

# **RABIES BULLETIN EUROPE**

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**Volume 30**

**No 2**

**Quarter 2**

**2006**

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Principal Editor: Conrad Freuling

Associated Editor: Dr. Thomas Müller

Technical Support: Anke Kliemt  
Heike Kubitza

Contact: WHO Collaborating Centre for Rabies Surveillance and Research  
Institute of Epidemiology, Friedrich-Loeffler-Institute  
- Federal Research Institute for Animal Health -  
Seestr. 55, D-16868 Wusterhausen, Germany  
tel: ..49 33979 80186  
fax: ..49 33979 80200  
email: who-rabies@fli.bund.de

Print: Hilgenfeldt & Kontny, Gartow, Germany  
www.druckerei-hk.de

ISSN 0257-8506

The Rabies Bulletin Europe is also available online: [www.who-rabies-bulletin.org](http://www.who-rabies-bulletin.org).

### **Acknowledgements**

The Rabies Bulletin Europe is sponsored by the:

World Health Organization, Geneva  
World Organisation for Animal Health (OIE), Paris

Gratefully acknowledged is the financial support of the WHO Collaborating Centre by the

Bundesministerium für Gesundheit und Soziale Sicherung and by the  
Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz,  
Germany

# 1. Editorial

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Bat rabies is a very important aspect of rabies research in epidemiology, control and eradication. Two teenagers from Texas and Indiana (USA) died of rabies this year. The rabies virus (RABV) was presumably transmitted by bats. In Europe, where bats can be found infected with EBLV1 and EBLV2 only few human rabies cases associated with bat contacts are reported. Yet the importance of information and research on bat rabies can be seen in a recent event in Denmark. A young girl was bitten by a bat which was later destroyed but could not be tested. The girl was referred to the nearest paediatric medical service for management of the potential rabies exposure. Post-exposure prophylaxis (PEP) was started (human rabies immunoglobulin was administered and a course of rabies vaccination was begun). During the summer, the patient's parents had noticed several bats lying on the ground around the farm, unable to fly, but they had not previously reported this. Because the dead bat that bit the child had been crushed, it was not possible to test brain tissue for rabies virus. Nine dead bats were then collected from the farm and tested at the Danish Institute for Food and Veterinary Research. Of these 9 bats, 4 tested positive for a bat variant of rabies virus, European Bat Lyssavirus (EBLV). (Source: ProMED-mail) Such biting incidents with positive tested bats and adequate post exposure prophylaxis given to the people affected have also been reported from Germany.

Nonetheless, worldwide, one main public health threat is still terrestrial rabies and hereby mainly urban transmission cycles in developing countries. Many countries in Western and Central Europe have successfully eradicated sylvatic rabies by means of oral immunisation of foxes (OIF). With the enlargement of the European Union more and more countries are starting rabies eradication programmes. In this issue we present an article about the rabies situation in Romania, a country with very high numbers of rabies cases in the past. The article not only reflects the past and present situation of rabies in this country but also outlines the planned activities towards eradication.

As usual, we present the rabies situation in Europe in tables and maps. For more information, see also the online version of the Rabies Bulletin Europe at [www.who-rabies-bulletin.org](http://www.who-rabies-bulletin.org).

Conrad Freuling

## 2. SUMMARY OF RABIES CASES IN EUROPE

RABIES CASES

2nd QUARTER 2006

01.04.06 -30.06.06

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
ALBANIA	ALB	3	1	2	0	0
AUSTRIA	AUT	0	0	0	0	0
BELARUS	BLR	386	321	65	0	0
BELGIUM	BEL	0	0	0	0	0
BOSNIA - HERCEGOVINA	BIH	21	17	4	0	0
BULGARIA	BGR	2	1	1	0	0
CROATIA	HRV	113	104	9	0	0
CYPRUS	CYP	0	0	0	0	0
CZECH REPUBLIC	CZH	0	0	0	0	0
DENMARK	DNK	2	0	0	2	0
ESTONIA	EST	34	31	3	0	0
FINLAND	FIN	0	0	0	0	0
FRANCE	FRA	0	0	0	0	0
GERMANY	DEU	4	0	0	4	0
GREECE	GRC	0	0	0	0	0
HUNGARY	HUN	0	0	0	0	0
ICELAND	ISL	0	0	0	0	0
IRELAND	IRE	0	0	0	0	0
ITALY	ITA	0	0	0	0	0
LATVIA	LVA	139	123	16	0	0
LITHUANIA	LTU	615	530	85	0	0
LUXEMBOURG	LUX	0	0	0	0	0
MACEDONIA	MKD	0	0	0	0	0
MALTA	MLT	0	0	0	0	0
MOLDOVA *	MDA					
NETHERLANDS	NED	2	0	0	2	0
NORWAY	NOR	0	0	0	0	0
POLAND	POL	18	14	3	1	0
PORTUGAL	PRT	0	0	0	0	0
ROMANIA	ROU	41	29	12	0	0
RUSSIAN FEDERATION	RUS	276	123	153	0	0
SERBIA AND MONTENEGRO	SCG	43	41	2	0	0
SLOVAK REPUBLIC	SVK	0	0	0	0	0
SLOVENIA	SVN	0	0	0	0	0
SPAIN	ESP	0	0	0	0	0
SWEDEN	SWE	0	0	0	0	0
SWITZERLAND + LIEC.	CHE	0	0	0	0	0
TURKEY	TUR	65	4	61	0	0
UNITED KINGDOM	UNK	0	0	0	0	0
UKRAINE	UKR	355	180	175	0	0
<b>TOTAL</b>		<b>2119</b>	<b>1519</b>	<b>591</b>	<b>9</b>	<b>0</b>

**Wildlife: excluding bats**

**\* no data**

## 3. Miscellaneous Articles

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### 3.1 RABIES IN ROMANIA – PAST, PRESENT AND FUTURE

Marian AVRAM, Laurentiu CIUPESCU, Florin FIRUTA, Cristian SIPOSEAN, Mihai TURCITU, Marin GRUIA, Nicolae STEFAN<sup>1</sup>

Classical rabies is an infectious disease inevitably fatal to humans and warm blooded animals once symptoms develop. It is caused by genotype1 lyssaviruses of the genus rhabdovirus, order mononegavirales. Rabies occurs worldwide except for some regions where due to geographical isolation or implemented control measurements rabies has never been introduced or has been eradicated. For classical rabies different transmission cycles can be distinguished. Urban rabies is mainly transmitted by stray and feral dogs, whereas for sylvatic rabies in Europe the red fox (*Vulpes vulpes*)

and more recently the neozoon raccoon dog (*Nyctereutes procyonoides*) may also serve as reservoir species.

Romania used to be one of the countries with the highest number of rabies cases in animals in Europe. Between 1946 and 1956 the number of rabies cases reported was more than a thousand annually. However, it is not clear whether the diagnosis was based on clinical grounds or laboratory diagnosis. Urban rabies was predominant after World War II and before the arrival of the fox rabies epidemic. Dogs accounted for about 75 % of all rabies cases in

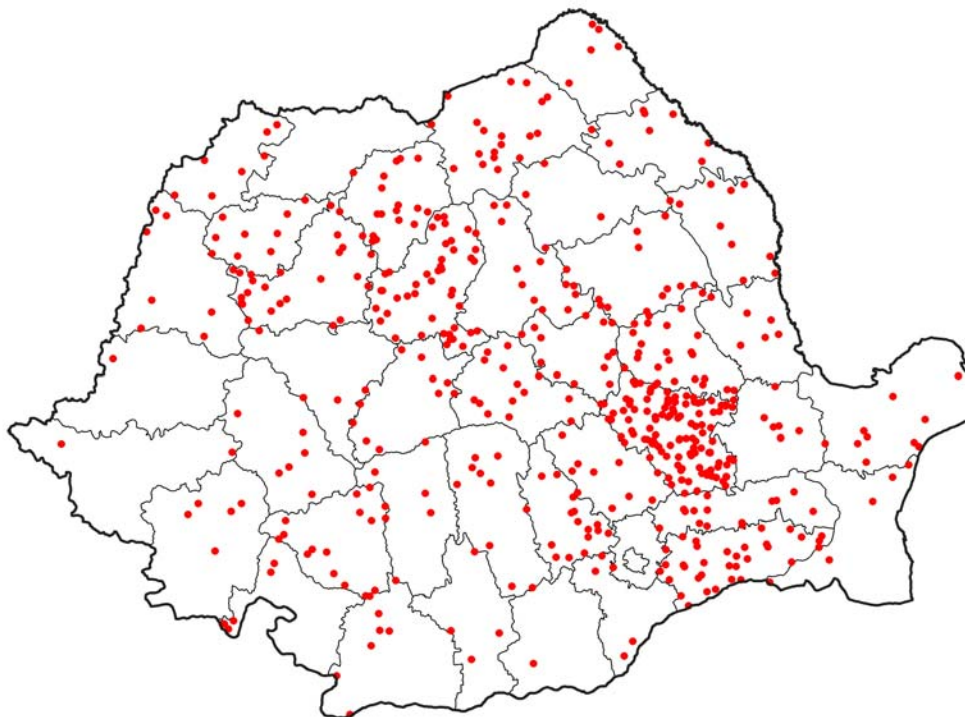


Figure1. Distribution of rabies cases in Romania in 2005 (530 cases)

