

Figures on Laboratory Animals Used in 2020

Report date 16 December 2021

Since 2021, in accordance with Section 1 Paragraph 2 of the Laboratory Animal Reporting Ordinance, the competent authorities have been reporting the figures on animals used for scientific purposes to the German Federal Institute for Risk Assessment (BfR). This is the first time that the data for 2020 has been reported to the BfR. The BfR has compiled this data and submitted it to the European Commission.

Compared to the previous year, the number of animals used in experiments in Germany fell by 14% in 2020. A total of almost 1.9 million vertebrates and cephalopods were used in animal experiments in accordance with Section 7 Paragraph 2 of the Animal Welfare Act. This figure is taken from the laboratory animal statistics, which are published by the BfR for the first time this year.

The number of mice used decreased from 1,438,336 (in 2019) to 1,341,134 (in 2020), the number of monkeys and prosimians dropped from 3,276 to 2,031. There was also a decrease among dogs from 3,519 (2019) to 2,560 (2020), and in cats from 954 to 644. The number of fish in animal experiments also decreased significantly from 347,543 (in 2019) to 224,883 (in 2020).

A summary and trend analysis of the results with graphical presentation is available on the BfR website at

https://www.bf3r.de/en/use_of_laboratory_animals_in_2020-291690.html

The following contains the BfR's published, processed data on the laboratory animals used in 2020 in accordance with Section 7 Paragraph 2 of the Animal Welfare Act, which were transmitted to the BfR by the federal states of Germany in 2021.

Laboratory Animal Data 2020

The report is available in English, as it was also sent to the EU Commission.

Animals used under §7 (2) of the Animal Protection Act by species

1. Animals used by species

Table 1: In total animals used by species (excludes re-use)		
Animal species	Number of animals	Percentage
Mice	1306952	70.63%
Rats	132832	7.18%
Guinea-Pigs	11226	0.61%
Hamsters (Syrian)	1984	0.11%
Hamsters (Chinese)	24	0.00%
Mongolian gerbil	2346	0.13%
Other rodents	14548	0.79%

Rabbits	69718	3.77%
Cats	364	0.02%
Dogs	1361	0.07%
Ferrets	155	0.01%
Other carnivores	231	0.01%
Horses, donkeys & cross-breeds (Equidae)	2000	0.11%
Pigs	19048	1.03%
Goats	255	0.01%
Sheep	7567	0.41%
Cattle	7355	0.40%
Prosimians	3	0.00%
Marmoset and tamarins	127	0.01%
Cynomolgus monkey	1405	0.08%
Rhesus monkey	39	0.00%
Vervets Chlorocebus spp.	0	0.00%
Baboons	6	0.00%
Squirrel monkey	0	0.00%
Other species of Old World Monkeys (Cercopithecoidea)	0	0.00%
Other species of New World Monkeys (Ceboidea)	0	0.00%
Apes	0	0.00%
Other mammals	1826	0.10%
Domestic fowl	17905	0.97%
Other birds	10911	0.59%
Reptiles	392	0.02%
Rana	0	0.00%
Xenopus	10486	0.57%
Other amphibians	4463	0.24%
Zebrafish	140724	7.60%
Other fish	84159	4.55%
Cephalopods	31	0.00%
Total uses	1850443	100.00%

Figure 1: Animals used by species groups (excludes re-use)

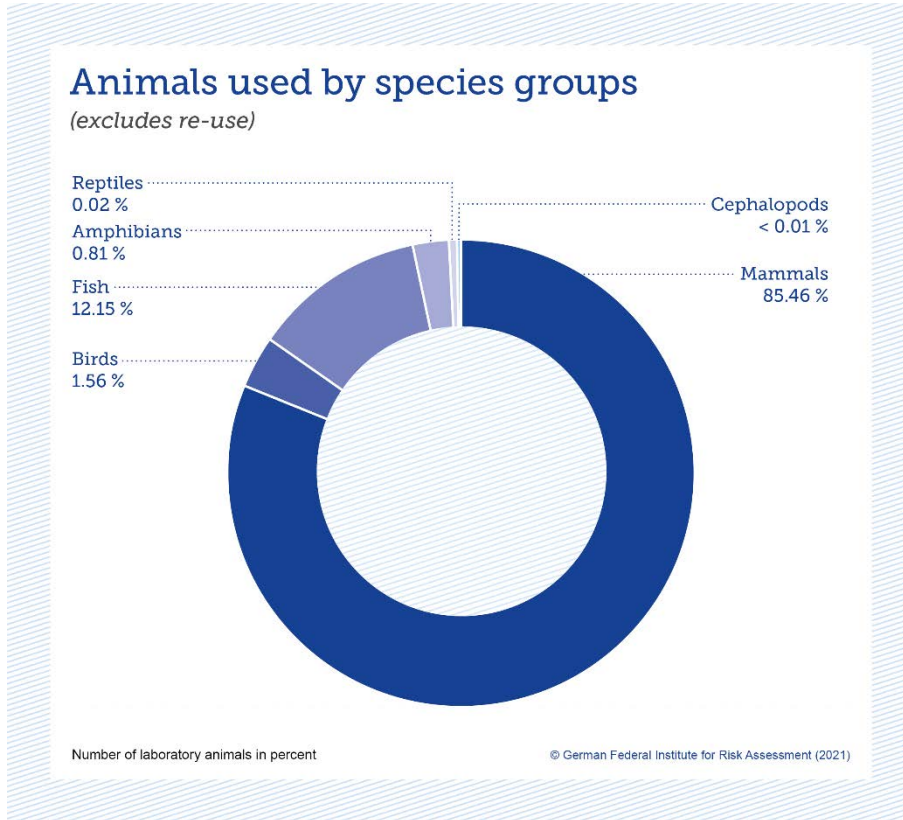


Table 2: Animals used by species groups (excludes re-use)

Table 2: Animals used by species groups (excludes re-use)		
Species grouping Level 1	Number of animals	Percentage
Warm-blooded vertebrates	1610188	87.02%
Invertebrates	31	0.00%
Cold-blooded vertebrates	240224	12.98%
Total uses	1850443	100.00%
Species grouping Level 2	Number of animals	Percentage
Mammals	1581372	85.46%
Birds	28816	1.56%
Fish	224883	12.15%
Amphibians	14949	0.81%
Reptiles	392	0.02%

Cephalopods	31	0.00%
Total uses	1850443	100.00%
Mammals		
	Number of animals	Percentage
Rodents	1469912	92.95%
Rabbits	69718	4.41%
Carnivores	2111	0.13%
Equidae	2000	0.13%
Artiodactyla	34225	2.16%
Non-human primates	1580	0.10%
Other mammals	1826	0.12%
Total uses	1581372	100.00%
Non-human primates		
	Number of animals	Percentage
Prosimians	3	0.19%
New World Monkeys	127	8.04%
Old World Monkey	1450	91.77%
Total uses	1580	100.00%

2. Origin of used Animals

Table 3: Origin of used animals in total (excludes re-use)

Animal species	Animals born in ...				Total
	the EU at a registered breeder	the EU but not at a registered breeder	the rest of Europe	the rest of the world	
Mice	1293244	6368	362	6978	1306952
Rats	131317	376	0	1139	132832
Guinea-Pigs	11226	0	0	0	11226
Hamsters (Syrian)	1916	0	0	68	1984
Hamsters (Chinese)	24	0	0	0	24
Mongolian gerbil	2131	215	0	0	2346
Other rodents	1216	13332	0	0	14548
Rabbits	68997	721	0	0	69718
Cats	63	191	0	110	364
Dogs	163	670	18	510	1361
Ferrets	97	48	0	10	155
Other carnivores	146	84	1	0	231
Horses, donkeys & cross-breeds (Equidae)	687	1313	0	0	2000

Pigs	11647	7367	0	34	19048
Goats	131	124	0	0	255
Sheep	6699	868	0	0	7567
Cattle	6132	1223	0	0	7355
Prosimians	3	0	0	0	3
Marmoset and tamarins	127	0	0	0	127
Cynomolgus monkey	21	0	0	1384	1405
Rhesus monkey	35	0	0	4	39
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	6	0	0	0	6
Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	72	1748	0	6	1826
Domestic fowl	10982	6923	0	0	17905
Other birds	3589	7087	132	103	10911
Reptiles	113	277	0	2	392
Rana	0	0	0	0	0
Xenopus	5472	4277	0	737	10486
Other amphibians	2291	2172	0	0	4463
Zebrafish	132609	8115	0	0	140724
Other fish	39273	42007	441	2438	84159
Cephalopods	14	17	0	0	31
Total uses	1730443	105523	954	13523	1850443

Table 4-6: Origin of used animals by species groups (excludes re-use)

Species grouping Level 1	Number of animals born in ...				Total
Animal species	the EU at a registered breeder	the EU but not at a registered breeder	the rest of Europe	the rest of the world	
Warm-blooded vertebrates	1550671	48658	513	10346	1610188
Cold-blooded vertebrates	179758	56848	441	3177	240224
Invertebrates	14	17	0	0	31
Total uses	1730443	105523	954	13523	1850443

