



Home Office

Statistics of Scientific Procedures on Living Animals Great Britain 2011

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Statistics of Scientific Procedures on Living Animals

GREAT BRITAIN
2011

Presented to Parliament pursuant to section 21(7) of
the Animals (Scientific Procedures) Act 1986

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Note: The 'Supplementary Tables' and 'Time Series Tables' and the 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals' can be found on the website at :-
<http://www.homeoffice.gov.uk/science-research/research-statistics/science/research-testing-using-animals/>.

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Introductory Notes

The statistics in this publication relate to scientific procedures performed using living animals subject to the provisions of the Animals (Scientific Procedures) Act 1986, during the year 2011. The purpose of the publication is to meet the requirements of the Animals (Scientific Procedures) Act 1986 section 21(7) “The Secretary of State shall in each year publish and lay before Parliament such information as he considers appropriate with respect to the use of protected animals in the previous year for experimental or other scientific purposes”. The system of control under the 1986 Act is explained in detail in Appendix A.

Confidentiality and Data quality

Detailed information on the work of individual project licence holders is not readily identifiable in this publication. Where a further breakdown of the 'other' species categories are not given in the commentary this is to safeguard the confidentiality of the establishment and the licence holder. The data provided remains provisional and subject to revision.

Symbols used in tables

..	not available
-	nil
N/A	not applicable
r	revised

Acknowledgements

This publication and the accompanying web tables have been prepared by staff in the Home Office Statistics unit of the Home Office Science Group. We are grateful for the support of colleagues in Policing Data Collection Section for data input, the Animals in Science Regulation Unit for their assistance with the collection, processing and quality assurance processes involved in preparing this report, and colleagues in the Communications Development Section who assisted in preparing the report for publication. Last but not least, the contribution of licensees who provided the returns on which this report is based is acknowledged.

Further information available

Further information is available from the Internet site: <http://homeoffice.gov.uk/science-research/research-statistics/science/research-testing-using-animals/> :-

- the 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals' (a useful reference guide with explanatory notes regarding the issues and classifications which are key to the production and presentation of the statistics).
- the 'Supplementary Tables' and the 'Time Series Tables'.

The dates of forthcoming publications are pre-announced and can be found via the UK National Statistics Publication Hub: <http://www.statistics.gov.uk/hub/index.html>.

Home Office Responsible Statistician

David Blunt, Chief Statistician and Head of Profession for Statistics

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Enquiries

If you have any enquiries about this publication, please email public.enquiries@homeoffice.gsi.gov.uk or write to:

Home Office Statistics, 5th Floor, Peel Building, 2 Marsham Street, London, SW1P 4DF.

This statistical bulletin is a National Statistics output produced to the highest professional standards and free from political interference. It has been produced by statisticians working in the Home Office Statistics Unit in accordance with the Home Office's Statement of Compliance with the Code of Practice for Official Statistics which covers our policy on revisions and other matters. The governance arrangements in the Home Office for statistics were strengthened on 1 April 2008 to place the statistical teams under the direct line management of a Chief Statistician, who reports to the National Statistician with respect to all professional statistical matters.

Definition – for the compilation of these statistics the number of procedures reported generally corresponds to the number of animals. Where an animal that has recovered fully from a completed procedure is used again for a further procedure it is counted as a separate procedure.

Presentation – the figures given refer to the numbers of procedures that were started in 2011 (rather than the numbers of animals), compared with 2010, unless indicated otherwise. Most figures have been rounded to the nearest 1,000 or 100 procedures or to two significant figures.

Summary

1. Just over 3.79 million scientific procedures were started in Great Britain in 2011, increasing 2 per cent (+68,100). Breeding of genetically modified (GM) animals and harmful mutants (HM), mainly mice, remained stable, accounting for 1.62 million procedures.
2. Excluding the breeding of GM and HM animals, the total number of procedures increased in 2011 (an increase of +71,300 or +3%, from 2.10 million to 2.18 million).
3. There were increases in numbers of procedures for several species, for example cats (+26%), pigs (+37%), birds (+14%) and fish (+15%). There were falls for several species, for example rats (-11%), guinea pigs (-16%), dogs (-21%), and non-human primates (-47% with new-world monkeys -68% and old-world monkeys -41%).
4. There was an increase (+2%) in the numbers of procedures for safety testing (toxicology) to 399,000, due to increased use of fish in regulatory toxicology, with a higher proportion carried out to meet more than one legislative/regulatory requirement (75% compared with 72% in 2010). Most toxicology procedures are carried out in the commercial sector where the number of procedures also rose (+1%).
5. The number of non-toxicology procedures increased 2 per cent to 3.39 million, reflecting the higher numbers of procedures carried out in universities (+7%), particularly fundamental research. The increase for non-toxicology included increases in physiology (+115,100), immunology (+62,000) and parasitology (+22,000) whilst ecology (-30,300), anatomy (-27,000), biochemistry (-11,900) and cancer research (-10,200) fell.
6. There were 1.08 million more procedures than in 2000 (+40%) mostly accounted for by breeding to produce GM and HM animals (+918,000, of which mice +795,000). Excluding such breeding, the total number of procedures was slightly higher than in 2000 (+8% or +159,900).

(Source: Tables 1, 3, 6, 9, 10, 19).

Definition – for the compilation of these statistics the number of procedures reported generally corresponds to the number of animals. Where an animal that has recovered fully from a completed procedure is used again for a further procedure it is counted as a separate procedure. The circumstances in which this re-use of an animal is permitted are limited (for further details see the Introductory Notes and the Form Notes in the 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals').

Presentation – the figures given refer to the numbers of procedures that were started in 2011 (rather than the numbers of animals), compared with 2010, unless indicated otherwise. Most figures have been rounded to the nearest 1,000 or 100 procedures or to two significant figures, in order to simplify the explanation/presentation; therefore the figures shown will not be identical to the figures in the tables. However, percentage changes given are calculated using the unrounded data available in the tables.

Commentary

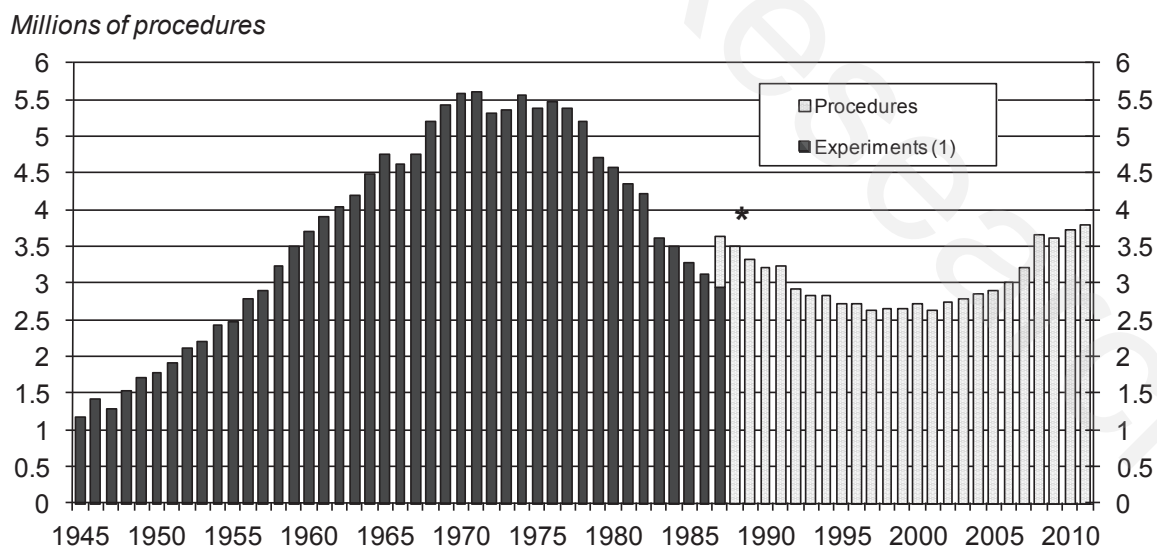
Procedures started in 2011 (Tables 1, 1a)

There were just over 3.79 million scientific procedures started in 2011, an increase of 68,100 (+2%) on 2010. Breeding of genetically modified (GM) animals or harmful mutants (HM) accounted for 1.62 million procedures (43% of the total). The total excluding such breeding increased (an increase of +3% or +71,300, from 2.10 million to 2.18 million). There were some 3.71 million animals used for the first time in procedures started in 2011 (Table 1a), an increase of 68,100 (+2%), reflecting the trend in numbers of procedures started.

There has been a significant reduction in the annual number of scientific procedures since 1976, this trend levelled out in the second half of the 1990s and in recent years there has been an increase. The total number of procedures was higher (+40% or +1.08 million) than in 2000, mostly accounted for by breeding to produce GM and HM animals (+918,000 higher, of which mice +795,000). Excluding such breeding, the total was slightly higher than in 2000 (+8% or +159,900).

The overall level of scientific procedures is determined by a number of factors, including the economic climate and global trends in scientific endeavour.

Figure 1: Experiments or procedures commenced each year 1945–2011



(1) Experiments under the 1876 Act or Scientific Procedures under the 1986 Act

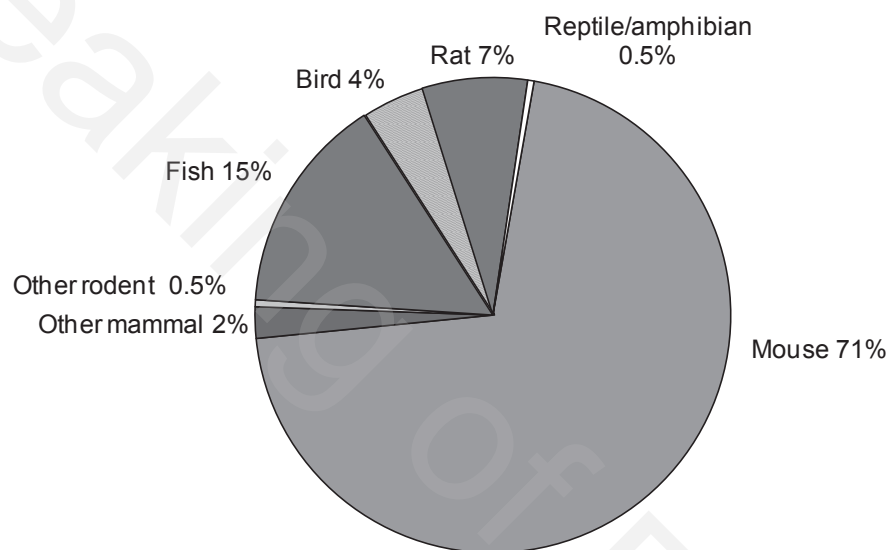
* The 1987 total includes experiments under the 1876 Act as well as procedures under the 1986 Act.

Species used (Tables 1 and 1a, and online Time Series Table 20)

Overall numbers

- Mice (71%), fish (15%), rats (7%) and birds (4%) were involved in the largest numbers of procedures, similar to recent years.
- Domestic fowl accounted for 92 per cent of all procedures using birds.
- 'Other mammals' accounted for two per cent of all procedures, of which dogs, cats and non-human primates combined were used in fewer than a quarter of one percent of all procedures, with a combined total of 7,300, lower than in 2010 (10,700).

Figure 2: Procedures by species of animal, 2011



Increases

There were higher numbers of procedures using some species in 2011, notably:

- Rabbits (+628 or +4%)
- Cats (+48 or +26%),
- Horses and other equids (+56 or +1%)
- Pigs (+1,165 or +37%)
- Goats (+169 or +626%)
- Other rodents (+2,352 or +152%)
- Cattle (+1,517 or +42%)
- Camelids (+224 or +679%)
- Birds (20,584 or +14%),
- Amphibians (+1,448 or +10%)
- Fish (+72,959 or +15%).

Decreases

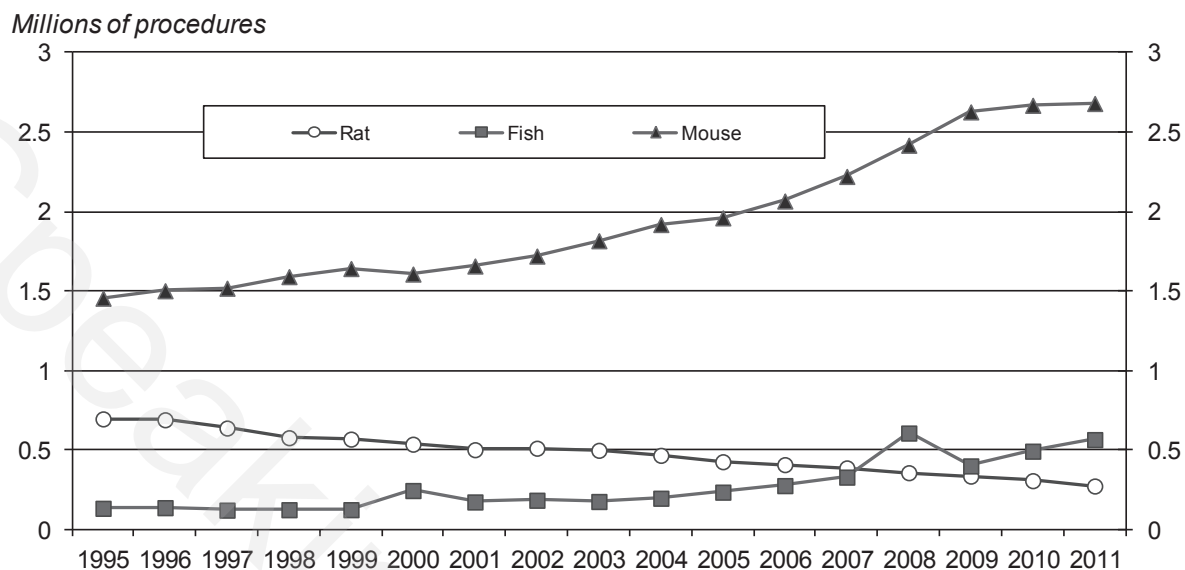
There were falls in numbers of procedures using other species in 2011, notably:

- Rats (-33,604 or -11%),
- Guinea pigs (-2,123 or -16%),
- Dogs (-1,230 or -21%),
- Deer (-12 or -19%)
- Non-human primates (-2,213 or -47%) with new-world monkeys (-752 or -68%) and old-world monkeys (-1,461 or -41%),
- Reptiles (-506 or -57%)

Figure 3 below shows that, since 1995, there has been a steady decrease in the number of procedures using rats, while the number of procedures using mice has steadily increased. The number of procedures

using fish increased in line with the increases in all years since 2001 apart from the 2009 decline that followed the peak in 2008. The proportion of total procedures accounted for by mice, rats and fish has steadily increased from around 84 per cent in 1995 to 93 per cent in 2011.

