



**State Veterinary Administration
of the Czech Republic
National Reference Laboratory
for Rabies
Information Bulletin 5a/2004**

**Rabies
Epizootiological Situation in 2003**



State Veterinary Administration of the Czech Republic National Reference Laboratory for Rabies, SVI Liberec

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Rabies - Epizootiological Situation in 2003

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Summary

7,603 animals belonging to 45 species were examined for rabies in the Czech Republic in 2003. Rabies was not diagnosed in any case.

Control measures were directed at the preventive vaccination of domestic animals and oral immunization of foxes. 2 743 500 Czech made SAD - Bern vaccine doses (Lysvulpen) were distributed during spring and autumn campaigns in 2003.

1. Laboratory Diagnostics

Presented analysis of the rabies situation was prepared on the base of the data reported by specialized laboratories in the Czech Republic territory.

The rabies diagnostics was arranged by three specialized laboratories in the Czech Republic territory in 2003:

1. The National Reference Laboratory for Rabies, State Veterinary Institute, Liberec
2. State Veterinary Institute, Olomouc
3. State Veterinary Institute, Praha

A direct fluorescent antibody test complemented by the mouse inoculation test in indicated cases was the basic diagnostic method.

Participation of responsible state laboratories on the total number of examined samples is demonstrated in graph.

Graph	Contribution of particular labs to the total examination number	p. 5
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In 2003, 7,603 samples were examined for rabies, 93 samples were not suitable for examination due to biological or physical deterioration. The mouse inoculation test was carried out in 894 cases (329 cats, 261 dogs, 35 others domestic animals and 269 wildlife animals) when men or farm animals had been exposed.

1.1. Animal Tested

In 2003, totally 7,603 animals belonging to 45 species were examined for rabies, of which 27 were wildlife species and 18 domestic ones.

The wildlife animals contributed to the total examination volume by 89 % (6,761 samples). The most frequent were foxes (6,248), roe-deers (187), martens (163) etc. The domestic animals participated by 11 % (430 cats, 341 dogs, 71 others).

The results of laboratory examination and participation of individual animal species are given in Table and graphs.

Graphs	Rabies cases and examinations by animals	p. 6
Table	Review of rabies laboratory examination in the Czech Republic in 2003	p. 7

2. Rabies in Animals

No rabies case was diagnosed in 2003. This is the first rabies free year in more than one hundred-year history of rabies occurrence in the Czech Republic.

Graphs	Rabies cases and examinations by months in 2003	p. 8
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2.1. Rabies in Wild Animals

6 761 animals were examined in 2003. Rabies in wildlife was not laboratory confirmed.

2.2. Rabies in Domestic Animals

In 2003, totally 842 domestic animals were examined for rabies. No rabies cases were diagnosed in this category of animals.

Sampling and rabies cases in the districts of CR are presented in maps and tables.

2.3. Control Examination

Maps	Rabies Samples in 2003 Foxes - Control Examination in 2003	p. 9
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3. Oral Vaccination of Foxes

The project of fox oral vaccination initiated in 1989 has continued also in 2003. 2 743 500 Czech made SAD - Bern vaccine doses (Lysvulpen) were distributed during spring and autumn campaigns.

The oral vaccination campaigns were carried out in April and October 2003. An area of 54 472 km² was treated with Lysvulpen vaccine baits. The whole territory of the state was covered by aerial distribution of vaccine baits with density of 25 doses/km².

For details and the geographical localization of the vaccination areas see the Map.

3.1.1. Laboratory Examination

Control examinations following bait distribution were directed at rabies diagnosis, tetracycline marking and antibody formation. The indirect measuring of bait uptake was obtained by the examination of fox bones for tetracycline incorporation. Antibody formation was tested in the body fluids by RFFIT test. The results are presented in the tables.

4 042 samples of which 3 740 were foxes were submitted for examination during 6 months after vaccination campaign which was performed in autumn 2002. Rabies was not diagnosed.

3 077 foxes were tested for tetracycline (TTC) marking. Biomarker was detected in 74.9 % of samples. Antibody formation was tested in 1 584 body fluids. Rabies virus neutralising antibodies were detected in 67.7 % of all examined samples.

1 950 animals of which 1 413 were foxes were analysed after spring campaign in 2003. No rabies case was registered. 943 foxes were tested for biomarker with 75.5 % positivity. Rabies virus neutralising antibodies were detected in 75.6 % of 401 examined samples.

