EUROPEAN COMMISSION
HEALTH AND CONSUMERS DIRECTORATE-GENERAL

Director General

SANCO/10488/2013

Programmes for the eradication, control and monitoring of certain animal diseases and zoonoses

The programme for the eradication of rabies

Bulgaria

Approved* for 2013 by Commission Decision 2012/761/EU

* in accordance with Council Decision 2009/470/EC

MINISTRY OF AGRICULTURE AND FOOD

BULGARIAN FOOD SAFETY AGENCY

✉ Sofia, 1606, "Pencho Slaveikov" blvd. 15A
☎ +359 (0) 2 915 98 20, 🖷 +359 (0) 2 954 95 93, www.babh.government.bg

Programme for Control and Eradication of Rabies in Bulgaria

(according to the provisions of art. 27 of Council Decision 2009/470/ EO and Commission Decision 2004/450)

1. Identification of the programme

Member State: **Republic of Bulgaria**

Disease(s) ([1]): **Rabies**

Year of implementation: **01.01.2013 – 31.12.2013**

The Law on Veterinary Activities (in Republic of Bulgaria) and the Ordinance on health requirements to cattle and pigs in case of their movement or transportation between Republic of Bulgaria and EU Member States and on determining the health status of areas and holdings of their origin and on additional guarantees, to which those must comply with (transposed version of Directive 64/432/EC and Directive 97/12 of European Union.

Contact (name, phone, fax, e-mail):
D-r Yordan Voynov
Executive Director
Bulgarian Food Safety Agency
15A "Pencho Slaveikov" blvd.

1606 Sofia, Bulgaria
tel. ++359 2 915 98 20
fax: ++359 2 952 38 35
E-mail: y.voynov@nvms.government.bg

Date sent to the Commission: 30.04.2012

2. Historical data on the epidemiological evolution of the disease(s) ([2]):

In our country rabies disease has been spreading mainly in North Bulgaria. The total number of cases confirmed in Bulgaria since the beginning of 1992 up to the end of 2011 is 368, of which 350 cases (95%) are in North Bulgaria (to the north of Stara Planina mountain chain that divides the country into two) and only 18 (5%) are the cases identified in South Bulgaria.

Wild predatory animals are the reservoir of rabies virus in our country, and these are mainly foxes and of less rates jackals. Of all the 476 animals found sick of rabies within the time-period 1992 – 2011, 276 are wild animals (58%), 234 (85%) of which being foxes.

Highest is the number of rabies cases registered in spring and less are the cases registered in autumn-winter seasons, those identified in summer being the lowest. This is due to ecological and biological specifics of the fox populations in our country. The spring pick of the disease is related to the reproduction period of foxes, while the autumn-winter rising trend is due to seeking and demand of living area manifested by young foxes.

The reason for the definitely predominant spread of rabies in North Bulgaria should be linked with geographic specifics of the country. North Bulgaria is separated from the Southern parts of the country through a natural geographic barrier, i.e. the Balkans Chain (Stara Planina mountain chain) and it acts as a natural barrier for the spread of rabies from north to south. The eastern areas of the country are also bordered by a natural geographic barrier, the Black Sea. To the north Bulgaria borders with Rumania through another natural water frontier, the river Danube, but there is a also a land border of 130 km length that could enable passage of animals. To the west, Bulgaria's land borders with Republic of Serbia and FIROM are predominantly of mountainous relief, but there are some areas of plane relief (Northwest Bulgaria).

As till now, there is not any individual administrative district (county) in North Bulgaria, where there has not been any rabies case confirmed. Observations show that each year there are rabies cases identified in an average of 6 to 7 of the total of 14 administrative districts of North Bulgaria.

Of the total of 476 animals found sick within the aforementioned time-period (1992-2011), 113 (24%) are livestock animals (cows, sheep, goats and horses) This high sickness rate among these type of animals is due to specifics of their keeping, since they spend substantial time grazing on pastures where the likelihood of contacts with wild animals is much higher.

The species and numbers of wild predatory animals in North Bulgaria are given in Table 4 (in the Annex attached).

During 2007, the first cases of rabies in South Bulgaria have been found ever since 1997. As by 20 August 2007 there have been 5 cases

of Rabies found in the region of Sofia town and 11 cases in the region of Sofia-district. That is the reason why the four administrative districts /Sofia-town, Sofia-district, administrative district (veterinary region) of Pernik and the municipality of Treklyano (of administrative district of Kyustendil) must be included in the Programme for oral vaccination of foxes to be effected during the spring of 2008.

After 2007 the disease spread south of Balkan Range – regions of Sofia town, Sofia district, Pernik, Kjustendil, and in 2009 Burgas.

Description of the submitted programme ([3]):

The objective of this programme is to ensure eradication of rabies on the territory of Republic of Bulgaria. It is foreseen this to be achieved by oral vaccination of foxes on the territory of North Bulgaria and on part of the territory of South Bulgaria (regions of Sofia town, Sofia district, administrative district of Pernik, administrative district of Kyustendil, administrative district of Burgas (municipalities of Pomorie and Ruen) and administrative district of Blagoevgrad (municipalities of Blagoevgrad, Simitli, Kresna, Strumyani, Sandanski and Petrich). This vaccination is to be performed that territory for a period of at least 5 years, twice per year in spring and autumn (March-May and September-November).

