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Prepared pursuant to section 21(7) of the Animals (Scientific Procedures) Act 1986 as adapted by section 29 of that Act

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Introductory Notes

Animals (Scientific Procedures) Act 1986 and key definitions

In the UK the use of animals in scientific procedures is regulated by the Animals (Scientific Procedures) Act 1986, an animal protection measure that requires licensing and oversight of all places, projects and personnel involved in such work. The general system of control under the 1986 Act is explained in detail in the Appendix.

The purpose of this publication is to meet the requirements of the 1986 Act to collect and publish statistical information on the use of protected animals in regulated procedures during the previous calendar year and to lay that information before the Northern Ireland Assembly.

Protected animals are defined in the 1986 Act as any living vertebrate other than man and any living cephalopod. Regulated procedures are defined in the 1986 Act as any procedure applied to a protected animal for an experimental or other scientific purpose, or for an educational purpose, that may have the effect of causing an animal pain, suffering, distress or lasting harm equivalent to, or higher than, that caused by the introduction of a needle in accordance with good veterinary practice. As the 1986 Act indicates, the breeding of an animal is a regulated procedure if the animal is bred from, or is the descendant of, an animal whose genes have mutated or been modified. For simplicity, these procedures will be referred to from this point on as the creation/breeding of genetically altered animals.

The number of regulated procedures, which will be simply referred to as procedures from this point on, usually corresponds with the number of animals used. However, animals are sometimes 're-used' when they have fully recovered from a previous procedure and in these instances they are counted as separate, additional, procedures. Overall, the number of procedures is always slightly higher than the number of animals used. The figures in this release focus on the number of procedures, not the number of animals, unless otherwise stated.

Changes to the data collection

Further to the above, the European Directive 2010/63/EU sets out a common format for member states, which includes the United Kingdom, and therefore Northern Ireland, to submit information on the use of animals for scientific purposes. Following the transposition of the directive into UK law in January 2013, through amendment regulations to the Animal (Scientific Procedures) Act 1986, some changes have been made to the collection which have impacted on the 2014 figures in this release. The key changes are listed as follows:

- In order to allow for the collection of data on actual severity of procedures (see below), these data are for procedures completed, as opposed to procedures started, as reported in previous publications. Any procedures started and counted in 2013 or earlier, but which were completed on or after 1 January 2014, should have been counted again for this statistical collection.

- Details of the actual severity are recorded for all procedures. This is an assessment of the severity that animals experienced as a result of the entire procedure applied and reflects the peak severity of that procedure.

- The species' information collected has been revised. Information on all cephalopods as opposed to only one species (Octopus vulgaris) are now collected as is information on species newly listed in 2013 in Schedule 2 of the Animal (Scientific Procedures) Act 1986.

- For the first time, information on free-feeding larval forms (e.g. tadpoles) is now collected (but as in previous years unborn or un-hatched embryos are not counted).

- Precise information on the number of individual animals re-used is no longer collected. However, it is still possible to ascertain the number of procedures which involved the re-use of animals.

- Data are now collected on place of birth, which replaces source.

- For genetically altered animals, separate breakdowns on genetically modified animals and animals with a harmful genetic mutation are no longer collected. Instead, separate breakdowns are now collected on animals which show a harmful phenotype (i.e. a harmful physical or biochemical defect) and animals which do not show a harmful phenotype.

- Data are no longer collected on use of anaesthesia.

- Information on target body system is no longer collected for all procedures but similar data are collected for procedures undertaken for basic and translational research purposes.

- Specific information is now collected on regulatory use. Some of this information was previously reported as applied studies. Fundamental toxicological research, method development, and those safety-related procedures, for which there is no regulatory requirement, are now reported under translational/applied research.

Data quality

As for any new collection, it is expected that there will be inconsistencies around the reporting of data until project licence holders (i.e. data suppliers) become familiar with the new reporting requirements and the revised data collection format. As a result, the 2014 data and comparisons with previous years' data should be interpreted with some caution. Caveats are as follows:

- As a result of the change to counting procedures completed, as opposed to procedures started, all procedures started before 2014 but completed in 2014 should be in both the pre-2014 and 2014 figures. Any procedures started in 2014 but completed after 2014 will not be included in the 2014 figures. It is expected that these opposing effects will partly cancel each other out. Any impact of the change from counting procedures started to counting procedures completed will be temporary and will disappear from future years' data collections.

- Quality assurance checks have identified that it is likely that some project licence holders have not reported this year on details of procedures started before 2014 but completed in 2014 which they previously reported on in earlier years. This has likely resulted in some under-reporting of the number of procedures. This will be a temporary effect reflecting the change in the reporting process and, if present, will disappear from future years' data collections.

- Similarly, quality assurance checks have identified that some project licence holders may have provided information on the number of animals (used in procedures) instead of on the number of procedures. Usually, one animal corresponds with one procedure and there will be no under-reporting of procedures in these instances. However, where more than one procedure is associated with the use of one animal, there may have been some under-reporting of the number of procedures. Where identified, this has been investigated and corrected.

- For the first time, information has been collected on the actual severity of the procedures. There

may have been some inconsistency in the reporting of this data but it is expected that this will decrease in future years as project licence holders become familiar with the new reporting process.

- Quality assurance checks have identified that some project licence holders provided incorrect information on breakdowns for the breeding of genetically altered animals. Specifically, some information was provided under creation of a new genetic line when it should have been reported under maintenance of established lines of genetically altered animals. This issue will only have affected the categorisation of genetically altered animals created/bred and not any totals.

- Further work will be undertaken in collaboration with project licence holders to identify issues and improve data capture.

Further information available
This statistical release is available online at the DHSSPS website:
http://www.dhsspsni.gov.uk/

The Animals (Scientific Procedures) Act 1986 can be accessed at:
https://www.gov.uk/government/publications/consolidated-version-of-aspa-1986

European Directive 2010/63/EU can be found at:
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0063

Description of Statistical Tables

1. Project holders were asked to answer detailed questions about the procedures completed in 2014. A description of the information gathered is set out below.

Species of animal

2. The majority of the tables refer to experimental procedures with the exception of tables 1a and 2, which refer to animals used for the first time, and tables 8-10, which refer to genetically altered animals created/bred in 2014 but not used in further experimental procedures.

3. The species' information collected has been revised. Information on all cephalopods as opposed to only one species (Octopus vulgaris) are now collected as is information on species newly listed in 2013 in Schedule 2 of the Animal (Scientific Procedures) Act 1986.

4. The list of species of categories of animals is selective to avoid undue complications; where collective terms are used it is because previous experience suggests that the category will contain a relatively small number or because further breakdown is of little interest. In several tables, rows which are completely zero have been omitted and if an animal is not mentioned then it is because the rows pertaining to that species are completely blank.

Genetic status of animal

5. For genetically altered animals, separate breakdowns on genetically modified animals and animals with a harmful genetic mutation are no longer collected. Instead, separate breakdowns are now collected on animals which show a harmful phenotype (i.e. a harmful physical or biochemical defect) and animals which do not show a harmful phenotype.

6. Unlike previous years, genetic status is shown separately for experimental procedures (Table 4) and those involving the creation/breeding of genetically altered animals that were not used in further experimental procedures (Tables 8, 9.1 and 10).

