



EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL
Unit 04 - Veterinary Control Programmes

SANCO/10402/2009

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

Eradication programme of Rabies

Approved* for 2010 by Commission Decision 2009/883/EC

Bulgaria

* in accordance with Council Decision 2009/470/EC

Programme for Control and Eradication of Rabies in Bulgaria

(according provisions of art. 24(3) of Council Decision 90/424/EEC and Commission Decision 2004/450)

1. Identification of the programme

Member State: Republic of Bulgaria

Disease(s) (1): Rabies

Year of implementation: 01.01.2010 – 31.12.2010

Reference of this document: The National Veterinary Service (NVS) of Republic of Bulgaria

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/EEC and Directive 97/12 of European Union.

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Date sent to the Commission

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 1988 up to the end of 2006 is 516, of which 493 cases (95.5%) are in North Bulgaria (to the north of Stara Planina mountain chain that divides the country into two) and only 23 (4.5%) are the cases identified in South Bulgaria, not a single case of rabies being identified in South Bulgaria during all the previous 8 years (see Table 1).

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 578 animals found sick of rabies within the time-period 1988 – 2007, 290 are wild animals (50.17%), 255 (87.93%) of which being foxes (see Table 2).

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 (see Table 3). 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. Alongside the whole southern border line of Bulgaria with Turkey and Greece there is still an existing border-fencing facility (netted fence), which plays the role of a barrier preventing the passage of animals. The eastern areas of the country are also bordered by a natural geographic barrier, the Black Sea. To the north Bulgaria borders with Romania through another natural water frontier, the river Danube, but there is also a land border of 130 km length that could enable passage of animals. To the west, Bulgaria's land borders with Yugoslavia and Macedonia 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 578 animals found sick within the aforementioned time-period (1988-2007), 206 (35.64%) 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 (see Table 2).

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 the technical meeting that took place in Brussels on 21 of August, because of the remarks made and saying that the distance between the outbreaks in the districts of Sofia-town and Sofia-district is rather small and near to the borders of vaccination zone (it turned out that this distance was between 5 and 35 km), the vaccination area has been reassessed. It was decided that the administrative district of Pernik and the municipality of Treklyano (of administrative district of Kyustendil) will be included into the area subject to vaccination. Thus, the nearest distance between a rabies outbreak, i.e. that in the village of Dragomir (Sofia-district), and a border of vaccination area will be 47 km, while the other outbreaks of Sofia-district are 75-80 km away, the distance between the outbreak located in the Sofia-town district and the border of vaccination area being 65 km.

During 2008 the epidemiological situation in the Republic of Bulgaria concerning rabies is not favourable. As by 31 March 2008 there are 3 confirmed positive rabies cases in Kyustendil region. During 2007 and 2008 the confirmed rabies cases in Sofia-district, Sofia-town and Kyustendil gave the prerequisite for spread of the disease in the territory of the all country.

Description of the submitted programme (7):

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 and administrative district of Kyustendil. This vaccination is to be performed that territory for a period of at least 5 years, twice per year in spring and autumn (April-May and September-October).

The total size of the afore mentioned territory where vaccination will be provided is 61 882 km² and it comprises territories located within 18 administrative districts (AD), as follows: ADs of Vidin (code No. 05, area of 3 033 km², number of settlements - 141), Montana (code No. 12, area of 3 635 km², number of settlements - 130), Vratsa (code No. 06, area of - 3620 km², number of settlements - 123), Pleven (code No. 15, area of - 4330 km², number of settlements - 133), Lovech (code No. 11, area of - 4129 km², number of settlements - 114), Gabrovo (code No. 07, area of - 2023 km², number of settlements - 309), Veliko Tarnovo (code No. 04, area of - 4662 km², number of settlements - 336), Ruse (code No. 18, area of - 2863 km², number of settlements - 83), Targovishte (code No. 25, area of - 2716 km², number of settlements - 197), Razgrad (code No. 17, area of - 2637 km², number of settlements - 102), Shumen (code No. 27, area of - 3390 km², number of settlements - 151), Silistra (code No. 19, area

of - 2846 km², number of settlements - 118), Dobrich (code No. 08, area of - 4720 km², number of settlements - 217), Varna (code No. 03, area of - 3820 km², number of settlements - 158), Sofia town (code №22, area of - 1345 km², number of settlements - 58), Sogia district (code №23, area of - 7062 km², number of settlements - 277), Pernik (code 14, area of - 2027 km², number of settlements - 172) and Kyustendil (code No. 10, area of 3084 km² and number of settlements - 182).