The total size of the afore mentioned territory where vaccination will be provided is 66 550 км2 and it comprises territories located within 20 administrative districts (AD), as follows: ADs of Vidin (code No. 05, area of 3 033 km^2, number of settlements – 141), Montana (code No. 12, area of 3 635 km^2, number of settlements – 130), Vratsa (code No. 06, area of - 3620 км^2, number of settlements - 123), Pleven (code No. 15, area of - 4330 км^2, number of settlements - 133), Lovech (code No. 11, area of - 4129 км^2, number of settlements - 114), Gabrovo (code No. 07, area of - 2023 км^2, number of settlements - 309), Veliko Tarnovo (code No. 04, area of - 4662 км^2, number of settlements - 336), Ruse (code No. 18, area of - 2803 км^2, number of settlements - 83), Targovishte (code No. 25, area of - 2716 км^2, number of settlements - 197), Razgrad (code No. 17, area of - 2637 км^2, number of settlements - 102), Shumen (code No. 27, area of - 3390 км^2, number of settlements - 151), Silistra (code No. 19, area of - 2846 км^2, number of settlements - 118), Dobrich (code No. 08, area of - 4720 км^2, number of settlements - 217), Varna (code No. 03, area of - 3820 км^2, number of settlements - 158), Sofia town (code №22, area of - 1345 км^2, number of settlements - 38) ,Sogia district (code №23, area of - 7062 км^2, number of settlements - 277), Pernik (code 14, area of - 2027 км^2, number of settlements - 172), Kyustendil (code No. 10, area of 3084 km^2 and number of settlements – 182), Burgas - municipality of Pomorie (413 km^2, number of settlements – 17) and municipality of Ruen (690 km^2, number of settlements – 42), Blagoevgrad – municipality Blagoevgrad (620 км2, number of settlements - 26), municipality Simitli (560 км2, number of settlements - 17), municipality Kresna (344 км2, number of settlements -7), municipality Strumyani (355 км2, number of settlements -21), municipality Sandanski (1035 км2, number of settlements -54), municipality Petrich (650 км2, number of settlements -53).

The first vaccination is to be performed in the spring of 2013 and will cover the whole territory of North Bulgaria (14 administrative districts), the administrative district of Sofia-town, Sofia-district, Pernik, Kyustendil, Burgas (municipalities of Pomorie and Ruen), Blagoevgrad (municipality Blagoevgrad, municipality Simitli, municipality Kresna, municipality Strumyani, municipality Sandanski, municipality Petrich - the total area being 66 550 km2.

The second vaccination is to be performed in the autumn of 2013 on the whole of the afore mentioned territory, on which the first vaccination will be performed.

Annex - Map No.1 attached.

Numbers of vaccination baits needed

Year 2013

First vaccination campaign: – the dose should again be 20 pieces of vaccination baits per 1 km^2. The territory for vaccination shall be the whole North Bulgaria of the following regions of: Vidin (No. 05); Montana (No. 12); Vratsa (No. 06); Pleven (No. 15); Lovetch (No. 11); Gabrovo (No. 07); Veliko Tarnovo (No. 04); Ruse (No. 18); Targovishte (No. 25); Razgrad (No. 17); Shumen (No. 27); Silistra (No. 19); Dobrich (No. 08), Varna (No. 03) and on the territory of 5 districts of South Bulgaria – Sofia town, Sofia district, Pernik (no. 14), Kyustendil (No. 10), Burgas (No 02), Blagoevgrad (01). The total area is 66 550 km^2. The number of baits needed – 1 331 000 pieces.

Year 2013

Second vaccination campaign: – the dose should be again 20 pieces of vaccination baits per 1 km^2. The number of baits needed will again be 1 331 000 pieces..

The total number of unit baits needed for the whole year 2012 will be 2 662 000 pieces of vaccination baits.

This oral vaccination must be performed by a applying strain vaccine that is derivative of the SAD strain and that is stable to high ambient temperatures, since the vaccination periods the temperatures in Bilgaria are relatively high. The first vaccination campaign will be performed during the period 10.04-10.05.2013 and the autumn campaign will be during the period 15.10 -15.11.2013.

The phylogenetic analysis provides evidence for the movement of rabies-infected hosts across the borders with FIROM. The clustering of three Bulgarian sequences, two foxes and one wolf, with a wolf and a fox from Bosnia and Herzegovina (U42704 & U42706) and two foxes from Serbia and Montenegro(the Federal Republic of Yugoslavia) (U22839 & U42703), is clearly suggestive of movement of rabies across national boundaries by wildlife vectors. By contrast there is no evidence for movement of infected animals between Bulgaria and Turkey. One possible reason for this could be the influence of topography within Bulgaria. Rivers and mountain ranges can slow-down or prevent the movement of infected hosts between regions. A contour map of Bulgaria suggests that the Stara Planina (Balkan) mountain range which bisects the country from east to west could block the movement of rabies southwards. Rivers within this mountain range could also contribute to preventing the movement of vectors southwards. All the provinces from which rabies samples were obtained are north of this range of mountains. No virus sequences are available from Romania although the country reports numerous cases of rabies (Rabies Bulleting Europe, WHO) some within provinces adjoining the Bulgarian border. However, the land border with Bulgaria is defined by the Danube river and this could act as a natural barrier to the movement of rabid animals in a manner similar to the Vistula river in Poland (Bourhy *et al*., 1999). Further epidemiological

studies on samples from both sides of the Bulgarian-Romanian border are needed to answer his question. If such constraints on the movement of rabies north can be demonstrated it would have major implications for the development of elimination strategies. The Danube to the north and the mountain range across the centre of the country would provide natural boundaries for focusing oral vaccination programmes. Such strategies were successfully developed for the elimination of rabies from Switzerland (Wandeler *et al*., 1988). However, rabies appears to be endemic within a diverse range of reservoir species present within the whole Balkan region, and this will present further challenges to the development of control strategies in countries such as Bulgaria.

Figure 1.