1946. Control measurements were implemented in 1942, 1944 and in 1951 with the veterinary law No 71/1951. Following this law preventive vaccinations of a considerable number of domestic animals, e.g. dogs reduced the rabies incidence considerably and were capable of eradicating rabies in some regions. Despite these successes rabies remained endemic in 6 regions comprising the lower Carpathian area. From the mid of the sixties fox rabies cases increased rapidly indicating that as in other European countries a fox rabies epidemic encompassed Romania. Although there is no data available for the time before 1977 when reporting to the RBE started it can be assumed that rabies had been established in wildlife. Wolves played an important role in the transmission of rabies to humans; between 1951 and 1966 113 persons were bitten by rabid wolves.

Since 1999 a monitoring programme for rabies has been in place for both domestic and wild animals. In areas with high rabies incidences field trials for oral immunisation of foxes using Lysvulpen were initiated. Furthermore, all domestic species were vaccinated within these areas. As shown in figure 2, wildlife rabies is mostly fox dependent. The number of rabies cases diagnosed may differ according to the number of animals tested, indicating a need for improved surveillance following WHO and EU recommendations. Rabies in Romanian wildlife is very interesting in therefore as that Romania has a rich diversity in wild fauna. This is reflected in rabies cases diagnosed in brown bears, lynxes, wolves and otters. In 2004 a rabid brown bear killed two people and some more where injured, all injured receiving appropriated post exposure prophylaxis. The racoon dog which is

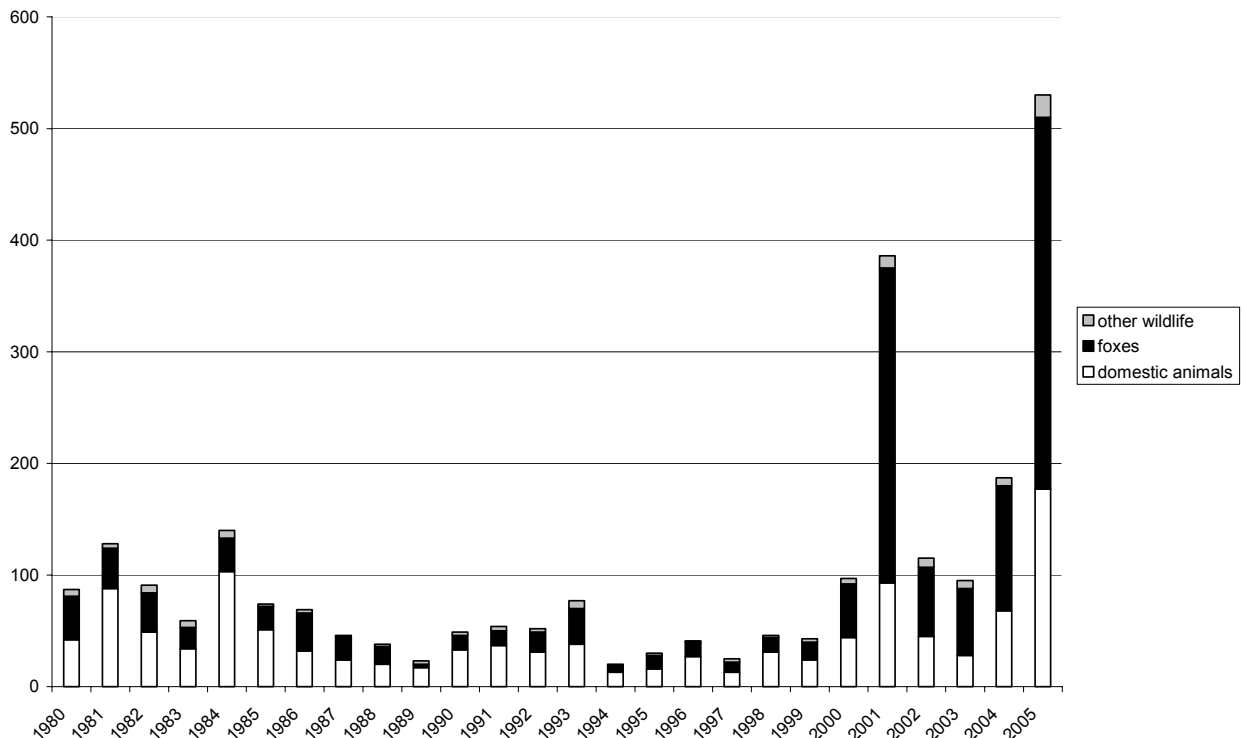


Figure 2. Number of confirmed rabies cases in animals, 1980-2005

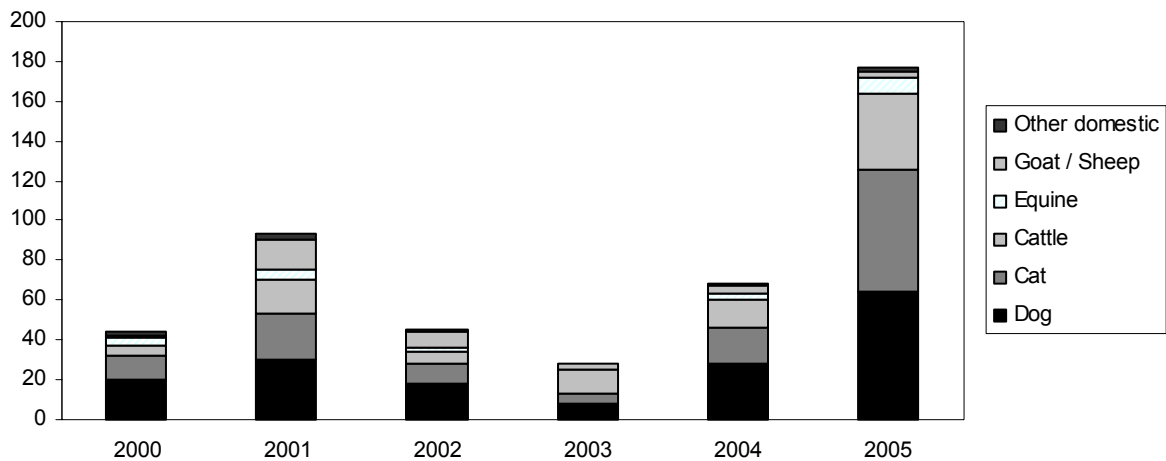


Figure 3. Number of confirmed rabies cases in domestic animals, 2000-2005

probably capable of establishing a rabies transmission cycle has so far been diagnosed rabid only rarely in the north western districts. As shown in figure 3 the number of domestic animals diagnosed rabid have increased from 2002 to 2005. Most cases are in pets, i.e. dogs and cats and might indicate insufficient vaccination coverage. Hence, the close relationship to these animals causes a high number of possible virus transmissions and therefore many pre and post exposure prophylactic treatments in humans with severe impacts on public health funding.

Currently, ongoing phylogenetic analysis of a few rabies virus isolates from across Romania suggest that at least 3 different rabies virus variants are circulating among wildlife in specific areas with genetic relationship to virus strains isolated in central Balkan region, and Hungary. Further analysis are planned to gain more information.