The first vaccination is to be performed in the spring of 2009 and will cover the whole territory of North Bulgaria (14 administrative districts), the administrative district of Sofia-town, Sofia-district, Pernik and Kyustendil, the total area being 61 882 km². On the territory of these 18 ADs there are 2 981 settlements (villages and towns) located on an area of 6 845 km². Thus, the area left to be covered by oral vaccination is 55 037 km².

The second vaccination is to be performed in the autumn of 2009 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 2009

First vaccination campaign: - the dose should again be 20 pieces of vaccination baits per 1 km². The territory for vaccination shall be the whole North Bulgaria of the following regions of: Varna (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. 19); Dobrich (No. 08); Varna (No. 03) and on the territory of 4 districts of South Bulgaria - Sofia town, Sofia district, Pernik (no. 14) and Kyustendil (No. 10). The total area is 61 882 km². The number of settlements is 2 981 of total area of 6 845 km², which leaves area for vaccination of 55 037 km². The number of baits needed - 1 100 740 pieces.

Year 2009

Second vaccination campaign: - the dose should be again 20 pieces of vaccination baits per 1 km². The number of baits needed will again be 1 100 740 pieces.

The total number of unit baits needed for the whole year 2009 will be 2 201 480 pieces of vaccination baits.

This oral vaccination must be performed by applying strain vaccine that is derivative of the SAD strain and that is stable to high ambient temperatures, since the vaccination periods (April-May and September-October) the temperatures in Bulgaria are relatively high.

The phylogenetic analysis provides evidence for the movement of rabies-infected hosts across the borders with the countries of the former Yugoslavia. 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 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 Bulletin 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.

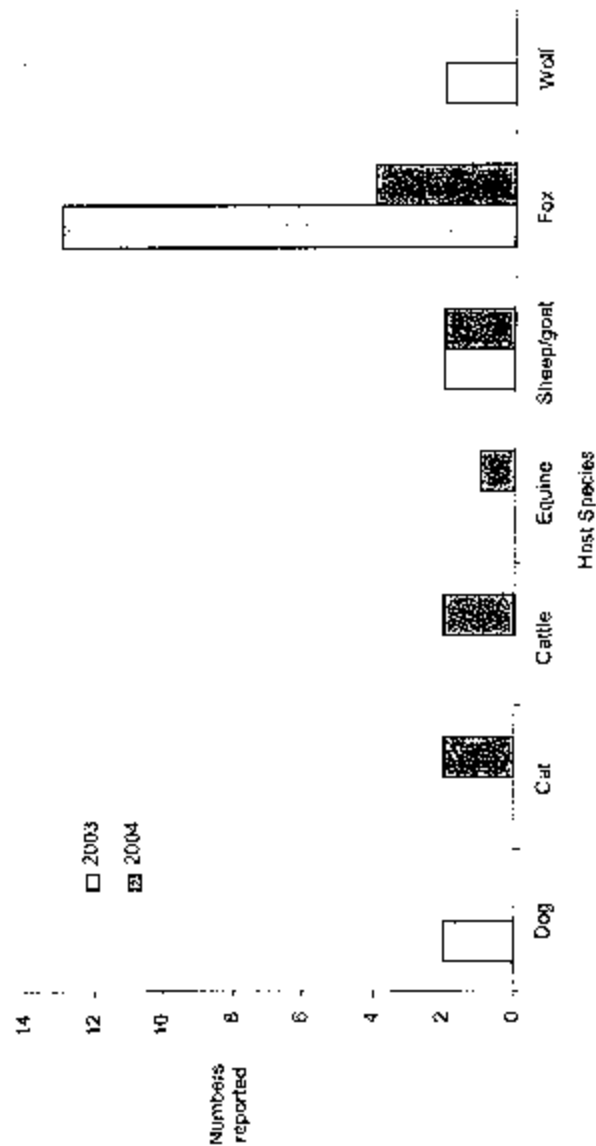


Figure 2a.