Species grouping Level 2	Number of animals born in ...				Total
Animal species	the EU at a registered breeder	the EU but not at a registered breeder	the rest of Europe	the rest of the world	
Mammals	1536100	34648	381	10243	1581372
Birds	14571	14010	132	103	28816
Fish	171882	50122	441	2438	224883
Amphibians	7763	6449	0	737	14949
Reptiles	113	277	0	2	392
Cephalopods	14	17	0	0	31
Total uses	1730443	105523	954	13523	1850443

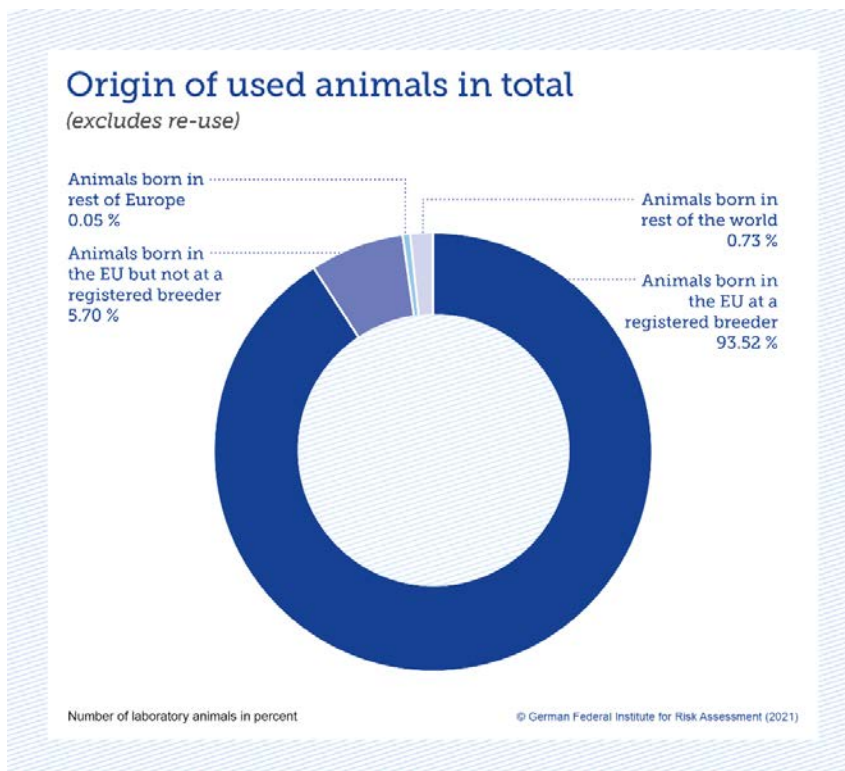
Mammals	Number of animals born in ...				Total
Animal species	the EU at a registered breeder	the EU but not at a registered breeder	the rest of Europe	the rest of the world	
Rodents	1441074	20291	362	8185	1469912
Rabbits	68997	721	0	0	69718
Carnivores	469	993	19	630	2111
Equidae	687	1313	0	0	2000
Artiodactyla	24609	9582	0	34	34225
Non-human primates	192	0	0	1388	1580
Other mammals	72	1748	0	6	1826
Total uses	1536100	34648	381	10243	1581372

3. Non-Human Primates (NHP) by source and generation

NHP Generation	Number of animals
F0	0
F1	169
F2 or greater	1351
Self-sustaining colony	60
Total uses	1580

NHP Source (origin)	Number of animals
Animals born at a registered breeder within EU	192
Animals born in rest of Europe	0
Animals born in Asia	790
Animals born in America	0
Animals born in Africa	598
Animals born elsewhere	0
Total uses	1580

Figure 2: Origin of non-human primates (excludes reuse)



4. Use of species in procedures by purpose

Animal species	Basic Research	Translational and Applied Research	Regulatory use and Routine production	Protection of the natural environment in the interests of the health or welfare of human beings or animals	Preservation of species	Higher education or training for the acquisition, maintenance or improvement of vocational skills	Forensic enquiries	Maintenance of colonies of established genetically altered animals, not used in other procedures	Non-EU Purpose	Total
Mice	867572	202203	124601	178	1744	29428	0	115408	0	1341134
Rats	26338	12963	90661	0	0	6846	0	1441	0	138249
Guinea-Pigs	550	539	10158	0	0	118	0	0	0	11365
Hamsters (Syrian)	628	1009	316	0	0	31	0	0	0	1984
Hamsters (Chinese)	0	24	0	0	0	0	0	0	0	24
Mongolian gerbil	770	1395	186	0	0	21	0	0	0	2372
Other rodents	4951	449	9142	0	0	6	0	0	0	14548
Rabbits	1265	888	68533	0	0	154	0	0	0	70840
Cats	114	155	333	0	0	42	0	0	0	644
Dogs	230	447	1587	0	0	296	0	0	0	2560
Ferrets	124	29	0	0	0	4	0	0	0	157
Other carnivores	7	14	146	3	61	0	0	0	0	231
Horses, donkeys & cross-breeds (Equidae)	864	1313	0	0	0	42	0	0	0	2219
Pigs	6854	5220	6439	468	16	522	0	92	0	19611
Goats	130	75	48	0	0	10	0	0	0	263
Sheep	5984	812	693	61	0	76	0	0	0	7626

Cattle	2141	4170	1086	0	0	353	0	0	0	7750
Prosimians	29	0	0	0	0	0	0	0	0	29
Marmoset and tamarins	10	8	158	0	0	0	0	0	0	176
Cynomolgus monkey	2	92	1672	0	0	0	0	0	0	1766
Rhesus monkey	14	36	4	0	0	0	0	0	0	54
Vervets Chlorocebus spp.	0	0	0	0	0	0	0	0	0	0
Baboons	0	6	0	0	0	0	0	0	0	6
Squirrel monkey	0	0	0	0	0	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0	0	0	0	0	0
Apes	0	0	0	0	0	0	0	0	0	0
Other mammals	1358	67	2	43	183	217	0	0	0	1870
Domestic fowl	8881	4972	3131	1410	150	194	0	0	0	18738
Other birds	8195	457	147	1472	495	233	0	0	0	10999
Reptiles	108	16	0	202	66	3	0	0	0	395
Rana	0	0	0	0	0	0	0	0	0	0
Xenopus	3099	0	8610	0	0	71	0	0	0	11780
Other amphibians	2078	0	0	2172	0	213	0	0	0	4463
Zebrafish	108018	1470	25994	4080	0	673	0	523	0	140758
Other fish	46794	5743	7731	5397	20865	314	0	394	0	87238
Cephalopods	31	0	0	0	0	0	0	0	0	31
Total uses	1097139	244572	361378	15486	23580	39867	0	117858	0	1899880
Percentage (%)	57.7	12.9	19.0	0.8	1.2	2.1	0.0	6.2	0.0	100.0