In Europe, oral rabies vaccination of foxes (ORV) has been successfully applied to combat rabies. For many years the Community has contributed financially towards campaigns for ORV in a number of Member States affected by epidemics

of wildlife rabies. As a result, large parts of Western and Central Europe could be freed from terrestrial rabies with this modern and powerful method of disease control. So far, next to Switzerland (1998) several MS such as Finland (1991), the Netherlands (1991), Italy (1997), France (2000), Belgium (2001), Luxembourg (2001) and the Czech Republic (2004) have been declared as being officially free of rabies. During the last two decades considerable progress in rabies elimination has also been achieved in many middle and eastern European countries.

Inspired by these successes, in 2006, Romania has drawn up a country-wide program for the control and eradication of rabies for a period of 10 years. In accordance with EU regulations this planned program is submitted to the Commission to benefit from co-financing of the Community. The main objectives are as follows:

1. Enhanced surveillance of rabies in fox population
2. Control of rabies in fox population and finally
3. Eradication of rabies in Romania

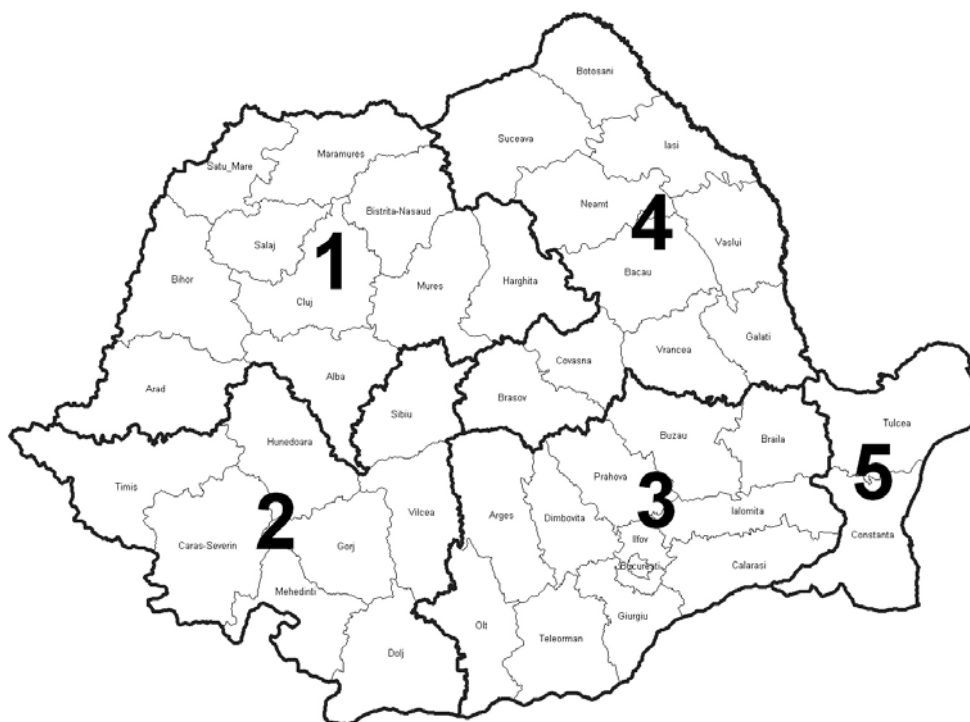


Figure 4. Regions in Romania according to ORV program

In order to fulfill the objective it is planned to orally vaccinate the entire fox population by 2016. Permanent surveillance of wildlife rabies and monitoring of the application of vaccination plans will be used to evaluate the effectiveness of ORF and improve and document the progress. For this purpose data collection, data analysis and IT-processing will be established. The implementation of the program will be carried out by the Sanitary Veterinary Services in collaboration with the services of the Ministry of Agriculture, Food and Rural Development based on a strategy under the co-ordination of the National Sanitary Veterinary and Food Safety Authority (NSVFSA). It will take into account the current epidemiological situation of rabies densities within the fox population as the main vector of rabies in various topographical areas.

According to natural borders Romania was divided into 4 major areas and a special one, Danube

Delta (figure No 4). The first vaccination campaign will be conducted in 2007. Considering ongoing oral vaccination programs in neighbouring countries Romania intends to start ORV in the northwestern part of the country comprising 10 counties covering an area of 50000 km<sup>2</sup> at the border with Hungary (See figure No 4, area nr. 1). In Hungary oral immunization of foxes against rabies started in 1992 and from 2004 ORV covered the whole territory of the country. This strategy has advantages for both countries as Romania will benefit from established long-term herd immunity among foxes in Hungarian vaccination areas. On the other hand, possible re-infection of areas in Hungary from adjacent Romanian areas will be significantly reduced.

Such vaccination campaigns in a given region are planned for the next two years. Afterwards vaccination areas will be extended to the east, covering step by step the whole territory of the country until 2016.



Depending on the success of ORV in areas freed from rabies vaccination will be stopped by and by.

Nevertheless, in accordance with the Report of the Scientific Committee on Animal Health and Animal Welfare, EC 2002, to protect a rabies-free or freed area from a neighbouring infected area, an immunological barrier (a buffer zone, 50 km deep) along the borders with infected areas will be established.

Romania will first use the classic pattern of two "single vaccination" campaigns per year, carried out in spring and autumn. Oral vaccination of foxes in spring will be carried out in May- June in order to increase the efficient access of fox cubs to bait. The vaccination will be repeated in autumn, September-October, when baits will be distributed in the same territory. This biannual distribution frequency has been used in all European programs of oral vaccination and it resulted in the elimination of rabies.

Aerial distribution of vaccine baits will be the preferred method of choice either using fixed-wing aircraft or helicopter. In urban and suburban areas complementary hand distribution of vaccine baits will be conducted. Regarding the recommendations of the Scientific Committee for Animal Health and Welfare adopted on the 23<sup>rd</sup> of October 2002, the number of baits/km<sup>2</sup> delivered with the planes will be 20, with a distance between the flight lines of 1000 m and the number of baits delivered by hand will be of 25/km<sup>2</sup>.

Follow-up investigations in vaccination areas will be coordinated at the National Reference Laboratory for Diagnosis and focused on rabies surveillance (diagnosis), bait uptake (tetracycline marking), serological testing of foxes on rabies specific antibody, and characterization of isolated strains by PCR or monoclonal antibodies.

<sup>1</sup>National Sanitary Veterinary and Food Safety Authority (NSVFSA), Ministry of Agriculture, Food and Rural Development, 1B Negustori Street, Bucharest, Romania

## 4 DISTRIBUTION OF RABIES IN EUROPE

### 4.1 Country summaries of rabies cases, 2nd quarter 2006

01.04.06-30.06.06

Country		Domestic animals									Wildlife											bat	Human cases	total			
		dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer				fallow deer	other	subtotal
Name	Code																										
Albania	ALB			2						2	1													1			3
Austria	AUT *									0														0			0
Belarus	BLR	35	16	13	1					65	284	28	1			2							6	321			386
Belgium	BEL *									0														0			0
Bosnia - Hercegovina	BIH	3		1						4	15		1										1	17			21
Bulgaria	BGR	1								1	1													1			2
Croatia	HRV	4	3	2						9	103									1				104			113
Cyprus	CYP *									0														0			0
Czech Republic	CZH *									0														0			0
Denmark	DNK									0														0	2		2
Estonia	EST	1	1	1						3	12	17		1		1								31			34
Finland	FIN *									0														0			0
France	FRA ***									0														0			0
Germany	DEU									0														0	4		4
Greece	GRC *									0														0			0
Hungary	HUN *									0														0			0
Iceland	ISL *									0														0			0
Ireland	IRE *									0														0			0
Italy	ITA *									0														0			0
Latvia	LVA	8	5	3						16	67	43	1	4	1	3				2			2	123			139
Lithuania	LTU	35	30	19	1					85	244	232		4	35	13			1	1				530			615
Luxembourg	LUX *									0														0			0
Macedonia	MKD *									0														0			0
Malta	MLT *									0														0			0
Moldova	MDA **									0														0			0
Norway	NOR *									0														0			0
Poland	POL		3							3	7	6				1								14	1		18
Portugal	PRT *									0														0			0
Romania	ROU	6	5	1						12	27			1			1							29			41
Russian Federation	RUS	52	43	39	3	10	1	3	2	153	113	8		2										123			276
Serbia and Montenegro	SCG	2								2	40			1										41			43
Slovak Republic	SVK *									0														0			0
Slovenia	SVN *									0														0			0
Spain	ESP *									0														0			0
Sweden	SWE *									0														0			0
Switzerland + Lichtenstein	CHE *									0														0			0
The Netherlands	NED									0														0	2		2
Turkey	TUR	36	3	19		3				61	4			5	1	10	2							4			65
Ukraine	UKR	74	69	29	1	2				175	156	4		5	1	10	2						2	180			355
United Kingdom	UNK *									0														0			0
<b>TOTAL</b>		<b>257</b>	<b>178</b>	<b>129</b>	<b>6</b>	<b>15</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>591</b>	<b>1074</b>	<b>338</b>	<b>0</b>	<b>8</b>	<b>14</b>	<b>46</b>	<b>22</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1519</b>	<b>9</b>	<b>0</b>	<b>2119</b>
PER CENT		12.1%	8.4%	6.1%	0.3%	0.7%	0.0%	0.1%	0.1%	27.9%	50.7%	16.0%	0.0%	0.4%	0.7%	2.2%	1.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.5%	71.7%	0.4%	0.0%	100%