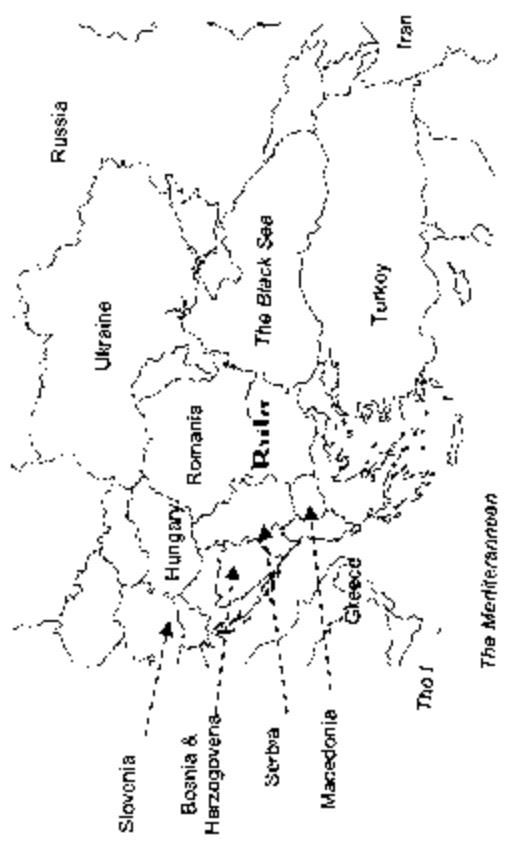


Figure 2b.

