



EUROPEAN COMMISSION  
HEALTH & CONSUMERS DIRECTORATE-GENERAL

Unit 04 - Veterinary Control Programmes

**SANCO/10405/2009**

*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**

**Romania**

\* in accordance with Council Decision 2009/470/EC

## **Programme for Surveillance, Control and Eradication of Rabies in Romania 2010**

### Summary:

1. Identification of the programme
2. Historical data on the evolution of rabies in Romania
3. Description of the submitted programme
4. Measures provided by the programme
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6. Data on the epidemiological evolution of rabies in the last 7 years
7. Objectives
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### **Identification of the programme**

Member State: Romania

Disease: Rabies

Application year: 2010

Reference of this document: N.S.V.F.S.A.

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## 2. Historical data on the epidemiological evolution of rabies in Romania.

Rabies is a mortal, acute encephalitis of warm blooded animals and humans, caused by a RNA-virus of Lyssavirus Families, which spread mainly by the saliva of diseased animals, as a result of their bites. The disease can also spread by the contamination of wounds of the skin or mucosal membranes with the saliva of the diseased animals. All warm blooded animals are affected. Rabies has two clinical forms - furious and dumb. Both forms are characterized by signs showing the affection of the central nervous system, behavioral deviation, salivation and the paralysis of the skeletal and pharyngeal muscles. Incubation period for rabies is between 14 days and 6 months, or more. An animal infected by rabies can spread the virus up to 10 days before the appearance of clinical signs. After showing the clinical signs, the animal dies in 10 days.

Rabies is disseminated on the whole globe, except certain countries in which, due to geographical particularities, either the virus never entered or the country became free of the disease, consequently to the application of certain serious combating measures (Luxemburg, Island, Norway).

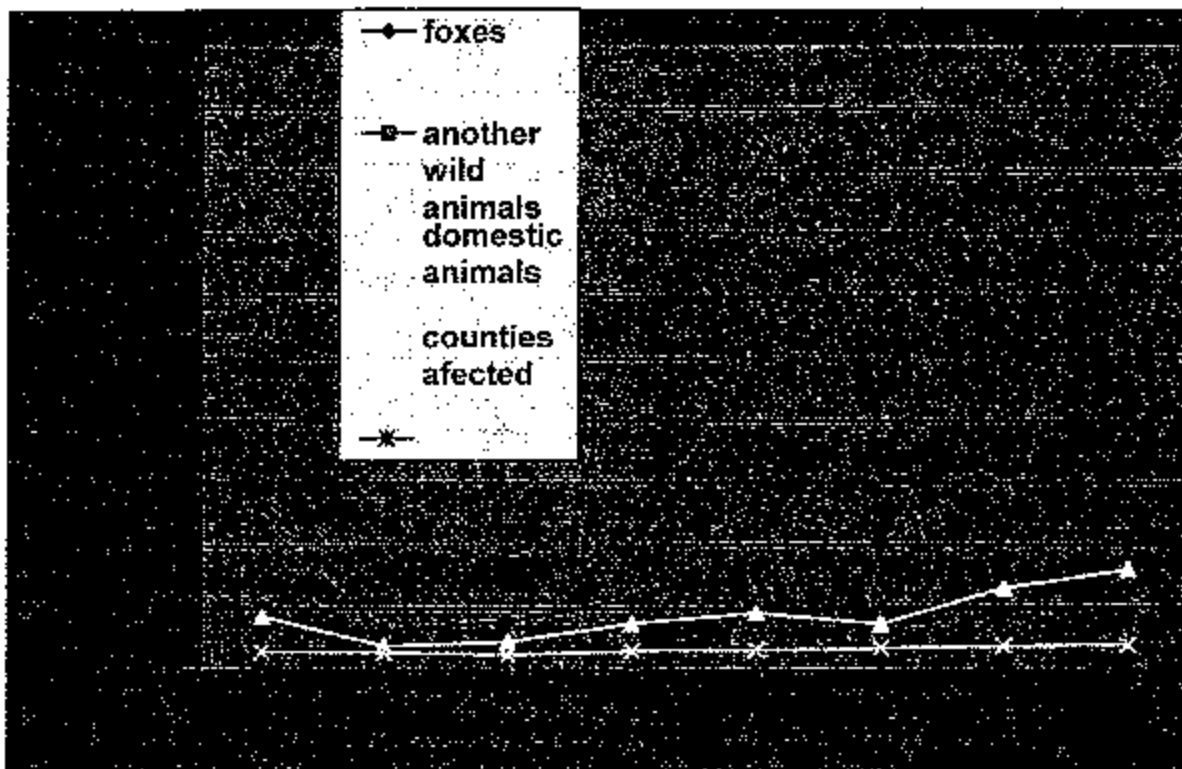
Lately, it was noticed a recrudescence of rabies in different regions of the world due to maintenance of the virus in the population of wild animals.

Romania, in the past, was one of the countries having the highest number of rabies cases from Europe.

Starting with 1950, following the measures applied, including immune- prophylaxis, rabies became preponderantly limited to wild carnivores, especially foxes.

The number of cases in foxes, in comparison with the number of cases in other wild and domestic animals, in an 8 years period (1999-2008), is shown in *Graphic 1*.

Number of rabies cases between 1999-2008 in animals population of Romania



Graphic 1

## Foxes population of Romania

Romania has a surface of more than 237500 km<sup>2</sup> of which 62346 km<sup>2</sup> is covered by forests. (Diagram 1).

