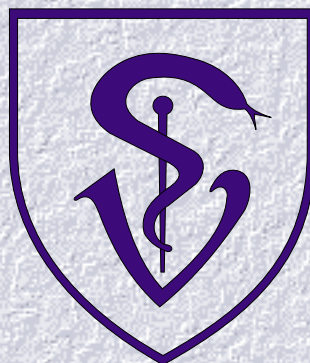




**State Veterinary Administration
of the Czech Republic
National Reference Laboratory
for Rabies
Information Bulletin 8a/2002**

**Rabies
Epizootiological Situation in 2001**



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

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Rabies - Epizootiological Situation in 2001

Authors:

MVDr. Oldřich MATOUCH, CSc. - State Veterinary Institute Liberec

MVDr. Jaroslav JAROŠ - State Veterinary Institute Liberec

Editor:

RNDr. Oldřich VALCL, CSc. - Department of Information Retrieval Systems SVA CR

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Summary

8 676 animals belonging to 45 species were examined for rabies in the Czech Republic in 2001. Rabies was diagnosed in 35 cases, 130 less than in 2000. This is a considerable reduction compared to the previous year. Wild animals participated by 33 cases on positive findings (94,3 %) and domestic animals by 2 cases (5,7 %). The highest incidence was registered in foxes - 29 cases (82,8 %). The other animals involved were badger (1) , roe-deer (1), marten (1), polecat (1) and domestic cat (2).

Rabies occurred in 7 districts. The majority of cases was recorded in the East Bohemia in the district Rychnov nad Kněžnou (21).

Control measures were directed on the preventive vaccination of domestic animals and oral immunization of foxes. 1 859 700 vaccine doses were distributed on the territory of 54 districts during two campaigns in 2001.

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 2001:

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

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

Graph	Contribution of particular labs to the total examination number	p. 5
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In 2001, 8 676 samples were examined for rabies, 85 samples were not suitable for examination due to biological or physical deterioration. The mouse inoculation test was carried out in 1 187 cases (436 cats, 340 dogs, 43 others domestic animals and 368 wildlife animals) when men or farm animals had been exposed.

1.1. Animal Tested

In 2001, totally 8 676 animals belonging to 45 species were examined for rabies, of which 28 were wildlife species and 17 domestic ones.

The wildlife animals contributed to the total examination volume by 85,2 % (7 394 samples). The most frequent were foxes (6 607), roe-deers (243), martens (266) etc. The domestic animals participated by 14,8 % (606 cats, 455 dogs, 221 others).

Graphs	Rabies cases and examinations by animals	p. 6
Table	Review of rabies laboratory examination in the Czech Republic in 2001	p. 7

2. Rabies in Animals

A total of 35 rabies cases were diagnosed in the CR during 2001, 130 cases less than in 2000. Rabies was registered in 6 animal species, of which in 5 wildlife species and 1 domestic species. Of the total number 33 (94,3 %) cases were diagnosed in wild animals and 2 cases (5,7 %) in domestic animals. The highest occurrence of rabies cases was recorded in January (12).

Graphs	Rabies cases and examinations by months in 2001	p. 8
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2.1. Rabies in Wild Animals

Rabies in wildlife was laboratory confirmed in 33 cases in 5 species. Most frequently it was in foxes (29 cases). One case was registered in badger (1) , roe-deer (1), marten (1) and polecat (1).

Foxes keep their dominant position in the epizootiology of rabies and remain principal reservoir and vector of the infection. Cases in foxes accounted for 82,8 % of all positive cases.

2.2. Rabies in Domestic Animals

In 2001, totally 1282 domestic animals were examined for rabies. Rabies was diagnosed in 2 cats.

2.3. Geographical Distribution

Only 7 of 77 districts were affected with rabies. The majority of rabies cases was reported from district Rychnov nad Kněžnou (21) in East Bohemia where massive reinfection occurred in the previous year. The development of rabies situation in this area and outbreaks in the neighbouring districts Ústí nad Orlicí (5) and Náchod (3) were in connection with this very active focus. Rabies situation in the adjacent area of Poland was also inconvenient. Only sporadic cases were registered in other districts – Nymburk (2), Mladá Boleslav (1), Děčín (1) and Frýdek Místek (1). South and West Bohemia and South Moravia remained rabies-free.

Maps	Rabies - samples and cases in 2001	p. 9
Tables	Rabies cases in the districts of the Czech Republic in 2001 - Districts of the Central Bohemia - Districts of the Southern Bohemia - Districts of the Eastern Bohemia - Districts of the Northern Moravia	p. 10

3. Oral Vaccination of Foxes

The project of fox oral vaccination initiated in 1989 has continued also in 2001. 1 859 700 Czech made SAD – Bern vaccine doses (Lysvulpen) were distributed in 54 districts during spring and autumn campaigns.

The manual distribution of vaccine baits in density of 18 baits/km² was performed in 37 districts by voluntary hunters. Aerial distribution was applied in 17 highly affected districts in North, Central, East and South Bohemia using 25 vaccine doses per km².

