conventional breeding as a major cause of poor welfare outcomes, the Nuffield report conveys a misleading impression that animal welfare standards on Britain's farms are poor and deteriorating, and that genome editing will simply be used by livestock scientists and breeders to exacerbate or accelerate those welfare problems.

This is simply not supported by the evidence of how these new technologies are being used in practice. UK-based research is at the forefront of genetic advances which could help alleviate serious animal welfare problems caused by intractable diseases such as Porcine Reproductive and Respiratory Disease (PRRS), Avian Influenza and African Swine Fever.

Around the world, new research breakthroughs in precision breeding are emerging on a near weekly basis which could help drive further health and welfare gains in animal agriculture.

For example, US authorities recently cleared [gene edited slick coated cattle](#) for commercialisation, a trait intended to improve the performance (and comfort) of cattle under

hotter conditions. [Polled gene edited cattle](#) could follow soon, offering a major welfare benefit by avoiding the de-horning process currently used to prevent injury to other cattle or farm workers. Israeli researchers have developed [gene edited hens](#) that lay eggs from which only female chicks hatch, potentially preventing the slaughter of billions of day-old male chicks each year, culled because they don't lay eggs. And USDA scientists have developed the first [gene edited calf](#) with resistance to the deadly and highly infectious bovine viral diarrhoea (BVD) virus.

When the Nuffield report's author, Dr Pete Mills, spoke to the All-Party Group in April 2022, he insisted that the report was 'emphatically not antagonistic' to the use of genome editing technologies in farmed animals. This is not, however, reflected in the way the report has been interpreted and referred to, particularly by lawmakers discussing the future regulation of these techniques.

Our analysis indicates that the Nuffield report was referenced more than 40 times by MPs and Peers during the Parliamentary passage of the Genetic Technology (Precision Breeding) Act. Almost without exception, the report was cited either to justify calls to remove animals from the scope of the legislation, or to support tighter restrictions on the use of genome editing in farmed animals. The report was not referenced a single time to illustrate how genome editing might be used positively to improve welfare outcomes, or to alleviate animal suffering.

Indeed, the Nuffield report was used by some Parliamentarians to conjure up deliberately emotive images such as 'cramming animals together in unsanitary conditions' or enabling them to endure poor welfare conditions more easily, when the Act has no bearing whatsoever on existing welfare legislation, which will continue to apply whether animals are precision bred or not.

As a result, with plans now being developed for additional, unique statutory controls on genome edited animals, there is a serious risk that genetic research and innovation with potentially game-changing implications for disease control and improved animal welfare – research in which the UK is recognised as a world-leader - could be discouraged or driven elsewhere.

This itself has ethical implications which are not addressed in detail in the Nuffield report, for example in relation to not using the potential of these breeding technologies to prevent unnecessary animal disease and suffering. Importantly, this applies not only to the impact on livestock and their keepers on British farms, but also in other countries – many of whom may take their lead from the UK as a respected regulator and thought leader in the animal welfare space.

Equally disappointing is the Nuffield report's seemingly wilful misrepresentation of the modern farmed animal breeding industry. According to breeders who presented both written and oral evidence to the Nuffield steering group, information about how the breeding industry has evolved to adapt a more balanced approach in recent decades was simply ignored or overlooked in favour of more historical data.

In response to criticisms from breeders that the report's portrayal of conventional breeding did not reflect the modern reality, Dr Mills told the All-Party Group that while data was widely available documenting historical welfare problems caused by livestock breeding, Nuffield had struggled to get hold of data to support breeders' claims of more recent improvements. He suggested that there was a need for reassurance on this point.

Indeed, one notable response to the report's publication is that livestock breeders and scientists increasingly recognise and accept the need to be more open about modern breeding programmes and objectives, and to demonstrate how a more balanced approach is delivering beneficial outcomes for the health and welfare of farmed animals. This is reflected in the breeding industry's development and adoption of codes of practice such as [Code EFABAR](#) to demonstrate their commitment to responsible and sustainable breeding.