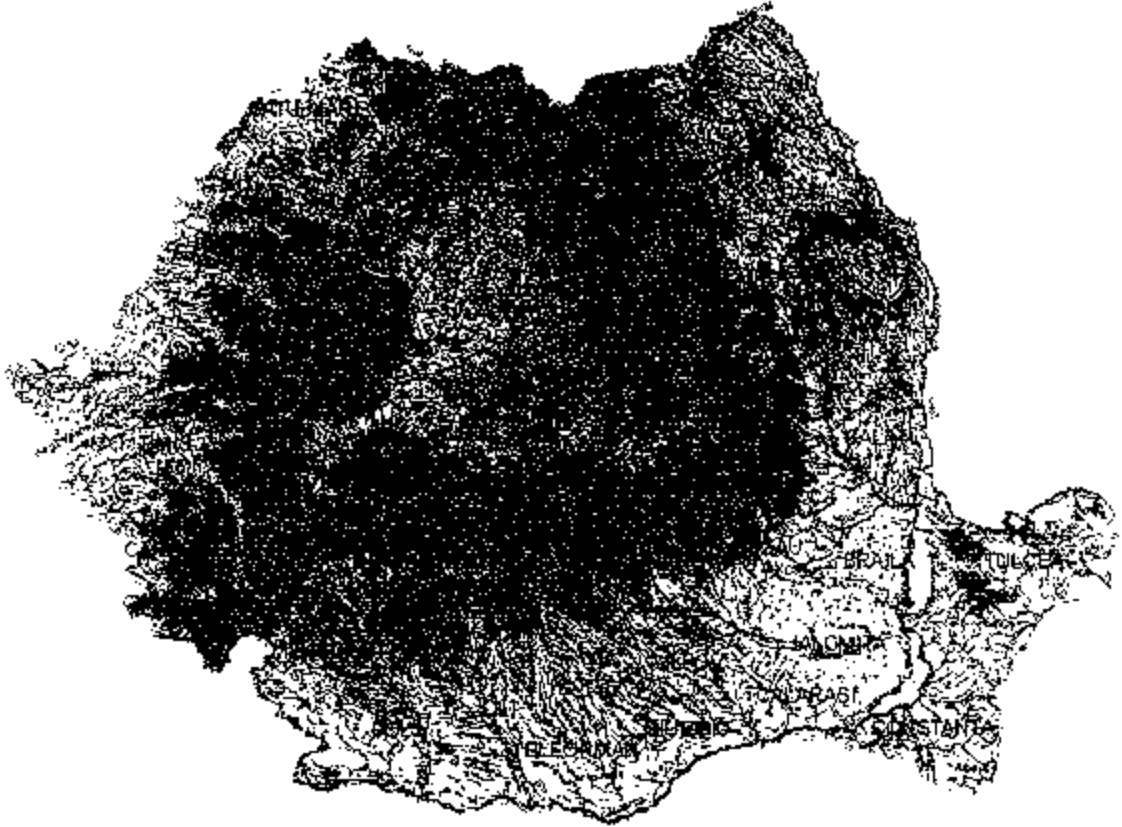


Diagram 1

In Diagram 2, is represented the percentage of geographical distribution of a over than 50.000 fox population in 2006, distributed per counties. The fox population is distributed in 2151 hunting grounds managed by the National Forests Administration and the Association of Hunters and Fishers at which these are officially registered (Graphic 2). From numerical point of view, the fox livestock in Romania, in the last years, is maintained in constant limits, which determine that their density to be under 1 animal per km<sup>2</sup>.

The stock-taking of foxes is done annually in spring, when is also established the cote for fox hunting.

## Geographical distribution of foxes in Romania, 2008

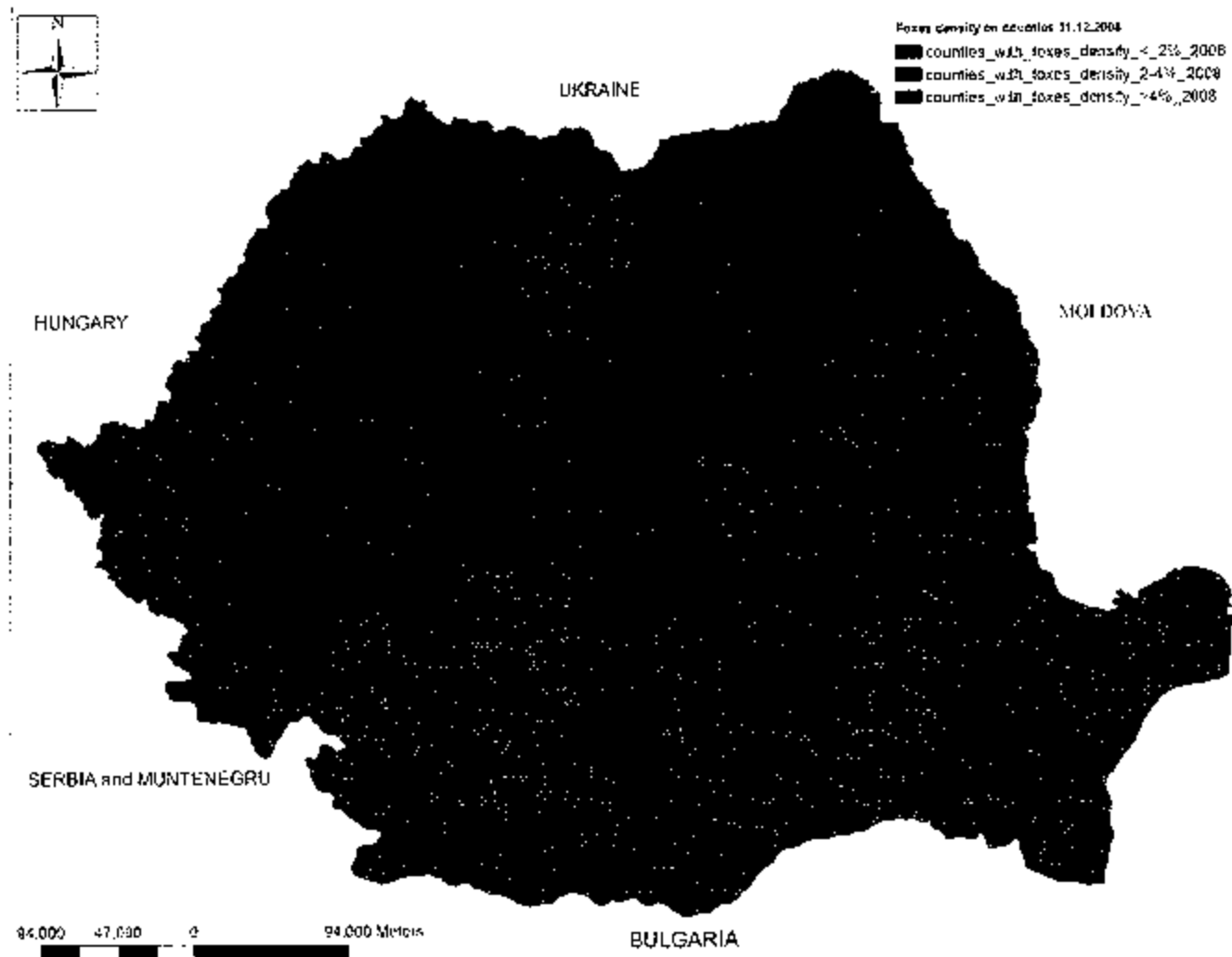
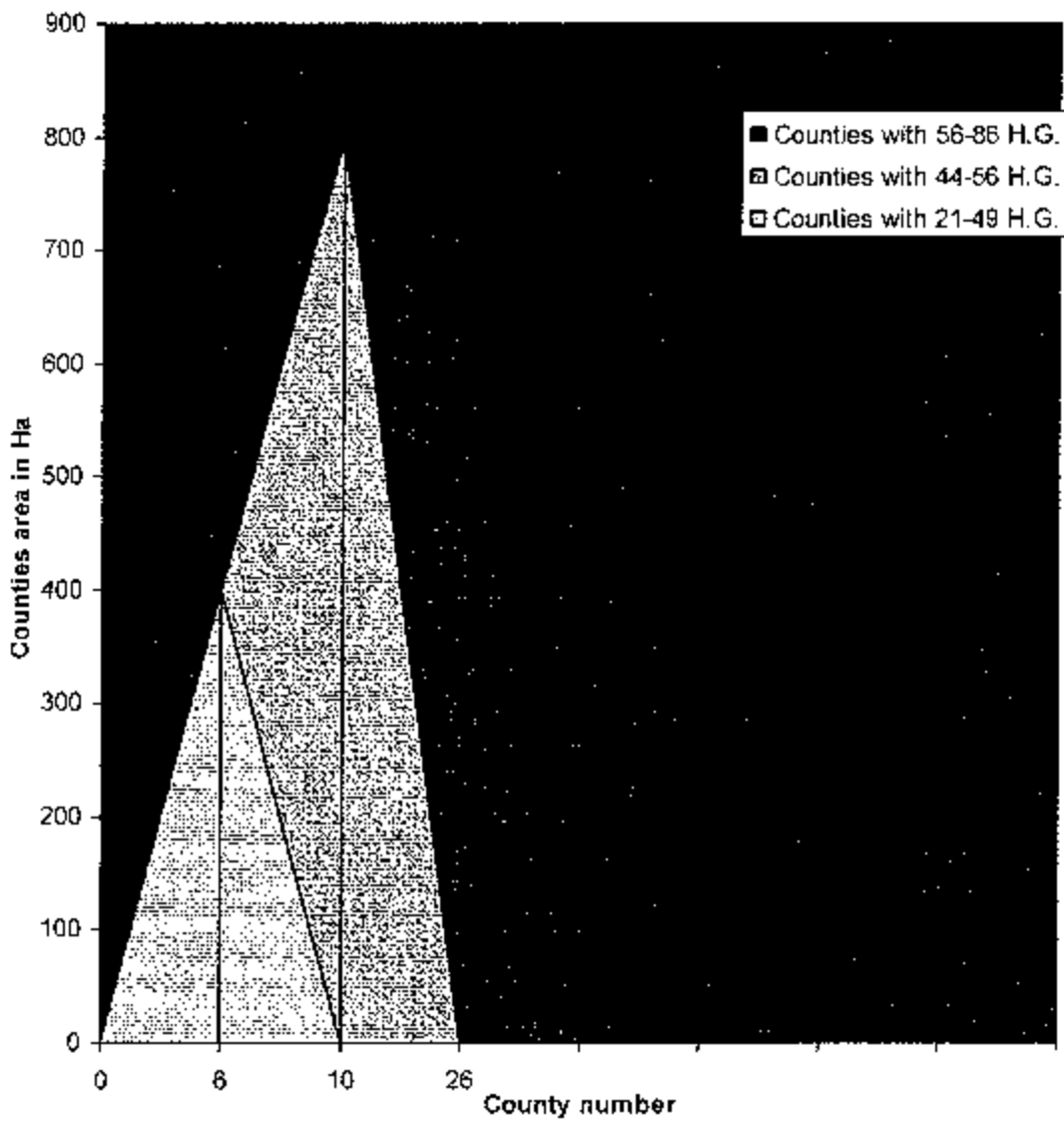