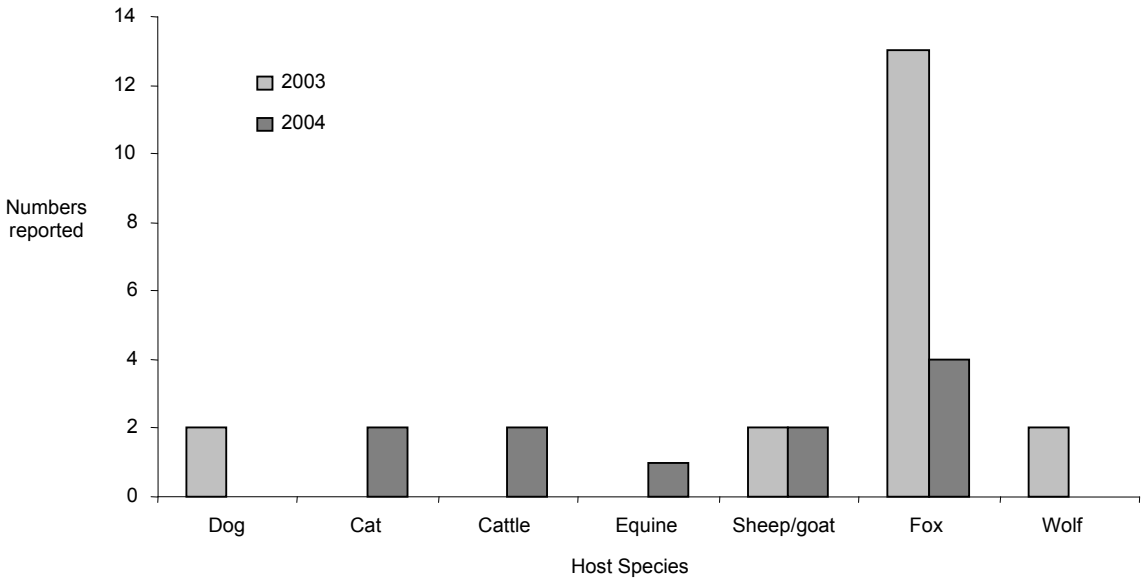
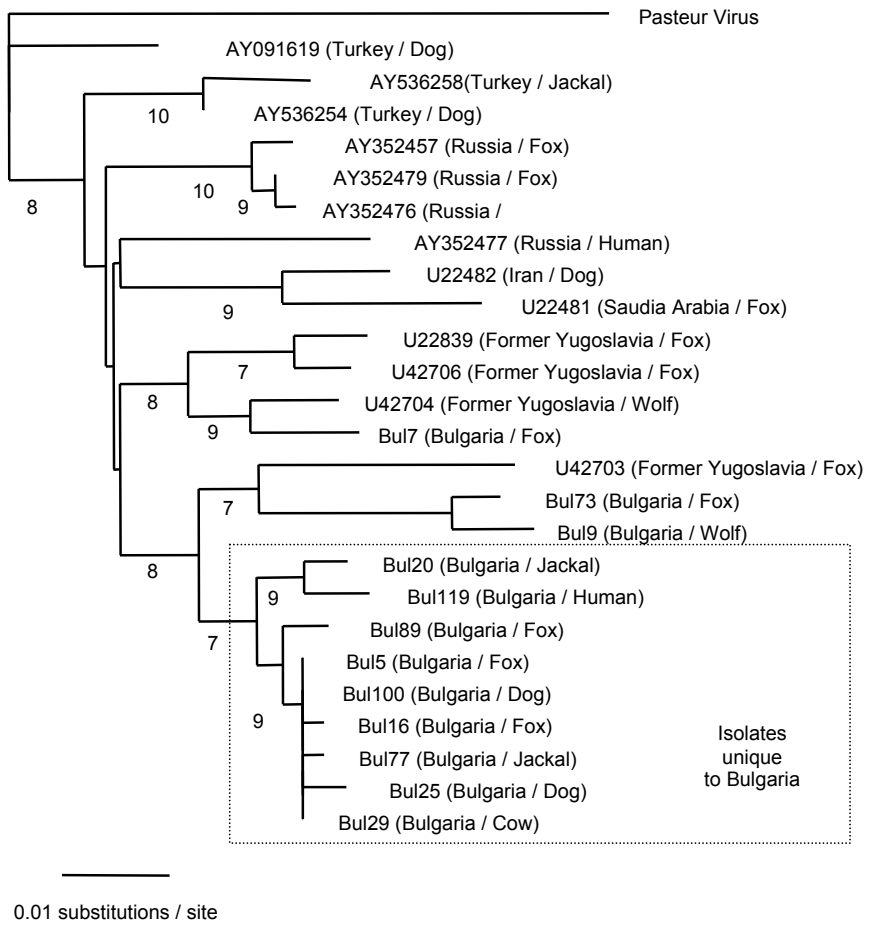


Figure 2a.

Figure 2b.

Figure 3.



<u>Procedure implemented for administering the oral vaccine</u>

Vaccination baits will be distributed by two ways :

- by helicopter or airplane
- by hands (150 000 baits will be hand distributed by hunters)

The vaccine should be supplied 5-10 days before been placed. For this period it will be stored in chillers at temperature of -20ºC.

Laboratory control after vaccination

Laboratory control of the oral vaccination will be effected in the National Diagnostic and Research Veterinary Medical Institute (NDRVMI) in Sofia. The following are the methods to be used for exercising this control:

1. RFFIT-test for detection of presence of antibodies against the rabies virus;
2. IFT-test - direct immune-fluorescent test for detecting the presence of the rabies virus;
3. ELISA - immune-enzyme test for proving the presence of antibodies after vaccination and for typing virus isolates;
4. Test for identifying the tetracycline marker;
5. IMAGE ANALYSIS – a test for typing the viruses isolated of samples taken in various regions of the country.

After completion of this 5-years Program

There should be a new vaccination program developed on the basis of the analysis of the results achieved through this 5-years program. The options for such further development are three, as follows:

a) continuing the vaccination in the whole North Bulgaria and on the territory of 5 districts of South–West Bulgaria – Sofia town, Sofia district, Pernik, Kyustendil, Blagoevgrad and 1 district of South-East Bulgaria - Burgas.

b) continuing the vaccination in certain individual administrative districts or regions;

c) continuing the vaccination only within the zone (strip) alongside the land border between Bulgaria and Rumania (the North-east part of the country), and in the strip alongside the border between Bulgaria and Republic of Serbia and FIROM (the North-west part of the country).