Primary purpose

7. Use of animals for regulated procedures is limited by Section 5 (3) of the Act to one of the following primary purposes:

a. basic research:

b. translational or applied research with one of the following aims—

(i) the avoidance, prevention, diagnosis or treatment of disease, ill-health or other abnormality, or their effects, in man, animals or plants;
(ii) the assessment, detection, regulation or modification of physiological conditions in man, animals or plants; or
(iii) the improvement of the welfare of animals or of the production conditions for animals reared for agricultural purposes.

c. the development, manufacture or testing of the quality, effectiveness and safety of drugs, foodstuffs and feed-stuffs or any other substances or products, with one of the aims mentioned in paragraph (b);

d. protection of the natural environment: research in the interests of the health or welfare of man or animals;

e. preservation of species: research aimed at preserving the species of animal subjected to regulated procedures as part of the programme of work;

f. higher education or training for the acquisition, maintenance or improvement of vocational skills;

g. forensic inquiries: including tests as part of forensic investigations and the production of materials, for example, antisera, for use in forensic investigations;

Source of animals (Table 2)

8. From 2013, Schedule 2c and 25(e) of the Act require, unless a specific exemption is granted, that certain animals, listed in Schedule 2 to the Act, have to be specifically bred for the use in regulated procedures. The species so listed are: mouse, rat, guinea-pig, hamster, rabbit, cat, dog, primate, quail, ferret, gerbil, frog, zebra fish and pigs and sheep if genetically modified.

9. Data is collected on place of birth, which replaces source. Unlike previous years, information is provided regarding animals used for the first time rather than on the number of procedures. The place of birth of these animals is tabulated according to whether it is within the UK, within the remainder of the EU, or elsewhere.

Stage of Development

10. Details of procedures on immature forms were collected but not enumerated because it is impracticable in some cases to count such procedures, e.g. a foetus resorbed during gestation, or fish fry which are very small and fast-moving.

Severity (Tables 3 & Tables 8-10)

11. For the first time, details of actual severity are recorded for all procedures.

12. The severity of procedural harms (i.e. excluding harms caused to animals as a result of non-procedural events such as transport and housing) is assessed as one of five categories as follows.

- Sub-threshold: When a procedure was authorised under a project licence but did not actually cause suffering above the threshold of regulation (ASPA 2 (1)) i.e. was less than the level of pain, suffering, distress or lasting harm that is caused by inserting a hypodermic needle according to good veterinary practice.

- Non-recovery (under general anaesthesia): When the entire procedure was carried out under general anaesthesia without recovery.

- Mild: The key characteristic of mild procedures is that any pain or suffering experienced by an animal is, at worst, only slight or transitory and minor so that the animal returns to its normal state within a short period of time.

- Moderate: The characteristic of moderate procedures is that they do cause a significant and easily detectable disturbance to an animal's normal state, but this is not life threatening.

Most surgical procedures carried out under general anaesthesia and with good post-operative analgesia (i.e. pain relief) would be classed as Moderate.

- Severe: The characteristics of severe procedures are that they cause a major departure from the animal's usual state of health and well-being. It would usually include long-term disease processes where assistance with normal activities such as feeding and drinking are required or where significant deficits in behaviours/activities persist. It includes animals found dead unless an informed decision can be made that the animal did not suffer severely prior to death.

13. The severity of genetically altered animals is assessed from:

- the phenotype of the animals, e.g. development of congenital disease (i.e. diseases present at birth) or tumours;

- in the case of animals that have no harmful phenotype but that have been biopsied for genotyping, the biopsy procedures will generally be assessed as mild;

- the animals assessed as severe in this category are expected to be largely animals within breeding colonies that were found dead and where the death of the animal was either a result of its phenotype or, more commonly, unexplained (all animals found dead are reported as severe unless an informed decision can be made that the animal did not suffer severely prior to death);

- a small number of the animals used to create new lines of genetically altered animals will have been subjected to surgical or minor procedures such as the injection of drugs or viral vectors (i.e. viruses containing the genes of interest).

14. Full details of severity assessment and classification can be found in Annex 8 of the European Directive.

Type of procedure

15. Table 5 provides a breakdown of all experimental procedures undertaken for the primary purpose of basic research, by area of study. These are:

- Oncology
- Cardiovascular blood and lymphatic system
- Nervous system
- Respiratory system
- Gastrointestinal system - including liver
- Musculoskeletal system
- Immune system
- Urogenital/reproductive system
- Sensory organs
- Endocrine system/metabolism
- Multi-systemic
- Ethology/animal behaviour/animal biology
- Other

16. Table 6 provides a breakdown of experimental procedures undertaken for the primary purpose of translation/applied research by area of study. These are:

- Human cancer
- Human infectious disorders
- Human cardiovascular disorders
- Human nervous and mental disorders
- Human respiratory disorders
- Human gastrointestinal disorders including liver
- Human musculoskeletal disorders
- Human immune disorders
- Human urogenital/reproductive disorders
- Human sensory disorders
- Human endocrine system/metabolism disorders
- Other human disorders
- Animal diseases and disorders
- Animal welfare
- Diagnosis of diseases
- Plant diseases
- Non regulatory toxicology and ecotoxicology

17. Table 7.1 provides a breakdown of experimental procedures undertaken for regulatory purposes. These fall into 4 categories:

- Routine production (of blood based products, monoclonal antibodies(ascites) or other products
- Quality control
- Other efficacy and tolerance testing
- Toxicity and other safety testing including pharmacology.

18. Table 7.4 provides a further breakdown on toxicity and other safety testing, by the various testing methods used.

Legislative requirements (Table 7.2 and 7.3)

19. Tables 7.2 and 7.3 provide a breakdown of all regulatory procedures by type and origin of the legislative requirement. The following are examples of legislative requirements which may be included:

- Medicines Act 1968;
- Workplace safety - e.g. Health and Safety at Work (Northern Ireland) Order 1978, COSHH Regulations;
- Substances used in agriculture - e.g. Control of Pesticides Regulations (Northern Ireland) 1987; EU Pesticides Directives;
- Substances used in foodstuffs - e.g. The Food Safety (Northern Ireland) Order 1991.

Creation/breeding of genetically altered animals (Tables 1, 8-10)

20. The creation/breeding of genetically altered animals includes the use of animals for the creation of new lines of genetically altered animals and the breeding of established lines of genetically altered animals that were not used in further regulated procedures. This category also includes

some animals which were bred with the intention of producing genetically altered animals, but resulted in non-genetically altered animals being born

Project and Personal licence holders and licensed establishments (Tables 11)

21. Project licence holders have been classified according to the type of designated place which was their main place of employment at the end of the year, although they could be licensed to carry out procedures at more than one place. Procedures have been classified according to the type of designated place of the project licence holder reporting them.

Commentary

1. Following the transposition of European Directive 2010/63/EU into UK law through amendment regulations to the Animals (Scientific Procedures) Act 1986, some changes have been made to the collection. The 2014 figures in this release are the first year for which these changes apply. In particular, information is now collected on procedures completed, not procedures started, as for previous publications. This has enabled details on the actual severity of procedures to be collected for the first time. See introductory notes, changes to the data collection section, for more details, including on other changes to the collection.

2. As a result of changes to the reporting requirements and the data collection format, the 2014 data and comparisons with previous years' data should be interpreted with some caution. See introductory notes, data quality section, for more details.