Diagram 2

Graphic 2. Repartition of hunting grounds (H.G.) depending on the counties surface



## **Rabies situation in foxes in Romania**

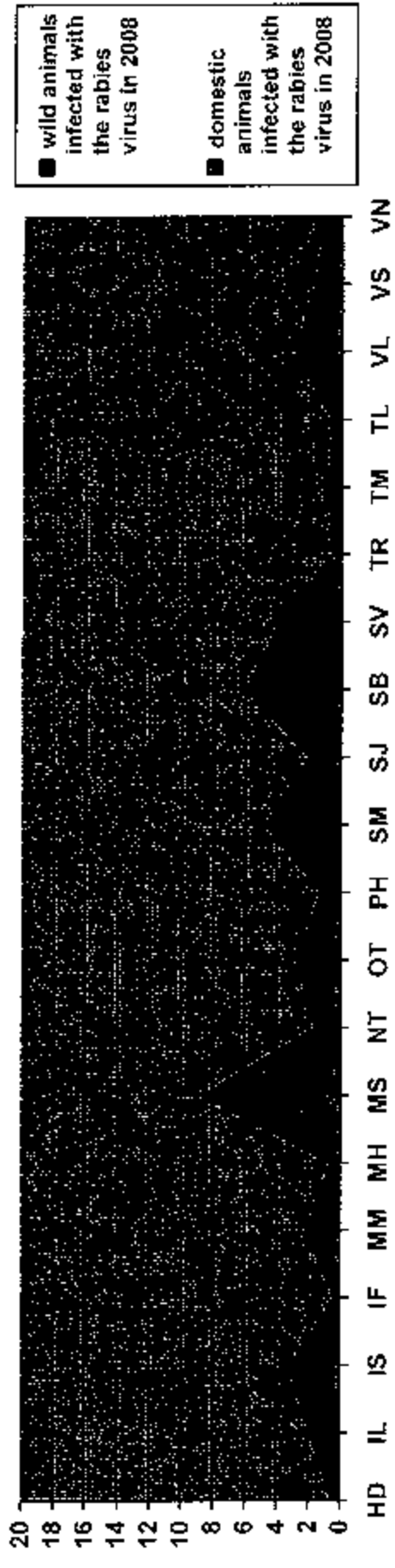
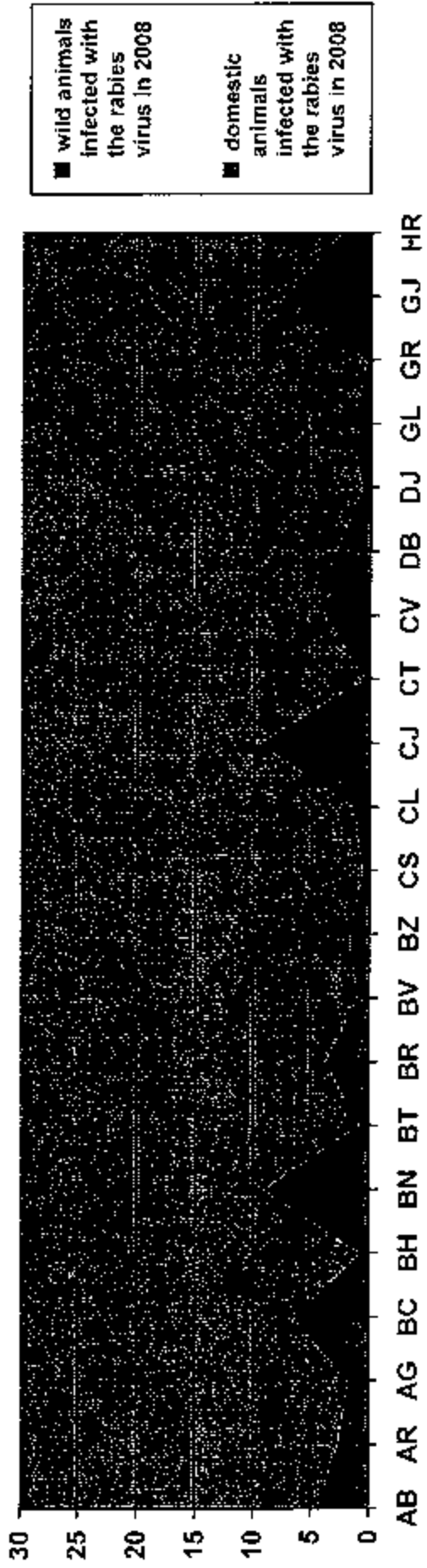
Rabies in foxes living in forests evolves for many years.