3.1.2. Evaluation of rabies status

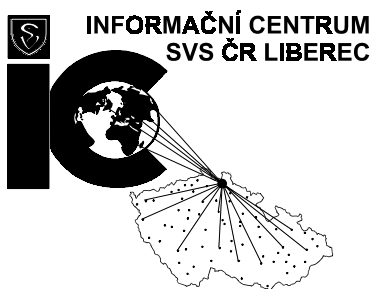
The present development of rabies situation is the result of effective rabies control which was based on aerial distribution of vaccine baits. In 1989 when oral vaccination of foxes was launched, the number of rabies cases reached 1 500. Gradual decrease of rabies cases was noticed in following years, reaching 0 incidence in 2003. This was the first year when no fox rabies was registered since the middle of the 20th century.

3.2. Planning for future

Our effort will be aimed mainly at the protection of rabies free status. The protective belts of vaccinated areas will be created predominantly along the north and east borders to prevent new introduction of rabies to the Czech Republic. The whole area will be treated aerially.

Map	Rabies - cases and area of vaccination in 2003	p. 10
Graphs	Rabies cases in the Czech Republic in 1990 - 2003 - domestic animals - wild animals	p. 11
Table	Surveillance of oral vaccination campaigns (spring 1996 - spring 2003)	p. 12