3.1. Control Examination - Bait Uptake

The uptake of vaccine baits by target and non-target species was monitored in designated control preserves. Voluntary hunters observed baiting sites in these areas on days 4, 8 and 14 following the placement. 78 % of baits were taken by foxes in the spring campaign. Non-target animals (wild boars, martens, cats, rodents...) participated on bait uptake by 8,5 %. After autumn campaign, 82,7 % of baits was taken by foxes and 6,1 % was consumed by non target animals. The field controls of bait uptake confirm the efficiency of Lysvulpen baits.

3.2. Laboratory Examination

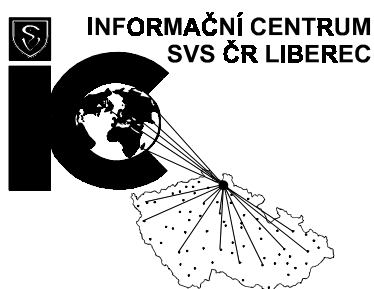
2 699 samples of which 1 882 were foxes were submitted for examination during 6 months after spring vaccination campaign. Rabies was diagnosed in 5 case in foxes. Isolated strains were identified by monoclonal antibodies as wild rabies viruses.

1 136 foxes were tested for tetracycline marking. Biomarker was detected in 80 % of samples. Antibody formation was tested in 412 body fluids. Rabies virus neutralising antibodies were detected in 70,2 % of all examined samples.

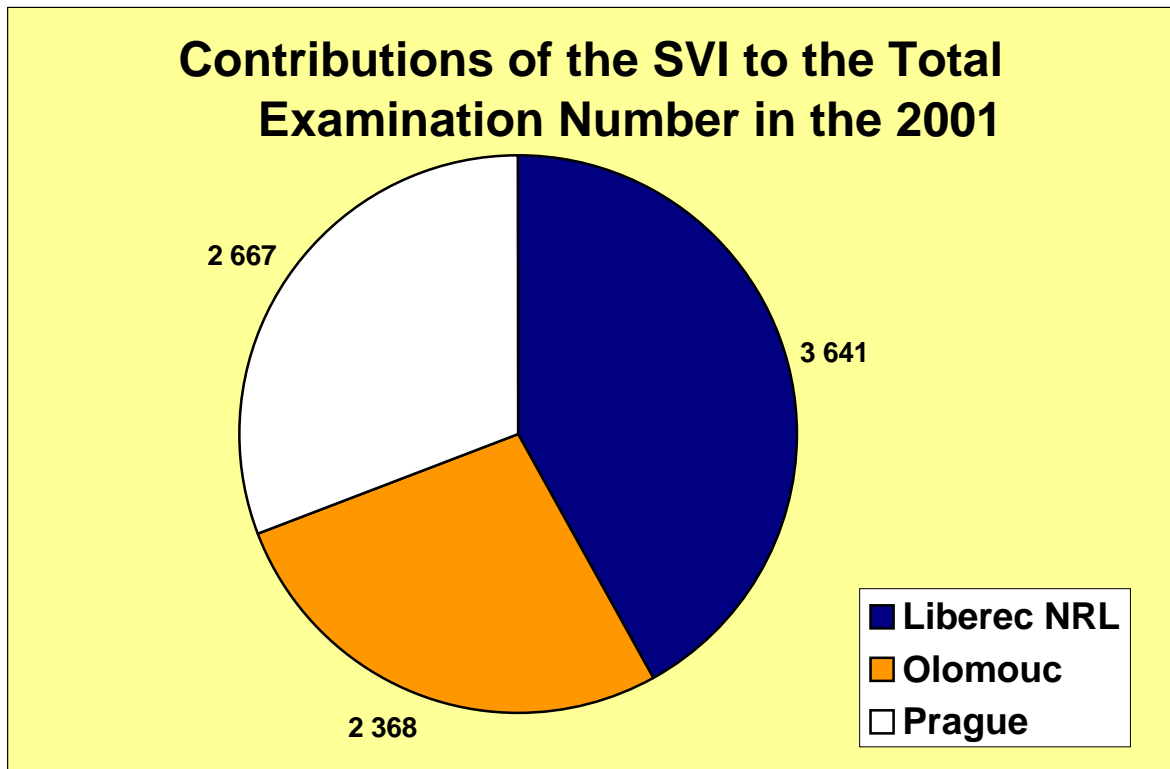
Oral vaccination has undoubtedly contributed to the considerable improvement of the rabies situation and restricted further extension of the disease. 35 cases in 2001 was the lowest recording since 1960s, the peak recording being 2 232 in 1984. The reduction of the wildlife rabies caused the decrease of rabies in domestic carnivores to minimum which is of great epidemiological importance.