By analysis of *Graphic 1*, where are presented the number of rabies cases occurred in the last 8 years in domestic and wild animals, it can be appreciated that rabies is an endemic disease with increasing evolutionary tendencies.

The association between the number of rabies cases in fox population and in domestic animals population is sustained by *Graphic 3*. In *Diagram 3* is presented the percent of domestic and wild animals infected with the rabies virus, distributed per counties, in 2008. In the last years, as an immuno-prophylactic measure, in limited areas, the oral vaccination of foxes was practiced manually, depending on the epidemiological situation, but having inconclusive results.

It must be added, that the Danube Delta is a particular area, protected under the Administration of Biosphere's Reservation, where beside the fox population and other wild animals, are also living domestic animals in a semi wild condition.





Graphic 3

## Rabies prevalence in foxes, Romania 2008

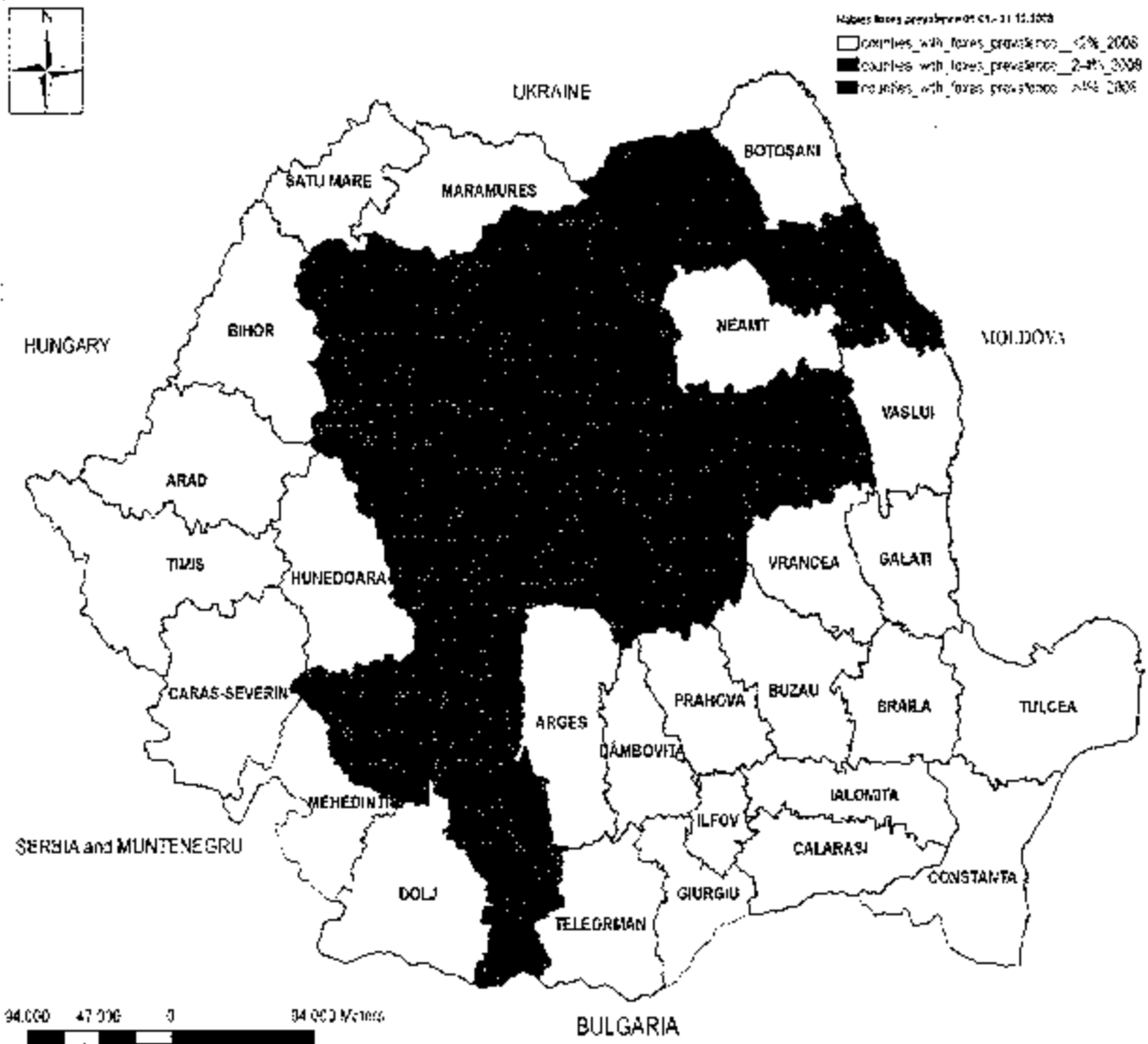


Diagram 3

### Rabies situation in wild animals, other than foxes

Species of domestic animals affected by rabies in Romania, in the last 8 years are presented in Table no. 1.

Against the situation presented, it can be appreciated that rabies evolves sporadically in the population of wild animals, other than foxes, its occurrence not being dependent of the existence of infected foxes in the relevant area.

#### Number of rabies cases in wild animals, included foxes in Romania 2001-2008

Year/Species	2001	2002	2003	2004	2005	2006	2007	2008
Cat	1	1	1	3	3	6	1	4
Ferret		1	1		3		1	0
Badger	2	5		2			1	2
Jackal					1	2	1	2
Otter	1						1	0
Musk	1						0	0
Weasel			1				0	0
Fallow-Deer			1				0	0
Marten				1	1		2	1
Bear				1	1		1	0
Deer				1			0	3
Boar					1		0	0
Linx					1		0	0
Wolf	1		3	1	1	1	2	6
other						5		8
<b>Total</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>9</b>	<b>12</b>	<b>20</b>	<b>10</b>	<b>26</b>
<b>Foxes</b>	<b>237</b>	<b>65</b>	<b>79</b>	<b>115</b>	<b>269</b>	<b>203</b>	<b>322</b>	<b>912</b>

Table no. 1

## Situation of rabies in domestic animals in Romania

Species of domestic animals in which rabies cases were registered on the territory of Romania, in the last 8 years, are presented in Table no. 2.

### Rabies cases registered in domestic animals within 2001-2008

Animal/Species	2001	2002	2003	2004	2005	2006	2007	2008
Dogs	45	18	17	33	35	27	47	43
Cats	13	11	12	18	31	19	36	60
Bovine	16	5	12	14	17	19	32	35
Horses		3	1	4	4	3	6	14
Sheeps	5	1	5	5	1	1	1	5
Goats					1	2	6	4
Pigs	5	2		1		2	4	0
Buffalos					1		0	0
Asinine					1		0	0
<b>Total</b>	<b>84</b>	<b>40</b>	<b>47</b>	<b>75</b>	<b>91</b>	<b>73</b>	<b>132</b>	<b>161</b>

Table no. 2

Among these, most rabies cases were registered in the dog population, but an important number of cases were also registered in the feline and bovine populations. (Diagram 4.)