\* NO CASES

\*\* NO DATA

\*\*\* One bat rabies case was reported for the 4th quarter 2005

4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other	subtotal
<b>ALBANIA</b>																										
Kukes			2						2	1													1			3
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>
PER CENT	0,0%	0,0%	66,7%	0,0%	0,0%	0,0%	0,0%	0,0%	66,7%	33,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	33,3%	0,0%	0,0%	100%
<b>BELARUS</b>																										
Brest									0	21																21
Gomel	11	4	1						16	32	2		1										1			52
Grodno	5	2	3						10	51	2					1							1			65
Minsk	8	6	3	1					18	67	6					1							1			93
Mogelev	2		3						5	59	2												2			68
Vitebsk	9	4	3						16	54	16												1			87
<b>TOTAL</b>	<b>35</b>	<b>16</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>284</b>	<b>28</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>321</b>	<b>0</b>	<b>0</b>	<b>386</b>
PER CENT	9,1%	4,1%	3,4%	0,3%	0,0%	0,0%	0,0%	0,0%	16,8%	73,6%	7,3%	0,0%	0,3%	0,0%	0,0%	0,5%	0,0%	0,0%	0,0%	0,0%	0,0%	1,6%	83,2%	0,0%	0,0%	100%
<b>BOSNIA - HERCEGOVINA</b>																										
Brcko									0	1																1
Banja Luka	2		1						3	7													1			11
Doboj	1								1	2																3
Sokolac									0	1																1
Srbinje (Foca)									0	1																1
Trebinje									0				1													1
Tuzlanski									0	1																1
Unsko-sanski									0	2																2
<b>TOTAL</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>21</b>
PER CENT	14,3%	0,0%	4,8%	0,0%	0,0%	0,0%	0,0%	0,0%	19,0%	71,4%	0,0%	0,0%	4,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	4,8%	81,0%	0,0%	0,0%	100%
<b>BULGARIA</b>																										
Montana									0	1																1
Razgrad	1								1																	1
<b>TOTAL</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>
PER CENT	50,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	50,0%	50,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	50,0%	0,0%	0,0%	100%
<b>DENMARK</b>																										
Arhus amt									0															0	1	1
Storstrøms amt									0															0	1	1
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other	subtotal
<b>CROATIA</b>																										
Bjelovarsko - Bilogorska		1							1	6													6			7
Brodsko - Posavska	1								1	1													1			2
Karlovacka									0	5													5			5
Koprivnicko - Krizevaska	1								1	4													4			5
Krapinsko - Zagorska									0	3									1				4			4
Licko - Senjska									0	1													1			1
Pozesko - Slovanska									0	5													5			5
Primorsko - Goranska									0	2													2			2
Sibensko - Kninska									0	2													2			2
Sisacko - Moslovska	1								1	24													24			25
Splitsko - Dalmatinska									0	14													14			14
Varazdinska		1							1	5													5			6
Viroticko - Podravska		1							1	4													4			5
Vukovarsko - Srijemska			2						2	2													2			4
Zagreb									0	1													1			1
Zagrebacka	1								1	24													24			25
<b>TOTAL</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>103</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>	<b>0</b>	<b>0</b>	<b>113</b>
PER CENT	3,5%	2,7%	1,8%	0,0%	0,0%	0,0%	0,0%	0,0%	8,0%	91,2%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,9%	0,0%	0,0%	0,0%	92,0%	0,0%	0,0%	100%
<b>ESTONIA</b>																										
Kesk-Eesti	1								1	3	3												6			7
Lääne-Eesti			1						1	3				1									4			5
Louna-Eesti		1							1	9	11				1								21			22
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>12</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>34</b>
PER CENT	2,9%	2,9%	2,9%	0,0%	0,0%	0,0%	0,0%	0,0%	8,8%	35,3%	50,0%	0,0%	0,0%	2,9%	0,0%	2,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	91,2%	0,0%	0,0%	100%
<b>GERMANY</b>																										
Aurich									0														0	1		1
Berlin-West,Stadt									0														0	1		1
Leer									0														0	1		1
Märkisch-Oderland									0														0	1		1
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%	

4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other	subtotal
<b>LATVIA</b>																										
Kurzeme	1		1						2	6	2										1	9			11	
Latgale	3	3	1						7	19	6		1			3			1				30		37	
Riga	1								1	5	3												8		9	
Vidzeme	2	2	1						5	27	26			4									57		62	
Zemgale	1								1	10	6			1					1			1	19		20	
<b>TOTAL</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>67</b>	<b>43</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>123</b>	<b>0</b>	<b>0</b>	<b>139</b>
PER CENT	5,8%	3,6%	2,2%	0,0%	0,0%	0,0%	0,0%	0,0%	11,5%	48,2%	30,9%	0,0%	0,7%	2,9%	0,7%	2,2%	0,0%	0,0%	1,4%	0,0%	0,0%	1,4%	88,5%	0,0%	0,0%	100%
<b>TURKEY</b>																										
Adana	3		1						4														0		4	
Aydin		1	2						3														0		3	
Bursa	1								1														0		1	
Denizli	1		1						2														0		2	
Diyarbakir	1		3						4	1													1		5	
Elazig			1						1														0		1	
Erzincan	1								1														0		1	
Gaziantep	1								1														0		1	
Hakkari			2						2														0		2	
Hatay	5		1						6														0		6	
Istanbul	5								5														0		5	
Izmir	1	1	4		1				7	3													3		10	
K.Maras	1								1														0		1	
Kocaeli			1						1														0		1	
Malatya	1								1														0		1	
Manisa	2		1						3														0		3	
Mardin	1								1														0		1	
Osmaniye	6		1		1				8														0		8	
Sakarya	2								2														0		2	
Sanliurfa	4		1		1				6														0		6	
Tunceli		1							1														0		1	
<b>TOTAL</b>	<b>36</b>	<b>3</b>	<b>19</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>65</b>
PER CENT	55,4%	4,6%	29,2%	0,0%	4,6%	0,0%	0,0%	0,0%	93,8%	6,2%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	6,2%	0,0%	0,0%	100%
<b>SERBIA AND MONTENEGRO</b>																										
Central Serbia	1								1	15													15			16
Montenegro									0	5													5			5
Vojvodina	1								1	20			1										21			22
<b>TOTAL</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>43</b>
PER CENT	4,7%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	4,7%	93,0%	0,0%	0,0%	0,0%	2,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	95,3%	0,0%	0,0%	100%