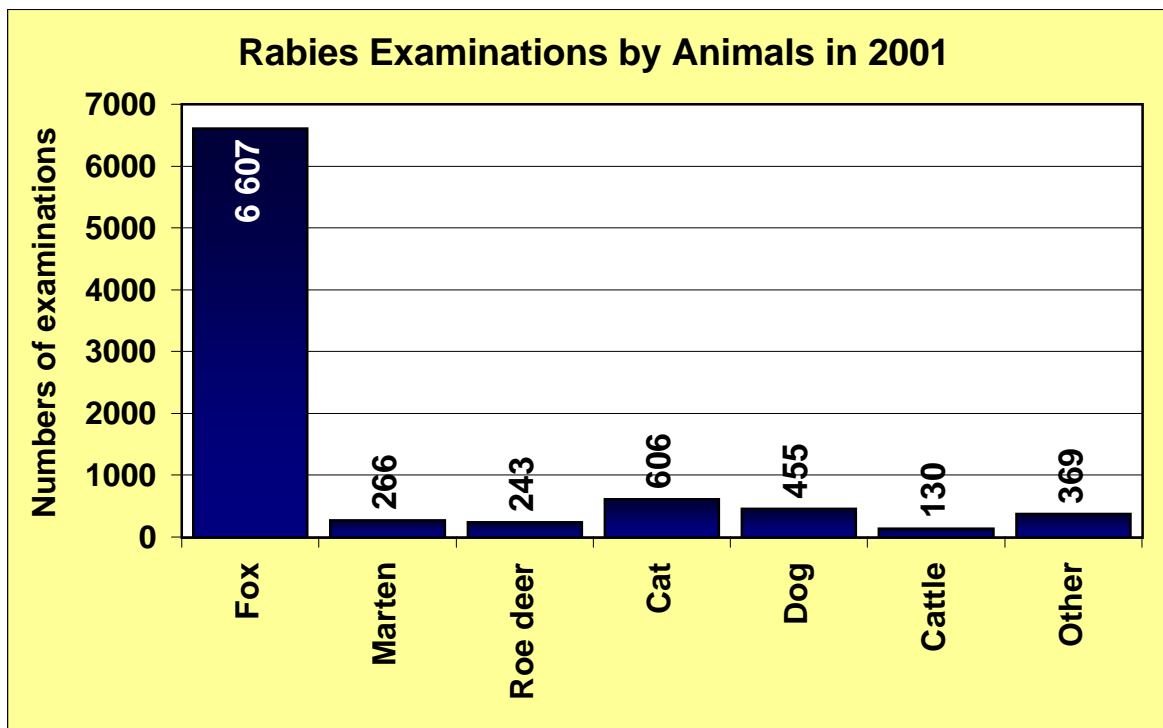
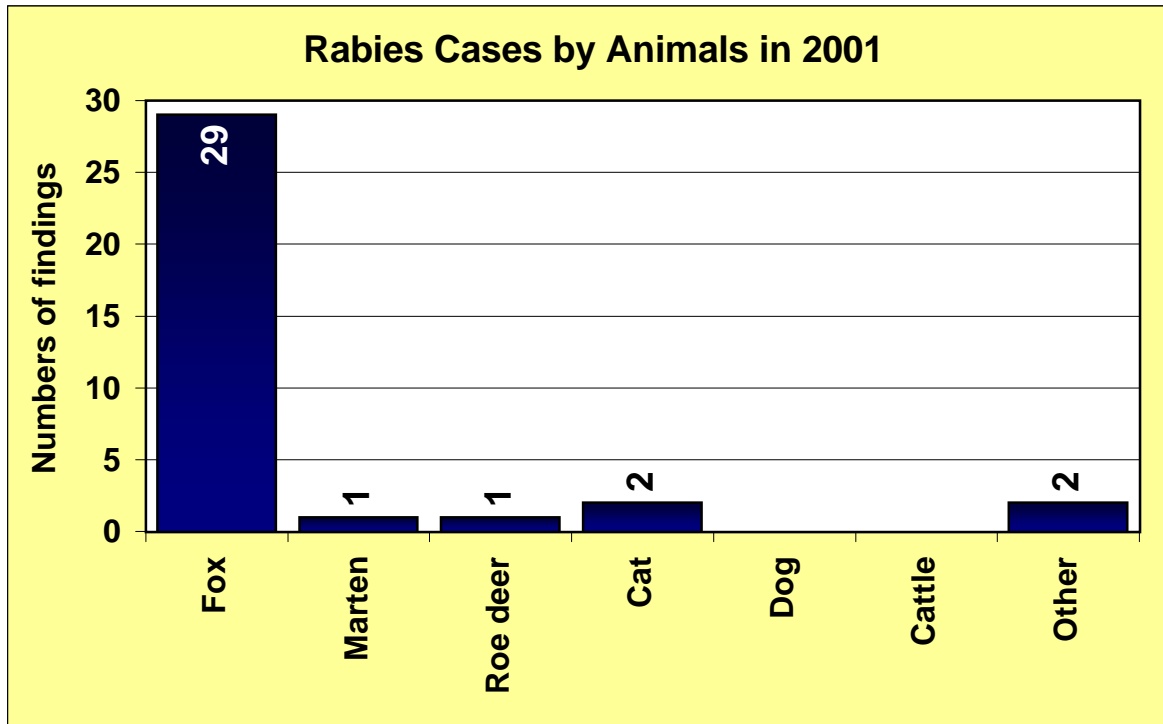
Rabies control programme for the next years should be focused at the residual fox rabies districts, prevention of the spreading to new territories and protection of border areas.