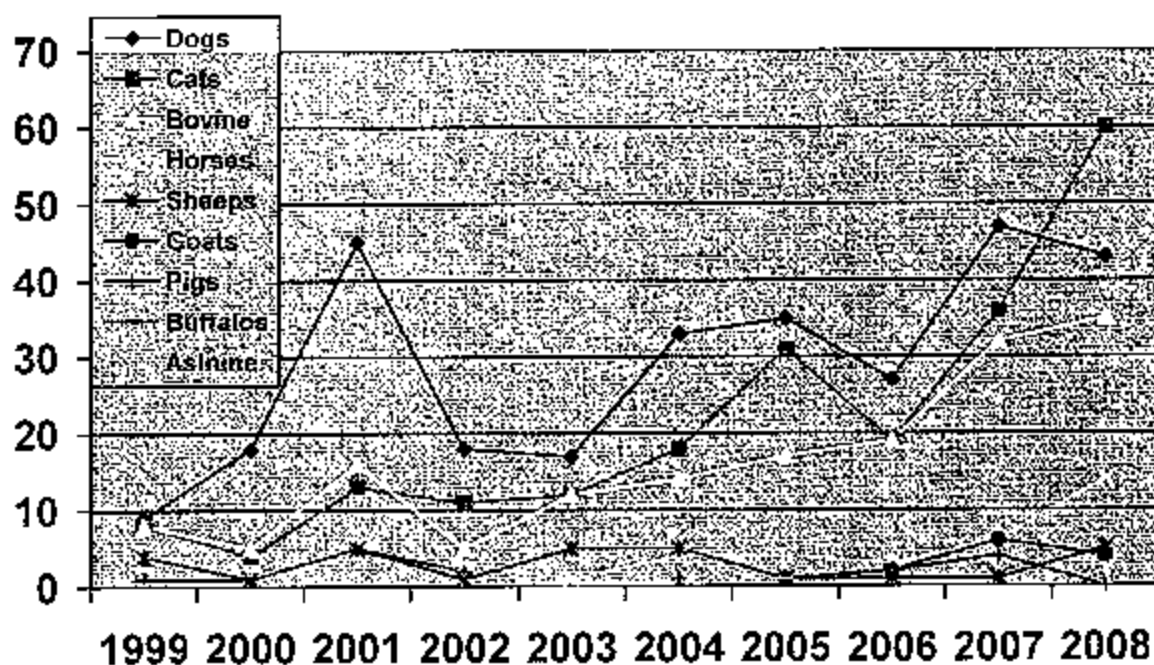


Diagram 4

### 3. Description of the programme

The Programme for Monitoring, Control and Eradication of Rabies will rule on the 16 counties of Romania and it will apply to the entire population of foxes from this area.

**The objectives of the programme comprise:**

- control of rabies in fox population in Romania
- monitoring of rabies in fox population in Romania
- vaccination effectiveness

**Actions undertaken for fulfillment of the objectives:**

- oral vaccination of wildlife in order to obtain an territory free of rabies.
- monitoring of evolution of rabies correlated with the plan for application of vaccination and the results obtained
- control of the application of vaccination plans and evaluation of its effectiveness
- collection of data, their proper registration, their statistic and informatics procession and their presentation in proper forms in order to be used in the practice of combating and eradication of rabies in Romania.

Oral vaccination of foxes will be carry out in two vaccination campaigns, in spring and autumn. spreading by plane, 20 baits/campaign/km<sup>2</sup>. Aerial distribution of baits will be fill in with manual distribution, where the plane can not act. After each campaign. 45 days later from baits administration, will be performed hunting for vaccine efficiency, shooting 4 foxes/campaign/100km<sup>2</sup>.

For monitoring, samples harvest from shooting foxes will be tested for post vaccination antibody and tetracycline presence.

Rabies surveillance will be carry out on samples from indicator animals (suspected, found dead or road kills).

maria

### 4. Measures provided in the submitted programme

#### 4.1 Duration of the programme: 10 years

First year: 2007

- Control
- Testing
- Vaccination

Last year: 2016

- Eradication
- Testing

#### 4.2 Organizing, surveillance and the role of all stakeholders involved in the programme

The main institutions implicated in the application of the programme for control, monitoring and eradication of rabies are:

National Sanitary Veterinary and Food Safty Authority (NSVFSA), County Sanitary Veterinary and Food Safety Divisions(CSVFSA), Institute for Diagnosis and Animal Health,

National Administration of Forests, District Forest Ranges, Associations of Hunters and Fishers of Romania, Institute for Control of Biological Products and Medicines for Veterinary Use.

#### **National Sanitary Veterinary and Food Safety Authority**

The tasks of the central sanitary veterinary authority responsible are to supervise and coordinate the departments which implement the Programme.

NSVSA is also responsible for assuring funds to cover the needs created by implementation of the Program.

At county level, responsible for the Program implementing are the 16-th County Sanitary Veterinary and Food Safety Directorates.

NSVSA, invested as Central Units for acquisition of services in view of foxes vaccination is responsible for organizing the tender and for monitoring and evaluation of vaccination efficacy, as well as the activity conducted by the society selected as winner of tender.

CSVFSD verify the transport and vaccine storage conditions, monitors the vaccine circulation within the territory, controls the training of personnel in charge with vaccination.

#### **Institute for Diagnosis and Animal Health**

The main responsibilities are:

- co-ordinates and administrates the testing capacity of the county laboratories, the training of personnel to apply the diagnosis methods;
- coordinates the diagnostic activity for rabies;
- draw up the epidemiological reports, based on the interpretation of the results regarding rabies;
- being the National Reference Laboratory, cooperates with Community Reference Laboratory for rabies for typing and subtyping wild strain rabies viruses.

#### **Institute for Control of Biological Products and Medicines for Veterinary Use**

The main responsibilities are:

- Authorizes, for commercialization, biological products used for immunization against rabies in Romania;
- Performs the quality control of all vaccine batches against rabies, accordingly with OIE Diagnostic Manual;
- Provides consultancy regarding biological products used for the immunization against rabies in Romania;

#### **National Administration of Forests**

The main responsibilities are:

- assures the maintenance of foxes population in reasonable limits within areas, by performing the seasonal hunting approved as a supplement to the already approved hunting quota; approve supplementary hunting quota outside the legal hunting season in the scope of sustaining the present Program;
- assures, by the personnel from cinegetic fund, the achievement of sampling and transmission of the samples for accomplish of laboratory surveillance for the diagnosis of rabies, accordingly with the approved sampling program and for the evaluation of postvaccinal immunization;
- assures the functioning of the system for collecting, transport and neutralizing of cadavers.

National Administration of Forests estimates each year the foxes number and establishes the annual quota of foxes proposed to be hunted.

### Associations of Ranges, Hunters and Fishermen of Romania

The main responsibilities are:

- monitoring and evaluate the density of foxes population from Romania's cynegetic fund;
- monitoring and control the implementation measures which are incumbent on the administrators of hunting funds;
- cooperates with CSVFSO for the implementation of the Program;

Associations of Rangers, Hunters and Fishermen of Romania organizes the hunting sessions following to the vaccination campaigns, assure the transport of the samples harvested by the personnel in charge with sampling at the level of CSVFSO.