Figure 3: Procedures using mice, rats and fish 1995–2011



'Other' categories use detail

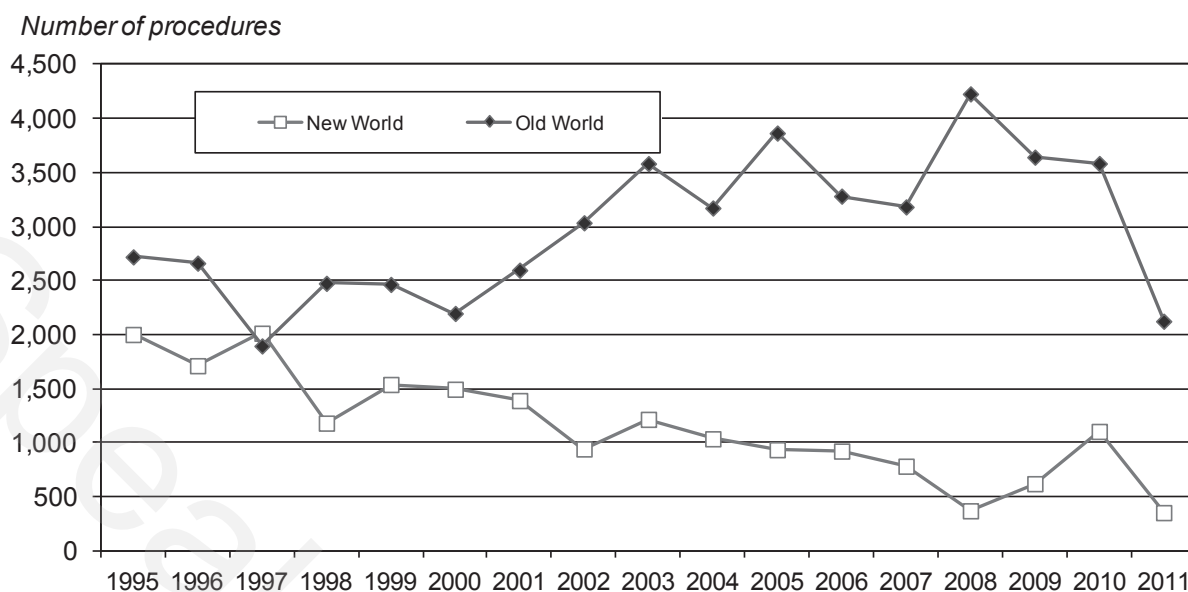
- The 'other carnivore' category included badgers, foxes and seals.
- The 'other mammals' category included bats, tree shrews and opossums.
- 'Other rodents' included voles, wood mice, squirrels, chinchillas and cotton rats.
- 'Other birds' included zebra finches, ducks and geese, pigeons, emu, guinea fowl and various wild garden or woodland birds, seabirds, waterfowl and game birds.
- 'Other ungulates' included wild boar.

Primate use (Tables 1 and 1a)

Figure 4 below shows the changes in procedures using old-world and new-world primates since 1995 (for details on primate species, see the 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals').

- The number of procedures using new-world primates fell by 752 (-68%), and there was a fall of 430 animals used.
- The number of procedures using old-world primates fell by 1,461 (-41%), and there was a fall of 760 animals used.
- Some primates were used more than once since some of the procedures they were involved in have only a minimal effect.
- The total number of procedures using primates decreased by 2,213 from 4,688 in 2010 to 2,475 in 2011 (-47%) and the number of animals used fell by 1,190 (from 2,649 in 2010 to 1,459 in 2011 or 45%), with slightly over 1,000 procedures in 2011 involving re-use of primates.

Figure 4: Procedures using non-human primates, 1995–2011



Species on which no procedures were started in 2011 (Table 1)

No procedures were performed using greyhounds, a number of primate species, and *Octopus vulgaris*. No great apes have been used since the current legislation (the 1986 Act) was implemented in 1987.

Primary purpose (Tables 1 and 1a)

Note: Breeding is for the purpose of producing genetically modified (GM) animals or harmful mutants (HM). Further details of the coding of GM and HM animals are given in the 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals' (section on Form Notes).

Increases

There was an increase in the numbers of procedures for:

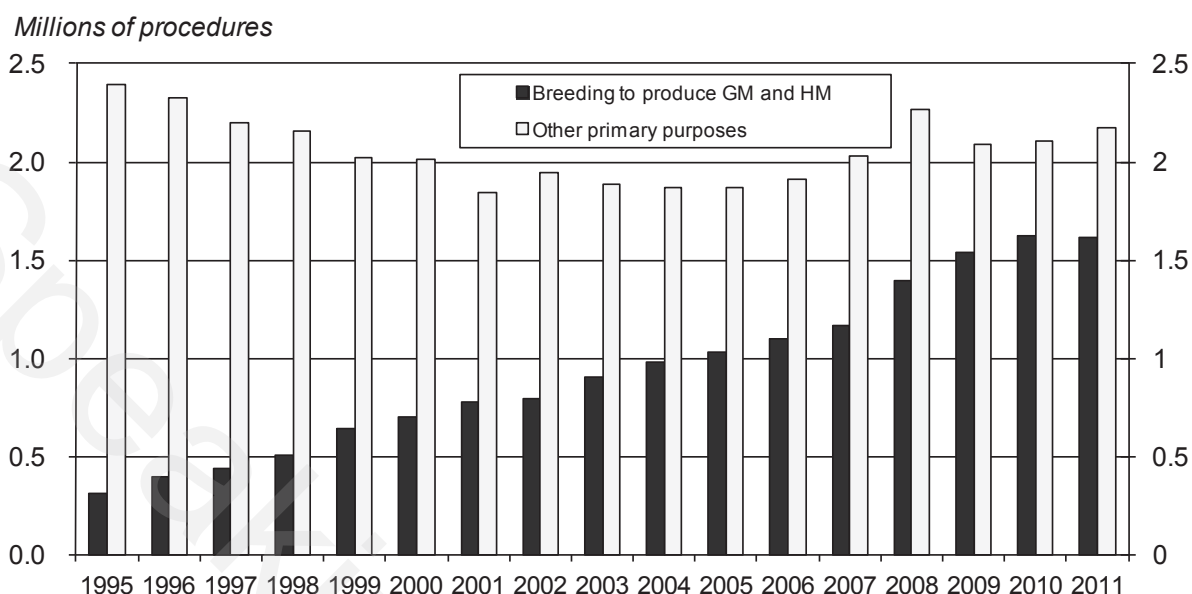
- direct diagnosis (+600 or 1%);
- fundamental biological research (+44,400 or +3%);
- veterinary medicine (+26,500, or +17%);
- protection of man, animals or environment (+41,000 or +54%).

Decreases

There were falls for:

- education (-700 or -31%); and
- human medicine/dentistry (-40,600 or -8%).

Figure 5: Comparison of breeding to produce GM and HM animals, with other primary purposes, 1995–2011



Source (Table 2 and online Supplementary Tables 2.1, 2.2)

The majority (79% or 2.99 million) of the 3.79 million procedures started in 2011 were carried out using animals listed in Schedule 2 of the Act. These animals must come from a designated source, unless a special exemption is granted. The animals in Schedule 2 are: mouse, rat, guinea pig, hamster, gerbil, rabbit, cat, dog, ferret, non-human primate, pigs (if genetically modified), sheep (if genetically modified), and quail *Coturnix coturnix*. The procedures involving animals listed in Schedule 2 and acquired from non-designated sources in the UK are authorised under Section 10(3) of the Act.

- Designated establishments in the UK were the source of animals for 2.96 million or 99 per cent of procedures using Schedule 2 listed species.
- Other EU countries were the source for Schedule 2 animals used in 13,700 procedures.
- Schedule 2 listed animals acquired from other sources (including Council of Europe countries who are signatories to ETS123) were used in 14,400 procedures; of these procedures 88 per cent (12,700) involved mice or rats (of which the large majority, 10,500, used GM or HM animals).

Genetic status (Table 3, and online Supplementary Tables 3 (full), 3.1, 3.2, 3.3)

Genetically 'normal' animals accounted for 1.76 million procedures (1.72 million procedures in 2010), slightly less than half (46%) of the total 3.79 million procedures. There were 376,000 procedures (10%) using HM animals and 1.65 million procedures (44%) using GM animals. There was an increase in procedures using GM animals (+51,500 or +3%) and normal animals (+41,000 or +2%) and a decrease in use of harmful mutants (-24,400 or -6%).

Genetically 'normal' animals (Table 3)

The increase in procedures using genetically 'normal' animals (+41,000 or +2%) was a result of increases for domestic fowl (+19,100) and fish (+71,000) with falls in use of mice (-14,900) and rats (-32,100).

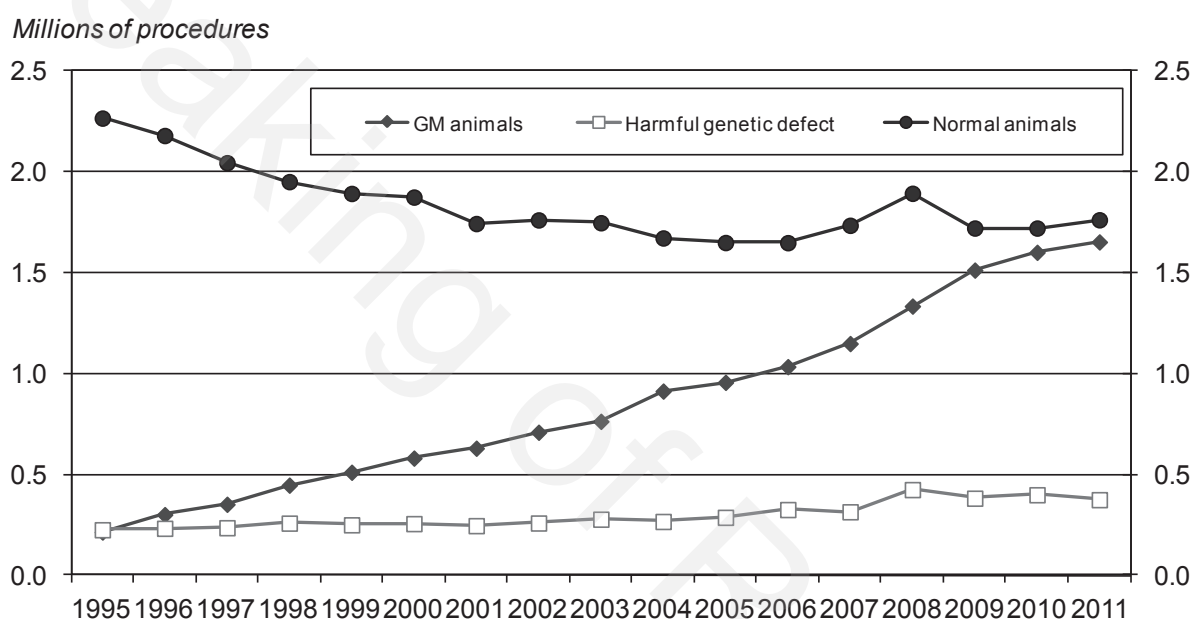
Animals with a harmful genetic defect (Table 3, online Supplementary Table 3.2)

The decrease in procedures using HM animals (-24,400 or -6%) was a result of decreases in use of mice (-15,000), fish (-9,100) and rats (-2,200) whilst use rose for amphibia (+1,800). The procedures using mice, rats and fish were mainly for maintaining breeding colonies, with the other primary purposes being fundamental biological research and for mice and rats, applied studies.

Genetically modified animals (Table 3)

The increase (+51,500 or +3%) in procedures using genetically modified animals (GM) was attributable to higher use of mice (+39,600 or +3%) and fish (+11,000 or +10%). The procedures using mice and fish were mainly for maintaining breeding colonies, with the other primary purpose being fundamental biological research.

Figure 6: Procedures by genetic status of animal, 1995–2011



Target body system (Table 4)

Slightly over half (52%) of all procedures in 2011 were prospectively directed towards one particular body system:-

- The immune system was the largest single category, accounting for 512,600 procedures (14%) mainly mice (463,300).
- The nervous system was the next largest with 420,000 (11%) procedures; mice, rats and fish were the most common species used (99% of this type of procedure).
- Of the single body system categories, there was a mix of rises and falls with no clear pattern.

Procedures conducted where the target body system was 'not relevant' accounted for 840,500 (22% of the total 3.79 million procedures), down 124,900 (-13%). The category for 'multiple' target body systems accounted for 983,200 procedures (26% of the total) increasing by ten per cent.

Use of anaesthesia (Table 5)

Procedures are only permitted without anaesthesia or analgesic when such administration is judged more traumatic than the procedure itself, or when it is incompatible with the object of the procedure.