Map	Rabies - cases and area of vaccination in 2001	p. 11
Graphs	Rabies cases in the Czech Republic in 1990 - 2001 - domestic animals - wild animals	p. 12
Table	Surveillance of oral vaccination campaigns (spring 1996 – spring 2001)	p. 13



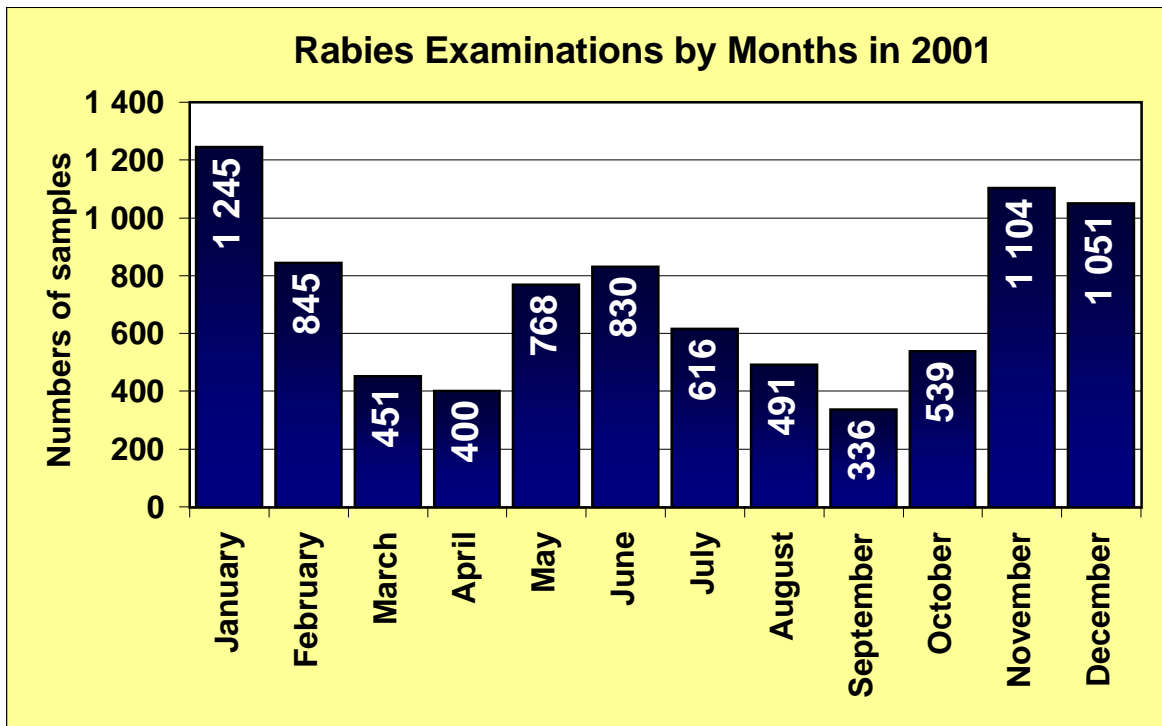
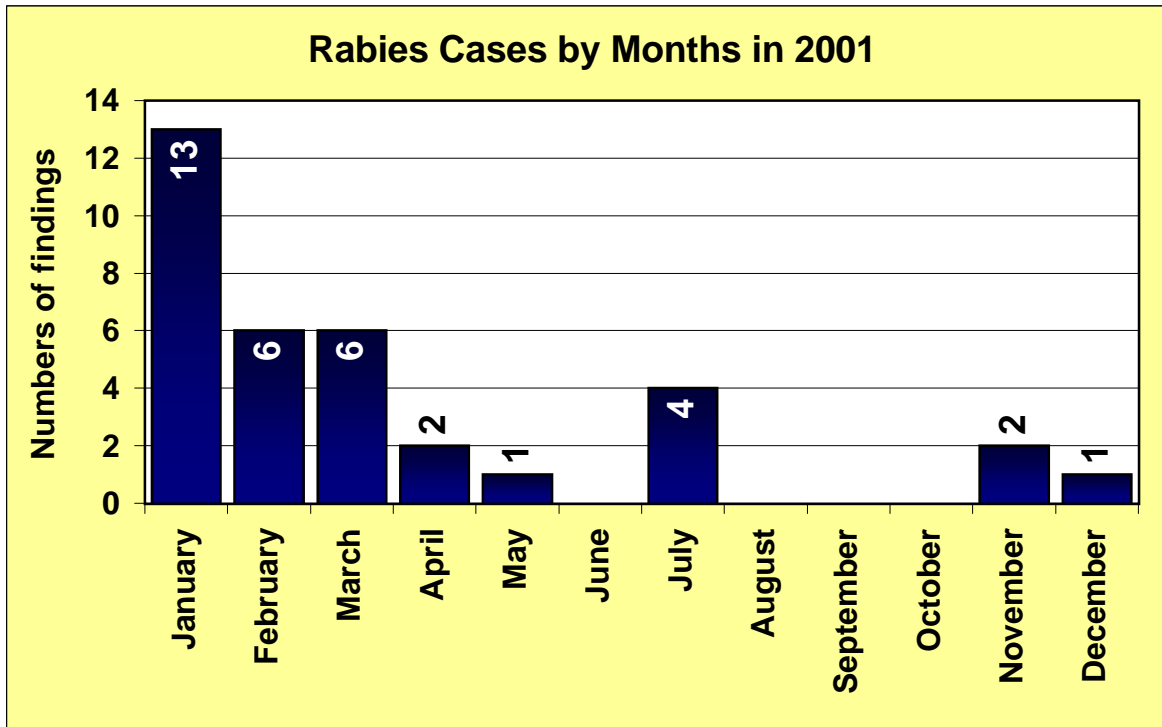
Technical Support and DTP:
Informační centrum SVS ČR
Ostašovská 521, CZ-460 11 Liberec 11,
Czech Republic
tel.: 048 / 510 76 96, *fax:* 048 / 510 79 03
e-mail: icsvscr@icsvscr.cz