### 4.3 Descriptions and demarcations of the geographical and administrative areas in which the programme is to be implemented:

The vaccination area for 2010 will be in the **North-Western** part of the country, in 16-th counties (table nr. 3), over than 90.000 km<sup>2</sup> surface, at the border with Ukraine, Hungary and Serbia-Montenegro, having natural border the chain Carpathian Mountains (diagram no. 5 and 6).

Table no. 3

Counties	Hunting grounds(km <sup>2</sup> )	Fox number
ALBA	5872	2333
ARAD	7411	1980
BIHOR	7005	1668
BISTRITA-NASAUD	4968	874
CLUJ	5994	2915
HARGHITA	5939	1661
MARAMURES	5857	1435
MURES	6398	2847
SALAJ	3541	1285
SATU-MARE	3978	1798
HUNEDOARA	6764	2004
CARAS SEVERIN	8274	1791
SIBIU	5217	2050
COVASNA	3704	871
TIMIS	8272	2558
BRASOV	5099	1586
<b>TOTAL</b>	<b>94.293 km<sup>2</sup></b>	<b>29.656</b>

## Geographical delimitations by natural barriers in Romania

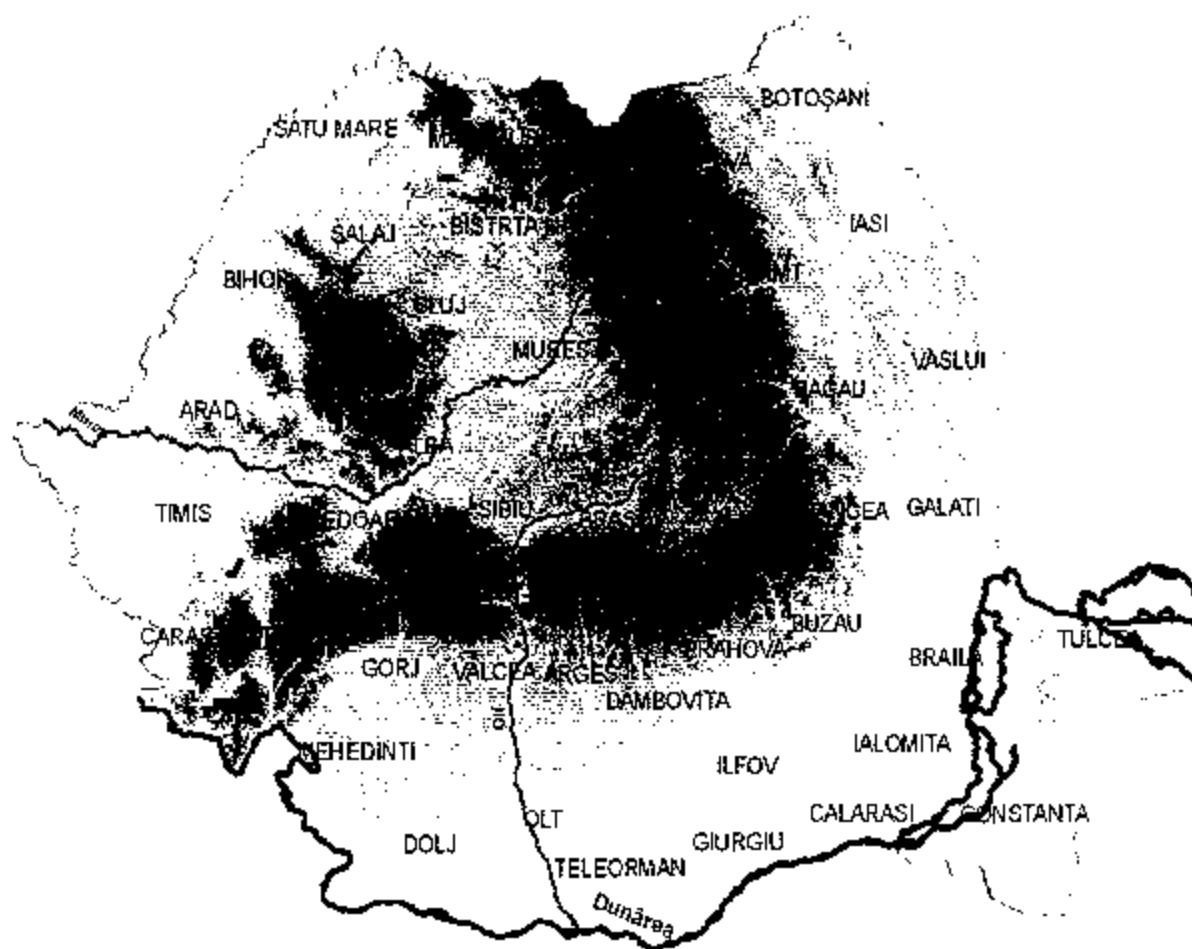


Diagram 5

- ◼ Carpathian Mountains Chain
- Rivers



## Rabies vaccination areas for 2010

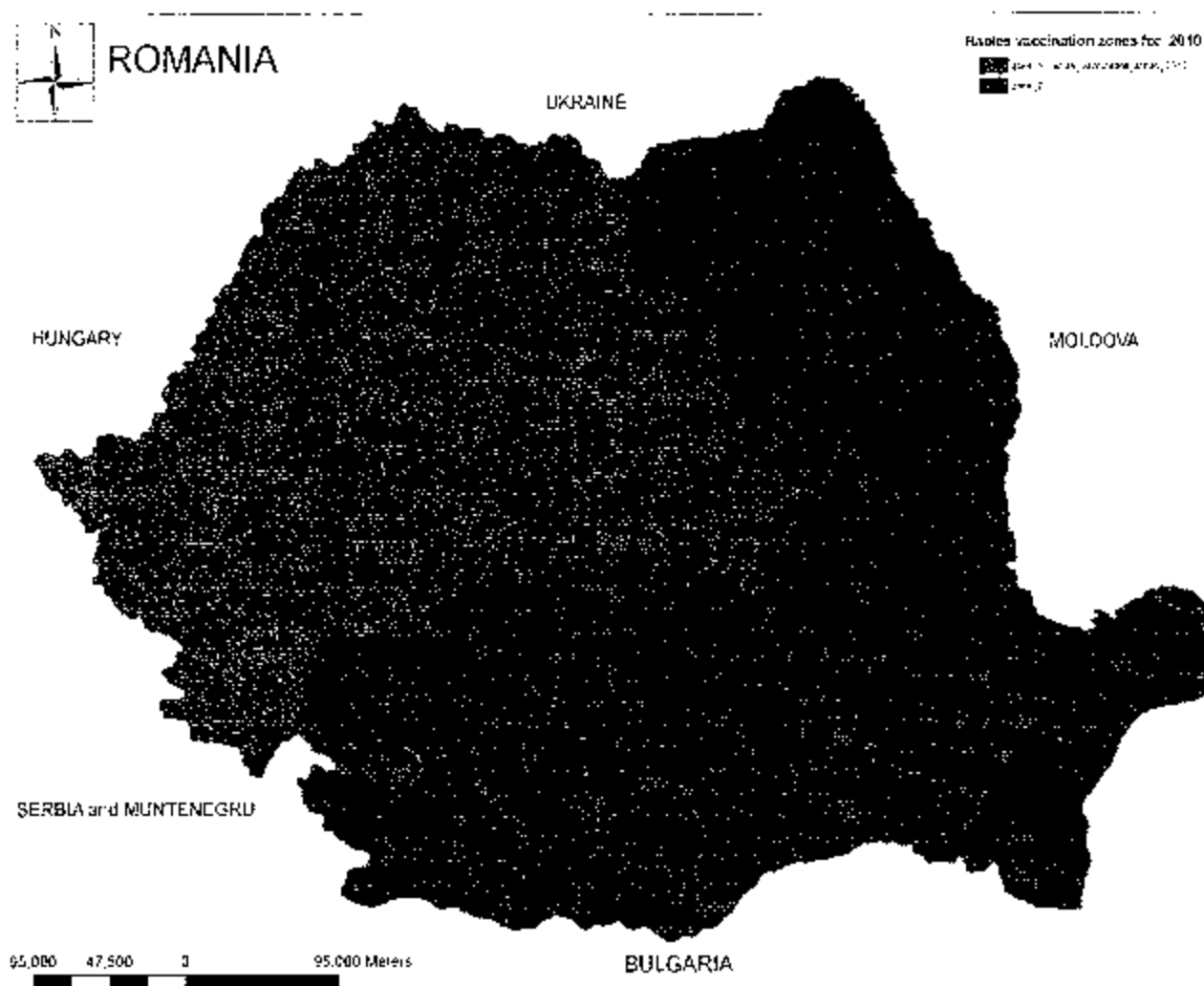


Diagram no. 6

Starting vaccination in these parts of the country is in conformity with the recommendations of Scientific Commission on Rabies as well as with policy of rabies vaccination and eradication within EU territory.

On the other side, Hungary as a member state has ruled a vaccination campaigns at the border with Romania since 1992.

#### **4.4 Description of the measures provided by this program**

Rabies prophylaxis under legislative aspects in Romania is regulated by the following Orders and Laws:

- NSVFSA President ORDER 29/2008 for the approval of the sanitary veterinary norm regarding general measures for preventing and control of rabies in domestic and wild animals
- Government Decision nr. 55 /2008 for the approval Programme for surveillance, control and eradication rabies in foxes

Accordingly with the above mentioned rules, in Romania, the vaccination and registration of domestic dogs and cats is compulsory.

Emergency vaccination of all domestic animals having contact with infected suspected animals is also compulsory.

##### **4.4.1 Disease notification**

Rabies is a notifiable disease from local to central level, in accordance with the NSVFSA President Order no.79/2008.

##### **4.4.2. Target animals and animal population - not applied**

##### **4.4.3. Identification of animals and registration of holdings - not applied**

##### **4.4.4. Qualifications of animals and herds - not applied**

##### **4.4.5. Rules on the movement of animals - not applied**

##### **4.4.6 Serological and virusological tests used for the detection of rabies and the immune status in foxes before and after vaccination:**

The serological and virological tests used are in conformity with the standard manuals for the OIE diagnosis tests.

##### **i) Fluorescent antibody test**

The most widely used test for rabies diagnosis is the FAT, which is recommended by both WHO and OIE. This test may be used directly on a smear, and can also be used to confirm the presence of rabies antigen in cell culture or in brain tissue of mice that have been inoculated for diagnosis. The FAT gives reliable results on fresh specimens within a few hours in more than 95-99% of cases. The sensitivity of the FAT depends on the specimen (the degree of autolysis and how comprehensively the brain is sampled, on the type of lyssavirus and on the proficiency of the diagnostic staff. Sensitivity may be lower in samples from vaccinated animals due to localisation of antigen, which is confined to the brainstem. For direct rabies diagnosis, smears prepared from a composite sample of brain tissue, that includes the brain stem, are fixed in high-grade cold acetone and then stained with a drop of specific conjugate. Anti-rabies fluorescent conjugates may be prepared in the laboratory. Those available commercially are either polyclonal conjugates specific to the entire virus or specific to the rabies nucleocapsid protein, or they may be prepared from a mix of different MAbs. In the FAT, the specific aggregates of nucleocapsid protein are identified by their fluorescence. The specificity and sensitivity of these anti-rabies fluorescent conjugates for locally predominant virus variants should be checked before use.