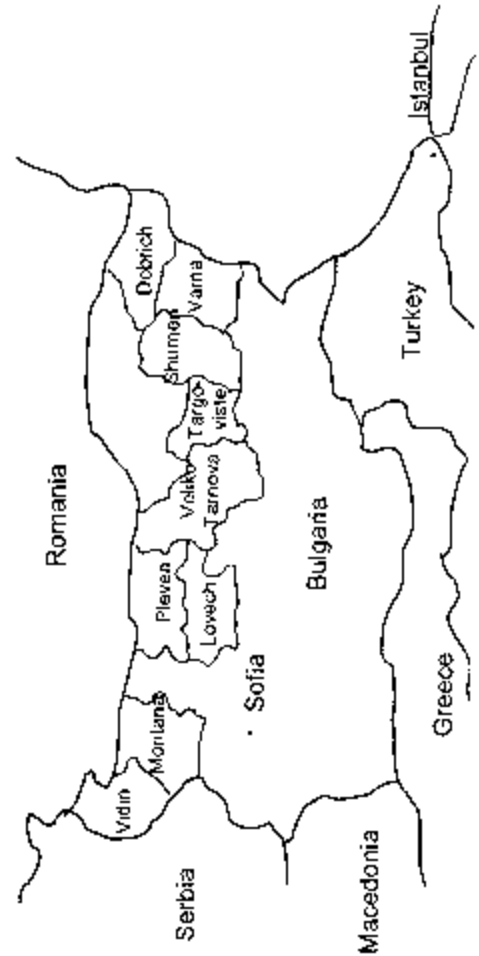
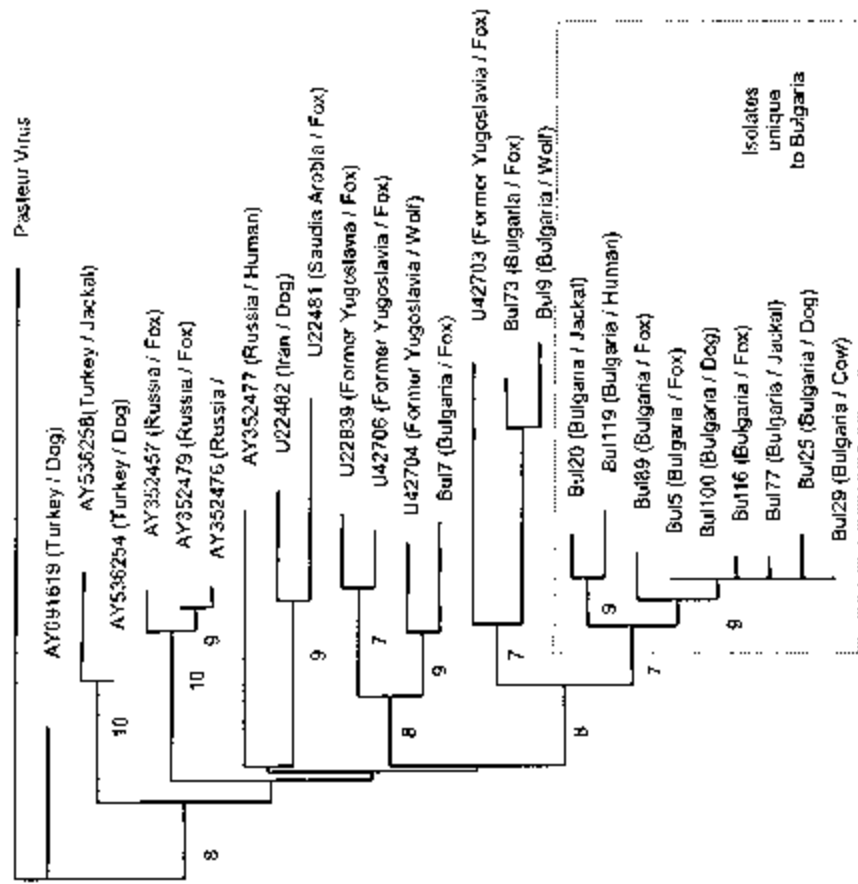


Figure 3.



0.01 substitutions / site

Procedure implemented for administering the oral vaccine

Vaccination baits are to be distributed by helicopter or airplane.

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

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. RPHIT-test for detection of presence of antibodies against the rabies virus;
2. IFI-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. IMAGF-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 4 districts of South Bulgaria - Sofia town, Sofia district, Pernik and Kyustendil.
- 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) of total area of 3,900 km², and in the strip alongside the border between Bulgaria and Yugoslavia (the North-west part of the country) of total area of 5,250 km². In such case the total area to be subjected to further vaccination would be 9,150 km².

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, culling of herds and animals, vaccination ...) and the main results (prevalence, 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.

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: 2010

Last year: 2014

- Control - Yes
- Testing - Yes
- Slaughter of positive animals
- Killing of positive animals – Yes
- Vaccination - Yes
- Treatment
- Disposal of products
- Monitoring or surveillance - Yes
- Other measures (specify):

- Eradication - Yes
- Testing - Yes
- Slaughter of positive animals
- Killing of positive animals – Yes
- 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 (*):

The implementation of the whole vaccination Programme on national level is to be steered by the National Veterinary Service of Bulgaria at the Ministry of Agriculture and Forestry and in particular by its 'Animal Health' Directorate at the NVS' Directorate General. 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 Veterinary Services (RV/Ss) in their quality of district units within the organisation structure of the NVS 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 National Veterinary Service 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 (*):
 As per the description in Point 3 above and the attached Map No. 1.

4.4. Measures implemented under the programme (*):

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 40 000 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. IFI-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.

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 hits on 1 km².

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 = RICPH) perform epizootiological and epidemiological inquiry;
- order for killing of the sick animal(s) executed;

- 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 RCHPH inform through the mass media the public about the cases(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 NVS and is generalized by Animal Health Directorate – the necessary reports are prepared.