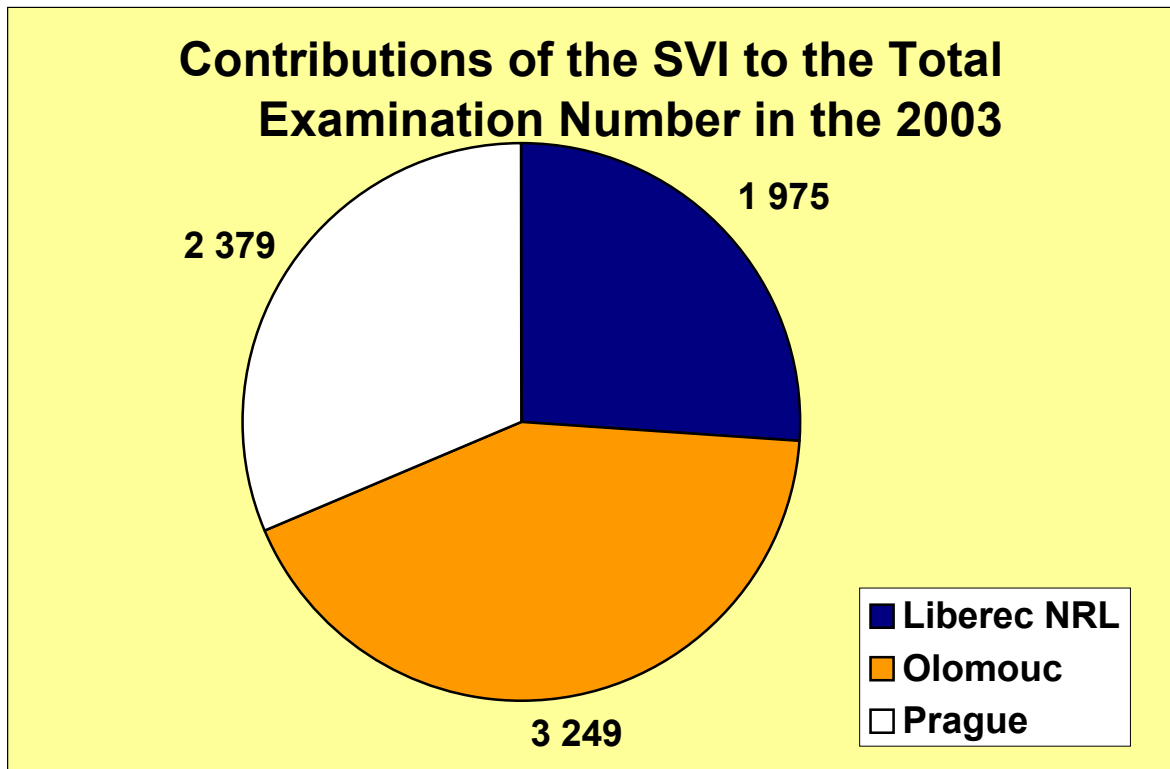
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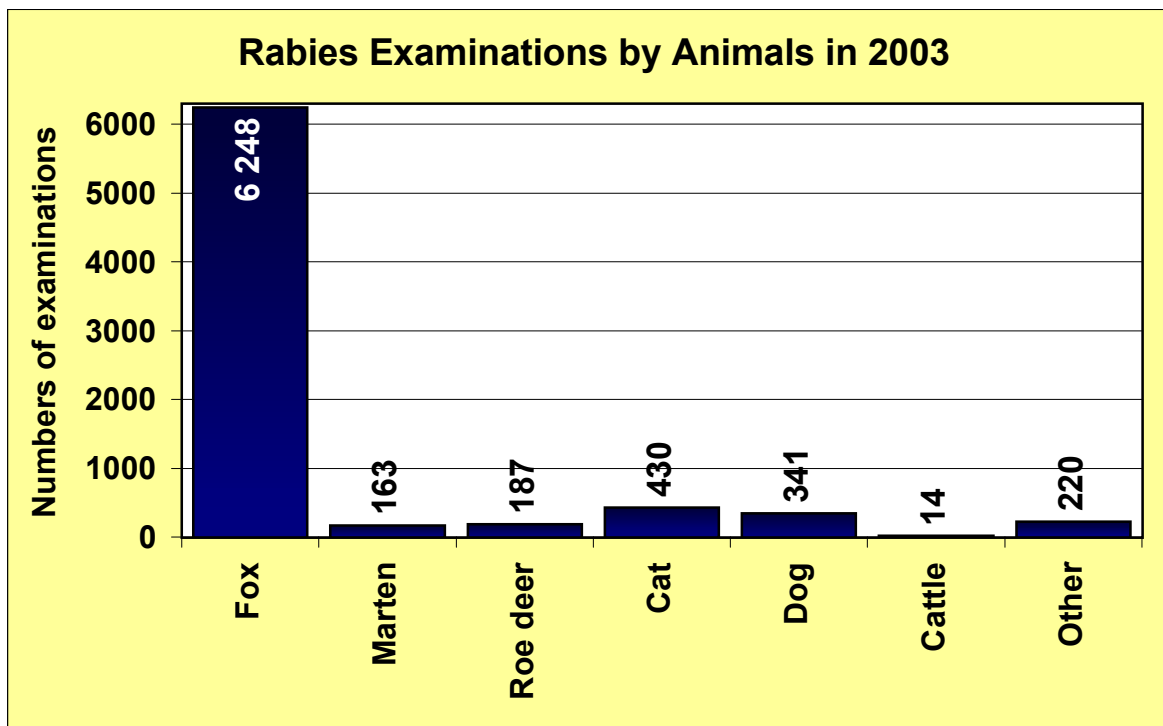
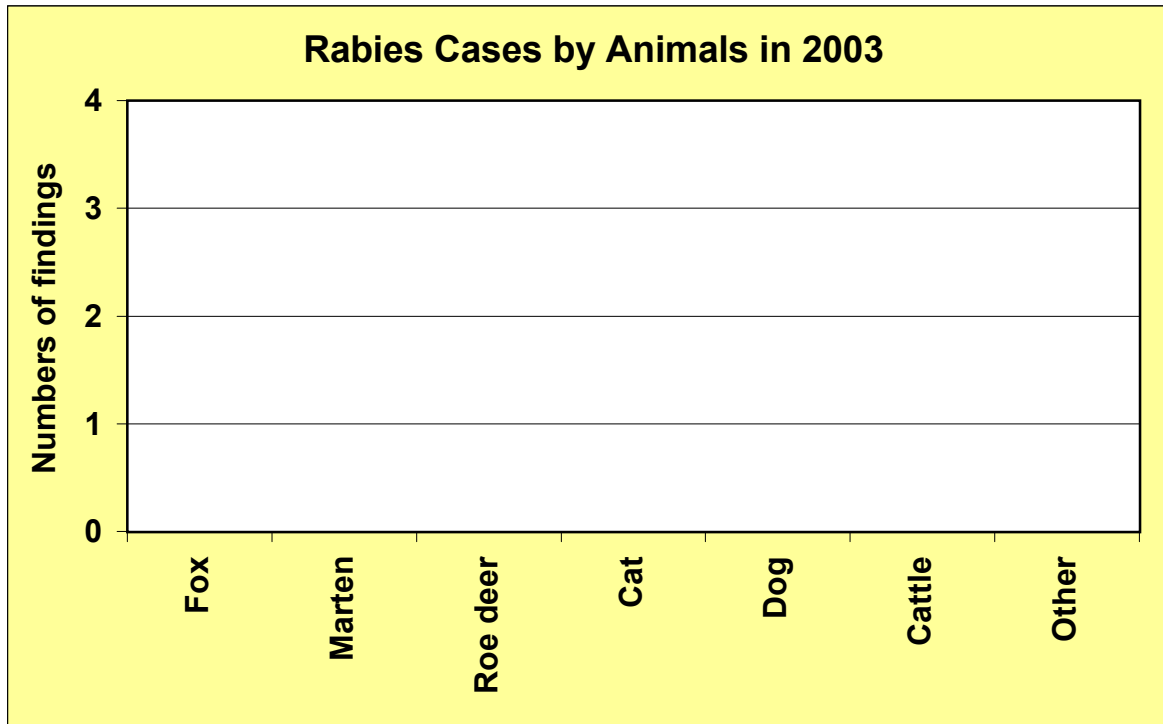