The FAT may be applied to glycerol-preserved specimens. If the specimen has been preserved in a formalin solution, the FAT may be used only after the specimen has been treated with a proteolytic enzyme. However, the FAT on formalin-fixed and digested samples is always less reliable and more cumbersome than when performed on fresh tissue.

## **ii) Enzyme-linked immunosorbent assay**

Commercial kits are available for indirect ELISA that allow a qualitative detection of rabies antibodies in individual fox samples following vaccination. In accordance with the WHO recommendations, 0.5 IU per ml rabies antibodies is the minimum measurable antibody titre considered to represent a level of immunity that correlates with the ability to protect against rabies infection. The ELISA provides a rapid test that does not require handling of live rabies virus, to determine if vaccinated foxes have sero-converted. Whereas the recommendations regarding the sampling fraction of foxes for the detection of antibodies is not provided in UE normative acts, 3000 animals have been proposed for examination in 2010 year.

## **iii) Another test:**

### **Tetracycline determination**

Tetracycline is a marker of bait uptake and provides a life-long marking of bones and teeth that is easily detected on post-mortem. It is innocuous for both target and non-target species and is very stable when incorporated into baits.

Determination of tetracycline uptake by direct U.V. microscopic examination of sections of bones and teeth provides an easy way of monitoring bait uptake and is especially useful when identifying other causes for vaccination failure.

## **4.4.7 Vaccines used and vaccination schemes**

Live rabies vaccines used for oral vaccination of foxes should fulfil the requirements of the European Pharmacopoeia monographs as well as the efficacy and safety recommendations of the WHO. Vaccine titer at batch release should correspond to at least ten times the dose found to completely protect an experimental group (indicative 100% protective dose). The titre of the final vaccine in the bait should not fall below the indicative 100% protective dose following exposure to 25°C for seven days. Each vaccine batch should be tested and approved for titre and stability by an acknowledged quality control scheme according to OIE standards and WHO recommendations.

Laboratories involved in the monitoring and evaluation of rabies programmes monitor the titer of all batches of rabies virus baits before and during release into the field.

The melting point of the bait casing should be above 40°C to ensure that the capsule of the vaccine is still covered if exposed to such temperatures in the field.

Vaccine producers should provide detailed information to the National Laboratories on the stability of baits to be used in the field.

The Community Reference Laboratory should perform additional tests or trials if required.

The use of tetracycline as a biomarker in the teeth and bones of foxes is recommended to evaluate bait-uptake in target species.

## **4.4.8. Information and assessment on bio-security measures management and infrastructure) in place in the holdings involved- not applied**

## **4.4.9. Measures in case of a positive result- not applied**

## **4.4.10. Compensation scheme for owners of slaughtered and killed animals- not applied**

#### **4.4.11 Control of the implementations of the programme and reporting**

The control of implementing the programme is made by the NSVFSA by the Directorate for Checks and Border Inspection Post (BIP) Coordination, in accordance with the provisions of the National Programme for Checks, approved through President order.