Figure 3: Use of animals in procedures by purposes

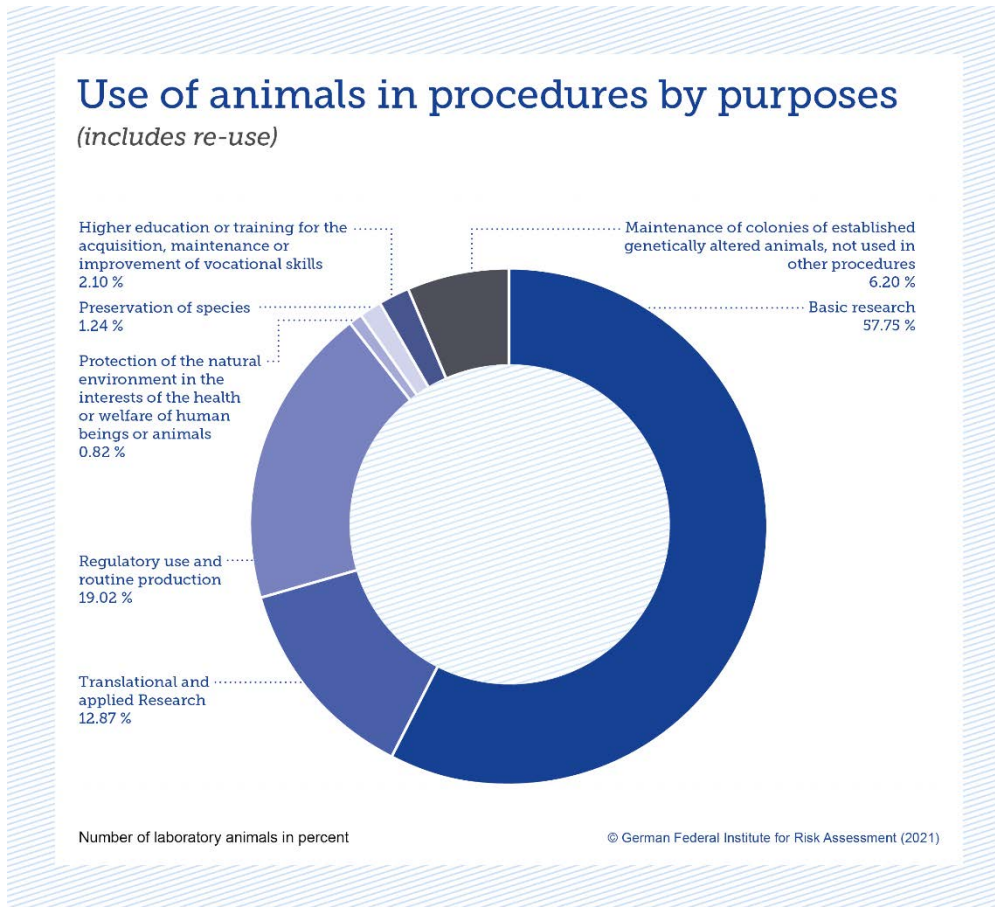


Table 10: Use of species in basic research purposes

Animal species	Oncology	Cardio-vascular 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	Multi-systemic	Ethology / Animal behaviour / Animal Biology	Other	Total
Mice	96250	68729	135836	15459	31675	11213	177613	20580	15697	45383	128671	3503	116963	867572
Rats	437	2886	12447	627	1156	525	3353	646	498	217	2340	332	874	26338
Guinea-Pigs	8	0	2	0	6	0	0	10	125	0	105	154	140	550
Hamsters (Syrian)	0	494	92	0	0	0	0	0	0	0	36	0	6	628
Hamsters (Chinese)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mongolian gerbil	0	0	153	0	0	0	214	0	242	0	0	25	136	770
Other rodents	97	0	221	0	0	1	265	0	3	3	0	1769	2592	4951
Rabbits	0	76	2	10	0	56	12	6	108	4	24	4	963	1265
Cats	10	0	3	0	16	0	0	24	1	8	34	0	18	114
Dogs	18	0	3	62	27	40	39	27	0	0	7	0	7	230
Ferrets	0	0	66	0	0	0	2	0	0	0	48	0	8	124
Other carnivores	0	0	0	0	0	0	0	0	0	0	0	7	0	7
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	6	24	47	150	25	28	559	0	25	864
Pigs	8	403	64	110	85	118	199	50	10	32	3399	571	1805	6854

Goats	0	0	0	0	0	0	0	38	0	0	9	35	48	130
Sheep	0	12	2	0	0	28	0	0	0	2	5919	0	21	5984
Cattle	0	0	0	0	35	10	74	218	0	458	708	187	451	2141
Prosimians	0	0	0	0	0	0	0	0	0	0	0	29	0	29
Marmoset and tamarins	0	0	2	0	0	0	0	0	0	8	0	0	0	10
Cynomolgus monkey	0	0	0	0	0	0	0	1	0	1	0	0	0	2
Rhesus monkey	0	0	14	0	0	0	0	0	0	0	0	0	0	14
Vervets Chlorocebus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baboons	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel monkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other mammals	0	0	52	0	0	0	0	58	0	0	13	963	272	1358
Domestic fowl	0	0	95	0	4057	0	405	0	152	5	440	2586	1141	8881
Other birds	0	0	136	0	500	0	0	0	15	0	6	7378	160	8195
Reptiles	0	0	108	0	0	0	0	0	0	0	0	0	0	108
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xenopus	7	32	1180	30	0	0	0	377	0	28	267	6	1172	3099
Other amphibians	0	0	0	0	0	554	0	0	0	0	37	37	1450	2078
Zebrafish	585	41660	32701	65	0	2546	5170	5234	101	1791	1650	2399	14116	108018
Other fish	992	196	327	0	442	20	844	235	556	0	519	35246	7417	46794
Cephalopods	0	0	31	0	0	0	0	0	0	0	0	0	0	31
Total uses	98412	114488	183537	16363	38005	15135	188237	27654	17533	47968	144791	55231	149785	1097139
Percentage (%)	9.0	10.4	16.7	1.5	3.5	1.4	17.2	2.5	1.6	4.4	13.2	5.0	13.7	100.0

Table 11: Use of species in translational and applies research purposes

Animal species	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	Total
Mice	104594	14003	9120	24393	6567	7263	350	14399	1396	1522	11563	1349	1023	828	672	62	3099	202203
Rats	904	92	1348	4413	138	952	352	1493	263	739	683	151	243	0	6	0	1186	12963
Guinea-Pigs	0	76	164	0	68	0	0	0	0	159	0	24	48	0	0	0	0	539
Hamsters (Syrian)	0	629	17	269	63	0	0	0	0	0	0	0	0	0	0	0	31	1009
Hamsters (Chinese)	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Mongolian gerbil	0	802	0	0	0	0	0	0	0	0	0	0	593	0	0	0	0	1395
Other Rodents	0	415	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	449
Rabbits	23	139	177	10	0	8	89	165	0	49	28	0	167	0	21	12	0	888

Cats	0	3	0	0	0	0	0	0	0	0	0	0	143	0	9	0	0	155
Dogs	21	0	14	99	6	6	0	34	0	24	53	0	181	0	9	0	0	447
Ferrets	0	12	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	29
Other carnivores	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0	0	0	0	0	0	0	0	1313	0	0	0	0	1313
Pigs	160	0	273	59	76	148	420	26	48	28	68	119	863	2916	7	0	9	5220
Goats	0	7	0	0	0	5	0	0	0	0	0	0	55	0	8	0	0	75
Sheep	0	18	20	3	0	0	31	0	0	7	0	2	152	0	563	0	16	812
Cattle	0	0	0	0	0	0	0	0	10	0	0	6	1597	528	2013	0	16	4170
Prosimians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marmoset and tamarins	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	8
Cynomolgus monkey	0	0	5	26	0	6	0	0	0	39	0	16	0	0	0	0	0	92
Rhesus monkey	2	5	19	0	0	0	0	0	0	0	0	10	0	0	0	0	0	36
Vervets Chlorocebus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baboons	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Squirrel monkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other mammals	0	0	0	0	0	0	0	0	0	0	0	0	15	52	0	0	0	67
Domestic fowl	0	0	0	0	0	0	0	0	0	0	0	0	4131	750	91	0	0	4972

Other birds	0	0	0	0	0	0	0	0	0	0	0	0	0	181	216	60	0	0	457
Reptiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	16
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xenopus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other amphibians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zebrafish	0	0	964	0	0	0	0	40	0	111	355	0	0	0	0	0	0	0	1470
Other fish	0	0	0	0	0	0	0	0	0	0	0	0	0	5160	23	0	0	560	5743
Cephalopods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total uses	105704	16225	12127	29277	6918	8388	1242	16157	1717	2678	12750	1680	15930	5313	3475	74	4917	244572	
Percentage (%)	43.2	6.6	5.0	12.0	2.8	3.4	0.5	6.6	0.7	1.1	5.2	0.7	6.5	2.2	1.4	0.0	2.0	100.0	

Table 12: Regulatory use of animals and routine production purposes

Animal species	Quality control (incl. batch safety and potency testing)	Other efficacy and tolerance testing	Toxicity and other safety testing including pharmacology	Routine production	Total
Mice	68116	9320	45317	1848	124601
Rats	22588	542	66767	764	90661
Guinea-Pigs	8053	26	1954	125	10158
Hamsters (Syrian)	45	45	225	1	316
Hamsters (Chinese)	0	0	0	0	0
Mongolian gerbil	0	0	70	116	186
Other rodents	0	47	9095	0	9142
Rabbits	3263	372	7902	56996	68533
Cats	0	79	142	112	333
Dogs	0	28	1204	355	1587
Ferrets	0	0	0	0	0
Other carnivores	146	0	0	0	146
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0
Pigs	89	615	5705	30	6439
Goats	0	0	44	4	48
Sheep	33	0	14	646	693
Cattle	334	130	559	63	1086
Prosimians	0	0	0	0	0
Marmoset and tamarins	0	0	158	0	158
Cynomolgus monkey	0	0	1672	0	1672
Rhesus monkey	0	0	4	0	4
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	0	0	0	0	0
Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	0	0	0	2	2
Domestic fowl	660	110	1812	549	3131
Other birds	0	0	142	5	147
Reptiles	0	0	0	0	0
Rana	0	0	0	0	0
Xenopus	0	0	8610	0	8610
Other Amphibians	0	0	0	0	0

Zebrafish	0	0	25994	0	25994
Other fish	0	0	7326	405	7731
Cephalopods	0	0	0	0	0
Total uses	103327	11314	184716	62021	361378
	28.6%	3.1%	51.1%	17.2%	100.0%

Table 13: Use of animals in quality control purposes

Animal species	Batch safety testing	Pyrogenicity testing	Batch potency testing	Other quality controls	Total
Mice	23685	0	44001	430	68116
Rats	291	0	22297	0	22588
Guinea-Pigs	912	0	7141	0	8053
Hamsters (Syrian)	0	0	45	0	45
Hamsters (Chinese)	0	0	0	0	0
Mongolian gerbil	0	0	0	0	0
Other rodents	0	0	0	0	0
Rabbits	0	3223	40	0	3263
Cats	0	0	0	0	0
Dogs	0	0	0	0	0
Ferrets	0	0	0	0	0
Other carnivores	0	0	146	0	146
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0
Pigs	59	0	30	0	89
Goats	0	0	0	0	0
Sheep	27	0	0	6	33
Cattle	60	0	274	0	334
Prosimians	0	0	0	0	0
Marmoset and tamarins	0	0	0	0	0
Cynomolgus monkey	0	0	0	0	0
Rhesus monkey	0	0	0	0	0
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	0	0	0	0	0
Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	0	0	0	0	0
Domestic fowl	556	0	104	0	660
Other birds	0	0	0	0	0