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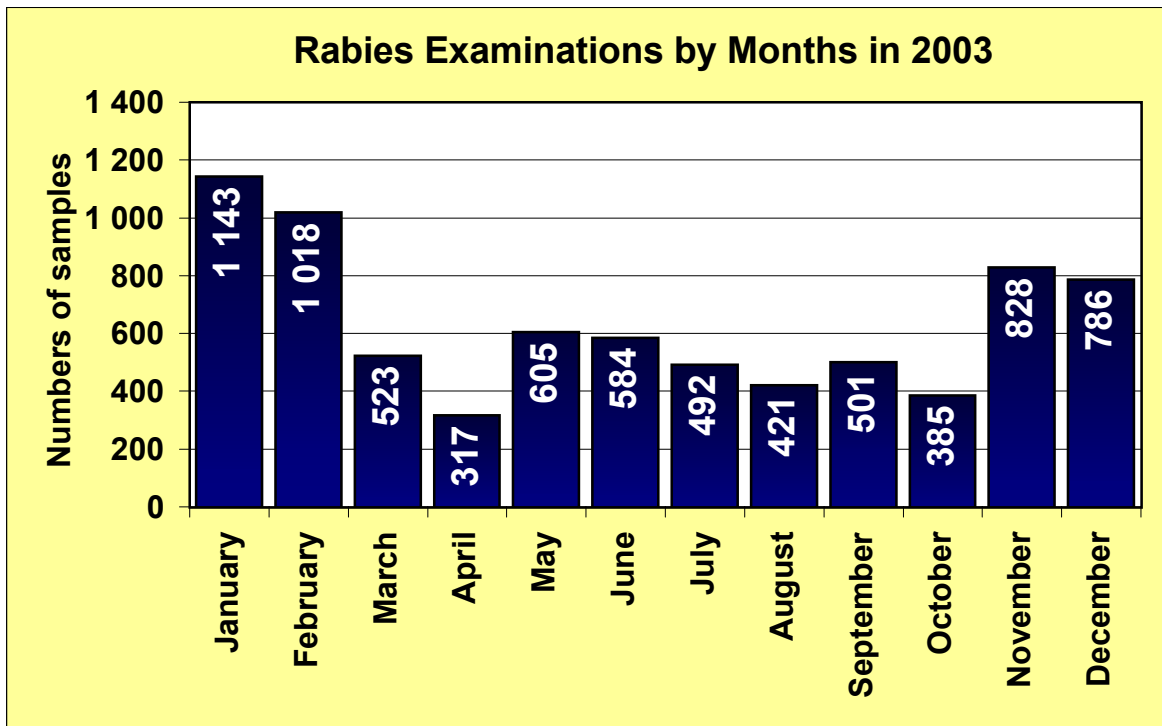
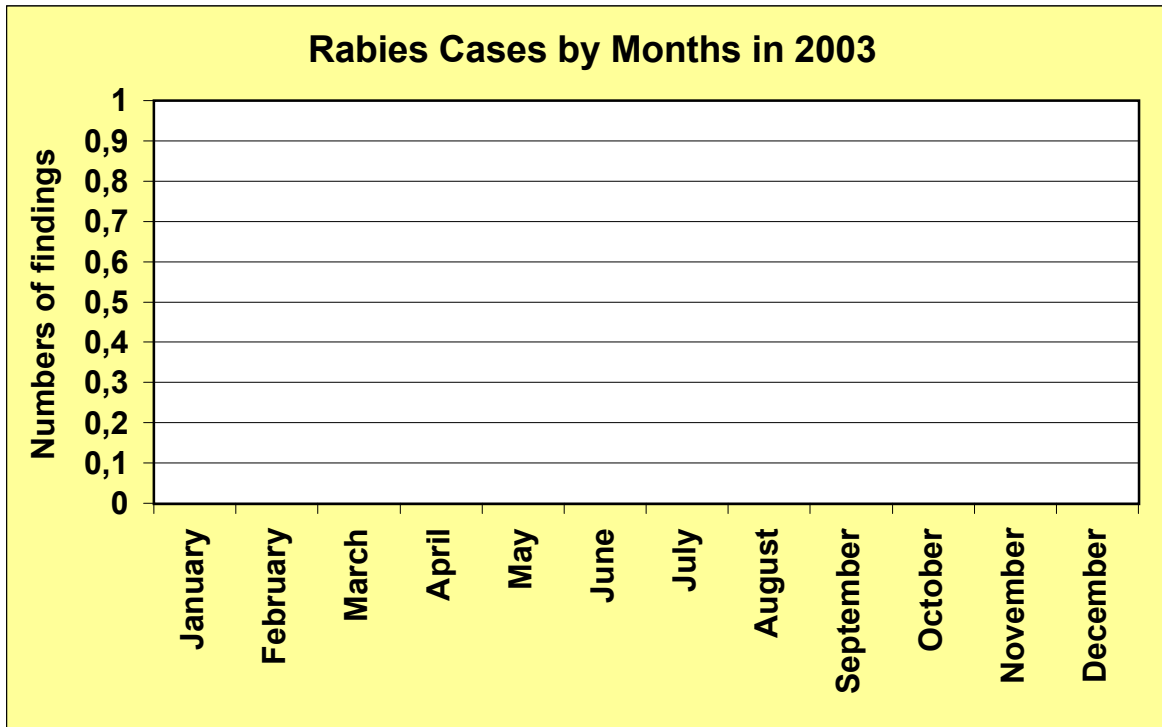