) A concise description is given with data on the target population (species, number of herds and animals present and under the programme), the main measures (testing, testing and slaughter testing and killing, qualification of herds and animals, vaccination …) and the main results (incidence, prevalence, qualification of herds and animals). The information is given according distinct periods if the measures were substantially modified. The information is documented by relevant summary epidemiological tables, graphs or maps.

([3]) A concise description of the programme is given with the main objective(s) (monitoring, control, eradication, qualification of herds and/or regions, reducing prevalence and incidence ...), the main measures (testing,

4. Measures of the submitted programme

4.1. *Summary of measures under the programme*

Duration of the programme: Five (5) years

First year: 2009

□ Control - Yes

- **□ Testing - Yes**
- **□ Slaughter of positive animals**
- **D Killing of positive animals – Yes**
- **animals - Yes**
- **D Vaccination - Yes**
- **□ Treatment**
- **□ Disposal of products**

□ Monitoring or surveillance - Yes

C Other **measures *(specify):***

Last year: 2013

□ Eradication - Yes

- **□ Testing - Yes**
- **□ Slaughter of positive animals**
- **□ Killing of positive**
- **□ Extended slaughter or killing**
- □ Disposal of products

4.2. *Designation of the **central authority charged with supervising and** coordinating the departments responsible for implementing the **programme*** ([1]):

The implementation of the whole vaccination Programme on national level is to be steered by the Bulgarian Food Safety Agency at the Ministry of Agriculture and Forestry and in particular by its 'Animal Health and Welfare' Directorate at the BFSA. All the campaigns are to be organised and performed in close cooperation with:

- Ministry of Health and its district units;
- Ministry of Interior and its district units;
- Ministry of Environment and Waters and its district units;
- National Forestry Administration at the Ministry of Agriculture and Forestry;
- Union of Hunters and Anglers in Bulgaria and its district and local units;
- Local bodies of the executive authorities – district governors and mayors of municipalities and settlements;
- Private practicing veterinary practitioners.

On administrative districts' level vaccination campaigns are to be organised and steered by the Regional Food Safety Departments (RFSDs) in their quality of district units within the organisation structure of the BFSA in cooperation with the local units of all the other aforementioned central and local governments' institutions.

Establishing public awareness of the Programme objectives and specifics:

-making all central institutions and organisations involved in its implementation well informed about the Programme for oral vaccination of foxes in Bulgaria;

- making all the regional (administrative district) units of the BFSA well informed and trained in the specifics of the Programme for oral vaccination of foxes in Bulgaria, in order to ensure that these will properly and effectively organise and steer it on the spot;
- making all district and local units of the aforementioned central institutions and organisations involved in its implementation well informed about the Programme for oral vaccination of foxes in Bulgaria;
- creating public awareness in the population through the local media for mass information, the local cable TV networks, radio broadcasting stations and direct meetings with the public;
- preparing awareness brochures, posters and others alike that are to be placed on public places and alongside roads.

4.3. ***Description and*** *delimitation* ***of the geographical and*** *administrative areas in which the programme is to be implemented* ([2]):

As per the description in Point 3 above and the attached Map No. 1.

Additionally all suspected animas of all species (suspect symptoms, found dead, road kills etc.) from the whole territory of the country (areas where the vaccination is carrying out and those where the oral vaccination is not carrying out) shall be tested by IF test for the presence of Rabies infection.

4.4. *Measures implemented under the programme* ([3])

4.4.1. Notification of the disease:

Ordinance № 23/14.12.2005 for the rules for notification and registration of contagious diseases in animals.

4.4.2. Target animals and animal population:

1. Objective of the programme – oral vaccination of foxes against rabies and eradication of the disease.
2. Foxes population – about 44 000 foxes.

4.4.3. Identification of animals and registration of holdings:

-

4.4.4. Qualifications of animals and herds:

-

4.4.5. Rules on the movement of animals:

-

4.4.6. Tests used and sampling schemes:

1. IFT-test - direct immune-fluorescent test for detecting the presence of the rabies virus;
2. ELISA - immune-enzyme test for proving the presence of antibodies after vaccination and for typing virus isolates;
3. Test for identifying the tetracycline marker.

The strategy of monitoring (surveillance) involves:

- the reception of vaccination baits by foxes by testing the presence of tetracycline in their bone marrow;
- the presence of rabies virus antibodies in blood samples taken from vaccinated foxes.

The letters accompanying all samples to the National Reference Laboratory must specify as follow:

-the species;

-the age of the animal (juvenile/adult);

-the origin (location) of the samples

4.4.7. Vaccines used and vaccination schemes:

In relation to the scientific opinion of Bulgarian Reference Laboratory for Rabies in Sofia the vaccination strains **SAD B19** and **SAD P5/88** are considered as more appropriate for use in Bulgaria.

The distribution of vaccine will be carried out by planes, twice per year (spring and autumn), dose – 20 vaccine bites on 1 km^2.

4.4.8. Information and assessment on bio-security measures management and infrastructure in place in the holdings involved:

-

4.4.9. Measures in case of a positive result:

Ordinance No. 23 of 17.05.2002 on prophylaxis and control of rabies in animals:

- notify the disease;
- together with the local bodies of Ministry of Health (Regional Inspectorate for Control and Protection of Public Health = RICPPH) perform epizoological and epidemiological inquiry;
- order for killing of the sick animal(s) concerned;
- take sample material for laboratory testing;
- order for destruction /disposal/ together with their hides and skins of all carcasses of the animals killed or dead due to rabies, which must be done in rendering plant or by burial;
- order for carrying out mandatory /compulsory/ vaccination against rabies of all dogs, cats and domestic animals going to pasture in the settlement affected or in part of it;
- impose a ban on movement of animals referred to in Item 7 to other settlements;
- together with the RICPPH inform through the mass media the public about the case(s) of rabies that have occurred.
- impose a ban on movements of rabies susceptible animals from the settlement affected to any other settlement;
- these restrictive measures may be ceased at least 30 days after the last rabies case confirmed;
- the local body of the National Forestry Administration together with the local units of the Union of Hunters and Anglers in Bulgaria shall organise shooting of stray dogs and wild carnivorous animals found in areas around the settlement affected.