Reptiles	0	0	0	0	0
Rana	0	0	0	0	0
Xenopus	0	0	0	0	0
Other amphibians	0	0	0	0	0
Zebrafish	0	0	0	0	0
Other fish	0	0	0	0	0
Cephalopods	0	0	0	0	0
Total uses	25590	3223	74078	436	103327
	24.8%	3.1%	71.7%	0.4%	100.0%

Table 14: Use of animals in routine production purposes

Animal species	Blood based products	Monoclonal antibody	Other product types	Total
Mice	745	1050	53	1848
Rats	475	1	288	764
Guinea-Pigs	121	0	4	125
Hamsters (Syrian)	1	0	0	1
Hamsters (Chinese)	0	0	0	0
Mongolian gerbil	0	0	116	116
Other rodents	0	0	0	0
Rabbits	56230	1	765	56996
Cats	96	0	16	112
Dogs	355	0	0	355
Ferrets	0	0	0	0
Other carnivores	0	0	0	0
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0
Pigs	0	0	30	30
Goats	0	4	0	4
Sheep	630	0	16	646
Cattle	38	0	25	63
Prosimians	0	0	0	0
Marmoset and tamarins	0	0	0	0
Cynomolgus monkey	0	0	0	0
Rhesus monkey	0	0	0	0
Vervets Chlorocebus spp.	0	0	0	0
Baboons	0	0	0	0
Squirrel monkey	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0
Apes	0	0	0	0
Other mammals	0	0	2	2
Domestic fowl	5	0	544	549
Other birds	3	0	2	5
Reptiles	0	0	0	0
Rana	0	0	0	0
Xenopus	0	0	0	0
Other amphibians	0	0	0	0
Zebrafish	0	0	0	0
Other fish	0	0	405	405
Cephalopods	0	0	0	0
Total uses	58699	1056	2266	62021
	94.6%	1.7%	3.7%	100.0%

Table 15: Use of animals in toxicity and other safety testing by test type purposes

Animal species	Acute and sub-acute toxicity	Skin irritation/corrosion	Skin sensitisation	Eye irritation/corrosion	Repeated dose toxicity	Carcinogenicity	Genotoxicity	Reproductive toxicity	Developmental toxicity	Neurotoxicity	Kinetics	Pharmacodynamics (incl. safety pharmacology)	Phototoxicity	Ecotoxicity	Safety testing in food and feed area	Target animal safety	Other toxicity/safety testing	Total
Mice	1703	0	2441	0	2004	48	854	0	0	0	8296	2946 9	0	0	4	277	221	45317
Rats	1878	20	0	0	7982	37	1213	22898	1437 1	100	4243	1355 4	0	0	96	0	375	66767
Guinea-Pigs	0	0	1899	0	0	0	0	0	0	0	18	37	0	0	0	0	0	1954
Hamsters (Syrian)	0	15	0	0	0	0	0	0	0	0	0	210	0	0	0	0	0	225
Hamsters (Chinese)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mongolian gerbil	0	0	0	0	0	0	0	0	0	0	0	70	0	0	0	0	0	70
Other Rodents	0	0	0	0	0	0	0	0	0	0	0	0	0	407	0	1858	6830	9095
Rabbits	0	268	88	14	118	0	0	395	4716	0	11	763	0	0	0	30	1499	7902
Cats	0	0	0	0	0	0	0	0	0	0	39	103	0	0	0	0	0	142

Dogs	107	0	3	0	392	0	0	0	0	0	271	404	0	0	0	27	0	1204
Ferrets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other carnivores	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigs	0	0	0	0	138	0	0	0	0	0	110	243	0	0	120	5077	17	5705
Goats	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	42	44
Sheep	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	14
Cattle	0	0	0	0	0	0	0	0	0	0	181	66	0	0	0	312	0	559
Prosimians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marmoset and tamarins	0	0	0	0	112	0	0	0	0	0	0	0	0	0	0	0	46	158
Cynomolgus monkey	0	0	0	0	1178	0	0	0	58	0	240	25	0	0	0	0	171	1672
Rhesus monkey	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Vervets Chlorocebus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baboons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel monkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other mammals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic fowl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1812	0	0	1812
Other birds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142	0	0	142

Reptiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xenopus	0	0	0	0	0	0	0	0	0	0	0	0	0	8610	0	0	0	8610
Other amphibians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zebrafish	0	0	0	0	0	0	0	0	0	0	0	0	0	25994	0	0	0	25994
Other fish	0	0	0	0	0	0	0	0	0	0	0	0	0	7326	0	0	0	7326
Cephalopods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total uses	3688	303	4431	14	1192	85	2067	23293	1914	100	1342	4494	0	42337	2174	7581	9201	184716
Percentage (%)	2.0	0.2	2.4	0.0	6.5	0.0	1.1	12.6	10.4	0.1	7.3	24.3	0.0	22.9	1.2	4.1	5.0	100.0

Table 16: Use of animals in repeated dose toxicity testing methods

Animal species	up to 28 days	29 - 90 days	> 90 days	Total
Mice	1417	587	0	2004
Rats	4510	2721	751	7982
Guinea-Pigs	0	0	0	0
Hamsters (Syrian)	0	0	0	0
Hamsters (Chinese)	0	0	0	0
Mongolian gerbil	0	0	0	0
Other rodents	0	0	0	0
Rabbits	54	64	0	118
Cats	0	0	0	0
Dogs	306	78	8	392
Ferrets	0	0	0	0
Other carnivores	0	0	0	0
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0
Pigs	94	0	44	138
Goats	0	0	0	0
Sheep	0	0	0	0
Cattle	0	0	0	0
Prosimians	0	0	0	0
Marmoset and tamarins	0	56	56	112
Cynomolgus monkey	110	175	893	1178
Rhesus monkey	0	0	4	4
Vervets Chlorocebus spp.	0	0	0	0
Baboons	0	0	0	0
Squirrel monkey	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0
Apes	0	0	0	0
Other mammals	0	0	0	0
Domestic fowl	0	0	0	0
Other birds	0	0	0	0
Reptiles	0	0	0	0
Rana	0	0	0	0
Xenopus	0	0	0	0
Other amphibians	0	0	0	0
Zebrafish	0	0	0	0
Other fish	0	0	0	0
Cephalopods	0	0	0	0
Total uses	6491	3681	1756	11928
	54.4%	30.9%	14.7%	100.0%

Table 17: Use of animals in acute and subacute toxicity testing methods

Animal species	LD50, LC50	Other lethal method	Non lethal method	Total
Mice	0	0	1703	1703
Rats	695	0	1183	1878
Guinea-Pigs	0	0	0	0
Hamsters (Syrian)	0	0	0	0
Hamsters (Chinese)	0	0	0	0
Mongolian gerbil	0	0	0	0
Other rodents	0	0	0	0
Rabbits	0	0	0	0
Cats	0	0	0	0
Dogs	0	0	107	107
Ferrets	0	0	0	0
Other carnivores	0	0	0	0
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0
Pigs	0	0	0	0
Goats	0	0	0	0
Sheep	0	0	0	0
Cattle	0	0	0	0
Prosimians	0	0	0	0
Marmoset and tamarins	0	0	0	0
Cynomolgus monkey	0	0	0	0
Rhesus monkey	0	0	0	0
Vervets Chlorocebus spp.	0	0	0	0
Baboons	0	0	0	0
Squirrel monkey	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0
Apes	0	0	0	0
Other mammals	0	0	0	0
Domestic fowl	0	0	0	0
Other birds	0	0	0	0
Reptiles	0	0	0	0
Rana	0	0	0	0
Xenopus	0	0	0	0
Other amphibians	0	0	0	0
Zebrafish	0	0	0	0
Other fish	0	0	0	0
Cephalopods	0	0	0	0
Total uses	695	0	2993	3688
	18.8%	0.0%	81.2%	100.0%

Table 18: Use of animals in ecotoxicity testing methods

Animal species	Acute toxicity	Chronic toxicity	Reproductive toxicity	Endocrine toxicity	Bioaccumulation	Other	Total
Mice	0	0	0	0	0	0	0
Rats	0	0	0	0	0	0	0
Guinea-Pigs	0	0	0	0	0	0	0
Hamsters (Syrian)	0	0	0	0	0	0	0
Hamsters (chinese)	0	0	0	0	0	0	0
Mongolian gerbil	0	0	0	0	0	0	0
Other rodents	0	0	0	0	0	407	407
Rabbits	0	0	0	0	0	0	0
Cats	0	0	0	0	0	0	0
Dogs	0	0	0	0	0	0	0
Ferrets	0	0	0	0	0	0	0
Other carnivores	0	0	0	0	0	0	0
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0	0	0
Pigs	0	0	0	0	0	0	0
Goats	0	0	0	0	0	0	0
Sheep	0	0	0	0	0	0	0
Cattle	0	0	0	0	0	0	0
Prosimians	0	0	0	0	0	0	0
Marmoset and tamarins	0	0	0	0	0	0	0
Cynomolgus monkey	0	0	0	0	0	0	0
Rhesus monkey	0	0	0	0	0	0	0
Vervets Chlorocebus spp.	0	0	0	0	0	0	0
Baboons	0	0	0	0	0	0	0
Squirrel monkey	0	0	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0	0	0
Apes	0	0	0	0	0	0	0
Other mammals	0	0	0	0	0	0	0
Domestic fowl	0	0	0	0	0	0	0
Other birds	0	0	0	0	0	0	0
Reptiles	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0
Xenopus	670	0	0	7940	0	0	8610