## 4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other	subtotal
<b>ROMANIA</b>																										
Alba	1								1														0			1
Arges									0	1													1			1
Bacau	1								1														0			1
Bihar		1							1														0			1
Bistrita-Nasaud	1	1							2														0			2
Botosani									0	1													1			1
Calarasi	1								1														0			1
Constanta									0							1							1			1
Covasna									0	3													3			3
Dambovit									0	1													1			1
Dolj									0	1													1			1
Galati									0	1													1			1
Giurgiu									0	2													2			2
Gorj			1						1														0			1
Harghita									0	2													2			2
Ialomita		1							1	2													2			3
Ifov									0	1													1			1
Mures									0	5													5			5
Olt									0	1													1			1
Prahova									0	1				1									2			2
Salaj		1							1														0			1
Sibiu	2								2														0			2
Suceava									0	1													1			1
Teleorman									0	1													1			1
Vaslui		1							1	2													2			3
Vrancea									0	1													1			1
<b>TOTAL</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>41</b>
PER CENT	14,6%	12,2%	2,4%	0,0%	0,0%	0,0%	0,0%	0,0%	29,3%	65,9%	0,0%	0,0%	0,0%	2,4%	0,0%	0,0%	2,4%	0,0%	0,0%	0,0%	0,0%	0,0%	70,7%	0,0%	0,0%	100%
<b>POLAND</b>																										
Lódzkie									0							1							1			1
Lubelskie									0	3	1												4			4
Mazowieckie									0														0	1		1
Opolskie		1							1														0			1
Podkarpackie									0	1													1			1
Podlaskie		1							1	1													1			2
Warminsko-Mazurskie		1							1	1	5												6			7
Wielkopolskie									0	1													1			1
<b>TOTAL</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>18</b>
PER CENT	0,0%	16,7%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	16,7%	38,9%	33,3%	0,0%	0,0%	0,0%	0,0%	5,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	77,8%	5,6%	0,0%	100%

## 4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other	subtotal
<b>UKRAINE</b>																										
Avtonomnaya Respublika Krym	1								1														0			1
Bolynskaja o.	3								3	2													2			5
Cherkasskaja o.	5	5	1	1					12	7	2		1	1									11			23
Chernigovskaja o.	10	13	7						30	41		2		3	1							1	48			78
Dnepropetrovskaja o.	6	1							7	4													4			11
Donetskaja o.	3	2							5	3													3			8
Khar'kovskaja o.	1	1							2	1													1			3
Khersonskaja o.	1	6	1						8	9		2			1								12			20
Khmel'nitskaja o.	4								4	15													15			19
Kirovogradskaja o.	10	11	2		1				24	11				1									12			36
Kiyevskaja o.									0	2													2			2
Luganskaja o.	1	4	1						6													1	1			7
L'vovskaja o.	2								2	2	2												4			6
Nikolajevskaja o.	7	2	3						12	15													15			27
Odesskaja o.	2	3	2						7	5													5			12
Poltavskaja o.	3	3	4						10	7				1									8			18
Rovenskaja o.		3							3	3													3			6
Sumskaja o.	3	1	2						6	1													1			7
Ternopol'skaja o.	1	1							2					1									1			3
Vinnitskaja o.	5	7	1		1				14	10				1									11			25
Zaporozhskaja o.	1	5	4						10	3		1		1									5			15
Zhitomirskaja o.	5	1	1						7	15				1									16			23
<b>TOTAL</b>	<b>74</b>	<b>69</b>	<b>29</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>175</b>	<b>156</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>180</b>	<b>0</b>	<b>0</b>	<b>355</b>
PER CENT	20,8%	19,4%	8,2%	0,3%	0,6%	0,0%	0,0%	0,0%	49,3%	43,9%	1,1%	0,0%	1,4%	0,3%	2,8%	0,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,6%	50,7%	0,0%	0,0%	100%
<b>LITHUANIA</b>																										
Alytaus	4	1	1						6	33	18			4									55			61
Kauno	5	3	10	1					19	32	39			1	5	3							80			99
Klaipėdos	4	1	1						6	16	8			2	4								30			36
Marijampolės	3	5	3						11	9	17			3	1								30			41
Panevezio	2	5	2						9	14	17			4	3								38			47
Siauliai	3	4	1						8	21	20			3									44			52
Tauragės									0	8	7												15			15
Telsiai		1							1	4	2			1	1								8			9
Utenos	4	5							9	49	78			5	6			1	1				140			149
Vilniaus	10	5	1						16	58	26			6									90			106
<b>TOTAL</b>	<b>35</b>	<b>30</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>244</b>	<b>232</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>35</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>530</b>	<b>0</b>	<b>0</b>	<b>615</b>
PER CENT	5,7%	4,9%	3,1%	0,2%	0,0%	0,0%	0,0%	0,0%	13,8%	39,7%	37,7%	0,0%	0,0%	0,7%	5,7%	2,1%	0,0%	0,2%	0,2%	0,0%	0,0%	0,0%	86,2%	0,0%	0,0%	100%

## 4.2 Rabies cases per country and administrative units, 2nd quarter 2006

01.04.06-30.06.06

Location	Domestic animals										Wildlife											bat	Human cases	total	
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other
<b>RUSSIAN FEDERATION</b>																									
Astrahanskaja obl.	2	6	6		2			2	18														0		18
Belgorodskaja obl.	1	1	1						3														0		3
Brijanskaja obl.	2								2	22													22		24
Cecenskaja resp.			3						3														0		3
Dagestan resp.			2						2														0		2
Ivanovskaja obl.	1								1	1				1									2		3
Jaroslavskaja obl.	1	4							5														0		5
Kabardino-Balkanskaja resp.	1	1	3	1	3				9														0		9
Kaliningradskaja obl.	1	1	2	1					5	7													7		12
Kalmykija resp.	4		2	1	2				9														0		9
Kaluzskaja obl.	1				2	1			4	12													12		16
Kurskaja obl.		1							1														0		1
Lipeckaja obl.	1	2							3	2													2		5
Mordovija resp.	1	1							2	1													1		3
Moskovskaja obl.	3	2							5	14	1												15		20
Nizegorskaja obl.	1								1	5													5		6
Orlovskaja obl.	1	4							5	1													1		6
Penzenskaja obl.	2	3							5	6													6		11
Pskovskaja obl.	3								3	2													2		5
Rjazanskaja obl.	1								1	5													5		6
Rostovskaja obl.	4	1	3				2		10														0		10
Saratovskaja obl.		2	2						4														0		4
Severnaja Osetija-Alanija resp.	2	1	5				1		9														0		9
Smolenskaja obl.	6								6	11	1			1									13		19
Stavropol'skij kr.	4	4	5		1				14	1													1		15
Tambovskaja obl.	1								1	1													1		2
Tul'skaja obl.		1							1	2													2		3
Tverskaja obl.	3		1						4	10	6												16		20
Ul'janovskaja obl.									0	1													1		1
Vladimirskaja obl.	2								2	5													5		7
Volgogradskaja obl.	2	1	2						5	2													2		7
Voronezskaja obl.	1	7	2						10	2													2		12
<b>TOTAL</b>	<b>52</b>	<b>43</b>	<b>39</b>	<b>3</b>	<b>10</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>153</b>	<b>113</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>123</b>	<b>0</b>	<b>276</b>
<b>PER CENT</b>	<b>18,8%</b>	<b>15,6%</b>	<b>14,1%</b>	<b>1,1%</b>	<b>3,6%</b>	<b>0,4%</b>	<b>1,1%</b>	<b>0,7%</b>	<b>55,4%</b>	<b>40,9%</b>	<b>2,9%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,7%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>44,6%</b>	<b>0,0%</b>	<b>100%</b>



### 4.3 Trend tables

#### 4.3.1 Comparison of the reporting quarter (II/2006) with the previous quarter (I/2006)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2006 (no.)	I 2006 (no.)	Difference	II 2006 (no.)	I 2006 (no.)	Difference	II 2006 (no.)	I 2006 (no.)	Difference	II 2006 (no.)	I 2006 (no.)	Difference	II 2006 (no.)	I 2006 (no.)	Difference
Albania	3	1	2	1		1	2	1	1						
Austria															
Belarus	386	463	-77	321	386	-65	65	77	-12						
Belgium															
Bosnia - Hercegovina	21	23	-2	17	23	-6	4		4						
Bulgaria	2	4	-2	1	2	-1	1	2	-1						
Croatia	113	159	-46	104	147	-43	9	12	-3						
Cyprus															
Czech Republic															
Denmark	2		2							2		2			
Estonia	34	68	-34	31	60	-29	3	8	-5						
Finland															
France															
Germany	4	3	1		3	-3				4		4			
Greece															
Hungary		1	-1		1	-1									
Iceland															
Ireland															
Italy															
Latvia	139	151	-12	123	131	-8	16	20	-4						
Lithuania	615	768	-153	530	691	-161	85	77	8						
Luxembourg															
Macedonia															
Malta															
Moldova*															
Norway															
Poland	18	24	-6	14	22	-8	3	2	1	1		1			
Portugal															
Romania	41	106	-65	29	84	-55	12	22	-10						
Russian Federation	276	416	-140	123	173	-50	153	241	-88					2	-2
Serbia and Montenegro	43	76	-33	41	75	-34	2	1	1						
Slovak Republic		3	-3		3	-3									
Slovenia		*			*			*			*			*	
Spain															
Sweden															
Switzerland + Lichtenstein															
The Netherlands	2		2							2		2			
Turkey	65	33	32	4	4		61	29	32						
Ukraine	355	519	-164	180	265	-85	175	254	-79						
United Kingdom															
<b>TOTAL</b>	<b>2119</b>	<b>2818</b>	<b>-699</b>	<b>1519</b>	<b>2070</b>	<b>-551</b>	<b>591</b>	<b>746</b>	<b>-155</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>-2</b>

