BVA British Veterinary Association | Minutes

Gene Editing Working Group

27th October 2023, 2pm on MS Teams

Attendees:

Madeleine Campbell, Chair
Rose Jackson, BCVA
Dominic Wells, Professor of Translational Medicine, RVC
Richard Piercy, Professor of Comparative Neuromuscular Disease, RVC
Fritha Langford, BVA EWAP
Polly Compston, BVA Policy Committee
Emily Craven, BVA EWAP

BVA:
Anna Judson BVA JVP
Amelia Findon – Director of Policy and Governance
Hannah Killeen – Policy and Public Affairs Officer

Minutes and Matters Arising

1. The minutes of the June meeting were agreed without amendment.

Review of Workplan and Themes Document

2. Members agreed the revised workplan, taking the topic of guidance, secondary legislation and checks and balances at the next meeting. It was agreed to invite experts from Defra and the Home Office to inform the group on the government processes and plans, as far as they are able to share these. It was also suggested that the group should consult Andrew George, an ethicist formerly of Brunel and the National Board of Research Ethics.
3. It was also agreed that the group should consider any guidance provided by international organisations, principally the FAO.
4. It would be useful to establish what the profession needed to know about gene editing. The BVA Voice Survey maybe one way to do this.

Action: BVA team to follow up with colleagues.

5. Members were broadly supportive of the emerging themes document.

Benefits and Risks to Companions Animals and Equines

6. The chair noted that BEVA and BSAVA had been invited to the meeting but were not able to attend. The papers and minutes would be shared with them, and they would have the opportunity to comment in writing. Any comments received will be shared with the group.
7. The group agreed that there was no need to revisit issues previously discussed in relation to production animals, where the arguments would be very similar for other species (disease resistance for example). The two additional aspects to consider were the ethics of gene editing for aesthetic reasons, and to enhance sporting performance.

Aesthetics

8. Gene editing could potentially be used to correct harmful Mendelian traits in certain breeds such as deafness in Dalmatians. The science is largely theoretical at the moment, and the potential for off-target side effects and failed experiments is similar to that discussed previously. Where there is a small gene pool for a breed, it becomes more difficult to breed away from it. Maintaining broader gene pools is a risk if everyone wants offspring from the edited line.

9. Tracking gene edited animals through the generations would require strict record keeping. A DNA sample will show whether or not an animal has a particular trait, but not whether that trait (or lack thereof) occurred naturally or through gene editing. The Precision Breeding Act prohibits the introduction of foreign DNA, which would be the only way a genetic marker could be left.
10. The working group concluded it would be ethically acceptable to use gene editing where there is an obvious benefit to an animal's health. Risks such as off-target effects would form part of the assessment as with any medical procedure. The case would have to be stronger for a germline change, as opposed to treatment of an individual animal.
11. The group was strongly against using gene editing to make changes to animal's appearance with no obvious health benefit (to select a "fashionable" colour, or "correct" a deviation from a breed standard.) As with selective breeding, the key is educating clients and the public.

Performance

12. The group felt a distinction should be drawn between enhancements (e.g. to increase speed) and correction (e.g. to reduce a genetic predisposition to fracture). Making such a distinction could be challenging if correction had the side-effect of improving performance. It would be ethically acceptable to use gene editing with the prime intention of reducing disease and injury, but not to use gene editing primarily to improve performance. Even when the main aim is to reduce disease and injury, gene editing (with its associated risks of harm) should not be the first port of call, nor should it be a substitute for good management and care of the animal.
13. Issues of fairness of competition between animals that have, and have not, been gene edited is outside the scope of this group's work.
14. There is a risk of illegal gene editing ('gene doping') that is not declared or recorded in an animal's microchip or record. This is different to other illegal procedures such as pharmaceutical doping as it is potentially much more difficult to detect and prove (the group noted that there is research into detecting 'gene doping' in racehorses) A system for extended monitoring will be needed, and systems will need revision to cope with registrations and approvals at commercial scale

Conclusions and Next Steps

15. The group agreed to meet next on 21st December, subject to outside experts being available, as agreed above. The group agreed to carry over the following points:
    - How ASPA will be scaled up to meet commercial demand for approvals
    - Who can legally manipulate embryos, and should this be covered by planned updates to the Veterinary Surgeons Act.

Action: BVA team to make arrangements accordingly

Any Other Business

16. It was agreed that gene editing of insects and parasites that commonly cause disease in other species is beyond the scope of the current discussion, but may need to be considered in the future.
17. It was clarified that the main output of the working group is a policy position, which BVA can use as an evidence base for future lobbying and influencing of secondary legislation.