Other amphibians	0	0	0	0	0	0	0
Zebrafish	2680	20643	960	1200	511	0	25994
Other fish	3333	96	368	2374	1146	9	7326
Cephalopods	0	0	0	0	0	0	0
Total uses	6683	20739	1328	11514	1657	416	42337
	15.8%	49.0%	3.1%	27.2%	3.9%	1.0%	100.0%

5. Use of species and severity

Table 19: Use of species and severity in total

Animal species	Non-recovery	%	Mild (up to and including)	%	Moderate	%	Severe	%	Total
Mice	65374	4.9%	818982	61.1%	395378	29.5%	61400	4.6%	1341134
Rats	7846	5.7%	103117	74.6%	24593	17.8%	2693	1.9%	138249
Guinea-Pigs	84	0.7%	6111	53.8%	1180	10.4%	3990	35.1%	11365
Hamsters (Syrian)	92	4.6%	1208	60.9%	683	34.4%	1	0.1%	1984
Hamsters (Chinese)	0	0.0%	21	87.5%	3	12.5%	0	0.0%	24
Mongolian gerbil	243	10.2%	832	35.1%	1254	52.9%	43	1.8%	2372
Other rodents	3	0.0%	13965	96.0%	386	2.7%	194	1.3%	14548
Rabbits	21315	30.1%	47791	67.5%	1638	2.3%	96	0.1%	70840
Cats	4	0.6%	529	82.1%	110	17.1%	1	0.2%	644
Dogs	69	2.7%	2262	88.4%	229	8.9%	0	0.0%	2560
Ferrets	2	1.3%	123	78.3%	32	20.4%	0	0.0%	157
Other carnivores	0	0.0%	113	48.9%	118	51.1%	0	0.0%	231
Horses, donkeys & cross-breeds (Equidae)	5	0.2%	2208	99.5%	6	0.3%	0	0.0%	2219
Pigs	1567	8.0%	15814	80.6%	1726	8.8%	504	2.6%	19611
Goats	0	0.0%	253	96.2%	7	2.7%	3	1.1%	263
Sheep	37	0.5%	6899	90.5%	641	8.4%	49	0.6%	7626
Cattle	21	0.3%	6907	89.1%	818	10.6%	4	0.1%	7750
Prosimians	0	0.0%	29	100.0%	0	0.0%	0	0.0%	29

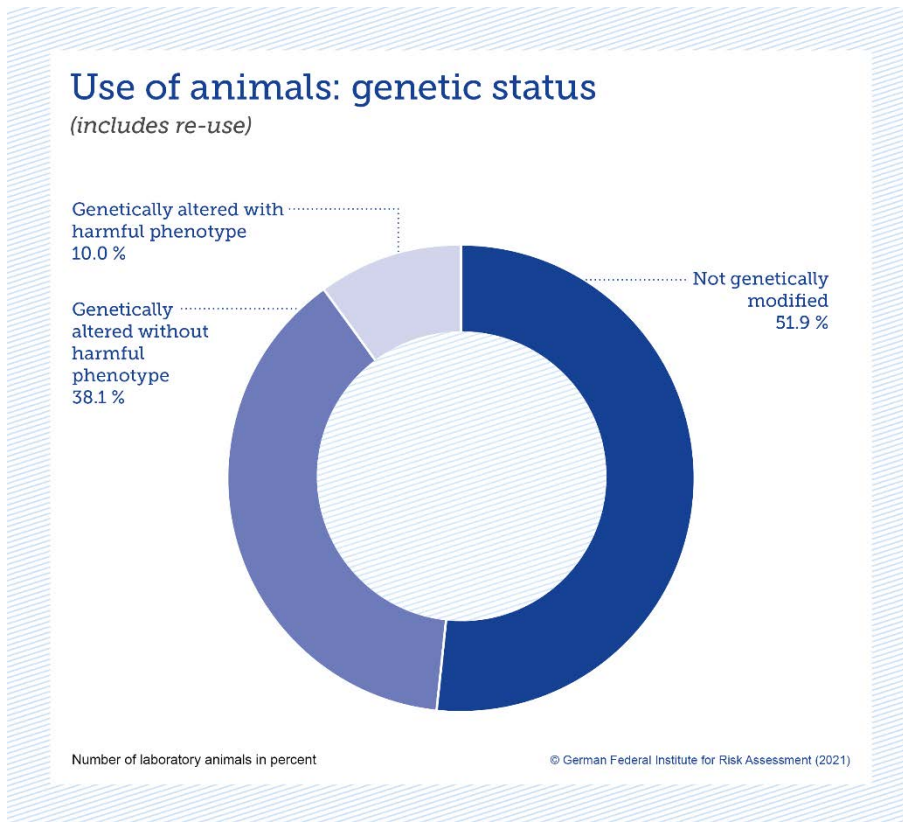
Marmoset and tamarins	0	0.0%	49	27.8%	127	72.2%	0	0.0%	176
Cynomolgus monkey	0	0.0%	543	30.7%	1223	69.3%	0	0.0%	1766
Rhesus monkey	0	0.0%	13	24.1%	41	75.9%	0	0.0%	54
Vervets Chlorocebus spp.	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Baboons	0	0.0%	0	0.0%	4	66.7%	2	33.3%	6
Squirrel monkey	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Other species of New World Monkeys (Ceboidea)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Apes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Other mammals	11	0.6%	1735	92.8%	96	5.1%	28	1.5%	1870
Domestic fowl	273	1.5%	16105	85.9%	2159	11.5%	201	1.1%	18738
Other birds	1400	12.7%	8810	80.1%	729	6.6%	60	0.5%	10999
Reptiles	0	0.0%	287	72.7%	108	27.3%	0	0.0%	395
Rana	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Xenopus	126	1.1%	11280	95.8%	247	2.1%	127	1.1%	11780
Other amphibians	353	7.9%	3715	83.2%	395	8.9%	0	0.0%	4463
Zebrafish	2405	1.7%	121701	86.5%	14822	10.5%	1830	1.3%	140758
Other fish	4999	5.7%	79188	90.8%	2169	2.5%	882	1.0%	87238
Cephalopods	11	35.5%	17	54.8%	2	6.5%	1	3.2%	31
Total uses	106240		1270607		450924		72109		1899880
	5.6%		66.9%		23.7%		3.8%		100.0%

6. Use of species and genetic status

Animal species	Not genetically modified	Genetically altered without harmful phenotype	Genetically altered with harmful phenotype	Total
Mice	531652	624873	184609	1341134
Rats	129997	5755	2497	138249
Guinea-Pigs	11365	0	0	11365
Hamsters (Syrian)	1984	0	0	1984
Hamsters (Chinese)	24	0	0	24
Mongolian gerbil	2372	0	0	2372
Other rodents	14548	0	0	14548
Rabbits	70765	75	0	70840
Cats	644	0	0	644
Dogs	2560	0	0	2560
Ferrets	118	39	0	157
Other carnivores	231	0	0	231
Horses, donkeys & cross-breeds (Equidae)	2219	0	0	2219
Pigs	19006	374	231	19611
Goats	263	0	0	263
Sheep	7626	0	0	7626
Cattle	7749	0	1	7750
Prosimians	29	0	0	29
Marmoset and tamarins	176	0	0	176
Cynomolgus monkey	1766	0	0	1766
Rhesus monkey	54	0	0	54
Vervets Chlorocebus spp.	0	0	0	0
Baboons	6	0	0	6
Squirrel monkey	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0
Apes	0	0	0	0
Other mammals	1870	0	0	1870
Domestic fowl	18417	302	19	18738
Other birds	10987	12	0	10999
Reptiles	395	0	0	395
Rana	0	0	0	0
Xenopus	10994	744	42	11780
Other amphibians	2667	1796	0	4463
Zebrafish	50802	86830	3126	140758

Other fish	84851	2387	0	87238
Cephalopods	31	0	0	31
Total uses	986168	723187	190525	1899880
	51.9%	38.1%	10.0%	100.0%

Figure 4: Use of animals: genetic status



7. Use of species and re-use

Animal species	First use	Re-uses	Total
Mice	1306952	34182	1341134
Rats	132832	5417	138249
Guinea-Pigs	11226	139	11365
Hamsters (Syrian)	1984	0	1984
Hamsters (Chinese)	24	0	24
Mongolian gerbil	2346	26	2372
Other rodents	14548	0	14548
Rabbits	69718	1122	70840
Cats	364	280	644
Dogs	1361	1199	2560
Ferrets	155	2	157
Other carnivores	231	0	231
Horses, donkeys & cross-breeds (Equidae)	2000	219	2219
Pigs	19048	563	19611
Goats	255	8	263
Sheep	7567	59	7626
Cattle	7355	395	7750
Prosimians	3	26	29
Marmoset and tamarins	127	49	176
Cynomolgus monkey	1405	361	1766
Rhesus monkey	39	15	54
Vervets Chlorocebus spp.	0	0	0
Baboons	6	0	6
Squirrel monkey	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0
Apes	0	0	0
Other mammals	1826	44	1870
Domestic fowl	17905	833	18738
Other birds	10911	88	10999
Reptiles	392	3	395
Rana	0	0	0
Xenopus	10486	1294	11780
Other amphibians	4463	0	4463
Zebrafish	140724	34	140758
Other fish	84159	3079	87238

