



Refinements to genotyping techniques

Great Britain, 2017

As part of the data collected under the EU Directive (2010/63/EU) on breeding and genotyping of animals for scientific procedures, licensed establishments were asked to provide information on the efforts made to refine tissue sampling techniques for genotyping at their establishment.

Sixty-eight establishments provided this additional information. These free text responses were reviewed by Home Office statisticians and two main themes were identified:

- (i) establishments are taking fewer samples specifically for the purpose of genotyping; and,
- (ii) an increase in the use of techniques of a reduced severity or invasiveness.

Around two-thirds of these establishments reported reducing the number of samples taken specifically for genotyping and/or using, or moving towards using, methods of reduced severity.

One of the ways that establishments have reduced the number of samples taken for genotyping is by using surplus material taken for identification purposes. This results in fewer samples being taken purely for genotyping and therefore causes less additional stress or pain for the animal. Improvement in the sensitivity of the genotyping tests themselves has also resulted in less material being required to provide a genotyping result which, in turn, means reducing the need to have to collect an additional sample. Several establishments also described outsourcing the genotyping to central or commercial laboratories to ensure efficient and accurate testing, which has also helped in reducing the need for re-sampling.

In cases where additional samples are needed for genotyping, establishments described efforts to use techniques of a lesser severity to do so. The main change has been the use of ear notches in mice to replace tail tipping, and mucus swabbing to replace fin clipping in fish. The use of less severe techniques of genotyping is evident in the data received, as none of the genotyping reported for 1 July to 31 December was classified as being more harmful than mild in severity.

Refinement of methodology has also been achieved through the increased collection of samples post-mortem.