- A third (29%) of all procedures had some form of anaesthesia to alleviate the severity of the interventions. For many of the remaining procedures the use of anaesthesia would have potentially increased the adverse effects of the procedure.
- The use of neuromuscular blocking agents (NMBA) was recorded in 2,547 procedures, all of which involved the use of general anaesthesia.

Fundamental and applied studies other than toxicology, regulatory or safety purposes

(Table 6)

Non-toxicology accounted for 3.39 million procedures, 89 per cent of the total of 3.79 million procedures, and was slightly higher than in 2010 (+60,200 or +2%). The main areas were: physiology (18% of such procedures), immunology (16%), cancer research (13%), anatomy (11%), genetics (10%), and pharmaceutical R&D (7%).

There were increases for physiology (+115,100), immunology (+62,000) and parasitology (+22,000) whilst there were falls for the 'other' category (-49,400), ecology (-30,300), anatomy (-27,000), biochemistry (-11,900) and cancer research (-10,200).

Production of biological materials (Table 7)

In 2011 some 349,700 procedures, 2,600 (-1%) fewer than in 2010, were carried out to produce biological materials.

- Forty-two per cent of these were for the production of infectious agents, (four percent of the total 3.39 million non-toxicology procedures), of which the most common species used were birds (79%) and mice (17%).
- Vectors, neoplasms and antibody production accounted for a further seven per cent of procedures for production of biological materials; using a wide range of species.
- The remaining fifty-one per cent of production procedures were to obtain other biological material such as tissues or blood products, also using a wide range of species.
- The numbers of procedures using immunisation to produce monoclonal antibodies by in vitro methods fell by 13 per cent to 1,900 procedures in 2011, less than half the level of 4,000 procedures in 2008.

Toxicology, other safety or efficacy evaluation

(Tables 9, 9a, 10, 11, online Supplementary Tables 12, 15, 16)

(Table 9 and online Time Series Table 25)

There were 399,000 procedures for toxicological or other safety/efficacy evaluation purposes, or just over one in ten (11%) of the total 3.79 million procedures. This represented a rise of two percent in toxicology procedures compared with 2010, which followed falls in toxicology in most recent years. The increase was due to a significant increase in the use of fish in toxicology; without this the trend would have continued downwards. Most (78%) toxicology procedures were for pharmaceutical safety and efficacy evaluation, and just under three-quarters (73%) involved rodent species; while non-human primates accounted for less than one per cent of such procedures.

(Table 10, online Time Series Table 21)

Over four-fifths of toxicological procedures (84% of 399,000) were carried out to conform to legal or regulatory requirements, with most of these (75% or 299,000 of the 399,000 toxicology procedures) carried out to meet a combination of legislative requirements. By comparison in 1995 a similar proportion of toxicology procedures (83%) were carried out to meet legislative requirements but a smaller proportion (59%) were to meet joint requirements.

Figure 7: Procedures (toxicology) by species of animal, 2011

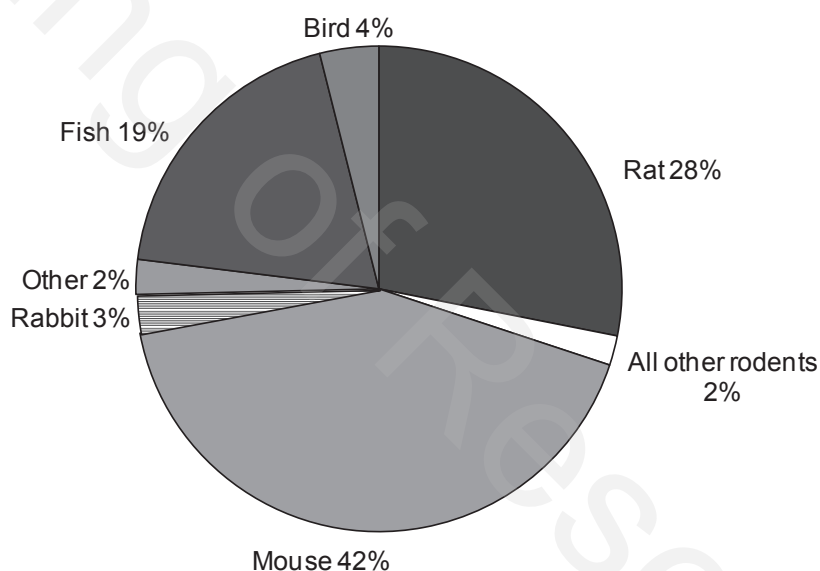
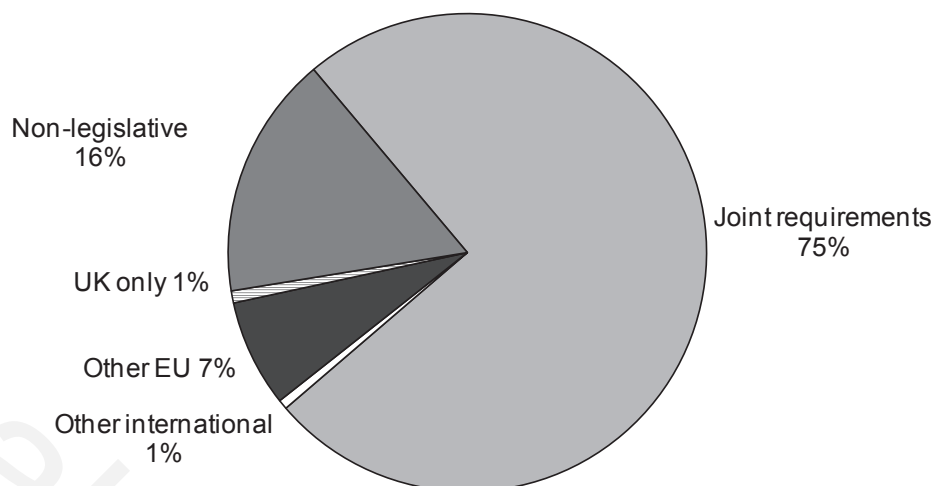


Figure 8: Procedures by legislative requirement (toxicology), 2011



Rodenticide trials

It is impracticable to collect accurate figures on the number of animals used in field trials of rodenticide substances. There was one return from a licensee which confirmed that such field trials occurred in 2011 as part of the work carried out under that licence.

Use of animals on the CITES list

Returns were required on the use of animals listed in Appendix 1 of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) or in Annex C.1 to the Council Regulation (EEC) 3626/82 (see Form Notes section in 'User Guide to Home Office Statistics of Scientific Procedures on Living Animals'). There were 68 procedures performed using animals in this category in 2011; these involved wild birds in research relevant to those species.

Type of establishment (Table 19)

In 2011 commercial organisations accounted for 26 per cent of the 3.79 million procedures and ten per cent of 3,165 project licences for which returns were received; the corresponding figures for universities were 50 per cent and 75 per cent respectively.

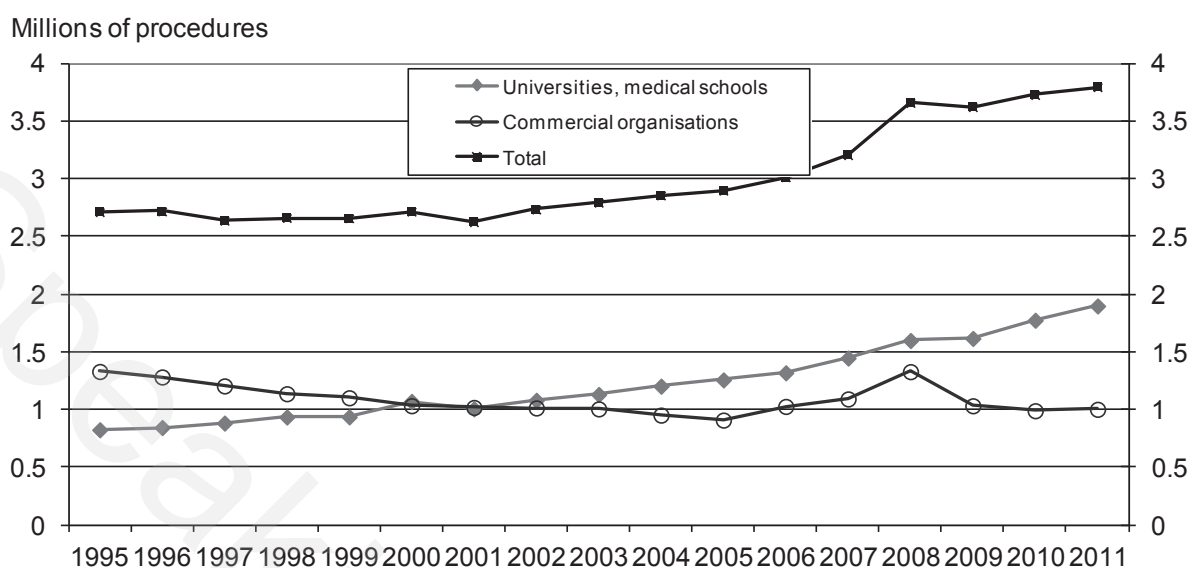
(Online Time Series Table 23)

The number of procedures accounted for by the commercial sector rose by one per cent to just over 1.00 million procedures in 2011. However, there have been falls in most previous years since the levels of around 2 million annually at the end of the 1980s.

The number of procedures carried out in the university sector has been increasing fairly steadily since the end of the 1980s, and increased again in 2011 (to 1.90 million, +7%).

The difference in trends between the commercial sector and the university sector is likely to reflect the increase in fundamental research using GM animals within universities, as well as the trend for lower numbers of procedures for toxicological purposes (with an increasing proportion of such procedures used to meet more than one requirement).

Figure 9: Procedures by establishment type 1995–2011



International comparisons (Table 1a and Commission report¹ Tables 1.0 and 1.1)

Data compiled by EU countries and submitted to the European Commission use a narrower, but common, definition of animal experiments. The main difference with the definition used for the other statistics in this publication is that it is based on numbers of animals and excludes breeding to produce GM or HM animals. The latest data are for 2008², of which some of the key points are as follows.

- Based on the latest internationally comparable data, the total number of animals used for experiments in the 27 EU Member States in 2008² was just over 12.0 million. The total fell by 1.7 per cent compared with 2005 for the EU25 Member States.
- In France, the UK and Germany there were experiments using 2.33 million animals, 2.27 million animals, and 2.02 million animals respectively.
- No apes were used in experiments anywhere in the EU in 2008. A total of 9,569 non-human primates were used in experiments across the EU27, a third (35% or 3,354) of which were used in the UK.

The full report is available on the Commission's website

http://ec.europa.eu/environment/chemicals/lab_animals/reports_en.htm.

¹ Commission Staff Working Paper - Report on the Statistics on the Number of Animals used for Experimental and other Scientific Purposes in the Member States of the European Union in the year 2008 (SEC (2010) 1107/final 2), available at http://ec.europa.eu/environment/chemicals/lab_animals/reports_en.htm Data quoted are from Tables 1.0 and 1.1 of the Commission Working Paper SEC (2010) 1107/final 2.

² Data for France related to 2007.

Returns, project licensees and designated places

(Appendix A Table 19)

Statistical returns are required each year from every person who holds a project licence for part or all of the year. For 2011 there were 3,165 licensees providing returns reporting either starting procedures (2,543 licensees, of which 13 reported only 'non-countable' procedures¹) or reporting none (622 licensees).

There were 2,624 project licences in force at the end of 2011 compared with 2,614 at the end of 2010, following falls in most of the last few years. Similarly, the number of certificates of designation in force authorising places where work is carried out was 181 at the end of 2011 compared with 188 at the end of 2010, again after falls in recent years. The number of personal licences in force decreased, to 15,403 at the end of 2011, compared with 15,721 at the end of 2010.

Further information

Further information about the work of the Animals in Science Regulation Unit can be found at <http://homeoffice.gov.uk/science-research/animal-research/>

Information about the Animal Procedures Committee can be found at <http://www.homeoffice.gov.uk/agencies-public-bodies/apc/>

Information about the National Centre for the Replacement, Refinement and Reduction of Animals in research NC3Rs can be found at <http://www.nc3rs.org.uk/>

Information relating to Northern Ireland is published by the Department of Health, Social Services and Public Safety and can be found at <http://www.dhsspsni.gov.uk/healthprotection-animalscience>

Information on public attitudes to animal testing is available from MORI at <http://www.ipsos-mori.com/researchspecialisms/socialresearch/specareas/nhspublichealth/attitudetowardsanimalexperimentation.aspx>

¹ It is not possible to collect accurate figures on numbers of procedures started using immature forms (e.g. larvae, embryos, fish fry). Information is collected indicating when such procedures using such forms are carried out, which are classified as „non-countable“ procedures.

Tables

Form Notes, and detailed table notes providing details of the terms and classifications used ('User Guide to Home Office Statistics of Scientific Procedures on Living Animals'), and the 'Supplementary Tables' and 'Time Series Tables' can be found on the website at: <http://homeoffice.gov.uk/science-research/research-statistics/science/research-testing-using-animals/>

Definitions

All tables refer to numbers of scientific procedures started on adult animals in 2011, unless indicated otherwise. Tables suffixed with an 'a' (e.g. Tables 1a, 6a, 9a) relate to numbers of animals used.