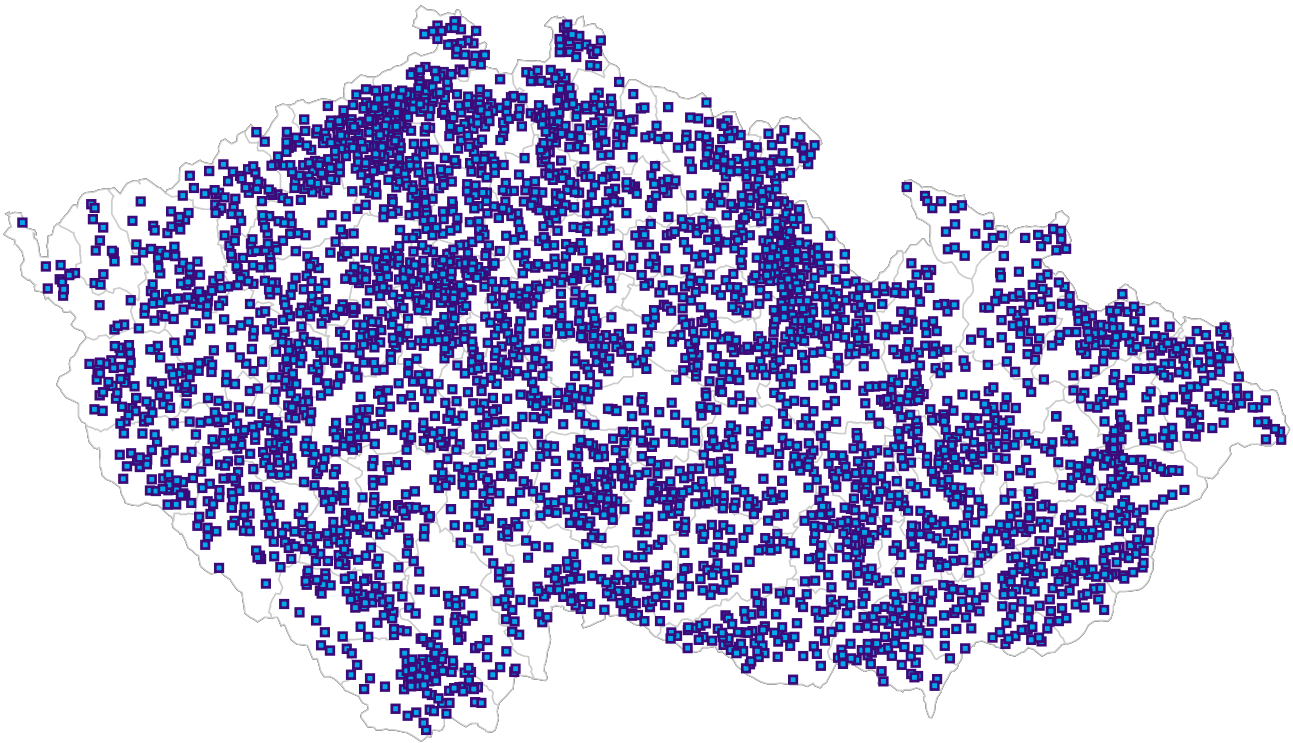


Review of Rabies Laboratory Examination in the Czech Republic in 2001

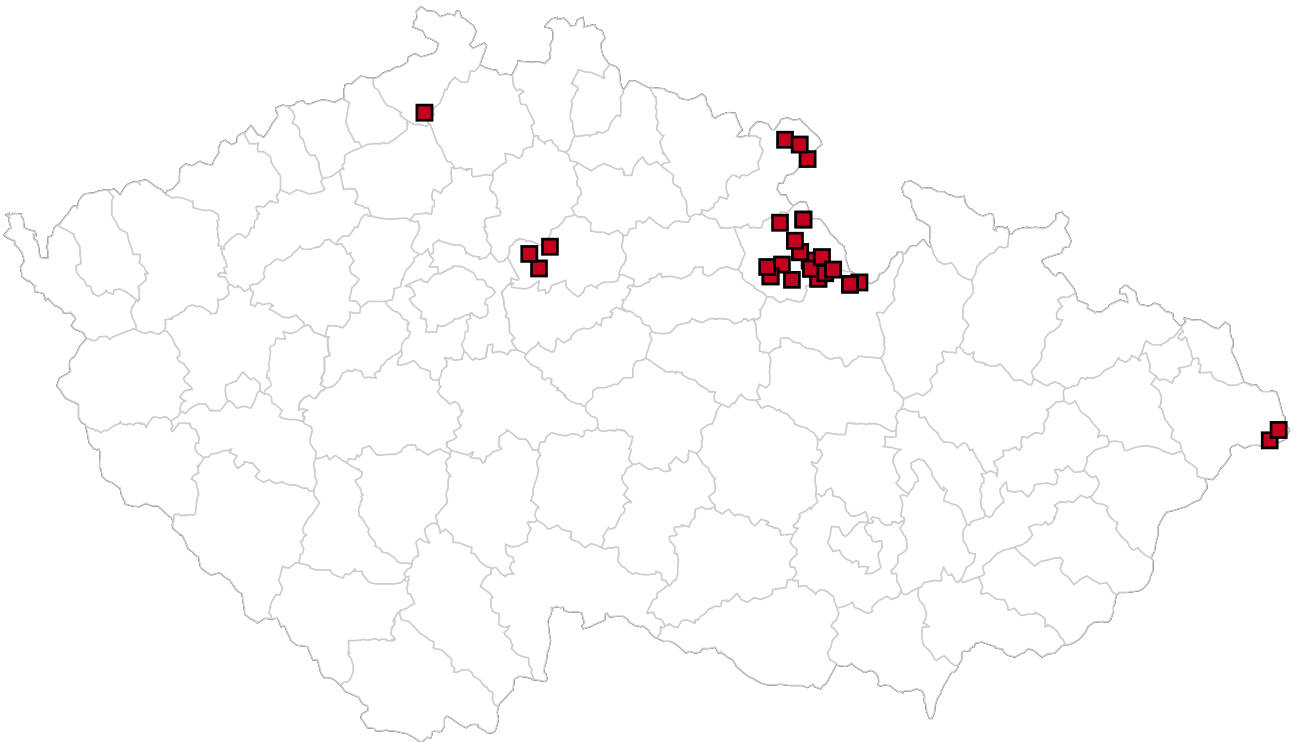
Animal	Samples examined	Number of MIT	Unsuitable samples	Rabies posit.	%posit.
Red fox	6 607	130	80	29	0,4
Marten	266	59	0	1	0,4
Roe deer	243	40	1	1	0,4
Badger	44	8	0	1	2,3
Norwegian rat	39	32	0	0	0,0
Wild boar	30	13	0	0	0,0
Squirrel	29	20	0	0	0,0
Brown hare	24	8	0	0	0,0
Weasel	18	10	0	0	0,0
Polecat	13	4	0	1	7,7
Red deer	9	0	0	0	0,0
Field mouse	8	7	0	0	0,0
Common mole	8	7	0	0	0,0
House mouse	8	4	0	0	0,0
Bat	7	3	1	0	0,0
Crowfoot	7	3	0	0	0,0
Black rat	6	6	0	0	0,0
Mouflon	5	0	0	0	0,0
Musk-rat	4	2	0	0	0,0