5. General description of the costs and benefits (7):

The funds that will be needed for the implementation of this Programme could be presented as follows (2010):

1. Procurement of vaccine
 2. 201 480 pieces of vaccination baits - 1 100 740 Euro
 3. Storage of vaccine at -20°C: - 3,000 EUR per year
 4. Transportation of vaccine from the central warehouse to the places of loading it on helicopters or of supplying it to hunters: - 5,000 EUR per year
 5. Testing - 4,500 Euro
 6. Bullets needed for shooting the foxes that are to be laboratory tested: - 5,000 EUR per year;
 7. Geographic maps (5,000) for hunters to spread baits manually: - 15,000 EUR;
 8. Printed materials and other means to ensure public awareness: - 5,000 EUR per year;
- 6. Data on the epidemiological evolution during the last five years (7)**
Please see the attached Table 1 and Table 2.

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

Year: 2004
 Disease (*): Rabies
 Description of the used serological tests:
 Description of the used microbiological or virological tests:
 Description of the other used tests: FAT

Region (*)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (†)	Number of positive samples (‡)	Number of samples tested (†)	Number of positive samples (‡)	Number of samples tested (†)	Number of positive samples (‡)
Sofia stolitisa						
Varna					6	-
Veliko Turnovo					2	-
Vidin					5	3
Vratsa					2	2
Gabrovo					3	-
Dobrich					1	-
Lovech					6	4
Montana					1	-
Pleven					1	-
Razgrad					4	2
Ruse					2	-
Silistra					5	-
Targovishte					-	-
Shumen					2	-
Blagoevgrad					5	-
Burgas					3	-
Kurdjali					-	-
Kyustendil					1	-
Pazardzhik					-	-
Pernik					1	-
Plovdiv					-	-
Sliven					1	-
Smolyan					2	-
Sofia					-	-
Stara Zagora					9	-
Haskovo					1	-
Yambol					3	-
Total					66	11

(*) Disease and/or animal species, if necessary.
 (†) Region as defined in the 3-yr period evaluation programme of the HEMOP 5/04.
 (‡) Number of samples tested.

H 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 (°): Rabies

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests: FAT

Animal species/category: domestic and wild animals

Region (°)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (°)	Number of positive samples (°)	Number of samples tested (°)	Number of positive samples (°)	Number of samples tested (°)	Number of positive samples (°)
Sofia stoliitsa					8	-
Varna					-	-
Veliko Turnovo					2	2
Vidin					6	1
Vratsa					1	-
Gabrovo					-	-
Dobrich					9	3
Lovech					24	-
Montana					6	4
Pleven					1	-
Razgrad					-	-
Ruse					2	-
Silistra					4	2
Targovishte					4	-
Shumen					2	-
Blagoevgrad					6	-
Burgas					1	-
Kurdjali					-	-
Kyustendil					1	-
Pazardzhik					11	-
Pernik					2	-
Plodiv					17	-
Sliven					-	-
Smolyan					6	-
Sofia					7	-

Stara Zagora					1		
Haskovo					1		
Yambol					1		
Total					123		12

1) Diseases and animal species if necessary.
 2) Region as defined in the approved eradication programme of the Member State.
 3) Number of samples tested.
 4) 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 (1): 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 (1)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (2)	Number of positive samples (3)	Number of samples tested (4)	Number of positive samples (5)	Number of samples tested (6)	Number of positive samples (7)
Sofia stolița					12	
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

1) Disease and animal species, if necessary.

2) Region as defined in the approved regulation on organization of the Member State.

3) Number of samples tested.

4) Number of positive samples.

Simplified data on surveillance and laboratory tests

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

Year: 2007

Disease (1): 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 (2)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (3)	Number of positive samples (4)	Number of samples tested (3)	Number of positive samples (4)	Number of samples tested (3)	Number of positive samples (4)
Sofia stolitza					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

1) Cattle and animal species if necessary.
 2) Regions as defined in the approved eradication programme of the Member State.
 3) Number of samples tested.
 4) Number of positive samples.