Symbols used in tables

..	not available	-	nil
NA	not applicable	r	revised

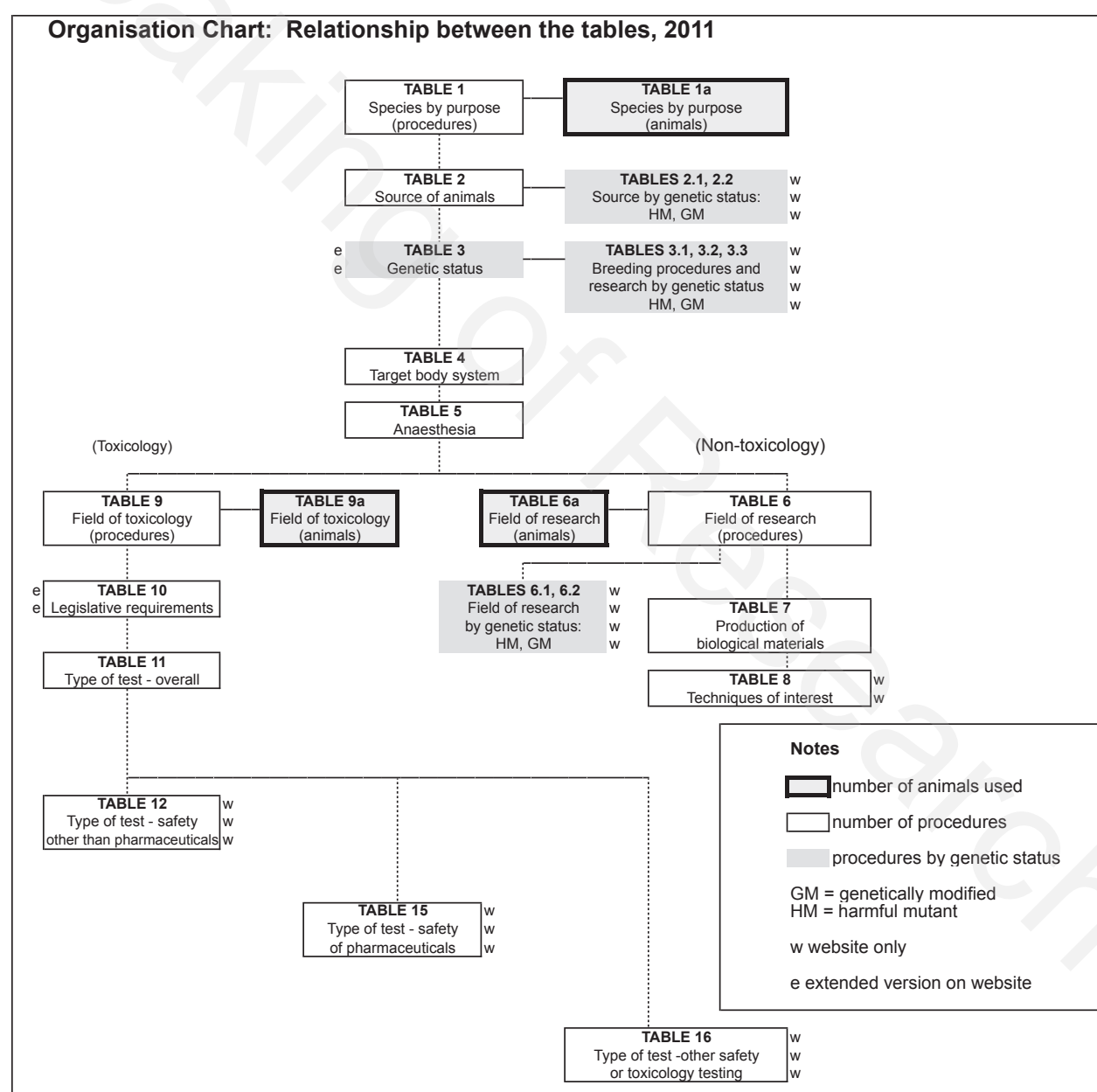


Table 1 Scientific procedures by species of animal and primary purpose of the procedure, page 1 of 2

Great Britain 2011	Species of animal	Primary purpose of the procedure							Number of procedures		
		Fundamental biological research	Applied studies - human medicine or dentistry	Applied studies - veterinary medicine	Protection of man, animals or environment	Education	Training	Forensic enquiries	Direct diagnosis	Breeding of GM or HM animals	Total
	Mammal										
	Mouse	864,182	318,304	14,612	17,776	903	-	-	4,433	1,459,553	2,679,763
	Rat	86,491	137,751	121	33,064	445	720	-	6	12,937	271,535
	Guinea pig	2,283	7,811	1,112	122	100	-	-	109	-	11,537
	Hamster	883	787	118	206	-	-	-	-	-	1,994
	Gerbil	508	-	-	-	-	-	-	-	-	508
	Other rodent	2,969	214	60	653	-	-	-	-	-	3,896
	Rabbit	1,467	8,346	2,373	1,767	20	-	-	1,462	26	15,461
	Cat	207	-	28	-	-	-	-	-	-	235
	Dog										
	Beagle	125	3,811	229	193	-	-	-	-	-	4,358
	Greyhound	-	-	-	-	-	-	-	-	-	-
	Other including cross-bred dogs	158	-	36	-	-	-	-	-	-	194
	Ferret	285	380	4	-	13	-	-	9	-	691
	Other carnivore	565	-	68	162	-	-	-	-	-	795
	Horse and other equids	144	-	308	-	-	-	-	7,928	-	8,380
	Pig	1,371	908	1,976	24	-	-	-	-	61	4,340
	Goat	113	5	2	7	-	-	-	69	-	196
	Sheep	4,306	699	1,263	82	-	-	-	31,183	181	37,714
	Cattle	3,410	-	1,551	21	-	-	-	120	-	5,102
	Deer	50	-	-	-	-	-	-	-	-	50
	Camelid	257	-	-	-	-	-	-	-	-	257
	Other ungulate	12	-	-	-	-	-	-	-	-	12

Table 1 Scientific procedures by species of animal and primary purpose of the procedure, page 2 of 2

Great Britain 2011

Species of animal	Primary purpose of the procedure							Number of procedures		
	Fundamental biological research	Applied studies - human medicine or dentistry	Applied studies - veterinary medicine	Protection of man, animals or environment	Education	Training	Forensic enquiries	Direct diagnosis	Breeding of GM or HM animals	Total
Primate										
Prosimian	-	-	-	-	-	-	-	-	-	-
New World monkey										
marmoset, tamarin	154	197	-	-	-	-	-	-	-	351
Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-
Other New World monkey	-	-	-	-	-	-	-	-	-	-
Old World monkey										
Macaque	177	1,652	-	287	-	-	-	8	-	2,124
Baboon	-	-	-	-	-	-	-	-	-	-
Other Old World monkey	-	-	-	-	-	-	-	-	-	-
Ape										
Gibbon	-	-	-	-	-	-	-	-	-	-
Great ape	-	-	-	-	-	-	-	-	-	-
Other mammal	525	-	20	-	-	-	-	-	-	545
Bird										
Domestic fowl (<i>Gallus domesticus</i>)	6,234	28	140,529	274	-	-	-	1,377	602	149,044
Turkey	460	171	2,628	-	-	-	-	150	-	3,409
Quail (<i>Coturnix coturnix</i>)	34	-	-	-	-	-	-	-	-	34
Quail (not <i>Coturnix coturnix</i>)	131	-	-	752	-	-	-	-	-	883
Other bird	6,680	-	-	2,099	-	-	-	469	-	9,248
Reptile - any reptilian species	383	-	-	-	-	-	-	-	-	383
Amphibian - any amphibian species	11,867	-	-	419	-	-	-	-	3,629	15,915
Fish - any fish species	342,442	1,731	19,975	58,908	-	-	23	-	140,824	563,903
Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-	-	-
Total	1,338,873	482,795	187,013	116,816	1,481	720	23	47,323	1,617,813	3,792,857
Increase on 2010	44,370	-40,593	26,531	41,019	-679	43	23	616	-3,199	68,131
Percentage change from 2010	3%	-8%	17%	54%	-31%	6%	N/A	1%	-0%	2%
Percentage of total for 2011	35%	13%	5%	3%	0.0%	0.0%	0%	1%	43%	100%
2010 Totals	1,294,503	523,388	160,482	75,797	2,160	677	0	46,707	1,621,012	3,724,726

N/A = Not applicable

Table 1a Animals used, by species of animal and primary purpose of the procedure, page 1 of 2

Great Britain 2011		Number of animals										
Species of animal		Primary purpose of the procedure								Total		
		Fundamental biological research	Applied studies - human medicine or dentistry	Applied studies - veterinary medicine	Protection of man, animals or environment	Education	Training	Forensic enquiries	Direct diagnosis			Breeding of GM or HM animals
Mammal												
Mouse		854,921	314,712	14,596	17,648	903	-	-	4,433	1,456,228	2,663,441	
Rat		80,825	136,279	121	32,802	445	720	-	6	12,937	264,135	
Guinea pig		2,283	7,803	1,112	122	100	-	-	94	-	11,514	
Hamster		883	787	118	206	-	-	-	-	-	1,994	
Gerbil		491	-	-	-	-	-	-	-	-	491	
Other rodent		1,825	214	60	653	-	-	-	-	-	2,752	
Rabbit		1,172	5,913	1,550	1,767	14	-	-	1,402	26	11,844	
Cat		125	-	28	-	-	-	-	-	-	153	
Dog												
Beagle		67	2,332	219	153	-	-	-	-	-	2,771	
Greyhound		-	-	-	-	-	-	-	-	-	-	
Other including cross-bred dogs		58	-	36	-	-	-	-	-	-	94	
Ferret		285	241	4	-	13	-	-	9	-	552	
Other carnivore		557	-	23	162	-	-	-	-	-	742	
Horse and other equids		67	-	230	-	-	-	-	36	-	333	
Pig		1,371	795	1,730	5	-	-	-	-	61	3,962	
Goat		33	3	2	7	-	-	-	69	-	114	
Sheep		4,251	599	1,040	70	-	-	-	1,196	181	7,337	
Cattle		2,178	-	1,467	15	-	-	-	112	-	3,772	
Deer		50	-	-	-	-	-	-	-	-	50	
Camelid		257	-	-	-	-	-	-	-	-	257	
Other ungulate		-	-	-	-	-	-	-	-	-	-	

Table 1a Animals used, by species of animal and primary purpose of the procedure, page 2 of 2

Great Britain 2011		Number of animals										
Species of animal		Primary purpose of the procedure							Total			
		Fundamental biological research	Applied studies - human medicine or dentistry	Applied studies - veterinary medicine	Protection of man, animals or environment	Education	Training	Forensic enquiries			Direct diagnosis	Breeding of GM or HM animals
Primate												
Prosimian	-	-	-	-	-	-	-	-	-	-	-	
New World monkey												
marmoset, tamarin	125	119	-	-	-	-	-	-	-	-	244	
Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	
Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	
Old World monkey												
Macaque	77	932	-	206	-	-	-	-	-	-	1,215	
Baboon	-	-	-	-	-	-	-	-	-	-	-	
Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	
Ape												
Gibbon	-	-	-	-	-	-	-	-	-	-	-	
Great ape	-	-	-	-	-	-	-	-	-	-	-	
Other mammal	444	-	20	-	-	-	-	-	-	-	464	
Bird												
Domestic fowl (<i>Gallus domesticus</i>)	6,234	15	140,529	235	-	-	-	-	1,377	602	148,992	
Turkey	460	44	2,628	-	-	-	-	-	55	-	3,187	
Quail (<i>Coturnix coturnix</i>)	34	-	-	-	-	-	-	-	-	-	34	
Quail (not <i>Coturnix coturnix</i>)	131	-	-	752	-	-	-	-	-	-	883	
Other bird	6,390	-	-	2,099	-	-	-	-	148	-	8,637	
Reptile - any reptilian species	383	-	-	-	-	-	-	-	-	-	383	
Amphibian - any amphibian species	4,379	-	-	419	-	-	-	-	-	3,231	8,029	
Fish - any fish species	340,911	1,731	19,975	58,908	-	-	-	23	-	140,697	562,245	
Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-	-	-	-	
Total	1,311,267	472,519	185,488	116,229	1,475	720	23	8,937	1,613,963	3,710,621		
Increase on 2010	43,621	-39,265	27,641	40,671	-679	43	23	602	-4,553		68,104	
Percentage change from 2010	3%	-8%	18%	54%	-32%	6%	N/A	7%	-0%		2%	
Percentage of total for 2011	35%	13%	5%	3%	0.0%	0.0%	0%	0.2%	43%		100%	
2010 Totals	1,267,646	511,784	157,847	75,558	2,154	677	0	8,335	1,618,516		3,642,517	

N/A = Not applicable

Table 2 Scientific procedures by Schedule 2 listed species and source of animals

Species of animal	Source							Number of procedures	
	Animals acquired from within own designated establishment	Animals acquired from another designated breeding or supplying establishment in the UK	Animals acquired from non-designated sources in the UK	Animals acquired from sources within the EU (outside the UK)	Animals acquired from Council of Europe countries who are signatories to ETS123	Animals acquired from other sources	Animals not listed in Schedule 2	Total	
Mouse	2,108,970	551,337	261	7,372	155	11,668	-	2,679,763	
Rat	46,844	223,427	94	650	1	519	-	271,535	
Guinea pig	222	7,589	-	3,726	-	-	-	11,537	
Hamster	263	1,274	-	457	-	-	-	1,994	
Gerbil	425	5	-	-	-	78	-	508	
Rabbit	4,650	9,918	3	821	-	69	-	15,461	
Cat	73	-	11	149	-	2	-	235	
Dog	1,309	2,481	66	428	-	268	-	4,552	
Ferret	30	661	-	-	-	-	-	691	
Pig (genetically modified)	34	-	-	-	-	-	-	34	
Sheep (genetically modified)	-	2	4	-	-	-	-	6	
Primate	647	611	-	48	-	1,169	-	2,475	
Quail (<i>Coturnix coturnix</i>)	-	34	-	-	-	-	-	34	
Animals not listed in Schedule 2	-	-	-	-	-	-	804,032	804,032	
Total	2,163,467	797,339	439	13,651	156	13,773	804,032	3,792,857	
Increase on 2010	648	-33,192	348	2,591	-86	-1,363	99,185	68,131	
Percentage change from 2010	0%	-4%	382%	23%	-36%	-9%	14%	2%	
Percentage of total for 2011	57%	21%	0.0%	0.4%	0.0%	0.4%	21%	100%	
2010 Totals	2,162,819	830,531	91	11,060	242	15,136	704,847	3,724,726	

Note. The total number of procedures using animals listed in schedule 2 was 2,988,825.