Common hamster	4	4	0	0	0,0
Dor mouse	3	3	0	0	0,0
Otter	3	2	0	0	0,0
Wood mouse	2	0	0	0	0,0
Raccoon dog	2	0	0	0	0,0
Fallow deer	2	1	0	0	0,0
Raccoon	1	1	0	0	0,0
Wild rabbit	1	1	0	0	0,0
Izard	1	0	0	0	0,0
Wild Animals	7 394	368	82	33	0,4
Cat	606	436	1	2	0,3
Dog	455	340	2	0	0,0
Cattle	130	1	0	0	0,0
Black-footed ferret	27	21	0	0	0,0
Sheep	21	2	0	0	0,0
Hamster	9	6	0	0	0,0
Rabbit	7	4	0	0	0,0
Horse	5	0	0	0	0,0
ZOO animals	4	1	0	0	0,0
Goat	4	1	0	0	0,0
Domestic fowl	3	2	0	0	0,0
Laboratory rat	3	3	0	0	0,0
Guinea-pig	2	1	0	0	0,0
Nutria	2	1	0	0	0,0
Silver fox	2	0	0	0	0,0
Pig	1	0	0	0	0,0
Mink	1	0	0	0	0,0
Domestic Animals	1 282	819	3	2	0,2
Total	8 676	1 187	85	35	0,4