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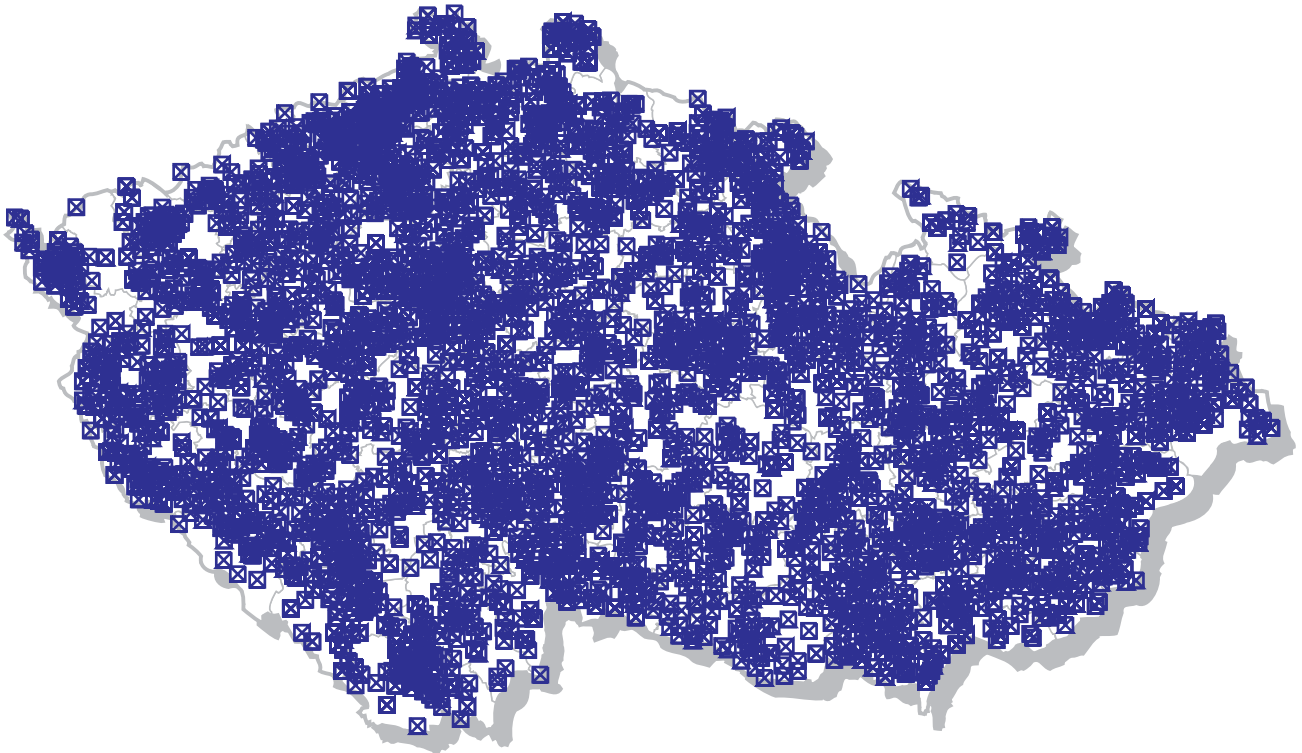