Table 3 Scientific procedures by species of animal, and genetic status**Summary Version**

Note. For numbers of procedures by purpose, see full table available on the website

Great Britain 2011**Number of procedures**

Species of animal	Genetic status			Total
	Normal animal	Animal with harmful genetic	Genetically modified animal	
Mammal				
Mouse	828,857	322,518	1,528,388	2,679,763
Rat	255,627	11,394	4,514	271,535
Guinea pig	11,537	-	-	11,537
Hamster	1,994	-	-	1,994
Gerbil	508	-	-	508
Other rodent	3,896	-	-	3,896
Rabbit	15,448	-	13	15,461
Cat	235	-	-	235
Dog				
Beagle	4,358	-	-	4,358
Greyhound	-	-	-	-
Other inc cross-breds	194	-	-	194
Ferret	691	-	-	691
Other carnivore	795	-	-	795
Horse and other equids	8,380	-	-	8,380
Pig	4,306	-	34	4,340
Goat	196	-	-	196
Sheep	37,708	-	6	37,714
Cattle	5,102	-	-	5,102
Deer	50	-	-	50
Camelid	257	-	-	257
Other ungulate	12	-	-	12
Primate				
Prosimian	-	-	-	-
New World monkey				
marmoset, tamarin	351	-	-	351
Squirrel, owl, spider monkey	-	-	-	-
Other New World monkey	-	-	-	-
Old World monkey				
Macaque	2,124	-	-	2,124
Baboon	-	-	-	-
Other Old World monkey	-	-	-	-
Ape				
Gibbon	-	-	-	-
Great ape	-	-	-	-
Other mammal	545	-	-	545
Bird				
Domestic fowl (<i>Gallus domesticus</i>)	148,215	478	351	149,044
Turkey	3,409	-	-	3,409
Quail (<i>Coturnix coturnix</i>)	34	-	-	34
Quail (not <i>Coturnix coturnix</i>)	883	-	-	883
Other bird	9,248	-	-	9,248
Reptile	383	-	-	383
Amphibian	12,002	2,870	1,043	15,915
Fish	406,129	38,433	119,341	563,903
Cephalopod	-	-	-	-
Total	1,763,474	375,693	1,653,690	3,792,857
Percentage of total for 2011	46%	10%	44%	100%

Table 4 Scientific procedures by species of animal and target body system

Great Britain 2011													
Species of animal	Body systems										Number of procedures		
	Respiratory	Cardiovascular	Nervous	Senses	Alimentary	Skin	Musculo - skeletal	Reproductive	Immune and reticulo - endothelial	Other system	Multiple systems	System not relevant	Total
Mammal													
Mouse	63,565	99,016	277,883	41,981	48,817	48,820	37,370	218,100	463,340	80,520	635,329	665,022	2,679,763
Rat	20,303	16,539	69,643	2,372	5,395	794	1,421	29,293	5,212	5,938	56,030	58,595	271,535
All other rodents	2,982	3,916	131	365	409	58	54	15	4,998	10	3,809	1,188	17,935
Rabbit	72	885	-	230	157	1,070	160	1,986	3,579	765	4,744	1,813	15,461
Cat	-	-	48	6	13	-	-	-	-	-	151	17	235
Dog	19	261	-	-	131	-	30	55	58	215	1,773	2,010	4,552
Ferret	248	13	-	38	-	-	-	-	55	-	83	254	691
Other carnivore	-	49	-	-	-	-	-	71	-	-	38	637	795
Horse and other equids	16	57	-	-	-	-	7	13	221	5,965	103	1,998	8,380
Pig	218	191	77	27	705	79	1	26	581	27	1,604	804	4,340
Sheep	65	211	144	-	775	77	383	1,388	1,490	28,682	2,462	2,037	37,714
All other ungulates	549	47	4	-	1,224	-	-	958	981	34	1,718	102	5,617
New World monkey	-	8	86	-	-	-	-	-	-	-	68	189	351
Old World monkey	9	41	57	5	-	-	-	-	2	-	792	1,218	2,124
All other mammals	-	-	-	13	-	131	-	3	-	-	-	398	545
Bird	84	718	1,474	425	3,898	57	371	1,237	3,594	121,798	21,018	7,944	162,618
Reptile	-	-	-	-	-	-	-	-	-	383	-	-	383
Amphibian	-	-	158	-	-	605	197	12,687	-	-	1,419	849	15,915
Fish	26,940	10,352	70,422	5,708	3,036	5,455	3,987	58,062	28,455	4,054	252,010	95,422	563,903
Total	115,070	132,304	420,127	51,170	64,560	57,146	43,981	323,894	512,566	248,391	983,151	840,497	3,792,857
Increase on 2010	27,623	10,993	43,437	-4,855	-18,243	-5,992	-7,805	2,599	46,528	10,221	88,507	-124,882	68,131
Percentage change from 2010	32%	9%	12%	-9%	-22%	-9%	-15%	1%	10%	4%	10%	-13%	2%
Percentage of total for 2011	3%	3%	11%	1%	2%	2%	1%	9%	14%	7%	26%	22%	100%
2010 Totals	87,447	121,311	376,690	56,025	82,803	63,138	51,786	321,295	466,038	238,170	894,644	965,379	3,724,726

Table 5 Scientific procedures by species of animal and level of anaesthesia

Great Britain 2011		Number of procedures				
Species of animal	No anaesthesia	Type of anaesthesia			Total	
		General anaesthesia, with recovery	Local anaesthesia	General anaesthesia at end of procedure, without recovery		
Mammal						
Mouse	1,984,204	396,591	144,433	106,142	2,679,763	
Rat	143,674	76,465	712	27,083	271,535	
All other rodents	11,722	2,863	548	1,721	17,935	
Rabbit	9,010	760	1,861	1,678	15,461	
Cat	148	87	-	-	235	
Dog	3,944	264	35	188	4,552	
Ferret	83	565	-	31	691	
Other carnivore	402	393	-	-	795	
Horse and other equids	362	-	8,014	4	8,380	
Pig	3,269	606	25	19	4,340	
Sheep	36,362	1,019	259	51	37,714	
All other ungulates	5,418	87	110	-	5,617	
Primate						
New World monkey	195	53	-	33	351	
Old World monkey	1,497	598	-	6	2,124	
All other mammals	401	3	131	-	545	
Bird	45,092	340	88	116,052	162,618	
Reptile	383	-	-	-	383	
Amphibian	15,304	430	-	107	15,915	
Fish	434,251	77,343	85	51,516	563,903	
T total	2,695,721	558,467	156,301	304,631	3,792,857	
Increase on 2010	127,435	-63,997	-50,049	72,294	68,131	
Percentage change from 2010	5%	-10%	-24%	31%	2%	
Percentage of total for 2011	71%	15%	4%	8%	100%	
2010 Totals	2,568,286	622,464	206,350	232,337	3,724,726	

Note. Neuromuscular blocking agents (NMBA) were used in 2,547 procedures in 2011. All of these procedures involved the use of general anaesthesia.

Table 6 Scientific procedures (non-toxicology) by species of animal and field of research, page 1 of 4

Great Britain 2011		Field of research										Number of procedures			
Species of animal		Anatomy	Physiology	Biochemistry	Psychology	Pathology	Immunology	Microbiology	Parasitology	Pharmacology	Pharmaceutical R&D	Therapeutics	Clinical medicine	Clinical surgery	
Mammal	Mouse	229,570	361,418	26,331	34,196	65,876	503,753	29,565	29,764	50,260	127,515	14,014	12,001	1,533	
	Rat	6,866	30,030	1,177	9,998	3,045	5,898	1,039	404	20,503	53,860	3,963	4,902	1,196	
	Guinea pig	-	370	-	-	23	412	451	1	1,663	1,565	96	-	-	
	Hamster	-	231	-	-	-	300	426	33	-	129	110	20	-	
	Gerbil	79	9	-	-	-	18	-	368	-	-	34	-	-	
	Other rodent	-	2	-	-	-	-	154	2,840	-	214	-	-	-	
	Rabbit	62	557	214	-	76	1,442	507	17	77	1,929	219	98	16	
	Cat	-	-	-	-	-	-	-	-	59	-	6	-	-	
	Dog	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Beagle	-	-	-	-	-	58	-	-	15	644	-	-	-	
	Greyhound	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other including cross-bred dogs	-	-	-	-	-	-	-	-	-	14	-	-	-	
	Ferret	8	24	-	6	-	72	539	-	-	13	3	-	-	
	Other carnivore	-	-	-	73	-	108	-	-	30	-	-	-	-	
	Horse and other equids	9	26	-	-	-	165	7,996	-	-	28	-	-	60	4
	Pig	62	304	-	-	280	321	233	6	140	32	61	152	72	53
	Goat	-	18	-	89	-	65	699	-	-	-	5	-	4	-
	Sheep	177	660	231	321	392	746	30,389	47	700	-	159	23	357	222
	Cattle	-	1,163	-	-	8	-	-	-	236	-	-	-	-	-
	Deer	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Camelid	-	-	-	-	-	257	-	-	-	-	-	-	-	-	
Other ungulate	-	-	-	12	-	-	-	-	-	-	-	-	-	-	

Table 6 Scientific procedures (non-toxicology) by species of animal and field of research, page 2 of 4

Great Britain 2011 Species of animal	Field of research										Number of procedures		
	Anatomy	Physiology	Biochemistry	Psychology	Pathology	Immunology	Microbiology	Parasitology	Pharmacology	Pharmaceutical R&D	Therapeutics	Clinical medicine	Clinical surgery
Primate	-	-	-	-	-	-	-	-	-	-	-	-	-
Prosimian	-	-	-	-	-	-	-	-	-	-	-	-	-
New World monkey	17	74	5	36	-	4	12	-	13	81	-	-	-
marmoset, tamarin	-	-	-	-	-	-	-	-	-	-	-	-	-
Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
Old World monkey	2	20	67	40	-	42	48	-	-	345	2	-	-
Macaque	-	-	-	-	-	-	-	-	-	-	-	-	-
Baboon	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
Ape	-	-	-	-	-	-	-	-	-	-	-	-	-
Gibbon	-	-	-	-	-	-	-	-	-	-	-	-	-
Great ape	-	-	-	-	-	-	-	-	-	-	-	-	-
Other mammal	-	10	-	-	3	-	-	-	-	-	-	-	-
Bird	-	-	-	-	-	-	-	-	-	-	-	-	-
Domestic fowl (<i>Gallus domesticus</i>)	780	1,513	8	60	-	729	4,632	117,178	-	263	254	4	-
Turkey	-	8	-	-	-	-	277	55	-	757	-	-	-
Quail (<i>Coturnix coturnix</i>)	-	34	-	-	-	-	-	-	-	-	-	-	-
Quail (spp. other than <i>Coturnix coturnix</i>)	-	11	-	-	-	-	-	-	-	-	-	-	-
Other bird	13	73	-	224	-	674	382	-	-	-	-	-	-
Reptile - any reptilian species	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphibian - any amphibian species	8,574	544	1,344	-	-	-	1,050	695	25	6	-	-	-
Fish - any fish species	111,034	207,455	-	1,131	3,956	16,338	9,742	4,923	1,605	40,866	300	311	-
Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	357,253	604,554	29,377	46,186	73,659	532,101	87,495	157,354	74,323	228,416	19,173	17,829	3,024
Increase on 2010	-27,037	115,141	-11,856	-5,525	-2,560	62,039	-13,210	22,041	-2,468	2,737	-2,947	319	1,067
Percentage change from 2010	-7%	24%	-29%	-11%	-3%	13%	-13%	16%	-3%	1%	-13%	2%	55%
Percentage of total for 2011	11%	18%	1%	1%	2%	16%	3%	5%	2%	7%	1%	0.5%	0.1%
2010 Totals	384,290	489,413	41,233	51,711	76,219	470,062	100,705	135,313	76,791	225,679	22,120	17,510	1,957

Table 6 Scientific procedures (non-toxicology) by species of animal and field of research, page 3 of 4

Species of animal	Field of research											Number of procedures		
	Dentistry	Genetics	Molecular biology	Cancer research	Nutrition	Zoology	Botany	Animal science	Ecology	Animal welfare	Other	Tobacco (1)	Alcohol	Total
Mammal														
Mouse	79	319,133	169,105	408,922	2,353	-	13	22	184	104	126,075	-	361	2,512,147
Rat	2	608	3,903	4,449	2,172	-	12	-	-	99	5,212	-	-	159,338
Guinea pig	-	-	-	-	-	-	-	-	-	-	-	-	-	4,581
Hamster	-	-	-	32	32	-	-	-	-	-	-	-	-	1,313
Gerbil	-	-	-	-	-	-	-	-	-	-	-	-	-	508
Other rodent	-	-	-	-	-	-	-	-	435	21	-	-	-	3,666
Rabbit	-	-	-	-	-	-	6	-	-	11	13	-	-	5,244
Cat	-	-	-	-	153	-	-	-	-	-	-	-	-	218
Dog														
Beagle	-	-	-	-	-	-	-	-	-	-	-	-	-	717
Greyhound	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other including cross-bred dogs	-	-	-	22	158	-	-	-	-	-	-	-	-	194
Ferret	-	-	-	-	-	-	-	-	-	-	-	-	-	665
Other carnivore	-	-	-	-	-	-	-	-	511	-	-	-	-	757
Horse and other equids	-	-	-	-	-	35	-	-	-	-	-	-	-	8,308
Pig	-	-	-	6	20	-	-	298	-	-	-	-	-	2,465
Goat	-	-	-	-	451	-	-	2	-	-	-	-	-	189
Sheep	-	208	-	-	-	-	-	-	-	-	-	-	-	37,217
Cattle	-	136	-	-	135	-	-	2,195	-	17	332	-	-	4,134
Deer	-	50	-	-	117	-	-	1,681	-	-	-	-	-	50
Camelid	-	-	-	-	-	-	-	-	-	-	-	-	-	257
Other ungulate	-	-	-	-	-	-	-	-	-	-	-	-	-	12

