

introduce DNA from another organism, and which makes a change that could theoretically have occurred through traditional selective breeding.

Advocates for gene edit note that selective breeding for a desired trait can result in the loss of other desirable traits which take many generations to recover, whereas gene editing allows the swift removal of undesirable material without removing nearby genetically linked material³.

Most of the changes introduced with gene editing are limited to somatic cells, which are cells other than egg and sperm cells (germline cells). These changes are isolated to only certain tissues and are not passed from one generation to the next. However, changes made to genes in egg or sperm cells or to the genes of an embryo could be passed to future generations⁴. Although heritable changes are less common, this position considers multiple generations in all cases, as this then covers both changes to individual animals and changes to the germline.

3. Risks of Gene Editing

Off target side effects and failed experiments. Any genetic experiment is likely to result in multiple failed experiments, some of which may impact live animals, whose welfare needs must be safeguarded. Even partially successful attempts risk off-target side effects, such as more rapid growth, increased risk of splayed legs, or limb deformities, which will need to be treated to safeguard the animal, **From Experiment to Stage 1 animals for commercial use** (2007.866 0) undertaken are safeguarded in the UK by A(SP)A. Once permission is given under the Precision Breeding Act for animals to move from an experimental setting to a commercial setting their welfare should be safeguarded by the Animal Welfare Act (2006) and by the Precision Breeding Act and associated secondary legislation. That secondary legislation has yet to be proposed/enacted. Ensuring that genetically edited animals remain fully traceable within commercial settings, and that a robust, centralised and mandatory mechanism for reporting on their health and welfare is established and independently run, is a necessary prerequisite for the ethical use of genetically edited animals.

Reduced standards (2000.00008866 0 594.96 842.04 57F3 11.04 20.5504 reW)

4. Potential uses of Gene Editing: Opportunities.

Gene editing has the potential both to improve animal health and welfare, if the potential deleterious effects (intended or unintended) can be successfully mitigated. As with any selective breeding, t

technology itself. These should be prioritised in BVA's discussions and lobbying efforts as the regulatory framework is developed -see conclusions and recommendations below.

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human health and welfare and on sustainability. Over the coming years, BVA will need to work closely with Defra, Parliament and other partners to shape the legislation accordingly.

The fundamental principles which should govern the use of gene editing in non-human animals are:

That any gene edit should have a demonstrable health or welfare benefit to the animal being edited, and/or its progeny, where the trait is heritable