4.4.10. Compensation scheme for owners of slaughtered and killed animals:

-

4.4.11. Control on the implementation of the programme and reporting:

1. Daily control and presence of official veterinarian (during the whole working day) during the application of vaccine bites and filling of protocols for the work done during the day (conditions for transport and storage of vaccines, number of flights, number of bites distributed).
2. The daily information is presented to the HQ at the BFSA and is generalized by Animal Health and Welfare Directorate – the necessary reports are prepared.

5. General description of the costs and benefits ([3]):

The funds that will be needed for the implementation of this Programme could be presented as follows (2013):

1. Procurement of vaccine

2 662 000 *pieces* of vaccination baits – 1 331 000 Euro

2. Storage of vaccine at -20ºC, transportation of vaccine from the central warehouse to the places of loading it on helicopters and spreading the

vaccination baits by helicopters or airplanes – 931 700 EUR per year.
3. Testing 194 448 Euro

6. **Data on the epidemiological evolution during the last five years** ([1])
Please see the attached Table 1 and Table 2.

6.2.1 *Stratified data on surveillance and laboratory tests*

Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2004 Disease ([a]): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region ([b])	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])
Sofia stolitsa					6	-
Varna					2	-
Veliko Turnovo					5	3
Vidin					2	2
Vratsa					3	-
Gabrovo					1	-
Dobrich					6	4
Lovech					1	-
Montana					1	-
Pleven					4	2
Razgrad					2	-
Ruse					5	-
Silistra					-	-
Targovishte					2	-
Shumen					5	-
Blagoevgrad					3	-
Burgas					-	-
Kurdjali					1	-
Kyustendil					-	-
Pazardzhik					1	-
Pernik					-	-
Plovdiv					1	-
Sliven					2	-
Smolyan					-	-

Sofia					9	-
Stara Zagora					1	-
Haskovo					3	-
Yambol					-	-
Total					**66**	**11**

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Number of samples tested.
И Number of positive samples.

Stratified data on surveillance and laboratory tests

Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2005 Disease (a): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region (b)	Number of samples tested (c)	Nu

Sofia stolitsa								
Varna								
Veliko Turnovo								
Vidin								
Vratsa								
Gabrovo								
Dobrich								
Lovech								
Montana								
Pleven								
Razgrad								
Ruse								
Silistra								
Targovishte								
Shumen								
Blagoevgrad								
Burgas								
Kurdjali								
Kyustendil								
Pazardzhik								
Pernik						2	-		Plov
Sliven								
Smolyan								
Sofia								
Stara Zagora								
Haskovo								

Sofia stolitsa					12	-		
	tested (c)		tested (c)		tested (c)	samples (a)		
Yambol					1	-		

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.
(c) Number of samples tested.
И Number of positive samples.

Stratified data on surveillance and laboratory tests

Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2006 Disease (a): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

	Serological tests		Microbiological or virological tests		Other tests	
Varna					4	2
Veliko Turnovo					-	-
Vidin					4	-
Vratsa					3	-
Gabrovo					-	-
Dobrich					7	5
Lovech					21	-
Montana					4	1
Pleven					2	-
Razgrad					1	1
Ruse					4	-
Silistra					-	-
Targovishte					3	-
Shumen					2	1
Blagoevgrad					35	-
Burgas					-	-
Kurdjali					-	-
Kyustendil					3	-
Pazardzhik					-	-
Pernik					1	-
Plovdiv					6	-
Sliven					1	-
Smolyan					14	-

Sofia					42	-
Stara Zagora					-	-
Haskovo					1	-
Yambol					-	-
Total					**170**	**10**

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.
(c) Number of samples tested.
И Number of positive samples.

Stratified data on surveillance and laboratory tests

Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2007 Disease ([a]): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region ([b])	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])
Sofia stolitsa					11	-
Varna					4	1
Veliko Turnovo					2	1
Vidin					7	-
Vratsa					5	3
Gabrovo					1	-
Dobrich					4	1
Lovech					3	-
Montana					16	-
Pleven					3	-
Razgrad					9	3
Ruse					-	-
Silistra					17	10
Targovishte					3	1
Shumen					4	4
Blagoevgrad					7	-
Burgas					-	-
Kurdjali					-	-
Kyustendil					4	-
Pazardzhik					1	-
Pernik					3	-

Plovdiv					6	-
Sliven					1	-
Smolyan					11	-
Sofia					69	16
Stara Zagora					2	-
Haskovo					-	-
Yambol					-	-
Total					**193**	**40**

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.
(c) Number of samples tested.
И Number of positive samples.

Stratified data on surveillance and laboratory tests Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2008 Disease ([a]): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region ([b])	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])
Sofia stolitsa					20	1
Varna					11	5
Veliko Turnovo					2	2
Vidin					5	3
Vratsa					3	-
Gabrovo					2	-
Dobrich					4	-
Lovech					2	-
Montana					4	-
Pleven					4	1
Razgrad					11	5
Ruse					1	1
Silistra					5	2
Targovishte					3	-
Shumen					8	4
Blagoevgrad					-	-
Burgas					1	-
Kurdjali					-	-
Kyustendil					14	3

Pazardzhik					2	-
Pernik					5	-
Plovdiv					1	-
Sliven					-	-
Smolyan					4	-
Sofia					10	1
Stara Zagora					4	-
Haskovo					1	-
Yambol					1	-
Total					**128**	**28**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the approved eradication programme of the Member State.
([c]) Number of samples tested.