Wildlife: excluding bats

II/2006 (no.), I/2006 (no.): number of cases

Difference: no. of cases in II/2006 minus cases in I/2006

\* no data

#### 4.3.2 Comparison of the reporting quarter (II/2006) with the same quarter of the previous year (II/2005)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2006 (no.)	II 2005 (no.)	Difference	II 2006 (no.)	II 2005 (no.)	Difference	II 2006 (no.)	II 2005 (no.)	Difference	II 2006 (no.)	II 2005 (no.)	Difference	II 2006 (no.)	II 2005 (no.)	Difference
Albania	3		3	1		1	2		2						
Austria															
Belarus	386	115	271	321	86	235	65	29	36						
Belgium															
Bosnia - Hercegovina	21	4	17	17	2	15	4	2	2						
Bulgaria	2	6	-4	1	4	-3	1	2	-1						
Croatia	113	60	53	104	57	47	9	3	6						
Cyprus															
Czech Republic															
Denmark	2		2							2		2			
Estonia	34	43	-9	31	39	-8	3	4	-1						
Finland															
France		3	-3								3	-3			
Germany	4	11	-7		9	-9				4	2	2			
Greece															
Hungary		2	-2					2	-2						
Iceland															
Ireland															
Italy															
Latvia	139	82	57	123	66	57	16	16							
Lithuania	615	317	298	530	262	268	85	55	30						
Luxembourg															
Macedonia		*			*			*			*			*	
Malta															
Moldova*															
Norway															
Poland	18	33	-15	14	25	-11	3	6	-3	1	2	-1			
Portugal															
Romania	41	123	-82	29	73	-44	12	50	-38						
Russian Federation	276	942	-666	123	430	-307	153	508	-355					4	-4
Serbia and Montenegro	43	18	25	41	16	25	2	2							
Slovak Republic		12	-12		9	-9		3	-3						
Slovenia		1	-1		1	-1									
Spain		1	-1					1	-1						
Sweden															
Switzerland + Lichtenstein															
The Netherlands	2		2							2		2			
Turkey	65	42	23	4	1	3	61	41	20						
Ukraine	355	344	11	180	141	39	175	203	-28						
United Kingdom															
<b>TOTAL</b>	<b>2119</b>	<b>2159</b>	<b>-40</b>	<b>1519</b>	<b>1221</b>	<b>298</b>	<b>591</b>	<b>927</b>	<b>-336</b>	<b>9</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>-4</b>

Wildlife: excluding bats

II/2006 (no.), II/2005 (no.): number of cases

Difference: no. of cases in II/2006 minus cases in II/2005

\* no data

## 5. LIST OF CONTRIBUTORS

---

### **ALB Albania**

Ass. Prof. Dr. Dragush Mati  
Ministry of Agriculture and Food  
Directorate of Veterinary Service  
Tirana /Albania  
Tel. +355 4 222 539  
Fax +355 4 222 539  
e-mail vetdirector@albaniaonline.com

Prof. Dr. Kristaq Berxholi, Director  
Institute of Veterinary Research „Bilal Golemi“  
Tirana /Albania  
Tel. +355 4 372 912  
Fax +355 4 372 912  
e-mail instvet@icc.al.eu.org

### **AUT Austria**

Mag. Ulrich Herzog, CVO  
Bundesministerium für Gesundheit und Frauen  
Bereich IV/B (Verbraucher-Gesundheit)  
Radetzkystraße 2  
A-1030 Wien  
Tel. +43-1-7 11 00-4824  
Fax +43-1-7 10 41 51  
e-mail: ulrich.herzog@bmgf.gv.at

### **BLR Belarus**

Dr. A.M. Axenov  
Head of the Central Board of Veterinary Medicine  
Ministry of Agriculture and Food  
Kirova 15  
Minsk /Belarus  
Tel.: +375-17-227 6623  
Fax +375-17-227 42 96/ +375-17-227 57 54  
e-mail vetinsp@mshp.minsk.by

### **BEL Belgium**

Dr. L. Lengele, Conseiller Général  
Dr. Dechamps  
Ministère des Classes Moyennes et de l'Agriculture  
Administration de la Santé animale et de la  
Qualité des produits animaux (DG5)  
Services vétérinaires  
WTC III - Boulevard Simon Bolivar 30  
5ème étage  
B-1000 Bruxelles/Belgique  
Tel. +32-2-208 36 48  
Fax +32-2-208 36 12

### Responsible expert:

Dr. F. Costy  
Institut Pasteur de Bruxelles  
Rue Engeland, 642  
B-1180 Bruxelles  
Tel. +32-2-373 31 11  
Fax +32-2-373 31 74

### **BIH Bosnia and Herzegovina**

Dr. Ramiz Velic  
Department of Infectious Diseases  
Veterinary Faculty Sarajevo  
Zmaja od Bosne 90  
Sarajevo 71000 /Bosnia and Herzegovina  
Tel. +387-61-160 361  
e-mail vetzar@bih.net.ba

Dr. Sc. Drago N. Nedic  
Ministry Agriculture, Forestry and  
Water Management of Republika Srpska  
Milosa Obilica 51  
76300 Bijeljina, Republika Srpska  
Bosnia and Herzegovina  
Tel. +387-55-401 812, 211 506, 403 508  
Fax +387-55-403 508, 472 353  
e-mail nedicd@rstel.net nedicd@vetservice.org  
Internet www.vetservice.org

### **BUL Bulgaria**

Prof. Rumen Valtchovski  
Head of Dept. of Virology and Virological Diseases  
National Veterinary Research Institute  
Tel. +359 9523903  
email rvaltchovski@abv.bg

### **HVR Croatia**

Dr. Ljerka Zeba  
Veterinary Administration  
Ministry of Agriculture and Forestry  
Vukovarska 78  
10000 Zagreb, Republic of Croatia  
Tel. +385 1 6106207  
Fax +385 1 6109207  
email ljerka.zeba@mps.hr

### **CYP Cyprus**

Dr. P. Economides, CVO  
Director of Veterinary Services  
Ministry of Agriculture, Natural Resources  
and Environment - Veterinary Services -  
1417 Nicosia /Cyprus  
Tel. +357-2-80 52 0  
Fax +357-2-33 28 03  
e-mail vet.services@cytanet.com.cy

### **CZH Czech Republic**

MVDr. Josef Vitásek  
State Veterinary Administration CR  
Slezská 7  
CZ – 120 00 Praha 2 / Czech Republic  
Tel.: +420 – 227 010 144  
Fax : +420 – 227 010 195  
e-mail: j.vitasek@svscr.cz

Responsible expert:

MVDr Oldrich Matouch, Csc  
National Reference Laboratory for Rabies  
State Veterinary Institute  
U Sila 1139  
CZ-46311 Liberec 30 /Czech Republic  
Tel. +420-48-2751 578  
Fax +420-48-2751 569  
e-mail matouch@volny.cz  
Internet <http://svs.aquasoft.cz>

**DNK Denmark**

Dr. Preben Willeberg, CVO  
Dr. Tina Mørk  
Ministeriet for Fødevarer, Landbrug og Fiskeri  
Danish Veterinary and Food Administration  
Tel. +45 33956000  
e-mail Tina Mørk <tm@FDIR.DK>

**EST Estonia**

Dr. Matti Nautras, CVO  
Head of Animal Health Department  
Veterinary and Food Broad of Estonia  
Väike-Paala-Street 3  
11415 Tallinn /Estonia  
Tel. +372-605 1732  
Fax +372-638 0210  
e-mail nautras@vet.agri.ee

Responsible expert:

Dr. Külli Must  
Head of Department  
Veterinary and Food Laboratory  
Kreutzwaldi 30  
51006 Tartu /Estonia  
Tel. +372-742 1246  
Fax +372-742 1730  
e-mail kylli@vetlab.ee

**FIN Finland**

Dr. Matti Aho, CVO  
Dr. Tiia Tuupanen  
Ministry of Agriculture and Forestry  
Department of Food and Health, Animal Health  
PO BOX 30  
FIN-00023 Government  
Finland  
Tel. +358-9-16001, +358-9-1605 2787  
Fax +358-9-1605 4777, +358-9-1605 3338  
e-mail cvo-finland@mmm.fi  
tiia.tuupanen@mmm.fi  
Internet [www.mmm.fi](http://www.mmm.fi)

**FRA France**

Dr. Florence Cliquet  
Agence Francaise de Securite Sanitaire des  
Aliments (afssa) - Site de Nancy  
Domaine de Pixérécourt  
Boite Postale 9  
F-54220 Malzéville /Republique Francaise  
Tel. +33-3-83.29.89.50  
Fax +33-3-83.29.89.59  
e-mail f.cliquet@nancy.afssa.fr  
Internet [www.afssa.fr](http://www.afssa.fr)

**DEU Germany**

Prof. Dr. Werner Zwingmann, CVO  
Fed. Ministry of Food, Agriculture and Consumer  
Protection  
PF 14 02 70, D-53103 Bonn, Germany  
Tel. +49 228 529 41 57  
Fax +49 228 529 35 53  
e-mail: [poststelle@bmelv.bund.de](mailto:poststelle@bmelv.bund.de)

Responsible experts:

Dr. Thomas Müller  
Conrad Freuling  
Friedrich-Loeffler-Institute  
Federal Research Institute for Animal Health  
WHO Collaborating Centre for Rabies Surveillance  
and Research, Wusterhausen, Seestr. 55  
D-16868 Wusterhausen/Germany  
Tel. +49-33979-80 0  
Fax +49-33979-80 200 and 222  
e-mail [who-rabies@fli.bund.de](mailto:who-rabies@fli.bund.de)  
Internet [www.fli.bund.de](http://www.fli.bund.de)

**GRC Greece**

Dr. B. Stylas  
Ministry of Agriculture

**HUN Hungary**

Dr. Tibor Balint  
Dr. Zsolt Földi  
Ministry of Agriculture and Regional Development  
Animal Health and Food Control Department  
H-1860 Budapest 55. Pf. 1  
Tel. +36-1 3014329 and 332 7986  
Fax +36-1 301 4669  
e-mail [foldiz@oai.hu](mailto:foldiz@oai.hu)

**ISL Iceland**

Dr. Halldor Runolfsson  
Chief Veterinary Officer  
Ministry of Agriculture, Veterinary Services  
Solvholsgata 7  
150 Reykjavik /Iceland  
Tel. +354-560 9750  
Fax +354-552 1160  
e-mail [halldor.runolfsson@lan.stjr.is](mailto:halldor.runolfsson@lan.stjr.is)

**IRE Ireland**

Dr. J. Melville  
Superintending Veterinary Inspector  
Department of Agriculture, Food and Forestry  
Agriculture House  
Dublin 2/Ireland  
Tel. +353-1-607 2981  
Fax +353-1-661 2440

Responsible expert:

Dr Patrick Lenihan  
Senior Superintending Research Officer  
Virology Division  
Central Veterinary Research Laboratory  
Abbotstown, Blanchardstown  
Dublin 15

**ITA Italy**

Dr. Franco Mutinelli  
Istituto Zooprofilattico  
Sperimentale delle Venezie  
Viale dell'Università, 10  
I-35020 Legnaro (PD) /Italy  
Tel. +39-049-80 84 259  
Fax +39-049-80 84 258  
e-mail fmutinelli@izsvenezie.it

**LVA Latvia**

Dr. V. Veldre  
Dr. E. Jegers  
Food and Veterinary Service  
Animal Health Division  
Republikas laukums 2  
Riga, LV-1010, Latvija  
Tel. +371 709 52 30  
Fax +371 732 27 27  
e-mail vvd@vvd.vita.gov.lv

**LTU Lithuania**

Dr. K. Lukauskas  
Dr. A. Dranseika  
State Veterinary Service

**LUX Luxembourg**

Dr. Arthur Besch, CVO  
Inspection Vétérinaire  
Grand-Duché de Luxembourg  
Administration des Services vétérinaires  
93, rue d'Anvers  
Boîte postale 1403  
L-1014 Luxembourg  
Tel. +352-478 2539  
Fax +352-407 545  
e-mail Arthur.Besch@asv.etat.lu

**MKD Macedonia**

Sloboden Cokrevski, DVM  
Ministry of Agriculture, Forestry and Water  
Economy  
Veterinary Directorate  
Republic of Macedonia  
Leninova 2  
1000 Skopje/Macedonia  
Tel. + 389 2 3210468  
Fax + 389 2 3210315  
e-mail scokrevski@veterina.gov.mk

**Responsible expert:**

Prof. Dr. Misho Hristovski  
Veterinary institute Skopje  
Department of Biology and Pathology of Fish, Bees  
and Wild Animals  
Lazar Pop Trajkov 5-7  
1000 Skopje/Macedonia  
Tel +389 2 3115125  
Fax +389 2 3114619  
e-mail hristovskim@hotmail.com

**MDA Moldova**

Dr. V. Bahau, Dr. A. Ganea  
Dr. V. Kilary  
Ministry of Agriculture

**NED Netherlands**

Dr. F.H. Plumiers  
Ministry of Agriculture, Nature Environment and  
Fisheries  
Bezuidenhoutseweg 73 - P.O. Box 20401  
NL-2500 EK's-Gravenhage /Netherlands  
+

Dr. Monique Aalten  
Inspectorate for Health Protection, Commodities  
and Veterinary Public Health  
Regional Inspectorate East  
De Stoven 22  
NL-7206 AX Zutphen /Netherlands  
Tel. +31-575-58 8 100  
Fax +31-575-588 8 200  
e-mail Monique.Aalten@kvw.nl

**Responsible expert:**

Dr. R.A.A. van Oosterom  
Inspectorate for Health Protection  
Commodities and Veterinary Public Health  
P.O. Box 16108  
NL-2500 BC The Hague /Netherlands

**NOR Norway**

Dr. Keren Bar-Yaacov, CVO  
Norwegian Food Safety Authority, Head Office  
P.O. Box 383  
N-2381 Brumunddal, Norway  
Tel. +47 23 21 68 00  
Fax +47 23 21 68 01  
e-mail postmottak@mattilsynet.no

**POL Poland**

Krzysztof Jazdzewski, DVM  
Acting Chief Veterinary Officer  
General Veterinary Inspectorate  
Veterinary Inspection  
30, Wspolna Str,  
00-930 Warsaw / Poland  
Tel.: +48.22.623.20.88-89 or 628.85.11  
Fax: +48.22.623.14.08  
e-mail: wet@wetgiw.gov.pl

**Responsible experts:**

Prof. Jan. F. Zmudzinski  
National Veterinary Research Institute  
Department of Virology  
National Reference Laboratory for Rabies  
Al. Partyzantow 57  
24 -100 Pulawy / Poland  
Tel.: +48.81.886.30.51  
Fax: +48.81.886.25.95  
e-mail: jfzmudzi@piwet.pulawy.pl

Magdalena Zietara, DVM  
Animal Health and Welfare Office  
General Veterinary Inspectorate  
Veterinary Inspection  
30, Wspolna Str,  
00-930 Warsaw / Poland  
Tel.: +48.22.623.22.64  
Fax: +48.22.623.14.08  
e-mail: magdalena.zietara@wetgiw.gov.pl

**PRT Portugal**

Dr.C.A.M.de Andrade  
Fontes  
Direccao-Geral da Pecuaria

**ROU Romania**

Prof. Gabriel Predoi, CVO  
General Director of the Sanitary Veterinary General  
Direction, National Sanitary Veterinary and Food  
Safety Authority  
Bd. Carol I, nr. 24, sector 3  
Bucuresti, cod 70.033 /Romania  
Tel. +40-21-3157875  
Fax +40-21-3124967  
e-mail predoi@ansv.ro