3. The main features of the statistics for 2014 were:

    a) The number of procedures completed was 19,857. Of these 2,194 (15%) related to the creation/breeding of genetically altered animals that were not used in further procedures and the remaining 16,943 (85%) were experimental procedures (Table 1).

    b) The number of animals used for the first time was 18,889. This is in comparison to 18,638 in 2013 (Table 1a).

    c) Of the 16,943 experimental procedures completed in 2014, the majority involved mice (65% or 10,032 procedures). Domestic fowl were used in 12% or 2,376 procedures, cattle in 8% or 1,661 procedures, sheep in 4% or 781 procedures, pigs in 3% or 690 procedures, and rat in 3% or 605 procedures (Table 1). All 2,194 genetically altered animals created/bred in 2014 (but not used in further procedures) were mice (Table 1).

    d) Some 14,889 or 93% of experimental procedures completed in 2014 used animals born in the UK. 1,083 or 7% of experimental procedures used animals born in the EU (outside the UK) (Table 2).

    e) The majority of experimental procedures completed in 2014 used animals that had not been genetically modified (73% or 12,340 procedures). 22% (3,717) of experimental procedures involved genetically modified animals without a harmful phenotype, i.e. a harmful physical or chemical defect. 5% (886) of experimental procedures involved genetically modified animals with a harmful phenotype (Table 4).

    f) Of the severity assessments undertaken for the 16,943 experimental procedures completed in 2014: 2% were assessed as sub-threshold; 59% were assessed as mild; 33% were assessed as moderate; and 6% were assessed as severe (Table 3).

    g) Of the 16,943 procedures (85%) undertaken for experimental purposes: 9,702 (49%) were undertaken for basic research; 5,980 (30% were undertaken for translational/applied research; 714 (3%) were undertaken for regulatory use; 405 (2%) were undertaken for the purpose of protection of the natural environment; and 142 (1%) were undertaken for forensic enquiries (Table 1).

    h) In 2014, 9,702 procedures were undertaken for basic research purposes. Of these, 96% (9,320) procedures were undertaken for the study of oncology and specified organ systems. 4% (382 procedures) were undertaken for the study of animal biology (including ethology/

animal behaviour) or other purposes (Table 5).

i) In 2014, 5,980 procedures were undertaken for translational/applied research purposes. Of those 70% (4,170 procedures) were undertaken for research on humans, 25% (1,473 procedures) were undertaken for animal research and 5% (322 procedures) were undertaken for the diagnosis of diseases (Table 6).

j) In 2014, 714 procedures were undertaken for regulatory use. Of these 85% (610) procedures) were for toxicity and other safety testing, including pharmacology, and 15% (104) procedures were for routine production of blood based products (Tables 7.1-7.1).

k) Of the 714 procedures undertaken for regulatory use, 80% (570) involved legislation on medicinal products for veterinary use (and their residues) and 20% (144) involved in food legislation (including food contact material) (Table 7.2). The majority of regulatory procedures (610 or 85%) were for toxicity and other safety testing, including pharmacology. All regulatory procedures satisfied both UK and EU legislation (Table 7.3).

l) Of the 2,914 genetically altered animals created/bred in 2014, 65% (1,891) were for the maintenance of established lines of genetically modified animals. The remaining 35% (1,023) were created/bred to create new lines of genetically modified animals (Table 9.1 and 10).

m) 59% of the projects on which procedures were completed were based at universities (including medical schools) and they accounted for 69% of the total procedures for 2014. Non-profit making organizations accounted for 36% of all projects and 25% of procedures and commercial concerns accounted for the remaining 5% of all projects and 6% of all procedures completed in 2014 (Table 11).

n) Returns were completed in respect of 125 project licences in 2014 (3 more than 2013). Some project holders would have made 2 returns for 2014, one relating to the expiring licence and one relating to the successor licence. A total of 72 licences carried out procedures in 2014 (Table 11).

o) At the start of 2014, the number of personal licensees authorised to carry out regulated procedures under the act was 480. Due to equal numbers of new and cancelled licences throughout the year, this number remained unchanged at 31 December 2014 (Table 13).

Table 1 Procedures by species of animal and purpose of the procedure

Northern Ireland 2014 **Number of procedures**

Species of animal	Experimental purpose of procedure (excluding creation & breeding)								Creation & breeding of genetically altered animals not used in experimental procedures	Total procedures	% of total procedures
	Basic Research	Translational/ Applied research	Protection of the natural environment	Preservation of species	Higher education or training	Forensic enquiries	Regulatory	Total experimental procedures			
Mammal											
Mouse *(Mus musculus)*	6,072	3,905	0	0	0	0	55	10,032	2,914	**12,946**	**65**
Rat *(Rattus norvegicus)*	412	193	0	0	0	0	0	605	0	**605**	**3**
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	6	32	0	0	0	0	50	88	0	**88**	**0**
Cat *(Felis catus)*	0	72	0	0	0	0	0	72	0	**72**	**0**
Dog *(Canis familiaris)*	0	99	0	0	0	0	57	156	0	**156**	**1**
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	381	162	0	0	0	0	147	690	0	**690**	**3**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	289	159	0	0	0	142	191	781	0	**781**	**4**
Cattle *(Bos primigenius)*	1,176	274	0	0	0	0	211	1,661	0	**1,661**	**8**
Primate											
New World monkey											
Marmoset and tamarin	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey											
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	6	3	280	0	0	0	0	289	0	**289**	**1**
Bird											
Domestic fowl (*Gallus domesticus*)	1,320	1,053	0	0	0	0	3	2,376	0	**2,376**	**12**
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Amphibia											
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	28	0	0	0	0	0	28	0	**28**	**0**
Fish											
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	40	0	125	0	0	0	0	165	0	**165**	**1**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**9,702**	**5,980**	**405**	**0**	**0**	**142**	**714**	**16,943**	**2,914**	**19,857**	**100**
% of total	**49**	**30**	**2**	**0**	**0**	**1**	**4**	**85**	**15**	**100**	

Table 1a Number of animals used for the first time in procedures by species of animal and purpose of the procedure

Northern Ireland 2014 **Number of animals**

Species of animal	Experimental purpose of procedure (excluding creation & breeding)								Creation & breeding of genetically altered animals not used in experimental procedures	Total procedures	% of total procedures
	Basic Research	Translational/ Applied research	Protection of the natural environment	Preservation of species	Higher education or training	Forensic enquiries	Regulatory	Total experimental procedures			
Mammal											
Mouse *(Mus musculus)*	6,072	3,905	0	0	0	0	55	10,032	2,914	**12,946**	**69**
Rat *(Rattus norvegicus)*	412	193	0	0	0	0	0	605	0	**605**	**3**
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	6	32	0	0	0	0	50	88	0	**88**	**0**
Cat *(Felis catus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Dog *(Canis familiaris)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	381	162	0	0	0	0	129	672	0	**672**	**4**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	289	147	0	0	0	142	168	746	0	**746**	**4**
Cattle *(Bos primigenius)*	808	129	0	0	0	0	91	1,028	0	**1,028**	**5**
Primate											
New World monkey											
Marmoset and tamarin	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey											
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	6	3	280	0	0	0	0	289	0	**289**	**2**
Bird											
Domestic fowl (*Gallus domesticus*)	1,320	1,053	0	0	0	0	3	2,376	0	**2,376**	**13**
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Amphibia											
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	14	0	0	0	0	0	14	0	**14**	**0**
Fish											
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	0	125	0	0	0	0	125	0	**125**	**1**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**9,294**	**5,638**	**405**	**0**	**0**	**142**	**496**	**15,975**	**2,914**	**18,889**	**100**
% of total	**49**	**30**	**2**	**0**	**0**	**1**	**3**	**85**	**15**	**100**	

Table 2 Source of animals used for the first time in experimental procedures by species of animal (excludes non-human primates)[1]