Geographical Distribution of Samples Submitted for Rabies Examination in 2001



Rabies Cases in the Czech Republic in 2001



Rabies Cases in the Districts of the Czech Republic in 2001

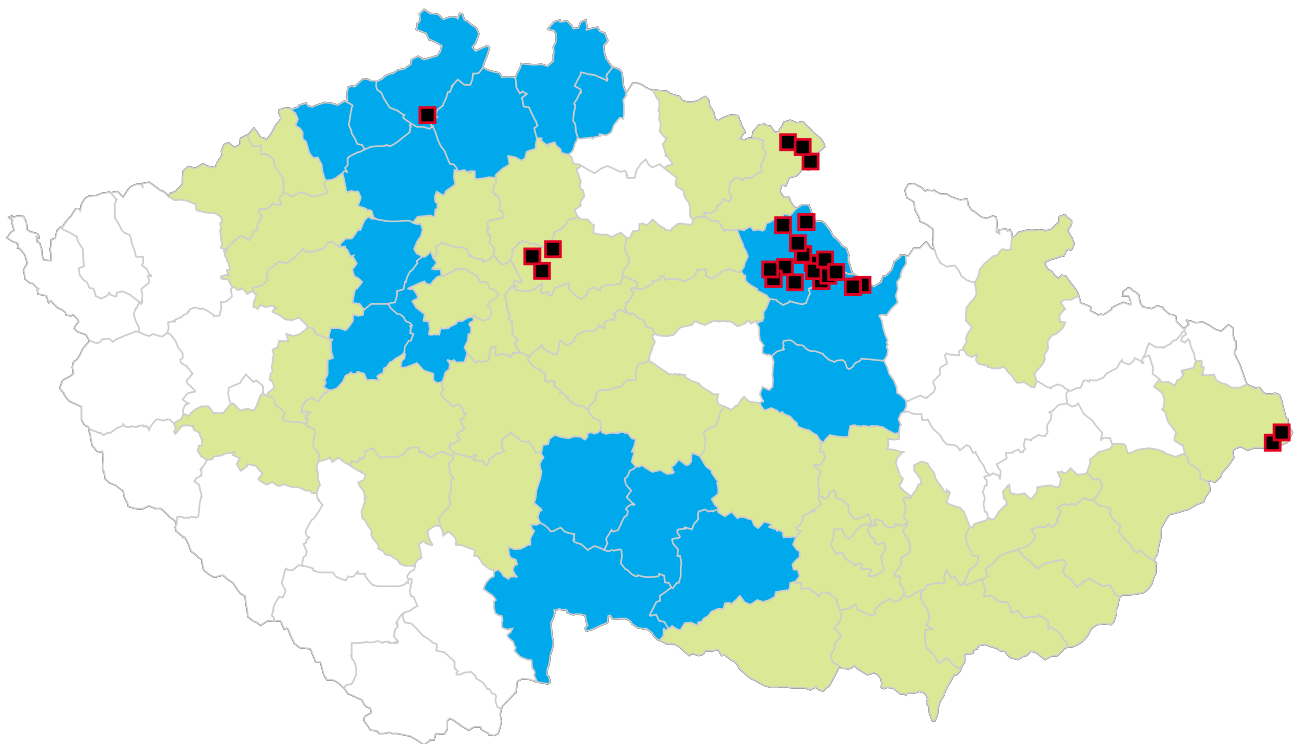
Animal	Districts of the Central Bohemia														
	suma	AB	MiB	BE	BN	KH	KL	KO	MB	ME	NB	PB	PY	PZ	RA
Red fox	29	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Roe deer	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Badger	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polecat	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marten	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wild animals	33	0	2	0	0	0	0	0	1	0	1	0	0	0	0
Cat	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Domestic animals	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	35	0	3	0	0	0	0	0	1	0	2	0	0	0	0

Animal	Districts of the Southern Bohemia										
	SoB	CL	CV	DC	JN	LB	LN	LT	MO	TP	UL
Red fox	0	0	0	0	0	0	0	0	0	0	0
Roe deer	0	0	0	0	0	0	0	0	0	0	0
Badger	0	0	0	0	0	0	0	0	0	0	0
Polecat	0	0	0	0	0	0	0	0	0	0	0
Marten	0	0	0	0	0	0	0	0	0	0	0
Wild animals	0	0	0	0	0	0	0	0	0	0	0
Cat	1	0	0	1	0	0	0	0	0	0	0
Domestic animals	1	0	0	1	0	0	0	0	0	0	0
TOTAL	1	0	0	1	0	0	0	0	0	0	0

Animal	Districts of the Eastern Bohemia											
	EaB	CR	HB	HK	JC	NA	PU	RK	SM	SY	TU	UO
Red fox	26	0	0	0	0	3	0	18	0	0	0	5
Roe deer	0	0	0	0	0	0	0	0	0	0	0	0
Badger	1	0	0	0	0	0	0	1	0	0	0	0
Polecat	1	0	0	0	0	0	0	1	0	0	0	0
Marten	1	0	0	0	0	0	0	1	0	0	0	0
Wild animals	29	0	0	0	0	3	0	21	0	0	0	5
Cat	0	0	0	0	0	0	0	0	0	0	0	0
Domestic animals	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	29	0	0	0	0	3	0	21	0	0	0	5