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 6 Scientific procedures (non-toxicology) by species of animal and field of research, page 4 of 4

Species of animal	Field of research											Number of procedures		
	Dentistry	Genetics	Molecular biology	Cancer research	Nutrition	Zoology	Botany	Animal science	Ecology	Animal welfare	Other	Tobacco (1)	Alcohol	Total
Primate														
Prosimian	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New World monkey														
marmoset, tamarin	-	-	-	-	-	-	-	-	-	-	-	-	-	242
Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Old World monkey														
Macaque	-	-	-	-	-	-	-	-	-	-	-	-	-	566
Baboon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ape														
Gibbon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Great ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other mammal														
154														545
Bird														
Domestic fowl (<i>Gallus domesticus</i>)	-	72	-	-	9,958	-	-	290	-	780	-	-	-	136,521
Turkey	-	-	-	-	216	-	-	165	-	-	-	-	-	1,478
Quail (<i>Coturnix coturnix</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	34
Quail (spp. other than <i>Coturnix coturnix</i>)	-	-	-	-	-	120	-	-	-	-	-	-	-	131
Other bird	-	-	-	-	-	2,919	-	2	3,901	614	-	-	-	8,802
Reptile - any reptilian species	-	-	-	-	-	383	-	-	-	-	-	-	-	383
Amphibian - any amphibian species	-	2,321	778	156	-	-	3	-	-	-	-	-	-	15,496
Fish - any fish species	-	23,012	6,509	18,070	2,884	1,623	-	4,007	33,580	27	-	-	180	487,553
Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	81	345,694	180,295	431,657	18,649	5,080	34	8,662	35,989	1,673	131,632	-	541	3,393,731
Increase on 2010	-33	-295	7,234	-10,217	3,419	-1,016	25	2,281	-30,276	443	-49,399	0	292	60,199
Percentage change from 2010	-29%	-0%	4%	-2%	22.4%	-17%	278%	36%	-44%	36%	-27%	N/A	117%	2%
Percentage of total for 2011	0.0%	10%	5%	13%	0.5%	0.1%	0.0%	0.3%	1%	0.0%	4%	0%	0.0%	100%
2010 Totals	114	345,989	173,061	441,874	15,230	6,096	9	6,381	69,265	1,230	181,031	0	249	3,333,532

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

N/A = Not applicable

Table 6a Animals used (non-toxicology), by species of animal and field of research, page 1 of 4

Great Britain 2011		Number of animals											
Species of animal		Field of research											
	Anatomy	Physiology	Biochemistry	Psychology	Pathology	Immunology	Microbiology	Parasitology	Pharmacology	Pharmaceutical R&D	Therapeutics	Clinical medicine	Clinical surgery
Mammal	229,228	359,387	26,310	33,833	65,719	502,227	29,565	29,764	49,527	125,335	13,991	11,950	1,533
	6,863	30,005	1,177	9,534	2,766	5,636	1,039	404	20,476	48,686	3,914	4,322	1,196
	Rat	-	370	-	-	23	412	436	1	1,663	96	-	-
	Guinea pig	-	231	-	-	-	300	33	-	129	110	20	-
	Hamster	-	9	-	-	-	18	351	-	-	34	-	-
	Gerbil	79	2	-	-	-	154	1,696	-	214	-	-	-
	Other rodent	-	-	-	-	-	447	-	77	1,923	214	39	16
	Rabbit	62	556	1	-	68	1,442	447	-	11	6	-	-
	Cat	-	-	-	-	-	-	-	-	-	-	-	-
	Dog	-	-	-	-	-	-	-	-	-	-	-	-
	Beagle	-	-	-	-	-	48	-	-	8	171	-	-
	Greyhound	-	-	-	-	-	-	-	-	-	-	-	-
	Other including cross-bred dogs	-	-	-	-	-	-	-	-	-	14	-	-
	Ferret	8	24	-	6	-	72	405	-	13	3	-	-
	Other carnivore	-	-	-	65	-	108	-	-	4	-	-	-
	Horse and other equids	9	26	-	-	-	96	92	-	10	-	-	4
	Pig	62	304	-	-	280	185	233	140	30	52	148	72
	Goat	-	10	-	17	-	65	6	-	-	3	-	4
	Sheep	177	660	231	321	342	388	598	665	-	66	23	334
	Cattle	-	1,163	-	-	8	685	47	212	-	-	-	222
Deer	-	-	-	-	-	-	-	-	-	-	-	-	
Camelid	-	-	-	-	-	257	-	-	-	-	-	-	
Other ungulate	-	-	-	-	-	-	-	-	-	-	-	-	

Table 6a Animals used (non-toxicology), by species of animal and field of research, page 2 of 4

Great Britain 2011		Field of research											Number of animals	
Species of animal		Anatomy	Physiology	Biochemistry	Psychology	Pathology	Immunology	Microbiology	Parasitology	Pharmacology	Pharmaceutical R&D	Therapeutics	Clinical medicine	Clinical surgery
Primate	Prosimian	-	-	-	-	-	-	-	-	-	-	-	-	-
	New World monkey	17	53	5	34	-	4	12	-	13	79	-	-	-
	marmoset, tamarin													
	Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
	Old World monkey													
	Macaque	-	16	7	6	-	42	48	-	-	24	2	-	-
	Baboon	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ape													
	Gibbon	-	-	-	-	-	-	-	-	-	-	-	-	-
	Great ape	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other mammal	-	10	-	-	3	-	-	-	-	-	-	-	-
	Bird													
	Domestic fowl (Gallus domesticus)	780	1,513	8	60	-	729	4,632	117,178	-	250	254	4	-
	Turkey	-	8	-	-	-	-	136	55	-	676	-	-	-
	Quail (Coturnix coturnix)	-	34	-	-	-	-	-	-	-	-	-	-	-
	Quail (spp other than Coturnix coturnix)	-	11	-	-	-	-	-	-	-	-	-	-	-
	Other bird	13	73	-	112	-	211	382	-	-	-	-	-	-
Reptile - any reptilian species	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amphibian - any amphibian species	2,944	107	205	-	-	-	1,050	695	25	5	-	-	-	
Fish - any fish species	110,320	207,267	-	916	3,956	16,275	9,742	4,923	1,605	40,866	300	311	-	
Cephalopod - Octopus vulgaris	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	350,562	601,839	27,944	44,904	73,165	529,200	49,450	156,117	73,462	220,061	19,092	17,060	3,024	

Table 6a Animals used (non-toxicology), by species of animal and field of research, page 3 of 4

Great Britain 2010 Species of animal	Field of research											Number of animals	
	Dentistry	Genetics	Molecular biology	Cancer research	Nutrition	Zoology	Botany	Animal science	Ecology	Animal welfare	Tobacco(1)	Alcohol	Total
Mammal													
Mouse	79	318,936	167,981	402,417	2,353	-	13	6	184	104	126,075	361	2,496,878
Rat	2	608	3,903	4,403	2,172	-	12	-	-	99	5,212	-	152,429
Guinea pig	-	-	-	-	-	-	-	-	-	-	-	-	4,566
Hamster	-	-	-	32	32	-	-	-	-	-	-	-	1,313
Gerbil	-	-	-	-	-	-	-	-	-	-	-	-	491
Other rodent	-	-	-	-	-	-	-	-	435	21	-	-	2,522
Rabbit	-	-	-	-	-	-	6	-	-	11	7	-	4,869
Cat	-	-	-	-	119	-	-	-	-	-	-	-	136
Dog	-	-	-	-	-	-	-	-	-	-	-	-	227
Beagle	-	-	-	-	-	-	-	-	-	-	-	-	-
Greyhound	-	-	-	-	-	-	-	-	-	-	-	-	94
Other including cross-bred dogs	-	-	-	22	58	-	-	-	-	-	-	-	531
Ferret	-	-	-	-	-	-	-	-	511	-	-	-	723
Other carnivore	-	-	-	-	-	35	-	-	-	-	-	-	261
Horse and other equids	-	-	-	-	20	-	-	-	-	-	-	-	2,314
Pig	-	-	-	6	451	-	-	298	-	-	-	-	107
Goat	-	-	-	-	-	-	-	2	-	-	-	-	-
Sheep	-	208	-	-	128	-	-	2,135	-	17	332	-	6,847
Cattle	-	136	-	-	70	-	-	497	-	-	-	-	2,818
Deer	-	50	-	-	-	-	-	-	-	-	-	-	50
Camelid	-	-	-	-	-	-	-	-	-	-	-	-	257
Other ungulate	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 6a Animals used (non-toxicology), by species of animal and field of research, page 4 of 4

Great Britain 2011		Field of research											Number of animals		
Species of animal		Dentistry	Genetics	Molecular biology	Cancer research	Nutrition	Zoology	Botany	Animal science	Ecology	Animal welfare	Other	Tobacco(1)	Alcohol	Total
Primate	Prosimian	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	New World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	marmoset, tamarin	-	-	-	-	-	-	-	-	-	-	-	-	-	217
	Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Macaque	-	-	-	-	-	-	-	-	-	-	-	-	-	145
	Baboon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other mammal	Gibbon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Great ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other mammal	-	154	-	-	-	-	-	-	297	-	-	-	-	464
	Bird	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Domestic fowl (Gallus domesticus)	-	72	-	-	9,958	-	-	251	-	780	-	-	-	136,469
	Turkey	-	-	-	-	216	-	-	165	-	-	-	-	-	1,256
	Quail (Coturnix coturnix)	-	-	-	-	-	-	-	-	-	-	-	-	-	34
	Quail (spp.other than Coturnix coturnix)	-	-	-	-	-	-	120	-	-	-	-	-	-	131
	Other bird	-	-	-	-	-	2,919	-	2	3,865	614	-	-	-	8,191
	Reptile - any reptilian species	-	-	-	-	-	383	-	-	-	-	-	-	-	383
Fish - any fish species	Amphibian - any amphibian species	-	2,321	178	80	-	-	-	-	-	-	-	-	-	7,610
	Fish - any fish species	-	22,977	6,509	18,070	2,730	1,623	-	4,007	33,291	27	-	-	180	485,895
	Cephalopod - Octopus vulgaris	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		81	345,462	178,571	425,030	18,307	5,080	31	7,363	38,583	1,673	131,626	-	541	3,318,228

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 7 Scientific procedures (non-toxicology) by species of animal and production of biological materials

Great Britain 2011

Species of animal	Production						Other ⁽¹⁾	Total	
	Infectious agents	Vectors	Neoplasms	Monoclonal antibodies (ascites model)	Monoclonal antibodies (initial immunisation)	Polyclonal antibodies			Other biological materials
Mammal									
Mouse	24,463	5,150	10,251	-	1,731	2,290	114,497	2,353,765	2,512,147
Rat	466	4	259	-	61	115	14,020	144,413	159,338
All other rodents	347	-	24	-	2	146	119	9,430	10,068
Rabbit	48	15	-	-	46	3,252	308	1,575	5,244
Cat	-	-	-	-	-	-	-	218	218
Dog	-	-	-	-	-	-	541	370	911
Ferret	-	-	-	-	-	102	-	563	665
Other carnivore	-	-	-	-	-	-	19	738	757
Horse and other equids	-	-	-	-	-	-	6,046	2,262	8,308
Pigs, sheep & all other ungulates	760	-	-	-	33	1,011	30,308	12,212	44,324
Primate									
New World monkey	-	-	-	-	-	-	85	157	242
Old World monkey	-	-	-	-	-	2	308	256	566
All other mammals	-	-	-	-	-	-	3	542	545
Bird	116,695	-	-	-	-	477	2,048	27,746	146,966
Reptile, Amphibian	-	-	-	-	-	-	7,634	8,245	15,879
Fish	4,685	-	-	-	-	-	1,353	481,515	487,553
Total	147,464	5,169	10,534	-	1,873	7,395	177,289	3,044,007	3,393,731
Increase on 2010	20,141	-1,715	1,943	0	-271	-822	-21,866	62,789	60,199
Percentage change from 2010	16%	-25%	23%	N/A	-13%	-10%	-11%	2%	1.8%
Percentage of total for 2011	4%	0.2%	0.3%	0%	0.1%	0.2%	5%	90%	100%
2010 Totals	127,323	6,884	8,591	0	2,144	8,217	199,155	2,981,218	3,333,532

(1) Includes breeding procedures which are now detailed in Tables 3.1 - 3.3

Table 9 Scientific procedures (toxicology) by species of animal and toxicological purpose, page 1 of 4