Northern Ireland 2014 — Number of animals

Species of animal	Source of animal						Total	% of total
	Animals born in the UK at a registered breeder	Animals born in the UK NOT at a registered breeder	Animals born in the EU at a registered breeder	Animals born in the EU but not at a registered breeder	Animals born in rest of Europe	Animals born in rest of world		
Mammal								
Mouse *(Mus musculus)**	9,522	433	77	0	0	0	**10,032**	**63**
Rat *(Rattus norvegicus)**	549	0	56	0	0	0	**605**	**4**
Guinea-pig *(Cavia porcellus)**	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)*	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)*	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)**	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)**	42	46	0	0	0	0	**88**	**1**
Cat *(Felis catus)**	0	0	0	0	0	0	**0**	**0**
Dog *(Canis familiaris)**	0	0	0	0	0	0	**0**	**0**
Ferret *(Mustela putorius furo)**	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)**	32	534	106	0	0	0	**672**	**4**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)**	663	83	0	0	0	0	**746**	**5**
Cattle *(Bos primigenius)*	719	309	0	0	0	0	**1,028**	**6**
Other mammal *(other Mammalia)*	0	289	0	0	0	0	**289**	**2**
Bird								
Domestic fowl (*Gallus domesticus*)	1,320	212	844	0	0	0	**2,376**	**15**
Other bird *(other Aves)*	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	**0**	**0**
Amphibia								
Rana *(Temporaria and Pipiens)**	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)**	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	11	0	0	0	3	**14**	**0**
Fish								
Zebrafish *(Danio rerio)**	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	125	0	0	0	0	**125**	**1**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	**0**	**0**
Total	**12,847**	**2,042**	**1,083**	**0**	**0**	**3**	**15,975**	**100**
% of total	**80**	**13**	**7**	**0**	**0**	**0**	**100**	

1. This table differs from the previous publications as it shows the place of birth (i.e. source) of all animals and not just those species listed in Schedule 2 of the Animals (Scientific Procedures) Act 1986.
* Denotes species listed in Schedule 2; Pigs and Sheep are only listed in Schedule 2 if they are genetically altered.

Table 3 Experimental procedures by species of animal, severity and purpose of the procedure[1]

Northern Ireland 2014 **Number of procedures**

Species of animal	Severity	Experimental purpose of procedure							Total	% of total
		Basic Research	Translational/ Applied research	Protection of the natural environment	Preservation of species	Higher education or training	Forensic enquiries	Regulatory		
Mouse	Sub threshold	249	0	0	0	0	0	0	249	2
	Non-recovery	7	18	0	0	0	0	0	25	0
	Mild	3,155	698	0	0	0	0	51	3,904	39
	Moderate	2,130	2,907	0	0	0	0	0	5,037	50
	Severe	531	282	0	0	0	0	4	817	8
	Total	**6,072**	**3,905**	**0**	**0**	**0**	**0**	**55**	**10,032**	**100**
Rat	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	8	0	0	0	0	0	8	1
	Mild	77	58	0	0	0	0	0	135	22
	Moderate	279	127	0	0	0	0	0	406	67
	Severe	56	0	0	0	0	0	0	56	9
	Total	**412**	**193**	**0**	**0**	**0**	**0**	**0**	**605**	**100**
Rabbits	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	6	0	0	0	0	0	50	56	64
	Moderate	0	32	0	0	0	0	0	32	36
	Severe	0	0	0	0	0	0	0	0	0
	Total	**6**	**32**	**0**	**0**	**0**	**0**	**50**	**88**	**100**
Cats	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	0	72	0	0	0	0	0	72	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0
	Total	**0**	**72**	**0**	**0**	**0**	**0**	**0**	**72**	**100**
Dogs	Sub threshold	0	0	0	0	0	0	0	0	0.0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	0	99	0	0	0	0	57	156	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0.0
	Total	**0**	**99**	**0**	**0**	**0**	**0**	**57**	**156**	**100**
Pigs	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	32	0	0	0	0	0	32	5
	Mild	381	24	0	0	0	0	147	552	80
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	106	0	0	0	0	0	106	15
	Total	**381**	**162**	**0**	**0**	**0**	**0**	**147**	**690**	**100**
All other Ungulates	Sub threshold	152	0	0	0	0	0	0	152	6
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	1,313	396	0	0	0	142	401	2,252	92
	Moderate	0	37	0	0	0	0	1	38	2
	Severe	0	0	0	0	0	0	0	0	0
	Total	1,465	433	0	0	0	142	402	2,442	**100**
Other mammals	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	6	3	280	0	0	0	0	289	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0
	Total	**6**	**3**	**280**	**0**	**0**	**0**	**0**	**289**	**100**
Birds	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	1,320	1,053	0	0	0	0	3	2,376	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0
	Total	**1,320**	**1,053**	**0**	**0**	**0**	**0**	**3**	**2,376**	**100**
Amphibians	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	0	28	0	0	0	0	0	28	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0
	Total	**0**	**28**	**0**	**0**	**0**	**0**	**0**	**28**	**100**
Fish	Sub threshold	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0
	Mild	40	0	125	0	0	0	0	165	100
	Moderate	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0
	Total	**40**	**0**	**125**	**0**	**0**	**0**	**0**	**165**	**100**
All species	Sub threshold	401	0	0	0	0	0	0	401	2
	Non-recovery	7	58	0	0	0	0	0	65	0
	Mild	6,298	2,431	405	0	0	142	709	9,985	59
	Moderate	2,409	3,103	0	0	0	0	1	5,513	33
	Severe	587	388	0	0	0	0	4	979	6
	Total	**9,702**	**5,980**	**405**	**0**	**0**	**142**	**714**	**16,943**	**100**

1. Species not listed had no procedures

Table 4 Experimental procedures by species of animal and genetic status

Northern Ireland 2014 **Number of procedures**

Species of animal	Genetic status			Total	% of total
	Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype		
Mammal					
Mouse *(Mus musculus)*	5,429	3,717	886	**10,032**	**59**
Rat *(Rattus norvegicus)*	605	0	0	**605**	**4**
Guinea-pig *(Cavia porcellus)*	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	88	0	0	**88**	**1**
Cat *(Felis catus)*	72	0	0	**72**	**0**
Dog *(Canis familiaris)*	156	0	0	**156**	**1**
Ferret *(Mustela putorius furo)*	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	690	0	0	**690**	**4**
Goat *(Capra aegagrus hircus)*	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	781	0	0	**781**	**5**
Cattle *(Bos primigenius)*	1,661	0	0	**1,661**	**10**
Primate					
New World monkey					
Marmoset and tamarin	0	0	0	**0**	**0**
Old World monkey					
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	289	0	0	**289**	**2**
Bird					
Domestic fowl (*Gallus domesticus*)	2,376	0	0	**2,376**	**14**
Other bird *(other Aves)*	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	**0**	**0**
Amphibia					
Rana *(Temporaria and Pipiens)*	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	28	0	0	**28**	**0**
Fish					
Zebrafish *(Danio rerio)*	0	0	0	**0**	**0**
Other fish *(other Pisces)*	165	0	0	**165**	**1**
Cephalopod *(Cephalopoda)*	0	0	0	**0**	**0**
Total	**12,340**	**3,717**	**886**	**16,943**	**100**
% of total	**73**	**22**	**5**	**100**	

Table 5 Experimental procedures (non-regulatory) by species of animal: basic research