Review of Rabies Laboratory Examination in the Czech Republic in 2003

Animal	Samples examined	Number of MIT	Unsuitable samples	Rabies posit.	%posit.
Red fox	6 248	100	79	0	0,0
Roe deer	187	38	4	0	0,0
Marten sp.	163	52	1	0	0,0
Badger	38	12	1	0	0,0
Brown rat	29	22	0	0	0,0
Wild boar	21	5	0	0	0,0
Squirrel	14	10	0	0	0,0
European ground squirrel	8	2	0	0	0,0
Hedgehog	8	6	1	0	0,0
House mouse	8	6	0	0	0,0
bat sp.	7	4	0	0	0,0
Brown hare	6	0	0	0	0,0
European mole	4	3	1	0	0,0
Raccoon dog	3	0	1	0	0,0
Fallow deer	2	0	0	0	0,0
Red deer	2	0	0	0	0,0
Weasel sp	2	2	0	0	0,0
Common vole	2	1	0	0	0,0
Dormouse sp.	1	1	0	0	0,0
Harvest mouse	1	0	0	0	0,0
Water vole	1	1	0	0	0,0
Musk rat	1	1	0	0	0,0
Common hamster	1	1	0	0	0,0
Beaver	1	0	0	0	0,0
Black rat	1	1	0	0	0,0
Wild cat	1	1	0	0	0,0
Sica deer	1	0	0	0	0,0
WILD ANIMALS	6 761	269	88	0	0,0
Cat	430	329	2	0	0,0
Dog	341	261	2	0	0,0
Ferret	27	20	0	0	0,0
Cattle	14	3	1	0	0,0
Sheep	8	0	0	0	0,0
Brown hare	5	3	0	0	0,0
Hamster	4	2	0	0	0,0
Pig	2	2	0	0	0,0
Rabbit	2	2	0	0	0,0
Turkey	1	0	0	0	0,0
Polar fox	1	0	0	0	0,0
Arctic fox	1	0	0	0	0,0
Goat	1	0	0	0	0,0
White mouse	1	1	0	0	0,0
Mink	1	1	0	0	0,0
Nutria	1	0	0	0	0,0
Mongolian gerbil	1	1	0	0	0,0
Guinea-pig	1	0	0	0	0,0
DOMESTIC ANIMALS	842	625	5	0	0,0
TOTAL	7 603	894	93	0	0,0