Responding directly to Dr Mills' call for reassurance, we would also like to bring to your attention the following two peer-reviewed papers, both published in 2023, documenting significant long-term improvements in key welfare criteria such as birth weight and piglet survival rates in pigs, leg strength and cardiovascular function in poultry, which have been delivered as a direct result of more balanced breeding programmes.

[Genetic and phenotypic time trends of litter size, piglet mortality, and birth weight in pigs](#)  
*Frontiers in Animal Science, July 2023*

[Evolutions in Commercial Meat Poultry Breeding](#)  
*Animals, October 2023*

Both papers focus on documented improvements over the past 20 years, and both emphasise that the rate of improvement has been most marked over the past 10 years, supported by an improved scientific understanding of animal biology, genomics and genetic function.

The original Nuffield report may now be over two years old, but it is still being cited as an authoritative point of reference on the ethical considerations of genome editing in farmed animals. Therefore, it continues to mislead the public debate in relation to animal welfare standards on UK farms, in relation to the welfare objectives and outcomes of modern breeding programmes, and in relation to the prospective applications of genome editing techniques in farmed animals. It also continues to overlook the ethical implications of not embracing these technologies, or of adopting overly-restrictive regulations which might discourage their use.

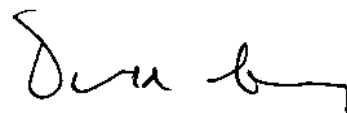
We would strongly urge the Nuffield Council on Bioethics to acknowledge the disproportionately negative impact of its report on the political and public debate surrounding these issues. We would also urge you to take action to update and revise the report to more accurately reflect recent positive developments in farmed animal breeding and welfare standards, as well as to take greater account of the potentially adverse ethical implications of adopting a disproportionately restrictive approach to the future regulation of genome editing in animals.

We look forward to your considered response.

Yours sincerely



Professor the Lord Trees FRCVS, FMedSci, HonFRSE



Lord Curry of Kirkharle CBE

## **Signatories**

Professor Bruce Whitelaw  
Director  
The Roslin Institute

Prof Bryan Charleson BVetMed, MSc, PhD, FRS, MRCVS  
Director  
The Pirbright Institute

Robert Sheasby  
Chief Executive  
Agricultural Industries Confederation

Dr Helen Ferrier  
Chief Scientific and Regulatory Affairs Adviser  
NFU

Martin Kennedy  
President  
NFU Scotland

Lizzie Wilson  
Chief Executive  
National Pig Association

Richard Griffiths  
Chief Executive  
British Poultry Council

Dr Craig Lewis  
Chair  
European Forum of Farm Animal Breeders

Professor Kevin Sinclair  
Head of Division of Animal Sciences, Faculty of Science  
University of Nottingham

Professor John Hammond  
Director of Research  
The Pirbright Institute

Professor James Wood OBE  
Alborada Professor of Equine and Farm Animal Science and Head of Department of Veterinary  
Medicine  
University of Cambridge

Professor Vincent C Emery  
President, University of Hereford-Global Academic Foundation  
Chair, Board of Trustee Directors, The Pirbright Institute

Professor (Emeritus) Helen Sang OBE FRSE FRSB  
The Roslin Institute and R(D)SVS  
University of Edinburgh

Professor Ken Sloan  
Vice Chancellor  
Harper Adams University

Professor Bob Webb PhD, DSc, FRSE  
Professor Emeritus  
School of Biosciences  
University of Nottingham

Marcus Bates  
CEO  
British Pig Association

Chris Jackson  
Director  
UK TAG – Technology for Agriculture & Genetics

Heather Jones  
CEO  
Sustainable Aquaculture Innovation Centre

Professor Ross Houston  
Director of Research, Genetics  
Benchmark Genetics

Dr Alan Tinch  
VP Genetics  
The Centre for Aquaculture Technologies

Professor Ramiro Alberio  
Division of Animal Sciences, School of Biosciences  
University of Nottingham

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