Year: 2009 Disease ([a]): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region ([b])	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ([c])	Number of positive samples ([d])	Number of samples tested ([c])	Number of positive samples ([d])	Number of negative samples tested ([c]) with FAT	Number of positive samples([d]) tested ([c]) with FAT
Sofia stolitsa					17	1
Varna					14	
Veliko Turnovo					12	
Vidin					28	5
Vratsa					8	2
Gabrovo					32	
Dobrich					33	
Lovech					14	
Montana					15	8
Pleven					9	1
Razgrad					23	5
Ruse					30	
Silistra					24	2
Targovishte					14	4
Shumen					36	17
Blagoevgrad					2	
Burgas					2	4
Kurdjali						
Kyustendil					37	5

Pazardzhik					8	
Pernik					2	2
Plovdiv					22	
Sliven					4	
Smolyan					13	
Sofia ditrict					47	3
Stara Zagora					1	
Haskovo						
Yambol					3	
Total samples tested by FAT: **509**					**450**	**59**

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.

Year: 2010 Disease (a): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region (b)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (c)	Number of positive samples (d)	Number of samples tested (c)	Number of positive samples (d)	Number of negative samples tested (c) with FAT	Number of positive samples(d) tested (c) with FAT
1. Varna					4	
2. Burgas					12	
3. Silistra					19	
4. Razgrad					1	
5. Shumen					15	1
6. Dobrich					4	
7. Ruse					1	1
8. Pleven					14	
9. Vratsa					-	3
10. Montana					7	
11. Vidin					4	
12. Gabrovo					16	
13 Lovech					4	

14. Veliko Tarnovo					3	1
15. Targovishte					9	
16. Kyustendil					28	
17. Pernik					4	
18. Sofia town					5	
19. Sofia region					8	
Total samples tested by FAT: **509**					**158**	**6**

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.

Year: 2011 Disease (a): Rabies Animal species/category: domestic and wild animals
Description of the used serological tests:
Description of the used microbiological or virological tests:
Description of the other used tests: FAT

Region (b)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (c)	Number of positive samples (d)	Number of samples tested (c)	Number of positive samples (d)	Number of negative samples tested (c) with FAT	Number of positive samples(d) tested (c) with FAT
Vidin					59	-
Montana					7	-
Vratsa					38	-
'Sofia-town' region					7	-
'Sofia-district' region					21	-
Pernik					21	-
Kyustendil					40	1
Lovech					68	-
Pleven					101	-
Gabrovo					45	-
Veliko Tarnovo					12	-
Ruse					29	-
Shumen					99	-
Razgrad					78	-
Targovishte					67	-
Varna					64	-
Dobrich					45	-
Silistra					14	-

Burgas					1	-
Total samples tested by FAT: **816**					816	1

(a) Disease and animal species if necessary.
() Region as defined in the approved eradication programme of the Member State.

И Number of positive samples.

6.3. *Data on infection (one table per year and per disease/species)*

Year: **2004** Disease (a): **Rabies** Animal species: **Domestic and wild animals**

Region (b)	Number of herds infected (c)	Number of animals infected
Vidin		2
Vratsa		1
Veliko Tarnovo		2
Dobrich		4
Pleven		1
Total		**10**

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds or flocks or holdings as appropriate.

Data on infection (one table per year and per disease/species)

Year: **2005** Disease (a): **Rabies** Animal species: **Domestic and wild animals**

Region (b)	Number of herds infected (c)	Number of animals infected
Vidin		1
Veliko Tarnovo		2
Dobrich		3
Montana		3
Silistra		2
Total		**11**

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds or flocks or holdings as appropriate.

Data on infection (one table per year and per disease/species)

Year: **2006** Disease ([a]): **Rabies** Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Varna		2
Dobrich		4
Montana		1
Razgrad		1
Shumen		1
Total		**9**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
([c]) Herds or flocks or holdings as appropriate.

Data on infection (one table per year and per disease/species)

Year: **2007** Disease ([a]): **Rabies** Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Varna		1
Vratsa		3
Veliko Tarnovo		1
Dobrich		1
Razgrad		3
Silistra		10
Sofia-town		5
Sofia-district		11
Targovishte		1
Shumen		4
Total		**40**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
(c) Herds or flocks or holdings as appropriate.
(d) *Data on infection (one table per year and per disease/species)*

Year: **2008 (incl. July)** Disease ([a]): **Rabies** Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Varna		5
Vidin		2
Veliko Tarnovo		2
Kyustendil		3
Pleven		1
Razgrad		5
Ruse		1
Silistra		2
Sofia-district		1
Shumen		4
Total		**26**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
([c]) Herds or flocks or holdings as appropriate.

Year: **2009 (incl. July)** Disease ([a]): **Rabies**Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Sofia-town		1
Vidin		5
Vratsa		2
Montana		7
Kyustendil		6
Pleven		1
Razgrad		5
Silistra		2
Targovishe		4
Shumen		17
Burgas		4
Plovdiv		2
Sofia district		3
Total		**59**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
([c]) Herds or flocks or holdings as appropriate.

Year: **2010** Disease ([a]): **Rabies**Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Vratsa		3

Veliko Turnovo		1
Ruse		1
Shumen		1
Total		**6**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
([c]) Herds or flocks or holdings as appropriate.

Year: **2011** Disease ([a]): **Rabies**Animal species: **Domestic and wild animals**

Region ([b])	Number of herds infected ([c])	Number of animals infected
Kyustendil		1
Total		**1**

([a]) Disease and animal species if necessary.
([b]) Region as defined in the eradication programme of the Member State.
([c]) Herds or flocks or holdings as appropriate.

6.6. Data *on wildlife* ([2])

6.6.1. Estimation of wildlife population Year:

2011

Method of estimation ([a])

Regions ([b])	Estimation of the population of the concerned wild species			
	Species: **Wolves**	Species: **Jackals**	Species: **Foxes**	Species: **Stray dogs**
Bulgaria	2074	39 365	43 912	41 352
Total	**2074**	**39 365**	**43 912**	**41 352**

The hunting bag is considered to be the standard method of estimation. If other method is used, explain. Region as defined in the approved eradication programme of the Member State.

