

MEMBER STATE NARRATIVE 2021

1. General information on any changes in trends observed since the previous reporting period.

In 2021 there is an increase of 9,24% compared to 2020. If we compare the number with 2019, we see a decrease of 3,30%. And compared to 2018 there is a decrease of 14,13%. We can assume that the observed decrease in 2020 was, at least partially, caused by the measures taken because of the Covid19 pandemic. In 2021, the increase is at least partially due to the revival of activities that were previously shut down or limited.

Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
556271	493982	437275	477675

Since 2015, the number of re-use continues to decline. Compared to 2020 there is a decrease of 5,05% and even a decrease of 27,33% compared to 2019.

Re-Use	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
No	551601	489814	434085	474646
Yes	4670	4168	3190	3029
Total uses	556271	493982	437275	477675

Over the years, we see a gradual decline in the number of mammals that are used in procedures.

The use of birds fluctuates and is higher in 2021 than in the previous three years.

The use of fish also fluctuates and had a sharp decline in 2020. In 2021, this figure is similar to 2018.

The use of amphibians and reptiles is decreasing over the years.

Species	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
Mammals	454576	401065	362087	364534
Birds	45412	41703	45946	59749
Fish	54843	49807	28126	53035

Amphibians	1116	1106	1011	321
Reptiles	324	301	105	36
Total uses	556271	493982	437275	477675

Within the mammal category we noticed that the upward trend in the use of mice came to an end in 2019. In 2020 the use of mice dropped even further, but in 2021 there was a slight increase again. Considered over several years, the downward trend still persists. We see a similar trend in the use of rats.

There is a noteworthy increase in procedures on hamsters in recent years. The number of tests on hamsters has increased from 886 in 2019 to 2985 in 2020 and to 4744 in 2021. This is largely due to research conducted to develop a vaccine and drugs against the SARS-CoV-2 virus. Hamsters were used in this type of research because the species is susceptible to corona infections.

The decrease in rabbit use is partly due to the end of a specific project investigating group housing in rabbit farming in 2020 and by the growth in the use of non-animal methods in antibody production.

The decrease in cattle use is also largely explained by the end of a specific project that was reported in 2020 in which the genetic diversity of old cattle breeds was mapped by taking a small ear biopsy of a large number of farm animals.

There was an increase in the use of horses in 2021. These are mainly horses from private owners. The procedures involve minimally invasive examinations such as ultrasound, ECG and other heart rate monitoring and blood sampling.

Animal Species	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
Mice	348937	299038	251913	267161
Rats	20003	17471	13760	14542
Hamsters	772	886	2985	4744
Rabbits	61575	63094	70761	61104
Cattle	850	1420	2329	1044
Horses, donkeys and cross-breeds	302	110	199	347

In 2021, the new reporting category for turkeys was used for the first time. This explains the decrease in the 'other birds' category in 2021.

We see increased use in the domestic fowl category. The increase is due to a greatly increased use of chickens in studies related to diseases and disorders in animals. Specifically, these are studies in which the safety and efficacy of drugs, anti-parasitic products and vaccines are investigated in farm animals. This also applies to the use of turkeys.

Animal Species	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
Domestic fowl	39203	35292	41115	54511
Turkey				2473
Other birds	6209	6411	4831	2765

In 2021, the new reporting categories for 'guppy, swordtail, molly, platy' and 'salmon, trout, chars and graylings' were used for the first time. Nevertheless, there is no decrease but an increase in the 'other fish' category. This increase is mainly due to increased use of *Cyprinus carpio* (+1165), *Anguilla anguilla* (+1033) and *Rutillus rutillus* (+1020). Animals in the 'other fish' category are used for various purposes. These include species conservation studies and studies related to animal or human diseases or studies on animal biology or behaviour.

In 2020, there was a sharp decrease in animal studies involving zebrafish compared to 2019. This decrease was due to measures taken due to the COVID-19 epidemic. In 2021, measures were less stringent and delayed trials were started or continued.

Animal Species	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
Zebra fish	25904	39115	22804	43113
Guppy, swordtail, molly, platy				350
Salmon, trout, chars and graylings				861
Other Fish	28939	10692	5322	8711

2. Information on significant increase or decrease in used animals in any of the specific areas and analysis of the reasons thereof.

The number of animal procedures in the 'basic research' category has been declining in recent years. In 2021 it shows a slight increase again, probably due to the restart of activities that were restricted in 2020.

For basic research, the increase is 13,78%. For translational and applied research, it is a 27,91% increase.

The 'preservation of species' category drastically increased in 2021 in comparison with 2020. It mainly involves fish, and to a lesser extent birds and amphibians. For fish, it mainly concerns a trial where a large number of animals were used in a study on the harmfulness of pumps and turbine screws. Most of the animals were released back into the wild afterwards. In the case of birds, these were wild partridges used for genetic research. All these animals were freed immediately after blood sampling.

Purpose Category	Number of use in 2018	Number of use in 2019	Number of use in 2020	Number of use in 2021
Basic Research	251704	222946	168821	192085
Translational and applied research	121645	130724	120505	154134
Regulatory use and Routine production	140896	115267	127262	109548
Protection of the natural environment in the interests of the health or welfare of human beings or animals	359	798	743	58
Preservation of species	5598	243	371	3017
Higher education or training for the acquisition, maintenance or improvement of vocational skills	7442	6287	3827	4073
Forensic enquiries	0	0	0	0
Maintenance of colonies of established genetically altered animals, not used in other procedures	28627	17717	15746	14760
Non-EU Purpose	0	0	0	0
Total uses	556271	493982	437275	477675

3. Information on any changes in trends in actual severities and analysis of the reasons thereof.

Proportionally, the share of non-recovery procedures and the share of severe procedures are almost the same as in 2020.