Northern Ireland 2014 **Number of procedures**

Species of animal	Basic Research													Total	% of total
	Oncology	Cardiovascular Blood and Lymphatic System	Nervous System	Respiratory System	Gastrointestinal System including Liver	Musculoskeletal System	Immune System	Urogenital/ Reproductive System	Sensory Organs (skin, eyes and ears)	Endocrine System/ Metabolism	Multisystemic	Ethology / Animal Behaviour /Animal Biology	Other		
Mammal															
Mouse *(Mus musculus)*	1,629	889	172	101	0	12	621	0	1,380	745	492	0	31	**6,072**	**63**
Rat *(Rattus norvegicus)*	46	63	0	0	0	109	0	0	194	0	0	0	0	**412**	**4**
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	0	0	0	0	0	0	6	0	0	0	0	0	0	**6**	**0**
Cat *(Felis catus)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Dog *(Canis familiaris)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	0	0	0	0	381	0	0	0	0	0	0	0	0	**381**	**4**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	0	0	0	0	1	0	0	0	0	0	272	0	16	**289**	**3**
Cattle *(Bos primigenius)*	0	237	0	0	0	0	0	0	0	0	650	0	289	**1,176**	**12**
Primate															
New World monkey															
Marmoset and tamarin	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey															
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	0	0	0	0	0	0	0	0	0	0	0	6	0	**6**	**0**
Bird															
Domestic fowl (*Gallus domesticus*)	0	0	0	0	1,320	0	0	0	0	0	0	0	0	**1,320**	**14**
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Amphibia															
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Fish															
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	0	0	0	0	0	0	0	0	0	0	40	0	**40**	**0**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**1,675**	**1,189**	**172**	**101**	**1,702**	**121**	**627**	**0**	**1,574**	**745**	**1,414**	**46**	**336**	**9,702**	**100**
% of total	**17**	**12**	**2**	**1**	**18**	**1**	**6**	**0**	**16**	**8**	**15**	**0**	**3**	**100**	

Table 6 Experimental procedures (non-regulatory) by species of animal: translational/applied research, page 1 of 2

Northern Ireland 2014 — Number of procedures

Species of animal	Translational/applied research								
	Human Cancer	Human Infectious Disorders	Human Cardiovascular Disorders	Human Nervous and Mental Disorders	Human Respiratory Disorders	Human Gastrointestinal Disorders including Liver	Human Musculoskeletal Disorders	Human Immune Disorders	Human Urogenital/ Reproductive Disorders
Mammal									
Mouse *(Mus musculus)*	875	261	0	72	1,071	0	0	0	0
Rat *(Rattus norvegicus)*	0	30	0	0	0	0	0	0	0
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	0
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	0
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	0
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	0
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	0
Rabbit *(Oryctolagus cuniculus)*	0	0	0	0	0	0	32	0	0
Cat *(Felis catus)*	0	0	0	0	0	0	0	0	0
Dog *(Canis familiaris)*	0	0	0	0	0	0	0	0	0
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	0
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	0
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	0
Pig *(Sus scrofa domesticus)*	0	0	32	0	0	0	0	0	0
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	0
Sheep *(Ovis aries)*	0	0	0	0	0	0	0	0	0
Cattle *(Bos primigenius)*	0	0	0	0	0	0	0	0	0
Primate									
New World monkey									
Marmoset and tamarin	0	0	0	0	0	0	0	0	0
Old World monkey									
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	0
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	0
Other mammal *(other Mammalia)*	0	0	0	0	0	0	0	0	0
Bird									
Domestic fowl (*Gallus domesticus*)	0	0	0	0	0	0	0	0	0
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	0
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	0
Amphibia									
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	0
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	0
Other amphibian *(other Amphibia)*	0	0	0	0	0	0	0	0	0
Fish									
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	0
Other fish *(other Pisces)*	0	0	0	0	0	0	0	0	0
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	0
Total	**875**	**291**	**32**	**72**	**1,071**	**0**	**32**	**0**	**0**
% of total	**15**	**5**	**1**	**1**	**18**	**0**	**1**	**0**	**0**

Table 6 Experimental procedures (non-regulatory) by species of animal: translational/applied research, page 2 of 2

Great Britain 2014 **Number of procedures**

Species of animal	Translational/applied research								Total	% of total
	Human Sensory Organ Disorders (skin, eyes and ears)	Human Endocrine/ Metabolism Disorders	Other Human Disorders	Animal Diseases and Disorders	Animal Welfare	Diagnosis of diseases	Plant diseases	Non-regulatory toxicology and ecotoxicology		
Mammal										
Mouse *(Mus musculus)*	1,519	0	87	5	0	0	0	15	**3,905**	**65**
Rat *(Rattus norvegicus)*	143	0	20	0	0	0	0	0	**193**	**3**
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	0	0	0	0	0	0	0	0	**32**	**1**
Cat *(Felis catus)*	0	0	0	72	0	0	0	0	**72**	**1**
Dog *(Canis familiaris)*	0	0	0	99	0	0	0	0	**99**	**2**
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	0	0	0	130	0	0	0	0	**162**	**3**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	0	0	0	49	0	110	0	0	**159**	**3**
Cattle *(Bos primigenius)*	0	0	0	274	0	0	0	0	**274**	**5**
Primate										
New World monkey										
Marmoset and tamarin	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey										
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	0	0	0	0	0	3	0	0	**3**	**0**
Bird										
Domestic fowl (*Gallus domesticus*)	0	0	0	844	0	209	0	0	**1,053**	**18**
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	**0**	**0**
Amphibia										
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	0	28	0	0	0	0	0	**28**	**0**
Fish										
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	0	0	0	0	0	0	0	**0**	**0**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	**0**	**0**
Total	**1,662**	**0**	**135**	**1,473**	**0**	**322**	**0**	**15**	**5,980**	**100**
% of total	**28**	**0**	**2**	**25**	**0**	**5**	**0**	**0**	**100**	

Table 7.1 Experimental procedures by species of animal: regulatory use

Northern Ireland 2014 **Number of procedures**

Species of animal	Routine Production			Quality control				Other efficacy and tolerance testing	Toxicity and other safety testing including pharmacology	Total	% of total
	Blood based products	Monoclonal antibody production (ascites)	Other	Batch safety testing	Pyrogenicity testing	Batch potency testing	Other quality controls				
Mammal											
Mouse *(Mus musculus)*	41	0	0	0	0	0	0	0	14	**55**	**8**
Rat *(Rattus norvegicus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Guinea-pig *(Cavia porcellus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	50	0	0	0	0	0	0	0	0	**50**	**7**
Cat *(Felis catus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Dog *(Canis familiaris)*	0	0	0	0	0	0	0	0	57	**57**	**8**
Ferret *(Mustela putorius furo)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	0	0	0	0	0	0	0	0	147	**147**	**21**
Goat *(Capra aegagrus hircus)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	2	0	0	0	0	0	0	0	189	**191**	**27**
Cattle *(Bos primigenius)*	8	0	0	0	0	0	0	0	203	**211**	**30**
Primate											
New World monkey											
Marmoset and tamarin	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey											
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	0	0	0	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Bird											
Domestic fowl (*Gallus domesticus*)	3	0	0	0	0	0	0	0	0	**3**	**0**
Other bird *(other Aves)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Amphibia											
Rana *(Temporaria and Pipiens)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Fish											
Zebrafish *(Danio rerio)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Cephalopod *(Cephalopoda)*	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**104**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**610**	**714**	**100**
% of total	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**85**	**100**	

Table 7.2 Experimental procedures by species of animal: regulatory use by legislative requirement