Year 2008

Disease (1): 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 (1)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested (1)	Number of positive samples (2)	Number of samples tested (3)	Number of positive samples (4)	Number of samples tested (5)	Number of positive samples (6)
Sofia stolitisa					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

(1) Disease and/or animal species if necessary.

(2) Region as defined in the approved HADOPON programme of the Member State.

(3) Number of samples tested.

4) Number of positive samples

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

Year 2004	Disease (1): Rabies	Animal species: Domestic and wild animals	Number of animals infected (2)
	Region (3)		
	Vidin		2
	Vratsa		1
	Veliko Tarnovo		2
	Dobrich		4
	Pliven		1
	Total		10

(1) Disease and animal species if necessary
 (2) Region as defined in the indicator programme of the Member State
 (3) Herds or flocks of holdings as appropriate

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

Year 2005	Disease (1): Rabies	Animal species: Domestic and wild animals	Number of animals infected
	Region (2)		
	Vidin		1
	Veliko Tarnovo		2
	Dobrich		3
	Montana		3
	Silistra		2
	Total		11

(1) Disease and animal species if necessary
 (2) Region as defined in the indicator programme of the Member State
 (3) Herds or flocks of holdings as appropriate

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

Year 2015	Disease (1): Rabies	Animal species: Domestic and wild animals	Number of animals infected
	Region (2)	Number of heads infected (3)	
	Varna		2
	Dobrich		4
	Montana		1
	Razgrad		1
	Shumen		1
	Total		9

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

Data on eradication table per year and per disease/species:

Year 2007	Disease (1): Rabies	Animal species: Domestic and wild animals	Number of animals infected
	Region (2)	Number of heads infected (3)	
	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

(1) Disease and animal species if necessary.
 (2) Region as defined in the eradication programme of the Member State.
 (3) Herds or flocks or holdings as appropriate.
 (4) Data on eradication table per year and per disease/species.

Year: 2008 (incl. July)

Disease (1): Rabies

Animal species: Domestic and wild animals

Region (*)	Number of herds infected (1)	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

(*) Disease and animal species, if necessary.
 (1) Region as defined in the eradication programme of the Member State.
 (2) Herds or flocks or holdings as appropriate.

6.6 Data on wildlife (*)

6.6.1. Estimation of wildlife population

Year: 2008

Regions (*)	Method of estimation (2)			Estimation of the population of the concerned wild species	
	Species: Wolves	Species: Jackals	Species: Foxes	Species: Stray dogs (Out of villages and towns)	
Bulgaria	2561	33 401	41 163	22 617	
Total					

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.

Data to provide only if vaccination has been carried out

Data only to provide a case the programme comprises measures as regards wildlife or if the data are epidemiologically relevant for the disease.

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

Disease (*)	Animal species, foxes		Target population (†)	Type of sample (‡)	Objective (¶)	Number of planned tests
	Region (†)	Type of the test (†)				
Bulgaria		Test: Immuno-fluorescent	foxes	brain	Monitoring of	1500
		Test: Virus neutralisation				
		Test: Immune-enzyme		serum	Control of vaccination	100
		Histological test for identification of tetracycline		serum		4400
				teeth, bone		880
				Total		6880

(*) Disease and species if necessary

(†) Region as defined in the approved eradication programme of the Member State

(‡) Description of the test (for instance SN-test, AS-EI-test, RBT, etc.)

(§) Specification of the targeted species and the categories of targeted animals (for instance sex, age, breeding animal, slaughter animal, etc.)

(||) Description of the sample (for instance blood, serum, milk, etc.)