Cephalopods	31	0	31
Total uses	1850443	49437	1899880
	97.4%	2.6%	100.0%

Figure 5: Use of species groups of re-used animals

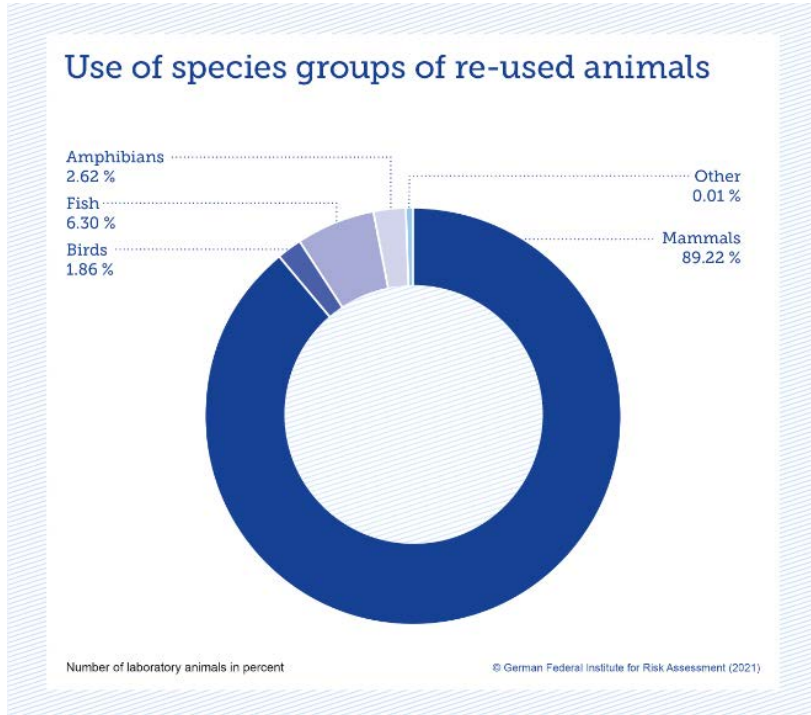
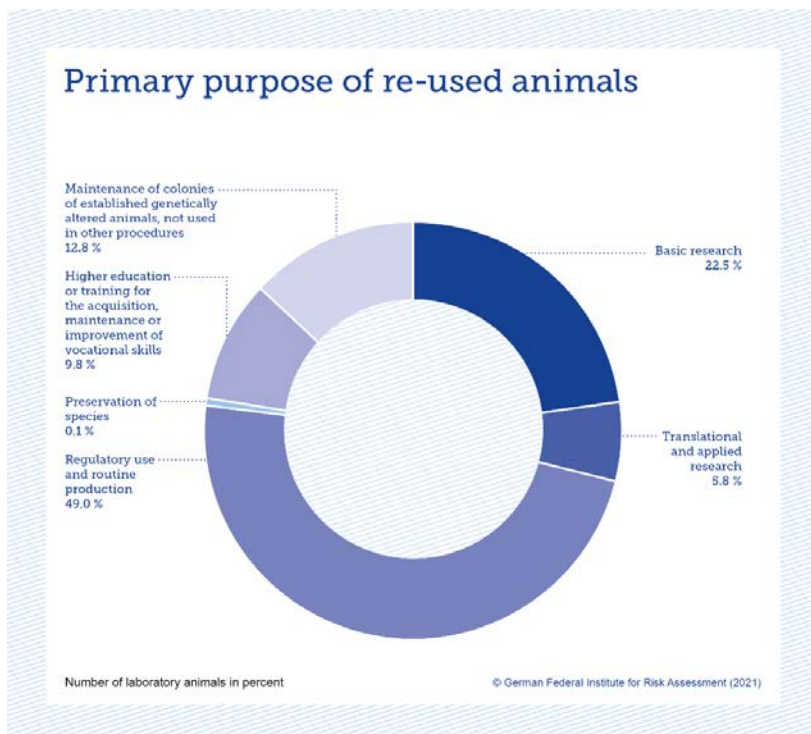


Figure 6: Primary purpose of re-used animals



8. Purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Basic Research	61011	750658	265984	19486	1097139
Translational and applied research	10869	109972	117970	5761	244572
Regulatory use and Routine production	24014	252741	46871	37752	361378
Protection of the natural environment in the interests of the health or welfare of human beings or animals	1431	13029	677	349	15486
Preservation of species	350	23075	155	0	23580
Higher education or training for the acquisition, maintenance or improvement of vocational skills	7235	21178	11176	278	39867
Forensic enquiries	0	0	0	0	0
Maintenance of colonies of established genetically altered animals, not used in other procedures	1330	99954	8091	8483	117858
Total uses	106240	1270607	450924	72109	1899880
	5.6%	66.9%	23.7%	3.8%	100.0%

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Oncology	6158	38075	51542	2637	98412
Cardiovascular Blood and Lymphatic System	5746	74311	32095	2336	114488
Nervous System	15991	104642	57355	5549	183537
Respiratory System	1079	10728	3924	632	16363
Gastrointestinal System including Liver	2683	23990	10709	623	38005
Musculoskeletal System	663	9567	4803	102	15135
Immune System	6899	126588	49878	4872	188237
Urogenital/Reproductive System	3654	19238	4626	136	27654
Sensory Organs (skin, eyes and ears)	3755	9379	3584	815	17533
Endocrine System/Metabolism	1665	32211	13825	267	47968
Multisystemic	4492	124152	15197	950	144791
Ethology / Animal Behaviour /Animal Biology	1399	51148	2613	71	55231
Other	6827	126629	15833	496	149785
Total uses	61011	750658	265984	19486	1097139
	5.6%	68.4%	24.2%	1.8%	100.0%

Table 24: Basic research: species and severity

Animal species	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Mice	51224	552032	246541	17775	867572
Rats	2381	13688	8974	1295	26338
Guinea-Pigs	36	345	169	0	550
Hamsters (Syrian)	0	480	147	1	628
Hamsters (Chinese)	0	0	0	0	0
Mongolian gerbil	58	348	360	4	770
Other rodents	3	4611	190	147	4951
Rabbits	18	1051	190	6	1265
Cats	4	65	45	0	114
Dogs	0	212	18	0	230
Ferrets	2	91	31	0	124
Other carnivores	0	7	0	0	7
Horses, donkeys & cross-breeds (Equidae)	0	858	6	0	864
Pigs	412	6035	334	73	6854
Goats	0	130	0	0	130
Sheep	6	5941	37	0	5984
Cattle	20	1700	421	0	2141
Prosimians	0	29	0	0	29
Marmoset and tamarins	0	0	10	0	10
Cynomolgus monkey	0	1	1	0	2
Rhesus monkey	0	0	14	0	14
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	0	0	0	0	0
Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	11	1239	80	28	1358
Domestic fowl	95	7527	1240	19	8881
Other birds	123	7523	549	0	8195
Reptiles	0	0	108	0	108
Rana	0	0	0	0	0
Xenopus	117	2811	164	7	3099
Other amphibians	352	1385	341	0	2078
Zebrafish	2250	100310	5335	123	108018

Other fish	3888	42222	677	7	46794
Cephalopods	11	17	2	1	31
Total uses	61011	750658	265984	19486	1097139
	5.6%	68.4%	24.2%	1.8%	100.0%

Table 25: Translational and applied research: purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Human Cancer	2172	30768	71236	1528	105704
Human Infectious Disorders	727	8374	6533	591	16225
Human Cardiovascular Disorders	2679	6801	2435	212	12127
Human Nervous and Mental Disorders	2827	12327	13936	187	29277
Human Respiratory Disorders	148	5464	700	606	6918
Human Gastrointestinal Disorders including Liver	119	2427	5647	195	8388
Human Musculoskeletal Disorders	324	336	557	25	1242
Human Immune Disorders	454	7455	6887	1361	16157
Human Urogenital/Reproductive Disorders	78	960	658	21	1717
Human Sensory Organ Disorders (skin, eyes and ears)	151	1546	965	16	2678
Human Endocrine/Metabolism Disorders	184	11565	818	183	12750
Other Human Disorders	129	446	879	226	1680
Animal Diseases and Disorders	390	13067	1995	478	15930
Animal Welfare	322	4728	249	14	5313
Diagnosis of diseases	0	2376	985	114	3475
Plant diseases	0	74	0	0	74
Non-regulatory toxicology and ecotoxicology	165	1258	3490	4	4917
Total uses	10869	109972	117970	5761	244572
	4.4%	45.0%	48.2%	2.4%	100.0%