Northern Ireland 2014 **Number of procedures**

Species of animal	Legislative requirement										Total	% of total
	Legislation on medicinal products for human use	Legislation on medicinal products for veterinary use and their residues	Medical devices legislation	Industrial chemicals legislation	Plant protection product legislation	Biocides legislation	Food legislation including food contact material	Feed legislation including legislation for the safety of target animals, workers and environment	Cosmetics legislation	Other		
Mammal												
Mouse	0	41	0	0	0	0	14	0	0	0	**55**	**8**
Rat	0	0	0	0	0	0	0	0	0	0	**0**	**0**
All other rodents	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit	0	50	0	0	0	0	0	0	0	0	**50**	**7**
Cat	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Dog	0	57	0	0	0	0	0	0	0	0	**57**	**8**
Ferret	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Pigs	0	147	0	0	0	0	0	0	0	0	**147**	**21**
All other ungulates	0	272	0	0	0	0	130	0	0	0	**402**	**56**
Primate												
New World monkey	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey	0	0	0	0	0	0	0	0	0	0	**0**	**0**
All other mammals	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Bird	0	3	0	0	0	0	0	0	0	0	**3**	**0**
Reptile, amphibian	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Fish	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**0**	**570**	**0**	**0**	**0**	**0**	**144**	**0**	**0**	**0**	**714**	**100**
% of total	**0**	**80**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**0**	**100**	

Table 7.3 Experimental procedures by species of animal: regulatory use by origin of legislative requirement

Northern Ireland 2014 **Number of procedures**

Species of animal	Origin of legislative requirement			Total	% of total
	Legislation satisfying EU requirements	Legislation satisfying only UK requirements	Legislation satisfying Non-EU requirements only		
Mammal					
Mouse *(Mus musculus)*	55	0	0	**55**	**8**
Rat *(Rattus norvegicus)*	0	0	0	**0**	**0**
Guinea-pig *(Cavia porcellus)*	0	0	0	**0**	**0**
Hamster (Syrian) (*Mesocricetus auratus*)	0	0	0	**0**	**0**
Hamster (Chinese) (*Cricetulus griseus*)	0	0	0	**0**	**0**
Mongolian Gerbil *(Meriones unguiculatus)*	0	0	0	**0**	**0**
Other rodent *(other Rodentia)*	0	0	0	**0**	**0**
Rabbit *(Oryctolagus cuniculus)*	50	0	0	**50**	**7**
Cat *(Felis catus)*	0	0	0	**0**	**0**
Dog *(Canis familiaris)*	57	0	0	**57**	**8**
Ferret *(Mustela putorius furo)*	0	0	0	**0**	**0**
Other carnivore *(other Carnivora)*	0	0	0	**0**	**0**
Horse and other equids *(Equidae)*	0	0	0	**0**	**0**
Pig *(Sus scrofa domesticus)*	147	0	0	**147**	**21**
Goat *(Capra aegagrus hircus)*	0	0	0	**0**	**0**
Sheep *(Ovis aries)*	191	0	0	**191**	**27**
Cattle *(Bos primigenius)*	211	0	0	**211**	**30**
Primate					
New World monkey					
Marmoset and tamarin	0	0	0	**0**	**0**
Old World monkey					
Cynomolgus monkey (*Macaca fascicularis*)	0	0	0	**0**	**0**
Rhesus monkey (*Macaca mulatta*)	0	0	0	**0**	**0**
Other mammal *(other Mammalia)*	0	0	0	**0**	**0**
Bird					
Domestic fowl (*Gallus domesticus*)	3	0	0	**3**	**0**
Other bird *(other Aves)*	0	0	0	**0**	**0**
Reptile *(Reptilia)*	0	0	0	**0**	**0**
Amphibia					
Rana *(Temporaria and Pipiens)*	0	0	0	**0**	**0**
Xenopus *(Laevis and Tropicalis)*	0	0	0	**0**	**0**
Other amphibian *(other Amphibia)*	0	0	0	**0**	**0**
Fish					
Zebrafish *(Danio rerio)*	0	0	0	**0**	**0**
Other fish *(other Pisces)*	0	0	0	**0**	**0**
Cephalopod *(Cephalopoda)*	0	0	0	**0**	**0**
Total	**714**	**0**	**0**	**714**	**100**
% of total	**100**	**0**	**0**	**100**	

Table 7.4 Experimental procedures by species of animal: regulatory use by type of test - toxicity and other safety testing including pharmacology, page 1 of 2

Northern Ireland 2014 **Number of procedures**

Species of animal	Acute and sub-acute toxicity testing methods			Other type of regulatory test or procedure									
	LD50 and LC50	Other lethal methods	Non-lethal methods	Skin irritation/corrosion	Skin sensitisation	Eye irritation/corrosion	Repeated dose toxicity	Carcinogenicity	Genotoxicity	Reproductive toxicity	Developmental toxicity	Safety testing in food and feed area	Target animal safety
Mammal													
Mouse	0	0	0	0	0	0	0	0	0	0	0	0	0
Rat	0	0	0	0	0	0	0	0	0	0	0	0	0
All other rodents	0	0	0	0	0	0	0	0	0	0	0	0	0
Rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0
Cat	0	0	0	0	0	0	0	0	0	0	0	0	0
Dog	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferret	0	0	0	0	0	0	0	0	0	0	0	0	0
Other carnivore	0	0	0	0	0	0	0	0	0	0	0	0	0
Horse and other equids	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigs	0	0	0	0	0	0	0	0	0	0	0	2	0
All other ungulates	0	0	0	0	0	0	0	0	0	0	0	164	18
Primate													
New World monkey	0	0	0	0	0	0	0	0	0	0	0	0	0
Old World monkey	0	0	0	0	0	0	0	0	0	0	0	0	0
All other mammals	0	0	0	0	0	0	0	0	0	0	0	0	0
Bird	0	0	0	0	0	0	0	0	0	0	0	0	0
Reptile, amphibian	0	0	0	0	0	0	0	0	0	0	0	0	0
Fish	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**166**	**18**
% of total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**3**

Table 7.4 Experimental procedures by species of animal: regulatory use by type of test - toxicity and other safety testing including pharmacology, page 2 of 2

Northern Ireland 2014 **Number of procedures**

Species of animal	Other type of regulatory test or procedure				Ecotoxicity						Other type of toxicity or safety test	Total	% of total
	Neurotoxicity	Kinetics	Pharmo-dynamics	Phototoxicity	Acute toxicity	Chronic toxicity	Reproductive toxicity	Endocrine activity	Bioaccumulation	Other			
Mammal													
Mouse	0	0	0	0	0	0	0	0	0	0	14	**14**	**2**
Rat	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
All other rodents	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Rabbit	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Cat	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Dog	0	57	0	0	0	0	0	0	0	0	0	**57**	**9**
Ferret	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Other carnivore	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Horse and other equids	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Pigs	0	145	0	0	0	0	0	0	0	0	0	**147**	**24**
All other ungulates	0	210	0	0	0	0	0	0	0	0	0	**392**	**64**
Primate													
New World monkey	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Old World monkey	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
All other mammals	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Bird	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Reptile, amphibian	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Fish	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Total	**0**	**412**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**610**	**100**
% of total	**0**	**68**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**100**	

Table 8 Creation of new lines and maintenance of established lines of genetically altered animals by species of animal, severity and genetic status[1]

Northern Ireland 2014 — Number of procedures

Species of animal	Actual severity	Genetic status			Total	% of total
		Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype		
Mouse	Sub threshold	0	414	0	414	14
	Non-recovery	0	0	0	0	0
	Mild	375	1,863	0	2,238	77
	Moderate	0	0	0	0	0
	Severe	0	0	262	262	9
	Total	**375**	**2,277**	**262**	**2,914**	**100**
All species	Sub threshold	0	414	0	414	14
	Non-recovery	0	0	0	0	0
	Mild	375	1,863	0	2,238	77
	Moderate	0	0	0	0	0
	Severe	0	0	262	262	9
	Total	**375**	**2,277**	**262**	**2,914**	**100**

1. All species except for mice were not involved in the creation/breeding of genetically altered animals in 2014. Therefore, these species are not listed in this table.