7.1.1 *Targets related to testing (one table for each year of implementation)* 1. Targets on diagnostic tests

Disease ([a]): Rabies Animal species: foxes

Region ([b])	Type of the test ([c])	Target population ([d])	Type of sample ([e])	Objective ([f])	Number of planned tests
Bulgaria	Test: Immuno-fluorescent test	Foxes/ wolfs/ jackals	brain	Monitoring of campaigns, coco	**2945**
	Test: Immuno-fluorescent	Suspect animals of all species	brain	Monitoring	**All found suspect animals**
	Test:Virus neutralisation test		serum	Control of vaccination	**50**
	Test:Immune-enzyme (ELISA) test		serum	Control of vaccination	**2945**
	Hystological test for idenidentification of tetracycline identification of tetracycline				
	identification of tetracycline		teeth, bone	Control of vaccination	**2945**
Total					**8885**

The table indicates the exact number of foxes (wolfs and jackals) which shall be tested under the programme according to the rule: 4 foxes per 100 km2. Moreover predators that must be tested under the programme, all suspect animals of all species (suspect symptoms, found dead, road kills etc.) from the whole territory of the country (areas where the vaccination is carrying out and those where the oral vaccination is not carrying out) shall be tested by IF test for the presence of Rabies infection.

(*) Disease and species if necessary.
() Region as defined in the approved eradication programme of the Member State.
[c) Description of the test (for instance SN-test, AB-Elisa, RBT, etc.).
f) Specification of the targeted species and the categories of targeted animals (for instance sex, age, breeding animal, slaughter animal, etc.).
(e) Description of the sample (for instance blood, serum, milk, etc.).
(f) Description of the objective (for instance qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, seroconversion, control on deleted vaccines, testing of vaccine, control of vaccination, etc.).

Description of serological tests to be used

	Analysis Type	Disease tested	Technological time (in hours)	Laboratory capacity (number of samples tested per the technological time specified)
1	Virus neutralisation reaction (micro) in cell cultures	Rabies in domestic animals	72 - 96	40
	Virus neutralisation in mice		288	10
2	Isolation and identification of virus in cell cultures	Rabies	120	30
	Biological sample in mice		504	10

3	Direct immune-fluorescence of printing preparations of brain and cell cultures	Rabies	8 72	50
4	ELISA test	Rabies antibodies	7	90

6-6-3- Data on vaccination or treatment of wildlife

Year: **2009-2013** Disease ([a]): **Rabies**

Description of the used vaccination, therapeutic or other scheme:

Animal species:

Region ([b])	Square km	Vaccination or treatment programme		
		Number of doses of vaccine or treatment to be administered	Number of campaigns	Total number of doses of vaccine or treatment administered
Bulgaria (2013)	66 550	2 662 000	2 per year	
Total				

([a]) Disease and species if necessary. ([b]) Region as defined in the approved eradication programme of the Member State.

FOXES

7.3. *Targets on vaccination or treatment*

7.3.1. Targets on vaccination or treatment ([1]): The first vaccination round (in the Spring of 2013) is intended to put the start of the implementation of the Programme and to gain the necessary experience by the veterinary services on the spot and by the other institutions and organizations, which are to take part in its implementation. The Programme is to be performed on the whole territory of the whole North Bulgaria (to the north of the Stara Planina Mountain and on the territory of 5 districts of South-West Bulgaria – Sofia town, Sofia district, AD of Pernik, AD of Kyustendil, Blagoevgrad and 1 district of South-East Bulgaria – Burgas.

Vaccine(s) and vaccination scheme or treatment and treatment scheme ([2]):

7.3.2. Targets on vaccination or treatment ([1]) of

wildlife

Disease ([a]): RABIES Animal species:

FOXES

Region ([b])	Square km	Targets on the **vaccination or treatment programme**		
		Number of doses of vaccine or **treatments expected to be administered in the**	**Expected number of campaigns**	**Total number of** doses of vaccine or treatment expected to be administered
Bulgaria	66 550	As per the description in Art. 3	2 per year	2 662 000
Total	**66 550**		**2 per year**	**2 662 000**

(") Disease and **species if necessary.**
([b]) Region as defined in the approved eradication programme **of the** Member State

8. Detailed analysis of the cost of the programme ([1])

Costs related to	Specification	Number of units	Unitary cost in euro	Total amount in euro	Community funding requested
1. Testing					
1.1. Cost of the analysis	Test: Immuno-fluorescent test	2945	23	67 735	Yes
	Test: Virus neutralisation test	50	31	1 550	
	Test:Immune-enzyme (ELISA) test	2945	23	67 735	Yes
	Hystological test for identification of	2945	14,5	42 703	Yes
1.2. Cost of sampling		2945	5	14 725	Yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment		2 662 000	0.5	1 331 000	Yes
2.2. Distribution costs					
Distribution of baits by helicopter		2 662 000	0,35	931 700	Yes
2.3. Administering costs				5000	No
2.4. Control costs					
Referring to the control of intake by foxes					

([1]) Fixed costs should not be included. All amounts are VAT excluded.

3. Slaughter and destruction					
3.1. Compensation of animals					
3.2. Transport costs					
3.3. Destruction costs					
3.4. Loss in case of slaughtering					
3.5. Costs from treatment of products (milk, eggs, hatching eggs, etc)					
4. Cleaning and disinfection		100	50	5 000	No
5. **Salaries** (staff contracted for the programme only)				30 000	Yes
6. Consumables and specific **equipment**					
7. Other costs					
Storage of vaccine at -20°C					
Printed materials for publ. awareness		20,000	0,25	5,000	No
				Total	**2 497 153**