Great Britain 2011		Toxicology or other safety/efficacy evaluation							Number of procedures	
Species of animal		General safety/efficacy evaluation							Finished cosmetics(2)	Cosmetics ingredients(2)
		Pollution	Agriculture	Industry	Household	Food additives	Other foodstuffs			
Mammal										
Mouse		1,165	5,789	5,364	-	-	3,628	-	-	
Rat		842	12,447	12,433	-	3,412	397	-	-	
Guinea pig		-	-	-	-	-	-	-	-	
Hamster		-	-	80	-	-	-	-	-	
Gerbil		-	-	-	-	-	-	-	-	
Other rodent		-	48	-	-	-	-	-	-	
Rabbit		-	1,008	646	-	104	-	-	-	
Cat		-	-	-	-	-	-	-	-	
Dog		-	-	-	-	-	-	-	-	
Beagle		-	65	-	-	8	64	-	-	
Greyhound		-	-	-	-	-	-	-	-	
Other including cross-bred dogs		-	-	-	-	-	-	-	-	
Ferret		-	-	-	-	-	-	-	-	
Other carnivore		-	-	-	-	-	-	-	-	
Horse, donkey and cross-bred equids		-	-	-	-	-	-	-	-	
Pig		-	5	-	-	-	-	-	-	
Goat		-	6	-	-	-	-	-	-	
Sheep		-	-	-	-	-	-	-	-	
Cattle		-	19	-	-	-	-	-	-	
Deer		-	-	-	-	-	-	-	-	
Camelid		-	-	-	-	-	-	-	-	
Other ungulate		-	-	-	-	-	-	-	-	

(2) Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

(2) Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

Table 9 Scientific procedures (toxicology) by species of animal and toxicological purpose, page 2 of 4

Great Britain 2011		Toxicology or other safety/efficacy evaluation							Number of procedures	
Species of animal		General safety/efficacy evaluation								
		Pollution	Agriculture	Industry	Household	Food additives	Other foodstuffs	Finished cosmetics(2)	Cosmetics ingredients(2)	
Primate	Prosimian	-	-	-	-	-	-	-	-	
	New World monkey	-	-	-	-	-	-	-	-	
	marmoset, tamarin	-	-	-	-	-	-	-	-	
	Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	
	Other New World monkey	-	-	-	-	-	-	-	-	
	Old World monkey	-	-	-	-	-	-	-	-	
	Macaque	-	-	-	-	-	-	-	-	
	Baboon	-	-	-	-	-	-	-	-	
	Other Old World monkey	-	-	-	-	-	-	-	-	
	Ape	-	-	-	-	-	-	-	-	
	Gibbon	-	-	-	-	-	-	-	-	
	Great Ape	-	-	-	-	-	-	-	-	
	Other mammal	-	-	-	-	-	-	-	-	
	Bird	-	-	-	-	-	-	-	-	
	Domestic fowl (Gallus domesticus)	-	235	-	-	-	-	-	-	
	Turkey	-	64	-	-	-	-	-	-	
	Quail (Coturnix coturnix)	-	-	-	-	-	-	-	-	
	Quail (spp,other than Coturnix coturnix)	-	752	-	-	-	-	-	-	
	Other bird	64	382	-	-	-	-	-	-	
Reptile - any reptilian species	-	-	-	-	-	-	-	-		
Amphibian - any amph bian species	400	-	-	-	-	-	-	-		
Fish - any fish species	11,205	1,965	680	-	-	-	-	-		
Total	13,676	22,785	19,203	-	3,524	4,089	-	-		
Increase on 2010	5,254	5,808	-7,901	-24	2,409	-3,599	0	0		
Percentage change from 2010	62%	34%	-29%	N/A	216%	-47%	N/A	N/A		
Percentage of total for 2011	3%	6%	5%	0%	0.9%	1%	0%	0%		
2010 Totals	8,422	16,977	27,104	24	1,115	7,688	0	0		

N/A = Not applicable

(2) Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

Table 9 Scientific procedures (toxicology) by species of animal and toxicological purpose, page 3 of 4

Great Britain 2011 Species of animal		Toxicology or other safety/efficacy evaluation										Number of procedures	
		Pharmaceutical safety/efficacy evaluation					Other purposes					Total	
		Safety testing	Efficacy testing	Quality control	ADME and residue	Toxicology research	Tobacco safety(1)	Medical device safety	Method development	Other			
Mammal													
Mouse	32,063	3,475	99,988	7,925	1,390	-	980	4,210	1,639	167,616			
Rat	64,722	117	757	10,854	453	-	424	3,288	2,051	112,197			
Guinea pig	1,146	31	5,407	20	39	-	299	14	-	6,956			
Hamster	390	118	-	93	-	-	-	-	-	681			
Gerbil	-	-	-	-	-	-	-	-	-	-			
Other rodent	-	-	-	-	-	-	-	-	182	230			
Rabbit	4,640	9	3,075	121	-	-	419	185	10	10,217			
Cat	17	-	-	-	-	-	-	-	-	17			
Dog													
Beagle	2,434	-	-	889	-	-	1	165	15	3,641			
Greyhound	-	-	-	-	-	-	-	-	-	-			
Other including cross-bred dogs	-	-	-	-	-	-	-	-	-	-			
Ferret	-	21	-	5	-	-	-	-	-	26			
Other carnivore	-	38	-	-	-	-	-	-	-	38			
Horse and other equids	32	40	-	-	-	-	-	-	-	72			
Pig	422	845	-	110	4	-	47	439	3	1,875			
Goat	-	-	-	1	-	-	-	-	-	7			
Sheep	76	160	128	48	-	-	69	16	-	497			
Cattle	12	754	22	147	-	-	-	6	8	968			
Deer	-	-	-	-	-	-	-	-	-	-			
Camelid	-	-	-	-	-	-	-	-	-	-			
Other ungulate	-	-	-	-	-	-	-	-	-	-			

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 9 Scientific procedures (toxicology) by species of animal and toxicological purpose, page 4 of 4

Species of animal		Toxicology or other safety/efficacy evaluation										Number of procedures	
		Pharmaceutical safety/efficacy evaluation					Other purposes					Total	
		Safety testing	Efficacy testing	Quality control	ADME and residue	Toxicology research	Tobacco safety(1)	Medical device safety	Method development	Other			
Primate	Prosimian	-	-	-	-	-	-	-	-	-	-	-	-
	New World monkey	83	-	-	-	-	-	-	-	26	-	-	109
	marmoset, tamarin	-	-	-	-	-	-	-	-	-	-	-	-
	Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-	-	-	-	-
	Other New World monkey	-	-	-	-	-	-	-	-	-	-	-	-
	Old World monkey	877	-	-	357	-	-	-	-	324	-	-	1,558
	Macaque	-	-	-	-	-	-	-	-	-	-	-	-
	Baboon	-	-	-	-	-	-	-	-	-	-	-	-
	Other Old World monkey	-	-	-	-	-	-	-	-	-	-	-	-
	Ape	-	-	-	-	-	-	-	-	-	-	-	-
Gibbon	-	-	-	-	-	-	-	-	-	-	-	-	-
	Great Ape	-	-	-	-	-	-	-	-	-	-	-	-
Other mammal	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bird	-	-	-	-	-	-	-	-	-	-	-	-
Bird	Domestic fowl (Gallus domesticus)	1,997	9,091	909	30	-	-	-	-	261	-	-	12,523
	Turkey	1,187	677	-	-	-	-	-	-	3	-	-	1,931
	Quail (Coturnix coturnix)	-	-	-	-	-	-	-	-	-	-	-	-
	Quail (spp.other than Coturnix coturnix)	-	-	-	-	-	-	-	-	-	-	-	752
	Other bird	-	-	-	-	-	-	-	-	-	-	-	446
	Reptile - any reptilian species	-	-	-	-	-	-	-	-	-	-	-	-
	Amphibian - any amphibian species	-	-	-	-	-	-	-	-	-	-	-	-
	Fish - any fish species	44,796	7,977	-	900	259	-	-	-	8,568	-	19	419
	Total	154,894	23,353	110,286	21,500	2,145	-	2,239	17,505	3,927	399,126		
	Increase on 2010	32,983	-3,039	17,060	-3,425	-35,711	0	1,165	-2,753	-295	7,932		
Percentage change from 2010	27%	-12%	18%	-14%	-94%	N/A	108%	-14%	-7%	2%			
Percentage of total for 2011	39%	6%	28%	5%	1%	0%	0.6%	4%	1%	100%			
2010 Totals	121,911	26,392	93,226	24,925	37,856	0	1,074	20,258	4,222	391,194			
(1) Following a decision in 1997, procedures using an mals in research on tobacco have not been allowed.													
N/A = Not applicable													

(1) Following a decision in 1997, procedures using an mals in research on tobacco have not been allowed.

N/A = Not applicable

Table 9a Animals used (toxicology), by species of animal and toxicological purpose, page 1 of 4

Great Britain 2011		Toxicology or other safety/efficacy evaluation						Number of animals	
Species of animal		General safety/efficacy evaluation						Finished cosmetics(2)	Cosmetics ingredients(2)
		Pollution	Agriculture	Industry	Household	Food additives	Other foodstuffs		
Mammal									
Mouse	1,165	5,789	5,364	-	-	3,628	-	-	
Rat	842	12,431	12,433	-	3,412	397	-	-	
Guinea pig	-	-	-	-	-	-	-	-	
Hamster	-	-	80	-	-	-	-	-	
Gerbil	-	-	-	-	-	-	-	-	
Other rodent	-	48	-	-	-	-	-	-	
Rabbit	-	1,008	646	-	104	-	-	-	
Cat	-	-	-	-	-	-	-	-	
Dog									
Beagle	-	65	-	-	8	64	-	-	
Greyhound	-	-	-	-	-	-	-	-	
Other including cross-bred dogs	-	-	-	-	-	-	-	-	
Ferret	-	-	-	-	-	-	-	-	
Other carnivore	-	-	-	-	-	-	-	-	
Horse and other equids	-	-	-	-	-	-	-	-	
Pig	-	5	-	-	-	-	-	-	
Goat	-	6	-	-	-	-	-	-	
Sheep	-	-	-	-	-	-	-	-	
Cattle	-	19	-	-	-	-	-	-	
Deer	-	-	-	-	-	-	-	-	
Camelid	-	-	-	-	-	-	-	-	
Other ungulate	-	-	-	-	-	-	-	-	

(2)Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

(2) Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

Table 9a Animals used (toxicology), by species of animal and toxicological purpose, page 2 of 4

Great Britain 2010 Species of animal	Toxicology or other safety/efficacy evaluation						Number of animals	
	General safety/efficacy evaluation						Finished cosmetics(2)	Cosmetics ingredients(2)
	Food additives							
	Pollution	Agriculture	Industry	Household	Other foodstuffs			
Primate								
Prosimian	-	-	-	-	-	-	-	-
New World monkey								
marmoset, tamarin	-	-	-	-	-	-	-	-
Squirrel, owl, spider monkey	-	-	-	-	-	-	-	-
Other New World monkey	-	-	-	-	-	-	-	-
Old World monkey								
Macaque	-	-	-	-	-	-	-	-
Baboon	-	-	-	-	-	-	-	-
Other Old World monkey	-	-	-	-	-	-	-	-
Ape								
Gibbon	-	-	-	-	-	-	-	-
Great Ape	-	-	-	-	-	-	-	-
Other mammal								
Bird								
Domestic fowl (<i>Gallus domesticus</i>)	-	235	-	-	-	-	-	-
Turkey	-	64	-	-	-	-	-	-
Quail (<i>Coturnix coturnix</i>)	-	-	-	-	-	-	-	-
Quail (spp,other than <i>Coturnix coturnix</i>)	-	752	-	-	-	-	-	-
Other bird	64	382	-	-	-	-	-	-
Reptile - any reptilian species	-	-	-	-	-	-	-	-
Amphibian - any amphibian species	400	-	-	-	-	-	-	-
Fish - any fish species	11,205	1,965	680	-	-	-	-	-
Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-
Total	13,676	22,769	19,203	-	3,524	4,089	-	-

(2) Following a decision in 1998, procedures using animals in research on finished cosmetics and on cosmetic ingredients have not been allowed.

Table 9a Animals used (toxicology), by species of animal and toxicological purpose, page 3 of 4

Species of animal	Toxicology or other safety/efficacy evaluation										Number of animals	
	Pharmaceutical safety/efficacy evaluation					Other purposes					Total	
	Safety testing	Efficacy testing	Quality control	ADME and residue	Toxicology research	Tobacco safety (1)	Medical device safety	Method development	Other			
Mammal												
Mouse	32,011	2,955	99,988	7,692	1,390	-	980	3,962	1,639		166,563	
Rat	64,571	117	757	10,854	453	-	424	2,978	2,037		111,706	
Guinea pig	1,138	31	5,407	20	39	-	299	14	-		6,948	
Hamster	390	118	-	93	-	-	-	-	-		681	
Gerbil	-	-	-	-	-	-	-	-	-		-	
Other rodent	-	-	-	-	-	-	-	-	182		230	
Rabbit	3,143	6	1,561	121	-	-	368	8	10		6,975	
Cat	17	-	-	-	-	-	-	-	-		17	
Dog												
Beagle	2,223	-	-	123	-	-	1	52	8		2,544	
Greyhound	-	-	-	-	-	-	-	-	-		-	
Other including cross-bred dogs	-	-	-	-	-	-	-	-	-		-	
Ferret												
Ferret	-	21	-	-	-	-	-	-	-		21	
Other carnivore												
Other carnivore	-	19	-	-	-	-	-	-	-		19	
Horse and other equids												
Horse and other equids	32	40	-	-	-	-	-	-	-		72	
Pig												
Pig	405	749	-	43	4	-	46	394	2		1,648	
Goat												
Goat	-	-	-	1	-	-	-	-	-		7	
Sheep												
Sheep	76	160	121	48	-	-	69	16	-		490	
Cattle												
Cattle	12	754	22	147	-	-	-	-	-		954	
Deer												
Deer	-	-	-	-	-	-	-	-	-		-	
Camelid												
Camelid	-	-	-	-	-	-	-	-	-		-	
Other ungulate												
Other ungulate	-	-	-	-	-	-	-	-	-		-	

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 9a Animals used (toxicology), by species of animal and toxicological purpose, page 4 of 4

Great Britain 2011

Species of animal	Toxicology or other safety/efficacy evaluation										Total
	Pharmaceutical safety/efficacy evaluation					Other purposes					
	Safety testing	Efficacy testing	Quality control	ADME and residue	Toxicology research	Tobacco safety (1)	Medical device safety	Method development	Other		
Primate Prosimian New World monkey marmoset, tamarin Squirrel, owl, spider monkey Other New World monkey	-	-	-	-	-	-	-	-	-	-	
	27	-	-	-	-	-	-	-	-	27	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
Old World monkey Macaque Baboon Other Old World monkey	775	-	-	76	-	-	-	219	-	1,070	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
Ape Gibbon Great Ape	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
Other mammal Bird Domestic fowl (Gallus domesticus) Turkey Quail (Coturnix coturnix) Quail (spp.other than Coturnix coturnix) Other bird	-	-	-	-	-	-	-	-	-	-	
	1,997	9,091	909	30	-	-	-	261	-	12,523	
	1,187	677	-	-	-	-	-	3	-	1,931	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	752	
	-	-	-	-	-	-	-	-	-	446	
	-	-	-	-	-	-	-	-	-	-	
Reptile - any reptilian species Amphibian - any amphibian species Fish - any fish species Cephalopod - <i>Octopus vulgaris</i>	-	-	-	-	-	-	-	-	19	419	
	44,796	7,977	-	900	259	-	-	8,568	-	76,350	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
Total	152,800	22,715	108,765	20,148	2,145	-	2,187	16,475	3,897	392,393	

(1) Following a decision in 1997, procedures using animals in research on tobacco have not been allowed.

