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Genome Editing and Farmed Animal Breeding: Social and Ethical Issues

There are a few areas of science which are of as much public interest as genome editing and the genetic modification of organisms. This evening, we heard from three experts about the social and ethical implications of this technique, and where expert consensus and the public's opinion stands on these issues. Prof. John Dupré, Professor of Philosophy of Science at the University of Exeter and Director of Egenis, the Centre of Study of Life Sciences, discussed the Nuffield Council on Bioethics' report into the use of genome editing technologies in farmed animals. Prof. Dupré chaired the inquiry, and he discussed the report's key findings and recommendations. Dr Elizabeth Cripps is a Senior Lecturer in Political Theory at the University of Edinburgh and Associate Director of CRITQUE, and she discussed the values and considerations that should guide our thinking on how our food and farming system should develop. Lastly, Dr Darren Bhattachary, CEO of Basis Social, spoke about the public dialogue commissioned as part of Nuffield Council on Bioethics' inquiry. The Q&A session at the end of the meeting focused mostly on the animal welfare aspects to our considerations of using genetic editing technologies.

The Nuffield Council on Bioethics' inquiry considered several core challenges facing the farming and food industry: animal health and welfare; human health; social, cultural and political; challenges of demand and supply; environmental and ecological. Prof. Dupré explained to us how genome editing may help in some of these areas, for example preventing farm animals from getting certain diseases and so improving their welfare. However, we want to avoid using this technique to uphold indefensible practices. If genome editing was used to prevent disease and allow more pigs into smaller spaces, then this would be a loss for animal welfare. The

inquiry report had several recommendations for the farming and food industry moving forward. The two key policy points were to introduce a 'traffic light' system to assess breeding programmes, and a government sponsored retail pathway to ensure all animal products on sale are from responsibly bred animals.

Dr Cripps explained to us the ethical considerations being made in the inquiry report. Basic justice requires institutions to protect individuals' basic interests, and these involve non-human animals' interests. These considerations are off the back of years of study into the science of animal cognition, which has revealed that non-human animals have far more complex lives than we thought decades ago. Creating a food and farming system which protects non-human animals' sophisticated needs will therefore be important for the future.

Lastly, Dr Bhattachary led us through the public dialogue's findings. A five step process was followed, which involved interviews of stakeholders, three workshops which involved an expert panel, and lastly analysis and reporting. Genome editing was considered in the context of four domains; food systems, farmed animals, nature and naturalness, and humans. Overall, the dialogue found that people wanted to move away from intensive farming to more sustainable systems. It was also found that animal welfare was considered the most acceptable application of genome editing, whilst making animals docile was considered one of the least acceptable applications.

The Q&A session followed similar topics to the talks, with many interested in how to promote both animal and human welfare with this technology. Concern was raised about how one would make ethical standards an international

policy. The speakers all accepted that this was a challenge, and that if the UK government were to raise the animal welfare standards they would also need to do so for imported foods. It was also raised that the Nuffield Council on Bioethics' report does have international standing, and that the organisation does regularly discuss finding with its counterparts in France, Germany and China. The Q&A session overall demonstrated a keenness to put animal welfare at the forefront of considerations with the farming and food industry, and the applications of genome editing technology.

Alfie Hoar

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