Table 9.1 Creation of new lines of genetically altered animals by species of animal, severity, purpose and genetic status[1]

Northern Ireland 2014 — Number of procedures

Species of animal	Actual severity	Basic research by genetic status			Translational/applied research by genetic status			Total by genetic status			Total	% of total
		Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype	Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype	Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype		
Mouse	Sub threshold	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0
	Mild	0	256	0	0	505	0	0	761	0	761	74
	Moderate	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	262	0	0	0	0	0	262	262	26
	Total	**0**	**256**	**262**	**0**	**505**	**0**	**0**	**761**	**262**	**1,023**	**100**
All species	Sub threshold	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0
	Mild	0	256	0	0	505	0	0	761	0	761	74
	Moderate	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	262	0	0	0	0	0	262	262	26
	Total	**0**	**256**	**262**	**0**	**505**	**0**	**0**	**761**	**262**	**1,023**	**100**

1. All species except for mice were not involved in the creation/breeding of genetically altered animals in 2014. Therefore, these species are not listed in this table.

Table 9.2 Creation of new lines of genetically altered animals by species of animal and severity: basic research[1]

Northern Ireland 2014 **Number of procedures**

Species of anin	Actual severity	Basic Research													Total	% of total
		Oncology	Cardiovascular Blood and Lymphatic System	Nervous System	Respiratory System	Gastrointestinal System including Liver	Musculoskeletal System	Immune System	Urogenital/ Reproductive System	Sensory Organs (skin, eyes and ears)	Endocrine System/ Metabolism	Multisystemic	Ethology / Animal Behaviour /Animal Biology	Other		
Mouse	Sub threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mild	0	0	0	0	0	0	0	0	0	0	256	0	0	256	49
	Moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	262	0	0	0	0	0	0	262	51
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**262**	**0**	**0**	**0**	**256**	**0**	**0**	**518**	**100**
All species	Sub threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mild	0	0	0	0	0	0	0	0	0	0	256	0	0	256	49
	Moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	262	0	0	0	0	0	0	262	51
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**262**	**0**	**0**	**0**	**256**	**0**	**0**	**518**	**100**

1. All species except for mice were not involved in the creation of genetically altered animals for basic research in 2014. Therefore, these species are not listed in this table.

Table 9.3 Creation of new lines of genetically altered animals by species of animal and severity: translational/applied research[1]

Northern Ireland 2014 **Number of procedures**

Species of anim	Actual severity	Translational/applied research																	Total	% of total
		Human Cancer	Human Infectious Disorders	Human Cardiovascular Disorders	Human Nervous and Mental Disorders	Human Respiratory Disorders	Human Gastrointestinal Disorders including Liver	Human Musculoskeletal Disorders	Human Immune Disorders	Human Urogenital/ Reproductive Disorders	Human Sensory Organ Disorders (skin, eyes and ears)	Human Endocrine/ Metabolism Disorders	Other Human Disorders	Animal Diseases and Disorders	Animal Welfare	Diagnosis of diseases	Plant diseases	Non-regulatory toxicology and ecotoxicology		
Mouse	Sub threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mild	505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	505	100
	Moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**505**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**505**	**100**
All species	Sub threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Non-recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mild	505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	505	100
	Moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**505**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**505**	**100**

1. All species except for mice were not involved in the creation of genetically altered animals for translational/applied research in 2014. Therefore, these species are not listed in this table.

Table 10 Maintenance of established lines of genetically altered animals by species of animal, severity and genetic status[1]

Northern Ireland 2014 — Number of procedures

Species of animal	Actual severity	Genetic status			Total	% of total
		Not genetically altered	Genetically altered without a harmful phenotype	Genetically altered with a harmful phenotype		
Mouse	Sub threshold	0	414	0	414	22
	Non-recovery	0	0	0	0	0
	Mild	375	1,102	0	1,477	78
	Moderate	0	0	0	0	0
	Severe	0	0	0	0	0
	Total	**375**	**1,516**	**0**	**1,891**	**100**
All species	Sub threshold	0	414	0	414	22
	Non-recovery	0	0	0	0	0
	Mild	375	1,102	0	1,477	78
	Moderate	0	0	0	0	0
	Severe	0	0	0	0	0
	Total	**375**	**1,516**	**0**	**1,891**	**100**

1. All species except for mice were not involved in the breeding of genetically altered animals in 2014. Therefore, these species are not listed in this table.

Table 11 Procedures and project licences by type of licensed establishment

Northern Ireland 2014

Type of licensed establishment	Number of project licences where countable[1] procedures were completed in 2014 by number of procedures									Number of project licences where only non-countable[1] procedures were completed in 2014	Number of project licences where no procedures were completed in 2014	Number of project licences	Number of procedures	
	Number of procedures								Total				Total	% of total
	1 to 50	51 to 100	101 to 200	201 to 400	401 to 600	601 to 800	801 to 1,000	More than 1,000						
Public health laboratories	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Universities, medical schools	14	2	5	11	4	2	3	2	43	0	30	73	13,625	**69**
NHS hospitals	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Government departments	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Other public bodies	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Non-profit-making organisations	11	2	4	5	1	1	0	1	25	0	20	45	4,973	**25**
Commercial organisations	1	1	0	1	0	0	1	0	4	0	3	7	1,259	**6**
Total	**26**	**5**	**9**	**17**	**5**	**3**	**4**	**3**	**72**	**0**	**53**	**125**	**19,857**	**100**

1 Procedures on adult or free-living animals (including neonatal and juvenile mammals, and newly hatched birds) are counted.
Details of procedures on immature forms (e.g. larvae, embryos, fish fry) are collected but not counted unless they have reached the free-feeding stage.

Table 12 - Designated establishments: 2005-2014

Northern Ireland	Number of designated places at 31 December									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Scientific procedure establishments	5	5	5	5	5	5	5	5	4	4
Scientific procedure and breeding establishments	0	0	0	0	0	0	0	0	0	0
Scientific procedure breeding and supplying establishments	5	5	5	5	3	3	3	3	4	4
Scientific procedure and supplying establishments	0	0	0	0	0	0	0	0	0	0
Breeding and supplying establishments	1	1	1	1	1	1	1	1	1	1
Total designated places	11	11	11	11	9	9	9	9	9	9

Table 13 - Personal Licensees:2005-2014

Number of personal licences at 31 December									
Northern Ireland									
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
535	607	523	561	565	585	582	590	480	480

Appendix

General system of control under the Animals (Scientific Procedures) Act 1986

Introduction

1. The Animals (Scientific Procedures) Act 1986 put in place a rigorous system of controls on scientific work on living animals, including the need for both the researcher and the project to be separately licensed; stringent safeguards on animal pain and suffering; and general requirements to ensure the care and welfare of animals.

Scope of the Act

2. The Act controls any experimental or other scientific procedure applied to a 'protected animal' which may have the effect of causing that animal pain, suffering, distress or lasting harm. Such work is referred to in the Act as a 'regulated procedure'. 'Protected animals' are defined as all living vertebrate animals, except man, plus cephalopods. The definition extends to foetal, larval or embryonic forms that have reached specified stages in their development. Under the Act an animal is regarded as 'living' until "the permanent cessation of circulation or complete destruction of its brain". Procedures carried out on decerebrate animals are also subject to the controls of the Act.

3. The definition of a regulated procedure encompasses most breeding of animals with genetic defects; production of antisera and other blood products; the maintenance and passage of tumours and parasites; and the administration for a scientific purpose of an anaesthetic, analgesic, tranquilliser or other drug to dull perception. Killing an animal requires licence authority in certain circumstances.