Table 26: Translational and applied research: species and severity

Animal species	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Mice	7384	81571	108290	4958	202203
Rats	2068	5593	5126	176	12963
Guinea-Pigs	43	171	178	147	539
Hamsters (Syrian)	81	392	536	0	1009
Hamsters (Chinese)	0	21	3	0	24
Mongolian gerbil	184	405	767	39	1395
Other rodents	0	308	141	0	449

Rabbits	107	535	212	34	888
Cats	0	140	14	1	155
Dogs	0	444	3	0	447
Ferrets	0	28	1	0	29
Other carnivores	0	14	0	0	14
Horses, donkeys & cross-breeds (Equidae)	5	1308	0	0	1313
Pigs	674	3781	653	112	5220
Goats	0	67	5	3	75
Sheep	20	144	599	49	812
Cattle	1	3901	264	4	4170
Prosimians	0	0	0	0	0
Marmoset and tamarins	0	3	5	0	8
Cynomolgus monkey	0	68	24	0	92
Rhesus monkey	0	13	23	0	36
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	0	0	4	2	6
Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	0	53	14	0	67
Domestic fowl	0	3900	896	176	4972
Other birds	0	370	27	60	457
Reptiles	0	16	0	0	16
Rana	0	0	0	0	0
Xenopus	0	0	0	0	0
Other amphibians	0	0	0	0	0
Zebrafish	0	1470	0	0	1470
Other fish	302	5256	185	0	5743
Cephalopods	0	0	0	0	0
Total uses	10869	109972	117970	5761	244572
	4.4%	45.0%	48.2%	2.4%	100.0%

Table 27: Regulatory use/routine production: purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Routine production	20781	40195	1045	0	62021
Quality control (incl. batch safety and potency testing)	85	65606	4114	33522	103327
Other efficacy and tolerance testing	230	2935	7686	463	11314
Toxicity and other safety testing including pharmacology	2918	144005	34026	3767	184716
Total uses	24014	252741	46871	37752	361378
	6.6%	69.9%	13.0%	10.4%	100.0%

Table 28: Regulatory use/routine production: species and severity

Animal species	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Mice	1250	70255	22853	30243	124601
Rats	1185	79345	9238	893	90661
Guinea-Pigs	0	5489	827	3842	10158
Hamsters (Syrian)	1	315	0	0	316
Hamsters (Chinese)	0	0	0	0	0
Mongolian gerbil	0	64	122	0	186
Other rodents	0	9040	55	47	9142
Rabbits	21149	46103	1225	56	68533
Cats	0	282	51	0	333
Dogs	69	1310	208	0	1587
Ferrets	0	0	0	0	0
Other carnivores	0	28	118	0	146
Horses, donkeys & cross-breeds (Equidae)	0	0	0	0	0
Pigs	195	5591	599	54	6439
Goats	0	46	2	0	48
Sheep	0	693	0	0	693
Cattle	0	975	111	0	1086
Prosimians	0	0	0	0	0
Marmoset and tamarins	0	46	112	0	158
Cynomolgus monkey	0	474	1198	0	1672
Rhesus monkey	0	0	4	0	4
Vervets Chlorocebus spp.	0	0	0	0	0
Baboons	0	0	0	0	0

Squirrel monkey	0	0	0	0	0
Other species of Old World Monkeys (Cercopithecoidea)	0	0	0	0	0
Other species of New World Monkeys (Ceboidea)	0	0	0	0	0
Apes	0	0	0	0	0
Other mammals	0	0	2	0	2
Domestic fowl	130	2995	0	6	3131
Other birds	0	147	0	0	147
Reptiles	0	0	0	0	0
Rana	0	0	0	0	0
Xenopus	0	8410	80	120	8610
Other amphibians	0	0	0	0	0
Zebrafish	35	14765	9487	1707	25994
Other fish	0	6368	579	784	7731
Cephalopods	0	0	0	0	0
Total uses	24014	252741	46871	37752	361378
	6.6%	69.9%	13.0%	10.4%	100.0%

Table 29: Quality control purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Batch safety testing	85	21858	3645	2	25590
Pyrogenicity testing	0	3184	39	0	3223
Batch potency testing	0	40558	430	33090	74078
Other quality controls	0	6	0	430	436
Total uses	85	65606	4114	33522	103327
	0.1%	63.5%	4.0%	32.4%	100.0%

Table 30: Routine production purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Blood based products	20706	37120	873	0	58699
Monoclonal antibody	0	1056	0	0	1056
Other product type	75	2019	172	0	2266
Total uses	20781	40195	1045	0	62021
	33.5%	64.8%	1.7%	0.0%	100.0%

Table 31: Toxicity and other safer testing by test purposes and severity

Purposes	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Acute and sub-acute toxicity	0	2800	530	358	3688
Skin irritation / corrosion	0	261	42	0	303
Skin sensitisation	0	3844	586	1	4431
Eye irritation / corrosion	0	13	1	0	14
Repeated dose toxicity	0	7988	3853	87	11928
Carcinogenicity	0	48	37	0	85
Genotoxicity	2	1982	80	3	2067
Reproductive toxicity	0	22681	559	53	23293
Developmental toxicity	0	18824	281	40	19145
Neurotoxicity	0	40	57	3	100
Kinetics	392	10354	2590	89	13425
Pharmaco-dynamics (incl. safety pharmacology)	2488	27476	14458	522	44944
Phototoxicity	0	0	0	0	0
Ecotoxicity	35	29545	10146	2611	42337
Safety testing in food and feed area	0	2174	0	0	2174
Target animal safety	0	7200	381	0	7581
Other	1	8775	425	0	9201
Total uses	2918	144005	34026	3767	184716
	1.6%	78.0%	18.4%	2.0%	100.0%

Table 32: Repeated dose toxicity testing methods and severity

	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
up to 28 days	0	4730	1685	76	6491
29 - 90 days	0	2447	1233	1	3681
> 90 days	0	811	935	10	1756
Total uses	0	7988	3853	87	11928
	0.0%	67.0%	32.3%	0.7%	100.0%

Table 33: Acute and subacute toxicity testing methods and severity

	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
LD50, LC50	0	124	271	300	695
Other lethal methods	0	0	0	0	0
Non lethal method	0	2676	259	58	2993
Total uses	0	2800	530	358	3688
	0.0%	75.9%	14.4%	9.7%	100.0%

Table 34: Ecotoxicity testing methods and severity

Methods	Non-recovery	Mild (up to and including)	Moderate	Severe	Total
Acute toxicity	35	3283	1954	1411	6683
Chronic toxicity	0	11614	8089	1036	20739
Reproductive ecotoxicity	0	1175	1	152	1328
Endocrine activity	0	11400	102	12	11514
Bioaccumulation	0	1657	0	0	1657
Other exotoxicity	0	416	0	0	416
Total uses	35	29545	10146	2611	42337
	0.1%	69.8%	24.0%	6.2%	100.0%

9. Purposes and testing by type of legislation

Table 35: Regulatory use (without routine production) purposes: type of legislation

Type of legislation	Quality control (incl. batch safety and potency testing)	Other efficacy and tolerance testing	Toxicity and other safety testing including pharmacology	Total
Legislation on medicinal products for human use	98437	9515	69641	177593
Legislation on medicinal products for veterinary use and their residues	4854	1107	7847	13808
Medical devices legislation	30	194	5329	5553
Industrial chemicals legislation	0	0	43509	43509
Plant protection product legislation	0	0	53145	53145
Biocides legislation	0	325	187	512
Food legislation including food contact material	0	0	417	417
Feed legislation including legislation for the safety of target animals, workers and environment	6	0	2170	2176
Cosmetics legislation	0	0	0	0
Other	0	173	2471	2644
Total uses	103327	11314	184716	299357
	34.5%	3.8%	61.7%	100.0%

Table 36: Quality control purposes: type of legislation

Type of legislation	Batch safety testing	Pyrogenicity testing	Batch potency testing	Other quality controls	Total
Legislation on medicinal products for human use	24843	3220	69944	430	98437
Legislation on medicinal products for veterinary use and their residues	720	0	4134	0	4854
Medical devices legislation	27	3	0	0	30
Industrial chemicals legislation	0	0	0	0	0
Plant protection product legislation	0	0	0	0	0
Biocides legislation	0	0	0	0	0
Food legislation including food contact material	0	0	0	0	0
Feed legislation including legislation for the safety of target animals, workers and environment	0	0	0	6	6
Cosmetics legislation	0	0	0	0	0
Other	0	0	0	0	0
Total uses	25590	3223	74078	436	103327
	24.8%	3.1%	71.7%	0.4%	100.0%

Table 37: Routine production purposes: type of legislation

Comment. With the new Implementing Decision 2020/569/EU, the type of legislation for routine production purposes is not anymore part of the annual reporting.
For a better comparison to the former year, the numbering of the tables has been maintained.