TABLE 1

CASES OF RABIES IDENTIFIED IN REPUBLIC OF BULGARIA IN THE YEARS BETWEEN 1992 AND 2011

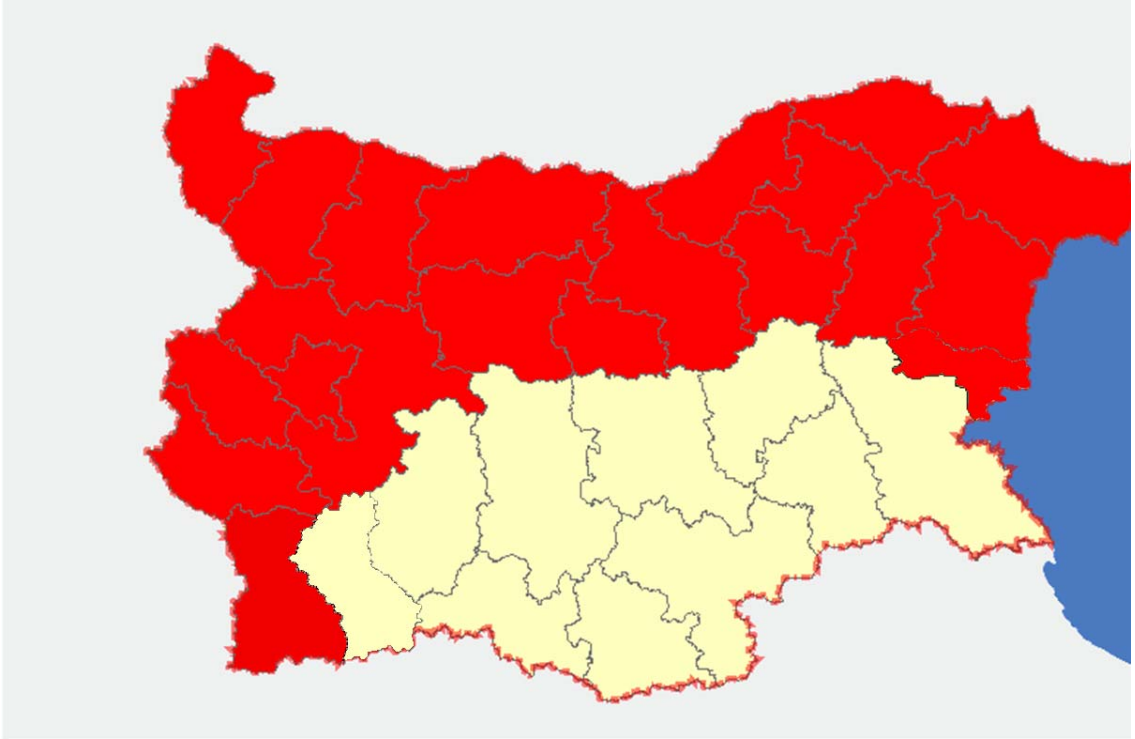
Administrative District /County/ of:	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Blagoevgrad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burgas	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-
Varna	-	-	-	-	-	-	-	-	-	3	-	-	-	-	2	1	5	-	-	-
Vidin	1	2	1	-	2	1	1	-	-	8	1	8	2	1	-	-	8	5	-	-
Vratsa	5	7	2	-	1	1	4	5	1	1	2	1	1	-	-	3	1	2	3	-
Veliko Tarnovo	-	1	1	-	2	-	1	1	-	3	-	4	2	2	-	1	2	-	1	-
Gabrovo	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dobrich	-	1	1	1	4	6	-	-	1	4	-	-	4	3	4	1	-	-	-	-
Kyustendil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	-	1
Kardzhali	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovech	-	7	2	2	1	-	-	1	-	1	2	2	-	-	-	-	1	-	-	-
Montana	9	11	1	-	2	-	1	2	1	4	-	-	-	3	1	-	3	8	-	-
Pazardzhik	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pernik	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-
Pleven	5	-	2	3	4	1	1	2	16	17	3	-	1	-	-	-	2	1	-	-
Plovdiv	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Razgrad	-	3	-	2	3	-	-	-	-	1	-	-	-	-	1	3	5	5	-	-
Ruse	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-
Silistra	-	-	1	1	-	2	-	-	1	-	-	-	-	2	-	10	2	2	-	-
Sliven	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smolyan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sofia-town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	1	-	-
Sofia-district	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	4	3	-	-
Stara Zagora	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Targovishte	-	7	-	1	2	4	1	-	-	12	4	2	-	-	-	1	-	4	-	-
Haskovo	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shumen	-	-	-	-	-	-	-	3	3	7	3	-	-	-	1	4	10	17	1	-
Yambol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL:	23	42	14	12	23	16	9	14	23	61	15	17	10	11	9	40	49	59	6	1

TYPES AND NUMBERS OF RABIES DISEASED ANIMALS (1988 – 2010) **TABLE 2**

Year	Total	Domestic Animals /livestock/	Dogs	Cats	Foxes	Jackals	Other species
1988	84	39	3	-	42	-	-
1989	78	38	2	-	37	-	1
1990	35	11	6	-	18	-	-
1991	20	9	3	-	7	-	1
1992	23	16	-	-	7	-	-
1993	42	24	4	-	12	-	2
1994	14	10	-	-	4	-	-
1995	12	4	6	-	2	-	-
1996	30	10	3	2	15	-	-
1997	16	1	5	-	8	2	-
1998	9	4	1	1	2	1	-
1999	25	11	3	-	11	-	-
2000	23	11	4	1	4	3	-
2001	62	7	7	4	38	4	2
2002	16	-	-	-	3	1	12
2003	17	3	2	-	10	-	2
2004	11	5	-	1	4	-	1
2005	12	2	1	2	5	1	1
2006	9	1	1	5	2	-	-
2007	40	-	7	7	24	2	-
2008	49	-	6	4	33	6	-
2009	59	4	3	3	47	2	-
2010	6	-	1	3	2	-	-
2011	1	-	-	-	1	-	-
Total:	**693**	**210**	**68**	**33**	**338**	**22**	**22**

Seasonal Spread of Rabies (1996-2007) **TABLE 3**

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Rabies cases	27	37	48	56	28	27	22	24	18	27	23	27



Map No.1 - regions in red color where the vaccination against rabies will be performed