(¶) Description of the objective (for instance qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, control on diluted 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 Virus neutralisation in mice	Rabies in domestic animals	72 - 96	40
2 Isolation and identification of virus in cell cultures Biological sample in mice	Rabies	288 120	10 30
3 Direct immune-fluorescence of printing preparations of brain and cell cultures	Rabies	504 8	10 50
4. ELISA test	Rabies antibodies	72 7	90

6-8-3- Data on vaccination or treatment of wildlife

Year: 2009-2013

Disease (°): Rabies

Animal species: FOXES

Description of the used vaccination, therapeutic or other scheme:

Region (°)	Saitara km	Vaccination or treatment programme	
		Number of doses of vaccine or treatment to be administered	Number of campaigns
Bulgaria (2010)	55,037	2 201 480	2 per year
Total			
(*) Disease and species if necessary. (°) Region as defined in the approved eradication programme of the Member State.			

7.3. Targets on vaccination or treatment

7.3.1. Targets on vaccination or treatment (): The first vaccination round (in the Spring of 2009) 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 Sava Plainina Mountain and on the territory of 4 districts of South Bulgaria - Sofia town, Sofia district, AD of Pernik and AD of Kyustendil with overall duration) of no less than 5 years, in order to ensure eradication of rabies from the whole territory of the whole country.

Vaccine(s) and vaccination scheme or treatment and treatment scheme (°):

7.3.2. Targets on vaccination or treatment (*) of wildlife

Disease (*): **RABIES** Animal species: **FOXES**

Region (*)	Source: km	Targets on the vaccination or treatment programme			Total number of doses of vaccine or treatment expected to be administered
		Number of doses of vaccine or treatments expected to be administered in the campaign	Expected number of campaigns		
Bulgaria	55,037	As per the description in Art. 3	2 per year		2 201 480
Total					

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

Data to provide for bovine brucellosis, ovine and caprine brucellosis (*B. melitensis*), *Brucella abortus*, African swine fever, swine vesicular disease, endemic classical swine fever, rabies, echinococcosis and trichinellosis and agents thereof.

8. Detailed analysis of the cost of the programme ()

Costs related to	Specification	Number of units	Unitary cost in euro	Total amount in euro	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis					
	Test. Immuno-fluorescent test	1500	15	22.500	Yes
	Test. Virus neutralisation test	100	30	3.000	Yes
	Test. Immune-enzyme (ELISA) test	4400	30	132.000	Yes
	Physiological test for identification of tetracycline	4400	20	88.000	Yes
1.2. Cost of sampling		2.000	15	30.000	Yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment		2 201 480	0,5	1 100 740	Yes
2.2. Distribution costs		25	200	5.000	No
Distribution of baits by helicopter				450.000	Yes
2.3. Administering costs				5.000	No
2.4. Control costs		500	15	7.500	Yes
Referring to the control of intake by foxes					

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)	3,000	10	30,000	Yes		
6. Consumables and specific equipment						
7. Other costs						
Storage of vaccine at -20°C	2	1,500	3,000	No		
Geographic maps for hunters	5,000	3	15,000	No		
Printed materials for publ. awareness	20,000	0,25	5,000	No		
Bullets for hunters			5,000	No		
				Total		1 906 740