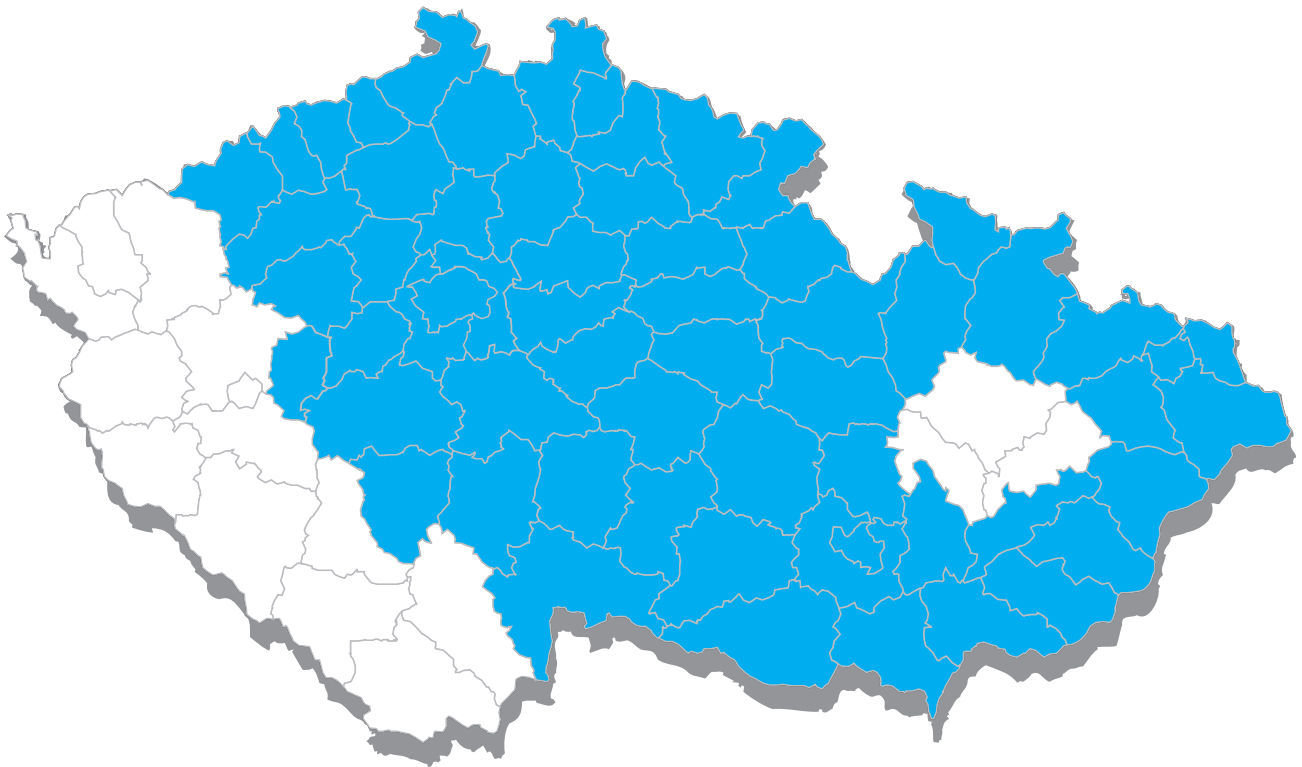
Geographical Distribution of Samples Submitted for Rabies Examination in 2003