In recent years, a trend was observed within the severity category of mild and moderate with a decrease of mild procedures and an increase in moderate procedures. This was confirmed in 2021. In 2021, this can partially be explained by an increasing number of procedures in the translational and applied categories 'animal diseases and disorders' and 'human nervous and mental disorders'. These are two categories in which we see a large proportion of moderate procedures.

Severity	Number of use in 2018	%	Number of use in 2019	%	Number of use in 2020	%	Number of use in 2021	%
Non-recovery	20565	3,70%	14074	2,85%	9464	2,16%	11044	2,31%
Mild	311660	56,03%	284376	57,57%	241487	55,23%	241281	50,51%
Moderate	154633	27,80%	131963	26,71%	139284	31,85%	174492	36,53%
Severe	69413	12,48%	63569	12,87%	47040	10,76%	50858	10,65%
Total uses	556271	100,00%	493982	100,00%	437275	100,00%	477675	100,00%

4. Particular efforts to promote the principle of replacement, reduction and refinement and its impacts on statistics if any.

Continuation of the RE-Place project (database that brings together expertise on alternative methods for animal testing) and funding of several specific 3R research projects.

In the Flemish region, round tables were initiated with a broad group of stakeholders. By 2023, these discussions should lead to an action plan with actions that can help reduce the number and share of animal experiments in the region and beyond.

A grant project has been set up for the years 2022, 2023 and 2024 with the aim to ensure, for the first time, the pooling of equipment and skills of the entire French-speaking scientific community of Belgium around the implementation of alternative methods to animal experimentation.

In the Brussels Capital Region grants were awarded for the creation of a Brussels platform for 3R alternatives. This platform will provide the Brussels Capital Region with a competent center to promote animal welfare and the application of the 3R Principle, in order to have a significant impact, ranging from the increased adoption of innovative techniques and 3R alternatives to the development of policy and regulatory measures. Since the attribution of the grant happened only recently, no impact on statistics is yet noticeable.

5. Further breakdown on the use of "other" categories if a significant proportion of animal use is reported under this category.

1. Other fish

16.43% of the fishes are reported under the "other" category.

They are mainly *Cyprinidae* (52%) and *Anguillidae* (24%), followed by *Nothobranchiidae* (9%), *Rivulidae* (8%) and *Cichlidae* (4%).

Other fish	Number of uses
<i>Cyprinus carpio</i>	2884
<i>Anguilla anguilla</i>	2062
<i>Rutilus rutilus</i>	1020
<i>Kryptolebias marmoratus</i>	715
<i>Carassius</i>	650
<i>Nothobranchius furzeri</i>	781
<i>Cichlidae</i>	191
<i>Sander lucioperca</i>	120
<i>Oreochromis niloticus</i>	81
<i>Maylandia estherae</i>	63
<i>Alosa fallax</i>	37
<i>Haplochromis</i>	16
<i>Pseudotropheus saulosi</i>	16
<i>Dicentrarchus labrax</i>	15
<i>Parophidion vassali</i>	10
<i>Squalius cephalus</i>	10
<i>Pygocentrus nattereri</i>	9
<i>Diancistrus fuscus</i>	6
<i>Synodontis grandioops</i>	6
<i>Piaractus brachypomus</i>	5
<i>Esox lucius</i>	4
<i>Priacanthus hamrur</i>	3
<i>Serrasalmus maculatus</i>	3
<i>Colossoma macropomum</i>	1
<i>Gadus morhua</i>	1
<i>Lampetra fluviatilis</i>	1
<i>Silurus glanis</i>	1

2. Other amphibians

33,96% of the amphibians are reported under the "other" category.

They are *Alytidae* (*Discoglossus pictus*, 69%) and *Ranidae* (*Lithobates catesbeianus*, 27%) and *Salamandridae* (*Ichtyosaura alpestris*, 4%).

Other amphibians	Number of uses
<i>Discoglossus pictus</i>	75
<i>Lithobates catesbeianus</i>	30
<i>Ichtyosaura alpestris</i>	4

3. Other birds

4,63% of the birds are reported under the “other” category.

They are mostly Numididae (41% of other birds) and Phasianidae (*Alectoris rufa*, *Coturnix coturnix*, *Coturnix japonica* and *Perdix perdix*) (40%). The other birds are members of Laridae (*Larus fuscus* and *Larus argentatus*) (7%), Fringillidae (*Serinus canaria*) (4%), Anatidae (3%), Estrildidae (*Amandava amandava*, *Estrilda astrild*, *Estrilda troglodytes* and *Taeniopygia*) (2%) and Columbidae (2%).

Other birds	Number of uses
<i>Numididae</i>	1146
<i>Alectoris rufa</i>	535
<i>Coturnix japonica</i>	223
<i>Coturnix coturnix</i>	190
<i>Perdix perdix</i>	169
<i>Serinus canaria</i>	108
<i>Larus argentatus</i>	100
<i>Larus fuscus</i>	100
<i>Anatidae</i>	87
<i>Columbidae</i>	48
<i>Amandava amandava</i>	20
<i>Estrilda astrild</i>	20
<i>Estrilda troglodytes</i>	17
<i>Taeniopygia</i>	2

6. Details on cases where the 'severe' classification is exceeded, whether pre-authorized or not, covering the species, numbers, whether prior exemption was authorised, the details of the use and the reasons why 'severe' classification was exceeded.

As in previous years, there were no cases in which the ‘severe’ classification was exceeded.