TABLE 1

CASES OF RABIES IDENTIFIED IN REPUBLIC OF BULGARIA IN THE YEARS BETWEEN 1988 AND 2007

Administrative District /County/ of:	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Blagoevgrad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burgas	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Varna	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Vidin	-	17	7	-	1	2	1	-	2	1	1	-	-	8	1	8	2	1	2	1
Vratsa	14	8	4	14	5	7	2	-	1	1	4	5	1	1	2	1	1	1	-	3
Veliko Tarnovo	7	3	-	-	-	1	1	-	2	-	1	1	-	3	-	4	2	2	-	1
Gabrovo	3	3	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dobrich	-	-	-	-	-	1	1	1	4	6	-	-	1	4	-	-	4	3	4	1
Kyustendil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kardzhali	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovech	10	18	9	-	-	7	2	2	1	-	-	1	-	1	2	2	-	-	-	-
Montana	34	13	11	-	9	11	1	-	2	-	1	2	1	4	-	-	-	3	1	-
Pazardzhik	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pernik	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Pleven	6	6	-	3	5	-	2	3	4	1	1	2	16	17	3	-	1	-	-	-
Plovdiv	5	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Razgrad	1	-	2	-	-	3	-	2	3	-	-	-	-	1	-	-	-	-	1	3
Ruse	-	3	1	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-
Silistra	1	1	-	-	-	-	1	1	-	2	-	-	1	-	-	-	-	2	-	10
Silven	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smolyan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sofia-town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sofia-district	1	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Stara Zagora	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	11
Targovishte	1	3	-	-	-	7	-	1	2	4	1	-	-	12	4	2	-	-	-	1
Haskovo	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Shumen	-	-	-	-	-	-	-	-	-	-	-	3	3	7	3	-	-	-	1	-
Yambol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL:	84	78	35	20	23	42	14	12	23	16	9	14	23	61	15	17	10	11	9	40

TYPES AND NUMBERS OF RABIES DISEASED ANIMALS (1988 – 2007)

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	-
Total:	578	206	58	23	255	14	22

Seasonal Spread of Rabies (1996-2007)

TABLE 3

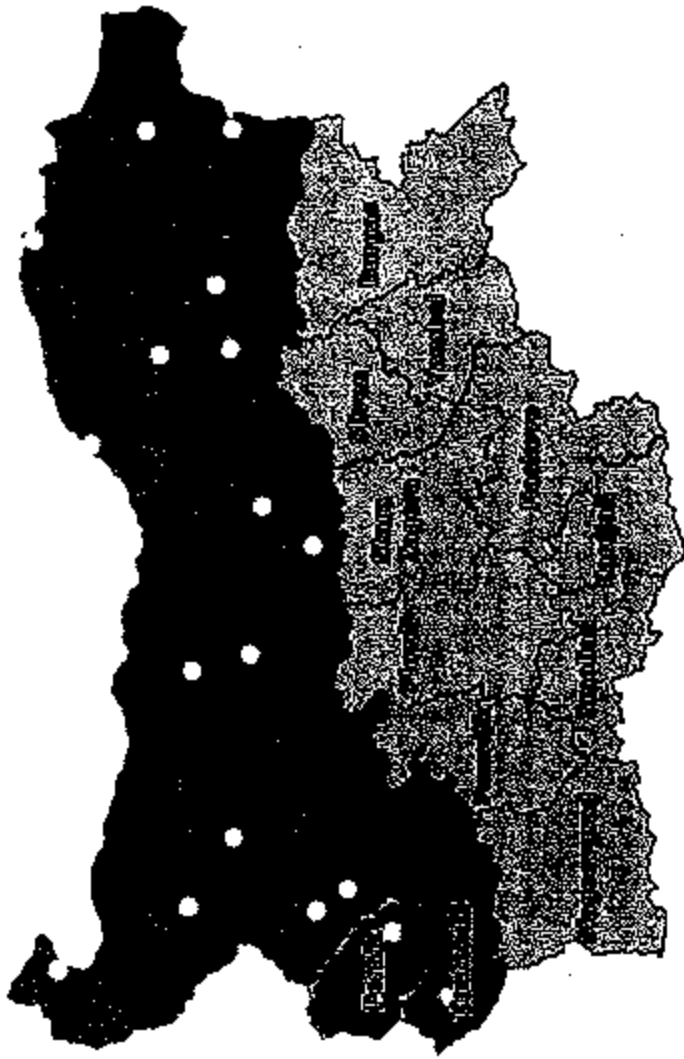
Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Rabies cases	20	23	27	42	21	19	12	20	13	15	20	16

Species and Numbers of Wild Predatory Animals in Bulgaria (2006)

TABLE 4

Animal Species	Wolves	Jackals	Foxes	Stray Dogs
Numbers	2312	28 523	38 727	22 634

■ Regions of vaccination against rabies in the Republic of Bulgaria



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