**RUS Russian Federation** (European part)

Prof. V.A. Vedernikov  
 WHO Coll. Centre on Prev. and Control of Zoonosis  
 The Kovalenko All-Union  
 Inst. of Exper. Veterinary Medicine, Moscow  
 Dr. V.V. Seliverstov  
 Veterinary Dept., Moscow  
 Prof. B.L. Cherkasskiy  
 WHO Collaborating Centre on Zoonosis, Moscow  
 Central Research Institute of Epidemiology,  
 Ministry of Public Health, Moscow

**SRB Serbia**

Mr. Budimir Plavsic, DVM  
 Ministry of Agriculture  
 Head of the Animal Health Department  
 e-mail b.plavsic@minpolj.sr.gov.yu

Dr. Jelena Desnica (Director)  
 Dr. Nenad Vranjes (Head of Rabies Unit,  
 Epidemiology, Rabies prevention)  
 Dr. Srdan Stankov (Rabies diagnostics)  
 Pasteur Institute Novi Sad  
 Hajduk Veljkova 1 / P.O. Box 208  
 21000 Novi Sad / Serbia  
 Tel.: +381 21 6611 003, 420 528  
 Fax: +381 21 6611 003, 420 528  
 Email: paster-ns@neobee.net

**SVK Slovak Republic**

Prof. Josef Bires, CVO  
 Roman Matejčík, DVM  
 State Veterinary Administration of the Slovak  
 Republic  
 Botanická No 17  
 842 13 Bratislava /Slovak Republic  
 Tel. +421-2-60 257 227  
 Fax +421-2-65 411 159  
 e-mail welfare@svsrr.sk

Responsible expert:

Miroslav Mojžiš, DVM  
 Štátny veterinárny ústav Zvolen  
 Pod Dráhami No. 918  
 960 86 Zvolen /Slovak Republic

**SVN Slovenia**

Aleš Brečelj, MSc, DVM  
 Ministry of Agriculture, Forestry and Food  
 Veterinary Administration of the Republic of  
 Slovenia  
 Parmova 53, 1000 Ljubljana / SLOVENIA  
 Tel. +386-1-300 13 00  
 Fax +386-1-300 13 56  
 e-mail ales.brecelj@gov.si  
 Internet www.sigov.si/vurs

Responsible expert:

Peter Hostnik, PhD, DVM  
 National Veterinary Institute, Unit for the  
 diagnostic of contagious and other diseases,  
 Laboratory of Virology  
 Gerbičeva 60  
 1000 Ljubljana / SLOVENIA  
 Tel. +386-1-477 91 00  
 Fax +386-1-477 93 52  
 e-mail peter.hostnik@vf.uni-lj.si

**ESP Spain**

Ilmo. Sr. D. Pedro Angel García González  
 Subdirector General de Sanidad Exterior  
 Tel. +34-91-596 20 38  
 Fax +34-91-596 20 47  
 e-mail pgarciag@msc.es

Sr. D. Carlos Abellán García  
 Jefe de Servicio de Veterinaria Oficial  
 Tel. +34-91-596 19 34  
 Fax +34-91-596 20 47  
 e-mail cabellan@msc.es

Ministerio de Sanidad y Consumo  
 Dirección General de Salud Pública  
 Subdirección General de Sanidad Exterior  
 C/Paseo del Prado, 18-20  
 E-28071 Madrid

Responsible expert - Diagnóstico:

Sr. D. Juan E. Echevarría Mayo  
 Servicio de Microbiología Diagnóstica  
 Centro Nacional de Microbiología  
 Instituto de Salud Carlos III  
 Ministerio de Sanidad y Consumo  
 Ctra. Majadahonda-Pozuelo s/n  
 28220 Majadahonda, Madrid  
 Tel. +34-91-509 79 01  
 Fax. +34-91-509 79 66  
 e-mail jeecheva@isciii.es

Epidemiología:

Sra. Dª Luisa Pilar Sánchez Serrano  
 Centro Nacional de Epidemiología  
 Instituto de Salud Carlos III  
 Ministerio de Sanidad y Consumo  
 C/ Sinesio Delgado, 6  
 E-28029 Madrid  
 Tel. +34-91-387 78 02  
 Fax +34-91-387 78 16  
 e-mail Isanchez@isciii.es

Dr. Ignacio Sanchez Esteban  
 Subdirector General de Sanidad Veterinaria  
 MAPA  
 Ministerio de Agricultura, Pesca y Alimentacion  
 Madrid /Spain  
 Tel. +34-91-347 82 95  
 Fax +34-91-347 82 99  
 e-mail isanchez@mapya.es  
 Internet www.mapya.es

Responsible expert:

D. Fulgencio Garrido Abellan  
 Tel. +34-958-44 03 75  
 Fax +34-958-44 12 00  
 e-mail fgarrido@moebius.es  
 Dña. Teresa Rodríguez-Trenchs  
 Tel. +34-91-347 83 46  
 Fax +34-91-347 82 99  
 e-mail trodrigu@mapya.es

**SWE Sweden**

Dr. Leif Denneberg  
National Board of Agriculture  
Department for Animal Production and Health  
SE-551 82 Jönköping /Sweden  
Tel. +46-36-15 50 00  
Fax +46-36-30 81 82  
e-mail leif.denneberg@sjv.se

**Responsible expert:**

Professor Anders Engvall  
National Veterinary Institute  
SE-751 89 Uppsala  
Tel. +46-18-67 40 00  
Fax +46-18-67 44 45  
e-mail anders.engvall@sva.se

**CHE Switzerland**

PD Reto Zanoni  
Dr. Urs Breitenmoser  
University of Bern - Swiss Rabies Centre  
Institute of Veterinary Virology  
Länggass Str. 122  
CH-3012 Bern /Switzerland  
Tel. +41-31-631 23 78  
Fax +41-31-631 25 34  
e-mail zanoni@ivv.unibe.ch  
e-mail breitenmoser@ivv.unibe.ch  
Internet www.cx.unibe.ch/ivv

**TUR Turkey**

Dr. Musa Arik  
Head of Animal Health Department  
Ministry of Agriculture and Rural Affairs  
General Directorate of Protection and Control  
Esat cad. No. 3  
06100 Bakanliklar, Ankara /Turkey  
Tel. +90-312-41 82 436  
Fax +90-312-41 78 209  
e-mail musaa@kkgm.gov.tr

**Responsible expert:**

Dr. Orhan Aylan, Chief of Rabies Laboratory  
Etlik Central Veterinary Control and Research  
Institute  
06020 Etlik, Ankara /Turkey  
Tel. +90-312-32 60 090 / 154  
Fax +90-312-32 11 755

**UKR Ukraine**

Dr. P. Verbytskiy  
Ministry of Agrarian Policy  
State Department of Veterinary Medicine  
Khreshchatik 24  
01001 Kiev /Ukraine  
Tel. +380-44-229 12 70  
Fax +380-44-229 85 45  
e-mail uzpr@minapk.kiev.ua

Dr. Liudmyla Grishok  
Institute of Veterinary Medicine  
Head of Laboratory for Rabies  
Donetskaja Street 30  
Kiev-151 /Ukraine  
Tel. +380-44-243 72 38  
Fax +380-44-242-69-81  
e-mail ivm-kiev@akcecc.kiev.ua

Dr. Zoya Trotsenko  
Head of Virology Department  
Central State Laboratory of Veterinary Medicine  
Donetskaya Street 30  
Kiev-151, Ukraine  
Tel/Fax +380-44-243 37 55  
e-mail biotech@astral.kiev.ua

**UNK United Kingdom**

Dr. J.M. Scudamore, CVO  
Dr. F. Landeg  
Dr. Anna Guitton  
Department for Environment, Food and Rural  
Affairs  
Room 205a, 1A Page Street  
London, SW1P 4PQ  
Tel. +44-20-7904 6069  
Fax +44-20-7904 6913  
e-mail fred.Landeg@defra.gsi.gov.uk

**Responsible expert:**

Dr. Anthony R. Fooks  
Rabies Research and Diagnostic Group, WHO  
Collaborating Centre, Department of Virology,  
Veterinary Laboratories Agency (Weybridge), New  
Haw, Addlestone, Surrey, KT15 3NB, UK  
Tel: +44 1932-357840  
Fax +44 1932-357239  
e-mail t.fooks@vla.defra.gsi.gov.uk

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of contact details!