Table 38: Toxicity and other safety testing by test purposes: type of legislation

Type of legislation	Acute and sub-acute toxicity	Skin irritation / corrosion	Skin sensitisation	Eye irritation / corrosion	Repeated dose toxicity	Carcinogenicity	Genotoxicity	Reproductive toxicity	Developmental toxicity	Neurotoxicity	Kinetics	Pharmacodynamics (incl. safety)	Phototoxicity	Ecotoxicity	Safety testing in food and feed area	Target animal safety	Other	Total
Legislation on medicinal products for human use	1425	3	157	3	6763	0	461	672	58	0	12275	44487	0	2872	0	0	465	69641
Legislation on medicinal products for veterinary use and their residues	0	0	0	0	64	0	27	0	0	0	426	455	0	85	0	5426	1364	7847
Medical devices legislation	1356	234	2484	3	237	48	148	0	0	0	40	2	0	585	0	0	192	5329
Industrial chemicals legislation	630	57	1399	8	2667	37	534	16687	6328	0	26	0	0	15026	0	0	110	43509
Plant protection product legislation	234	9	391	0	1831	0	810	5934	12759	100	589	0	0	21770	0	1888	6830	53145
Biocides legislation	6	0	0	0	0	0	52	0	0	0	69	0	0	60	0	0	0	187
Food legislation including food contact material	12	0	0	0	366	0	35	0	0	0	0	0	0	0	4	0	0	417
Feed legislation including legislation for the safety of target animals, workers and environment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2170	0	0	2170
Cosmetics legislation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	25	0	0	0	0	0	0	0	0	0	0	0	0	1939	0	267	240	2471
Total uses	3688	303	4431	14	11928	85	2067	23293	19145	100	13425	44944	0	42337	2174	7581	9201	184716
Percentage (%)	2.0	0.2	2.4	0.0	6.5	0.0	1.1	12.6	10.4	0.1	7.3	24.3	0.0	22.9	1.2	4.1	5.0	100.0

Table 39: Repeated dose toxicity purposes: type of legislation

Type of legislation	up to 28 days	29 - 90 days	> 90 days	Total
Legislation on medicinal products for human use	4286	897	1580	6763
Legislation on medicinal products for veterinary use and their residues	64	0	0	64
Medical devices legislation	100	137	0	237
Industrial chemicals legislation	940	1551	176	2667
Plant protection product legislation	1101	730	0	1831
Biocides legislation	0	0	0	0
Food legislation including food contact material	0	366	0	366
Feed legislation including legislation for the safety of target animals, workers and environment	0	0	0	0
Cosmetics legislation	0	0	0	0
Other	0	0	0	0
Total uses	6491	3681	1756	11928
	54.4%	30.9%	14.7%	100.0%

Table 40: Acute and subacute toxicity testing methods: type of legislation

Type of legislation	LD50, LC50	Other lethal methods	Non lethal methods	Total
Legislation on medicinal products for human use	0	0	1425	1425
Legislation on medicinal products for veterinary use and their residues	0	0	0	0
Medical devices legislation	0	0	1356	1356
Industrial chemicals legislation	481	0	149	630
Plant protection product legislation	214	0	20	234
Biocides legislation	0	0	6	6
Food legislation including food contact material	0	0	12	12
Feed legislation including legislation for the safety of target animals, workers and environment	0	0	0	0
Cosmetics legislation	0	0	0	0
Other	0	0	25	25
Total uses	695	0	2993	3688
	18.8%	0.0%	81.2%	100.0%

Table 41: Ecotoxicity purposes: type of legislation

Type of legislation	Acute toxicity	Chronic toxicity	Reproductive ecotoxicity	Endocrine activity	Bioaccumulation	Other exotoxicity	Total
Legislation on medicinal products for human use	0	2872	0	0	0	0	2872
Legislation on medicinal products for veterinary use and their residues	85	0	0	0	0	0	85
Medical devices legislation	49	0	0	0	536	0	585
Industrial chemicals legislation	898	12272	960	0	896	0	15026
Plant protection product legislation	3841	5595	314	11388	225	407	21770
Biocides legislation	30	0	0	30	0	0	60
Food legislation including food contact material	0	0	0	0	0	0	0
Feed legislation including legislation for the safety of target animals, workers and environment	0	0	0	0	0	0	0
Cosmetics legislation	0	0	0	0	0	0	0
Other	1780	0	54	96	0	9	1939
Total uses	6683	20739	1328	11514	1657	416	42337
	15.8%	49.0%	3.1%	27.2%	3.9%	1.0%	100.0%

10. Purposes and origin of legislative requirements

Table 42: Regulatory use (without routine production): origin of legislative requirement

Origin of legislative requirement	Quality control (incl. batch safety and potency testing)	Other efficacy and tolerance testing	Toxicity and other safety testing including pharmacology	Total
Legislation satisfying EU requirements	101032	11141	183297	295470
Legislation satisfying national requirements only (within EU)	203	173	238	614
Legislation satisfying Non-EU requirements only	2092	0	1181	3273
Total uses	103327	11314	184716	299357
	34.5%	3.8%	61.7%	100.0%

Table 43: Toxicity and other safety testing: origin of legislative requirement

Origin of legislative requirement	Acute and sub-acute toxicity	Skin irritation / corrosion	Skin sensitisation	Eye irritation / corrosion	Repeated dose toxicity	Carcinogenicity	Genotoxicity	Reproductive toxicity	Developmental toxicity	Neurotoxicity	Kinetics	Pharmaco-dynamics (incl safety pharmacology)	Phototoxicity	Ecotoxicity	Safety testing in food and feed area	Target animal safety	Other toxicity/safety testing	Total
Legislation satisfying EU requirements	3584	259	3766	7	11874	85	2022	23293	19145	100	13358	44720	0	42132	2170	7581	9201	183297
Legislation satisfying national requirements only (within EU)	0	0	0	0	0	0	0	0	0	0	67	0	0	167	4	0	0	238
Legislation satisfying Non-EU requirements only	104	44	665	7	54	0	45	0	0	0	0	224	0	38	0	0	0	1181
Total uses	3688	303	4431	14	11928	85	2067	23293	19145	100	13425	44944	0	42337	2174	7581	9201	184716
Percentage (%)	2.0	0.2	2.4	0.0	6.5	0.0	1.1	12.6	10.4	0.1	7.3	24.3	0.0	22.9	1.2	4.1	5.0	100.0

Table 44: Repeated dose toxicity: origin of legislative requirement

Origin of legislative requirement	up to 28 days	29 - 90 days	> 90 days	Total
Legislation satisfying EU requirements	6439	3679	1756	11874
Legislation satisfying national requirements only (within EU)	0	0	0	0
Legislation satisfying Non-EU requirements only	52	2	0	54
Total uses	6491	3681	1756	11928
	54.4%	30.9%	14.7%	100.0%

Table 45: Acute and subacute toxicity testing: origin of legislative requirement

Origin of legislative requirement	LD50, LC50	Other lethal methods	Non lethal method	Total
Legislation satisfying EU requirements	635	0	2949	3584
Legislation satisfying national requirements only (within EU)	0	0	0	0
Legislation satisfying Non-EU requirements only	60	0	44	104
Total uses	695	0	2993	3688
	18.8%	0.0%	81.2%	100.0%

Table 46: Ecotoxicity testing: origin of legislative requirement

Origin of legislative requirement	Acute toxicity	Chronic toxicity	Reproductive ecotoxicity	Endocrine activity	Bioaccumulation	Other ecotoxicity	Total
Legislation satisfying EU requirements	6487	20739	1328	11514	1657	407	42132
Legislation satisfying national requirements only (within EU)	158	0	0	0	0	9	167
Legislation satisfying Non-EU requirements only	38	0	0	0	0	0	38
Total uses	6683	20739	1328	11514	1657	416	42337
	15.8%	49.0%	3.1%	27.2%	3.9%	1.0%	100.0%

11. Animals used under §4 (3) of the Animal Protection Act by species

Table 47: Animals used by species

Animal species	Number of animals*	Percentage
Mice	505140	79.70%
Rats	55157	8.70%
Guinea-Pigs	460	0.07%
Hamsters (Syrian)	87	0.01%
Hamsters (Chinese)	9	0.00%
Mongolian gerbil	494	0.08%
Other rodents	3633	0.57%
Rabbits	334	0.05%
Cats	0	0.00%
Dogs	2	0.00%
Ferrets	9	0.00%
Other carnivores	0	0.00%
Horses, donkeys & cross-breeds (Equidae)	3	0.00%
Pigs	928	0.15%
Goats	59	0.01%
Sheep	46	0.01%
Cattle	7	0.00%
Prosimians	0	0.00%
Marmoset and tamarins	27	0.00%
Cynomolgus monkey	33	0.01%
Rhesus monkey	20	0.00%
Vervets Chlorocebus spp.	0	0.00%
Baboons	0	0.00%
Squirrel monkey	0	0.00%
Other species of Old World Monkeys (Cercopithecoidea)	0	0.00%
Other species of New World Monkeys (Ceboidea)	0	0.00%
Apes	0	0.00%
Other mammals	360	0.06%
Domestic fowl	6765	1.07%
Other birds	413	0.07%
Reptiles	220	0.03%
Rana	0	0.00%
Xenopus	1217	0.19%
Other amphibians	385	0.06%
Zebrafish	25883	4.08%
Other fish	32093	5.06%
Cephalopods	0	0.00%
Total uses	633784	100.00%

*the naming of the column was corrected on 20 December 2022.