Table 10 Scientific procedures (toxicology) by species of animal and type of legislation
Summary version

Note. For numbers of procedures by purpose, see full table available on the website

Great Britain 2011							Number of procedures		
Species of animal	UK requirements only	One EU country only (not UK)	EU requirements, incl. European Pharmacopoeia	Requirements of (non-EU) Council of Europe	Requirements of other countries	Any combination of legislative requirements	Non-legislative purposes	Total	
Mammal									
Mouse	1,493	-	8,042	46	580	151,163	6,292	167,616	
Rat	434	27	900	-	272	104,462	6,102	112,197	
All other rodents	128	-	717	-	221	6,414	387	7,867	
Rabbit	240	-	2,511	-	39	7,169	258	10,217	
Cat	-	-	15	-	-	2	-	17	
Dog	-	-	35	-	-	3,299	307	3,641	
Ferret	-	-	-	-	-	26	-	26	
Other carnivore	38	-	-	-	-	-	-	38	
Horse and other equids	-	-	72	-	-	-	-	72	
Pigs, sheep & all other ungulates	80	-	1,539	-	111	1,591	26	3,347	
Primate									
New World monkey	-	-	-	-	-	96	13	109	
Old World monkey	-	-	-	-	-	1,549	9	1,558	
All other mammals	-	-	-	-	-	-	-	-	
Bird	-	1,535	2,281	-	-	11,572	264	15,652	
Reptile / Amphibian	-	-	-	-	-	419	-	419	
Fish	858	-	11,290	-	1,317	10,859	52,026	76,350	
Total	3,271	1,562	27,402	46	2,540	298,621	65,684	399,126	
Increase on 2010	124	1,548	-479	-15	-2,003	17,589	-8,832	7,932	
Percentage change from 2010	4%	11057%	-2%	N/A	-44%	6%	-12%	2%	
Percentage of total for 2011	1%	0.4%	7%	0%	1%	75%	16%	100%	
2010 Totals	3,147	14	27,881	61	4,543	281,032	74,516	391,194	

N/A = Not applicable

Table 11 Scientific procedures (toxicology) by species of animal and type of toxicological test: all purposes, page 1 of 2

Great Britain 2011												Number of procedures	
Species of animal	Type of toxicological test or procedure											Teratogenicity	
	Acute lethal toxicity	Acute lethal concentration	Acute limit setting	Acute non - lethal clinical sign	Subacute limit-setting or dose ranging	Subacute toxicity	Subchronic and chronic	Carcinogenicity	Genetic toxicology (includes mutagenicity)				
Mammal													
Mouse	78,545	1,180	4,563	11,406	3,435	3,552	1,945	1,815	2,166	355			
Rat	74	1,878	3,269	5,549	8,046	13,483	10,847	2,032	4,850	2,987			
All other rodents	338	182	4	38	-	40	96	-	-	-			
Rabbit	-	-	-	8	68	102	64	-	-	1,813			
Cat	-	-	-	2	-	-	-	-	-	-			
Dog	-	-	-	87	386	840	840	-	-	-			
Ferret	-	-	-	-	-	-	-	-	-	-			
Other carnivore	-	-	-	-	-	-	-	-	-	-			
Horse and other equids	-	-	-	-	32	-	-	-	-	-			
Pigs, sheep & all other ungulates	-	-	-	22	48	59	134	-	-	-			
Primate													
New World monkey	-	-	-	-	11	2	-	-	-	-			
Old World monkey	-	-	-	7	121	476	228	-	-	-			
All other mammals	-	-	-	-	-	-	-	-	-	-			
Bird	308	60	182	-	60	534	-	-	-	-			
Reptile, amphibian	-	-	-	-	-	400	-	-	-	-			
Fish	105	5,383	2,457	-	2,136	6,734	4,080	-	-	-			
Total	79,370	8,683	10,475	17,119	14,343	26,222	18,234	3,847	7,016	5,155			
Increase on 2010	12,315	1,647	-4,997	11,043	820	2,434	1,546	-8,576	398	1,701			
Percentage change from 2010	18%	23%	-32%	182%	6%	10%	9%	-69%	6%	49%			
Percentage of total for 2011	20%	2%	3%	4%	4%	7%	5%	1%	2%	1%			
2010 Totals	67,055	7,036	15,472	6,076	13,523	23,788	16,688	12,423	6,618	3,454			

Table 11 Scientific procedures (toxicology) by species of animal and type of toxicological test: all purposes, page 2 of 2

Species of animal	Type of toxicological test or procedure										Number of procedures	
	Other reproductive toxicity	In eyes	For skin irritation	For skin sensitisation	Toxicokinetics	Pyrogenicity	Biocompatibility	Enzyme induction for in vitro tests	Immunotoxicology	Other toxicology	Total	
Mammal												
Mouse	156	-	104	1,306	7,639	-	250	18	7,885	41,296	167,616	
Rat	34,230	-	-	-	9,985	-	94	164	624	14,085	112,197	
All other rodents	-	-	-	48	72	-	-	80	43	6,926	7,867	
Rabbit	162	692	989	-	96	4,281	188	-	-	1,754	10,217	
Cat	-	-	-	-	-	-	-	-	-	15	17	
Dog	95	-	-	-	342	-	-	-	-	1,051	3,641	
Ferret	-	-	-	-	-	-	-	-	-	26	26	
Other carnivore	-	-	-	-	-	-	-	-	-	38	38	
Horse and other equids	-	-	-	-	-	-	40	-	-	-	72	
Pigs, sheep & all other ungulates	-	-	8	-	202	-	69	-	-	2,805	3,347	
Primate												
New World monkey	-	-	-	-	-	-	-	-	-	96	109	
Old World monkey	-	-	-	-	282	-	-	-	-	444	1,558	
All other mammals	-	-	-	-	-	-	-	-	-	-	-	
Bird	556	-	-	-	108	-	-	-	-	13,844	15,652	
Reptile, amphibian	-	-	-	-	-	-	-	-	-	19	419	
Fish	1,280	-	-	-	1,110	-	-	-	4,575	48,490	76,350	
Total	36,479	692	1,101	1,354	19,836	4,281	641	262	13,127	130,889	399,126	
Increase on 2010	3,363	179	405	202	-3,661	-1,337	393	146	5,871	-15,960	7,932	
Percentage change from 2010	10%	35%	58%	18%	-16%	-24%	158%	126%	81%	-10.9%	2%	
Percentage of total for 2011	9%	0.2%	0.3%	0.3%	5%	1%	0.2%	0.1%	3%	33%	100%	
2010 Totals	33,116	513	696	1,152	23,497	5,618	248	116	7,256	146,849	391,194	

Appendix A

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

Introduction

1. The Animals (Scientific Procedures) Act 1986 puts into effect 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. The Act implements, and in some ways exceeds, the requirements of European Union Directive 86/609/EEC.
2. Operation of the Act is a reserved issue in Great Britain, the Home Office administering the legislation in England, Scotland and Wales. The Act is separately administered in Northern Ireland.

Scope of the Act

3. The 1986 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'.
4. 'Protected animals' are defined as all living vertebrate animals, except man, plus one invertebrate species, *Octopus vulgaris*. The definition extends to foetal, larval or embryonic forms that have reached specified stages in their development.
5. 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.
6. 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.
7. 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 the identification of animals for scientific purposes, if this causes no more than momentary pain or distress and no lasting harm; or the administration of a novel veterinary product under authority of an Animal Test Exemption Certificate (issued under the Medicines Act 1968).
8. Two kinds of licence are required for all 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.

Personal licences

9. A personal licence is the Home Secretary'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

Home Office licence need the endorsement of a sponsor (usually a personal licence holder in a senior position at the applicant's place of work). Satisfactory completion of an accredited training course is also required before a personal licence is issued.

10. On 31 December 2011 there were 15,403 active personal licences. Personal licences continue to be in force until revoked, but they must be reviewed at least every five years.

Project licences

11. A project licence is granted when the Home Secretary 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.
12. In deciding whether and on what terms to authorise the project, the likely adverse effects on the animals used must be weighed against the potential benefits (to humans, other animals or the environment) which are expected to accrue from the work. Adequate consideration must also have been given to the feasibility of using alternative methods not involving living animals.
13. The holder of a project licence undertakes overall responsibility for the scientific direction and control of the work. New project licence applicants are required to complete an accredited training course before the licence is granted.
14. When making an application for a project licence the applicant nominates, and the Home Office assigns, an overall severity banding to the project. There are three main severity bandings: mild, moderate and substantial. A fourth band, unclassified, is used for procedures where the animals are decerebrate or used under terminal anaesthesia – i.e. the animal is anaesthetised before the procedure starts, is kept anaesthetised throughout the course of the procedure and is killed without recovering consciousness.
15. It is not possible to lay down hard and fast rules about how severity should be assessed. It depends not only upon the amount of suffering caused, but also the duration, the number of animals and what action is taken to reduce suffering, such as the use of anaesthesia or early endpoints. The overall severity is used in weighing the likely adverse effects on the animals against the benefits likely to accrue, as required by section 5(4) of the Act.
16. The following table details the number of project licences which were active on 31 December 2011, the number granted during 2011 and the number revoked during 2011 (usually either at the licence holder's request or because the licence had run the maximum allowed term of five years). The total figures are subdivided into severity bandings.

Project licences by severity band – number and share of total, 2011

Severity band	In force on 31 December 2011		Granted during 2011		Revoked during 2011	
	Number	%	Number	%	Number	%
Mild	936	36%	202	36%	191	35%
Moderate	1,591	61%	344	61%	332	61%
Substantial	55	2%	10	2%	8	1%
Unclassified	42	2%	8	1%	14	3%
Total	2,624		564		545	

NB Percentages may not sum to 100 due to rounding.

Designation of premises

17. Except where otherwise authorised in a project licence (e.g. for field work at a specified place and time), any place where work is carried out under the Act must be designated as a scientific procedure establishment. Since January 1990 establishments that breed certain types of animal listed in Schedule 2 to the Act – mouse, rat, guinea-pig, hamster, rabbit, dog, cat and primate – for use in scientific procedures ('breeding establishments'), and establishments that obtain such animals from elsewhere and supply them to laboratories ('supplying establishments') must hold a certificate of designation.
18. Quail *Coturnix coturnix* was added to the list of species specified in Schedule 2 of the Act in 1993, and ferrets, gerbils, genetically modified pigs and genetically modified sheep were added to the list in 1999. Designated establishments are required to nominate a person to be responsible for the day-to-day care of animals and a veterinary surgeon to advise on their health and welfare.
19. There were 181 certificates of designation in force on 31 December 2011. Of these, 178 were registered as user establishments, 113 as breeding establishments and 63 as supplying establishments. These figures add up to more than the total number of establishments because a single establishment may fall into more than one of the categories: for example, an establishment may be registered as both a breeder and user of animals.

Table 19 Project licences and scientific procedures by type of designated establishment

Great Britain 2011

Type of designated establishment	Number of licence holders ⁽¹⁾ reporting countable ⁽²⁾ procedures, by number of procedures reported									Licencees reporting non-countable ⁽²⁾ procedures only	Number of licence holders ⁽¹⁾ reporting no procedures	Total licencees	Procedures	
	Number of procedures reported												Total	Percentage
	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	Total					
Public health laboratories Universities, medical schools NHS hospitals Government departments Other public bodies Non-profit-making organisations Commercial organisations	3	3	3	2	1	0	1	3	16	3	2	21	9,608	0%
	370	198	272	293	159	90	85	427	1,894	7	470	2,371	1,897,225	50%
	2	2	3	6	2	4	0	6	25	-	3	28	23,400	1%
	28	13	8	10	5	3	0	13	80	-	23	103	61,500	2%
	19	14	13	14	12	10	7	70	159	2	48	209	504,168	13%
	14	8	6	17	7	2	5	43	102	-	23	125	295,451	8%
	32	15	27	31	25	19	11	93	253	2	53	308	1,001,505	26%
Total	468	253	332	373	211	128	109	655	2,529	14	622	3,165	3,792,857	100%

(1) Some licence-holders hold more than one licence; these figures are compiled by numbers of project licences, not by numbers of actual licence-holders.

(2) Only 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.

Animals in the wild involved in rodenticide trials are also not counted. Details (if applicable) are given in the Commentary.

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