Foxes - Control Examination in 2003

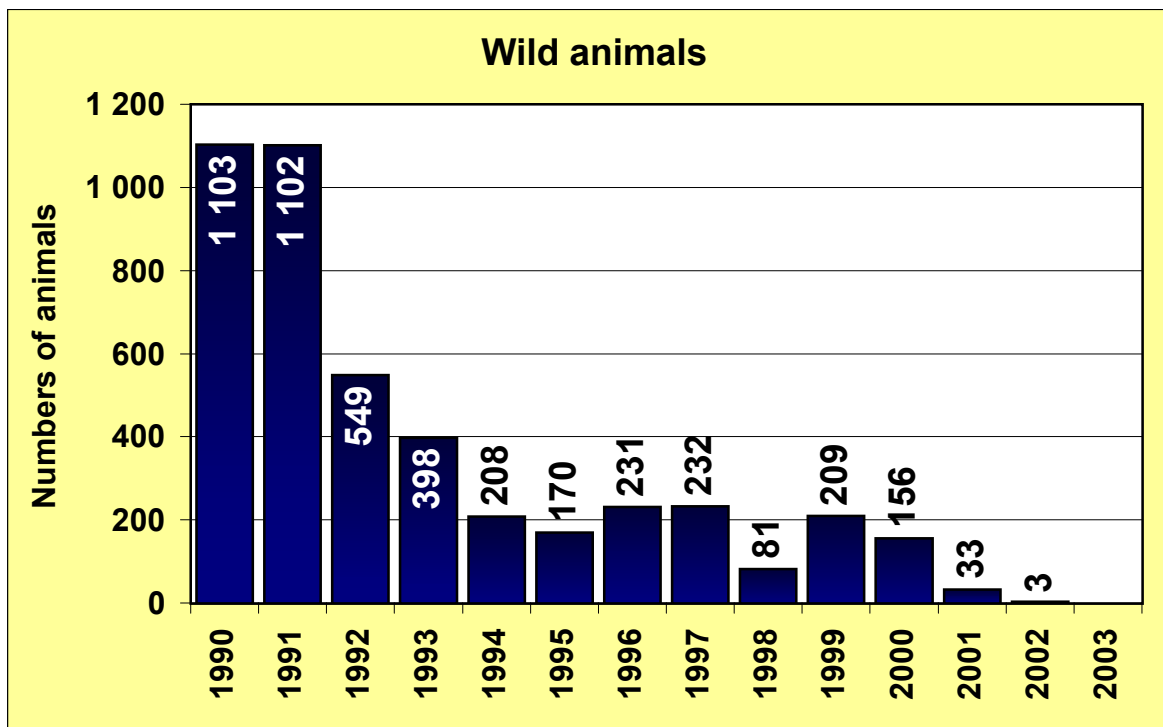
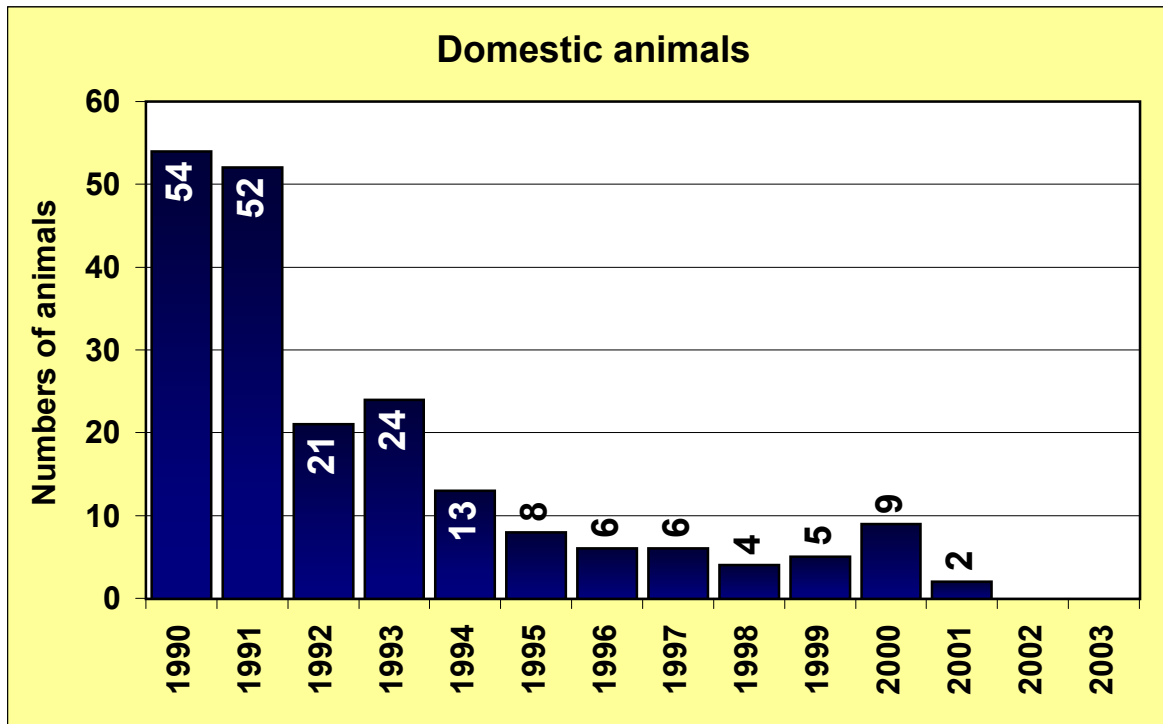


Area of Aerial Vaccination in 2003



 Area of Vaccination

Rabies Cases in the Czech Republic in 1990 - 2003



Surveillance of Oral Vaccination Campaigns

Campaign	bait uptake %	TTC marking %	Seroconversion %	Number of isolated strains
Spring 1996	75,9	77,1	60,6	49
Autumn 1996	74,8	71,5	54,9	155
Spring 1997	74,8	74,5	55,6	61
Autumn 1997	78,7	70,8	50,4	86
Spring 1998	79,3	79,6	64,8	15
Autumn 1998	77,4	70,0	51,0	68
Spring 1999	77,7	77,3	62,2	72
Autumn 1999	79,6	73,4	66,6	70
Spring 2000	81,7	74,4	71,0	32
Autumn 2000	81,9	78,7	69,4	77
Spring 2001	82,7	80,0	70,2	5
Autumn 2001	88,8	75,9	60,8	30
Spring 2002	88,5	80,1	78,3	3
Autumn 2002	89,7	74,9	67,7	0
Spring 2003	X	75,1	75,6	0
Average value	80,8	75,6	63,9	
Total				723