4. The controls of the 1986 Act do not extend to procedures applied to animals in the course of recognised veterinary, agricultural or animal husbandry practice; procedures for identification of animals for scientific purposes, if this causes no more than momentary pain or distress and no lasting harm; or clinical tests on animals for evaluating a veterinary product under authority of an Animal Test Certificate (issued under the Medicines Act 1968).

Project and Personal Licences

5. Two kinds of licence are required for all scientific work controlled by the Act. The procedures must be part of a programme of work authorised by a project licence and the person applying the regulated procedures must hold a personal licence. No work may be done unless the procedure, the animals used and the place where the work is to be done are specifically authorised in both project and personal licences.

6. A project licence is granted when the Department of Health, Social Services and Public Safety (hereinafter referred to as the Department) considers that the use of living animals in a programme of work, for a purpose permitted by the Act, is justified and the methods proposed appropriate.

7. In deciding whether and on what terms to authorise the project, the likely adverse effects on the animals used must be weighed against the benefit (to humans, other animals or the environment) which is likely to accrue from the work. Adequate consideration must also have been given to the feasibility of using alternative methods not involving living animals. The holder of a project licence undertakes overall responsibility for the scientific direction

and control of the work and is responsible for making the statistical returns on which this publication is based. New project licence applicants are now required to complete an accredited training course.

8. A personal licence is the Department's endorsement that the holder is a suitable and competent person to carry out specified procedures on specified animals, under supervision where necessary. Applicants must be over 18 and are required to give details of their qualifications, training and experience. Those who have not previously held a licence need the endorsement of the named training and competency officer. Satisfactory completion of an accredited training course is also required before a personal licence is issued.

9. On 31 December 2014, there were 480 personal licences in force. Personal licences continue to be in force until revoked but they must be reviewed at least every five years.

Establishment Licences

10. Except where otherwise authorised in a project licence (for example, for field work at a specified place and time), any place where work is carried out under the Act must be licensed. Establishments that breed certain types of animal listed in Schedule 2 of the Act for use in scientific procedures ('breeding establishments'), and establishments that obtain such animals from elsewhere and supply them to laboratories ('supplying establishments') must hold an appropriate licence to do so. Animals listed in Schedule 2 are: mice; rats; guinea pigs; hamsters; gerbils; rabbits; cats; dogs; ferrets; non-human primates; pigs (if genetically modified); sheep (if genetically modified); common quail (Coturnix coturnix); amphibians (of the species Xenopus Laevis, Xenopus Tropicalis, Rana Temporaria and Rana Pipiens); and zebrafish.

11. Licensed establishments are required to appoint the following named persons:
    - Named Animal Care and Welfare Office (NACWO)
    - Named Veterinary Surgeon (NVS)
    - Named Training and Competence Officer (NTCO)
    - Named Information Officer (NIO)
    - Named Compliance Officer (NCO)

12. There were 9 licensed established in 2014

The Inspectorate

13. The Act gives statutory recognition to the Animals (Scientific Procedures) Inspectorate and describes the Inspectors' duties. Inspectors hold either medical or veterinary qualifications. Inspectors assess all applications for new licences or amendments to existing licences in detail and advise the Department on how to ensure that only properly justified work is licensed. When assessing research proposals, the Inspectorate ensures that full consideration is given to alternatives, not only the replacement of procedures with others which do not use animals, but also the reduction of the number of animals used and the refinement of procedures to minimise pain and suffering. These are known as the 3Rs. Inspectors carry out visits, mainly without notice, to establishments designated under the Act to inspect the premises and to ensure that the establishment's controls are adequate and that the terms and conditions of the licences issued under it are being observed.

14. Inspectors also advise the Department on policy matters connected with the operation of the Act and they are available to give advice and assistance to licensees and other personnel working under the Act.

15. During 2014 the Inspectorate made 113 visits to establishments.

The Animals in Science Committee (ASC)

16. The Animals in Science Committee is an advisory non-departmental public body of the Home Office. The Animals in Science Committee was established by the Animals (Scientific Procedures) Act 1986 as amended to comply with Directive EU 2010/63/EU which came in to force on the 1st January 2013. Article 49 of this Directive requires each EU country to set up a National Committee for the Protection of Animals used for Scientific Purposes. In the UK the committee is known as the Animals in Science Committee and has superseded the Animal Procedures Committee.

    The Animals in Science Committee is responsible for providing impartial, balanced and objective advice to the Home Office, the Department of Health, Social Services and Public Safety, to animal welfare bodies and within the European Union on issues relating to the Animals (Scientific Procedures) Act 1986 as amended.

Guidance, Codes of Practice and Statistics

17. In addition to these annual statistics, the Act requires that there be published and laid before Parliament guidance on the operation of the controls of the Act and codes of practice as to the care and accommodation of animals and their use in regulated procedures. Four such documents have been published:
    - Guidance on the operation of the Animals (Scientific Procedures) Act 1986 (2000; HC 321);
    - Code of practice for the housing and care of animals used in scientific procedures (1989; HC 107);
    - Code of practice for the housing and care of animals in designated breeding and supplying establishments (1995; HC 125); and
    - Code of Practice for the Humane Killing of Animals under Schedule 1 to the Animals (Scientific Procedures) Act 1986 (1997; HC 193).

Education and training

18. The Animals (Scientific Procedures) Act 1986 imposes clear responsibilities on persons with specific roles in relation to the care and use of animals in scientific procedures. These are elaborated further in the Home Office guidance on the operation of the Act published in March 2014 https://www.gov.uk/government/publications/operation-of-aspa. As the roles differ, it follows that the education and training required before assuming these responsibilities will differ:

    - personal licence holders are responsible for the welfare of animals on which they carry out regulated procedures; applicants will be granted licences only if adequately trained to take on this responsibility and they will usually be required to work under supervision initially;

    - project licences will be issued only to persons with appropriate qualifications to direct a programme of work which is well-justified and takes account of all reasonable possibilities for reducing the number of animals used, refining the procedures to reduce suffering and replacing animal procedures with alternatives which do not involve protected animals;

- holders of establishment licences have responsibility not only for ensuring that the fabric and staffing of designated places are maintained to appropriate standards but also for ensuring that reasonable steps are taken to prevent unauthorised procedures being carried out and that adequate training facilities are available for all animal users.

19. European Directive 2010/63/EU requires that staff are adequately trained to carry out procedures on animals; design procedures and projects; take care of or kill animals. All training programmes are accredited under a scheme recognised by the Department. Accreditation seeks to achieve common and high standards for licensee training.

20. Throughout 2013, the Home Office has worked with all EU member states towards developing a common framework for training which will be used throughout the EU to facilitate free movement of licensees within the UK and Europe as well as ensuring high standards in the use of animals for scientific purposes.

21. Satisfactory completion of an accredited course prior to application for a personal licence has been a requirement under Departmental policy since 1 April 1994. The same requirement has applied to new applicants for project licences from 1 April 1995.

22. During 1995, mandatory training for Named Veterinary Surgeons was introduced and in 2004 mandatory training was introduced for Named Animal Care and Welfare Officers.

Performance against code of practice standards

23. The licensing team works to specific targets set out in the draft Code of Practice. The Code of Practice requires new personal licences, certificates and amendments to be issued within 20 working days. Project licences will be considered and issued/refused within 40 working days from receipt of application, unless the application involves a complex or multidisciplinary programme in which case the process may be extended by a further 15 working days (3 weeks).

24. A total of 357 licences, amendments and cancellations were processed during the year. One hundred percent (100%) were processed within the targets.

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