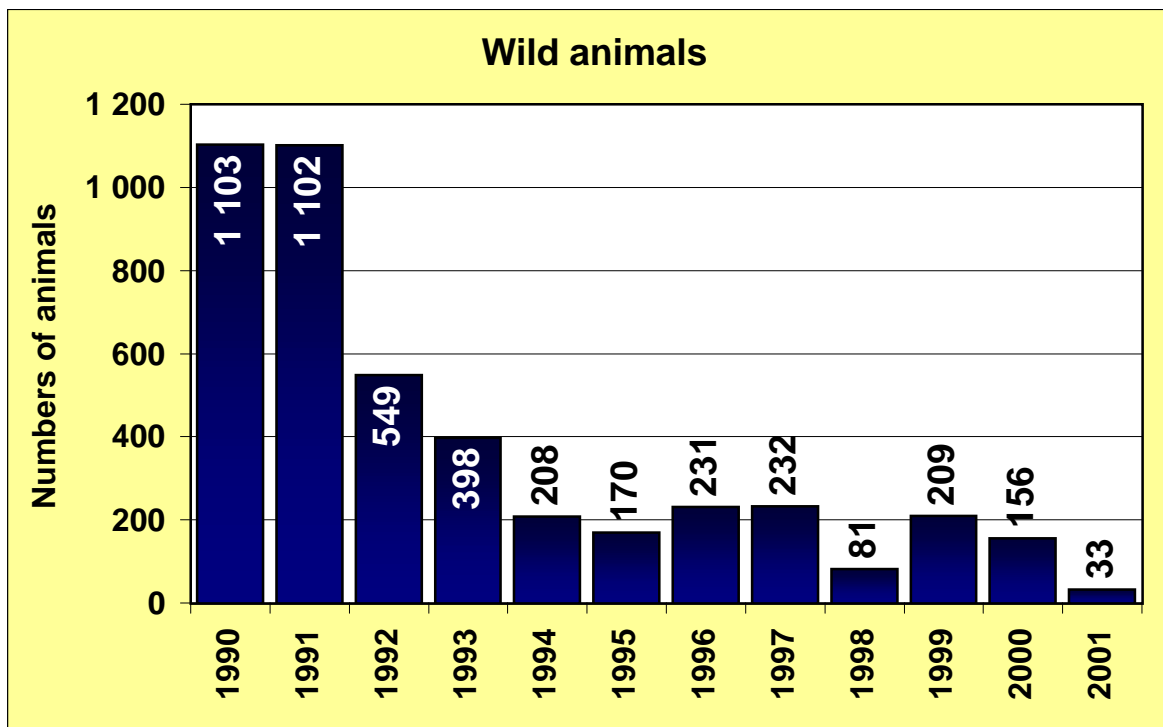
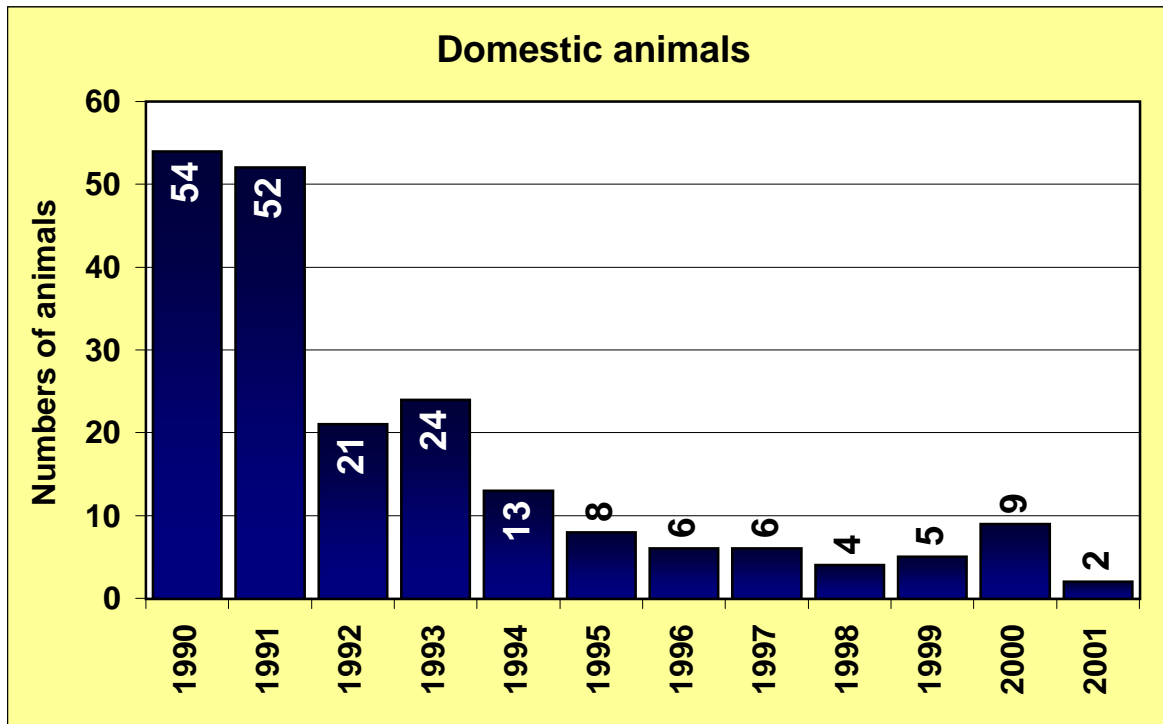
Animal	Districts of the Northern Moravia											
	NoM	BR	FM	JE	KI	NJ	OL	OP	OS	PR	SU	VS
Red fox	2	0	2	0	0	0	0	0	0	0	0	0
Roe deer	0	0	0	0	0	0	0	0	0	0	0	0
Badger	0	0	0	0	0	0	0	0	0	0	0	0
Polecat	0	0	0	0	0	0	0	0	0	0	0	0
Marten	0	0	0	0	0	0	0	0	0	0	0	0
Wild animals	2	0	2	0	0	0	0	0	0	0	0	0
Cat	0	0	0	0	0	0	0	0	0	0	0	0
Domestic animals	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	2	0	0	0	0	0	0	0	0	0

Rabies Cases and Area of Vaccination in 2001



- Rabies cases
- Aerial vaccination
- Manual vaccination

Rabies Cases in the Czech Republic in 1990 - 2001



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
Average value	78,5	75,2	61,5	
Total				690