At the level of county SVFSD, the control is performed by sanitary veterinary official officers from the service for checks, in collaboration with the official veterinarian from animal health service and sanitary veterinary zonal office who draw up reports concerning the fulfillment of the programme. These reports about surveillance shall be sent towards the central veterinary authority and to the Institute for Diagnosis and Animal Health.

### **5. Benefits of the programme**

The effective completion of the programme for control and monitoring of rabies in Romania will reduce the spreading chances of rabies in wild and domestic animal population, eliminating the risk of rabies transmission to humans and allowing our country to grant the free of rabies status.

### **6. Data on the epidemiological evolution during the last five years**

**6.1. Evolution of the disease - not applied**

**6.2. Stratified data on surveillance and laboratory tests- not applied**

**6.3. Data on infection (one table per year and per disease/species) - not applied**

**6.4. Data on the status of herds at the end of each year - not applied**

**6.5. Data on vaccination or treatment programmes- not applied**

**6.6. Data regarding the number of foxes in Romania**

**6.6.1. Estimation of fox population: 2008 y**

**Estimation method:**

Annually, the State Forestry Services of Romania, by specific methods, estimates the fox population and set up the hunting quota. The counting of foxes is carried out in winter and early spring by the identification of sets, direct observations on certain areas and holdings and blind running.

Hunting of foxes takes place during the whole year, but the main part takes place in the winter.

An:2008

No	Counties	Fox number
1	ALBA	2333
2	ARAD	1980
3	BIHOR	1668
4	BISTRITA-NASAUD	874
5	CLUJ	2915
6	HARGHITA	1661
7	MARAMURES	1435
8	MURES	2847
9	SALAJ	1285
10	SATU-MARE	1798
11	SIBIU	2050
12	CARAS-SEVERIN	1791
13	HUNEDOARA	2004
14	COVASNA	871
15	TIMIS	2558
16	BRASOV	1586
	<i>TOTAL</i>	<i>29.656</i>

### 6.6.2. Monitoring of wildlife

Years: 2005 – 2009(31.03)    Disease: rabies

Animal Species: foxes

Description of the used serological tests:

1. ELISA test for antibody detection.

Description of the used virological tests:

2. Direct Immunofluorescent

Alte teste

3. Tetracycline detection

All serological and virological tests are performed according to the diagnostic manual of the EU

România	Serological tests (ELISA)		Virological tests (FAT)		Other tests (UV)	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2005	Not applied	Not applied	770	277	Not applied	Not applied
2006	Not applied	Not applied	829	203	Not applied	Not applied
2007	Not applied	Not applied	823	321	Not applied	Not applied
2008	17	2	964	951	20	3
2009(30.03.09)	74	13	663	186	172	6

### 6.6.3 Data on the vaccination programme in foxes

Year: 2005-2009

Disease: Rabies

Animal Species: foxes

In Romania a complete vaccination by plane distribution of foxes was never done, the only way of vaccination so far being by manually distribution of bites at den.

## 7. Objectives

### 7.1. Targets related to testing

#### 7.1.1. Target on diagnostic test:

**Disease:** Rabies

**Animal species:** foxes

Region :	Type of test:	Target population:	Type of sample:	objective:	Number of planned tests
16 counties	1. F.A.T	Foxes	brain	Monitoring of rabies virus in the indicator animals	1000
	2. E.L.I.S.A (antibody level)	Foxes	Liquid thoracic and blood serum	Monitoring of postvaccinated antibody	3000
	3. U.V (tetracycline marker)	Foxes	bones and teeth	Monitoring of the tetracycline marker	7200
<b>Total</b>					<b>11200</b>

#### Number of testes on counties

No.	County	Virological Tests		Serological tests		Others	
		1. F.A.T.		2. E.L.I.S.A (antibody level)		3. U.V (tetracycline marker)	
		Sample no.	Positive cases	Sample no.	Positive cases	Sample no.	Positive cases
1	ALBA	55		165		400	
2	ARAD	60		180		450	
3	BIHOR	55		165		450	
4	BISTRITA-NASAUD	50		150		500	
5	BRASOV	60		180		500	
6	CARAS-SEVERIN	70		210		400	
7	CLUJ	75		225		450	
8	COVASNA	65		195		500	
9	HARGHITA	70		210		400	
10	HUNEDOARA	60		180		450	
11	MARAMURES	70		210		500	
12	MURES	60		180		450	
13	SATU-MARE	70		210		450	
14	SALAJ	60		180		450	
15	SIBIU	50		150		450	
16	TIMIS	70		210		400	
	<b>TOTAL</b>	<b>1000</b>		<b>3000</b>		<b>7200</b>	

**7.1.2. Targets on testing herds and animals- not applied**

**7.2. Targets on qualification of herds and animals- not applied**

**7.3. Targets on vaccination or treatment**

**7.3.1. Targets on vaccination or treatment - not applied**

**7.3.2 Data on the vaccination programme in foxes**

**Year: 2010**

**Disease: Rabies**

**Vaccination by aerial distribution**

No	Counties	Km <sup>2</sup>	Aerial distribution		
			Number of doses (baites) (momeli)/km <sup>2</sup>	Number of campaigns	Total number of doses (baites) /county
1	ALBA	5873	20	2	220.000
2	ARAD	7431	20	2	300.000
3	BIHOR	7006	20	2	280.000
4	BISTRITA-NASAUD	4969	20	2	200.000
5	CLUJ	5994	20	2	240.000
6	IARGHITA	5939	20	2	240.000
7	MARAMURES	5857	20	2	240.000
8	MURES	6398	20	2	280.000
9	SALAJ	3541	20	2	150.000
10	SATU-MARE	3978	20	2	160.000
11	CARAS-SEVERIN	8274	20	2	330.000
12	HUNEDOARA	6764	20	2	280.000
13	SIBIU	5217	20	2	260.000
14	COVASNA	3704	20	2	120.000
15	TIMIS	8272	20	2	320.000
16	BRASOV	4491	20	2	180.000
	<b>TOTAL</b>	<b>94293</b>	<b>20</b>	<b>2</b>	<b>3.800.000</b>



**Vaccination by manual distribution**

No	Counties	Km <sup>2</sup>	Manual distribution		
			Number of doses (baites) (momeli)/km <sup>2</sup>	Number of campaigns	Total number of doses (baites) /county
1	ALBA	5873	50	2	3.000
2	ARAD	7431	50	2	3.000
3	BIHOR	7006	50	2	3.000
4	BISTRITA-NASAUD	4969	50	2	2500
5	CLUJ	5994	50	2	3.000
6	HARGHITA	5939	50	2	3.000
7	MARAMURES	5857	50	2	3.000
8	MURES	6398	50	2	4.000
9	SALAJ	5541	50	2	3.000
10	SATU-MARE	3978	50	2	3.500
11	CARAS-SEVERIN	8274	50	2	3.500
12	HUNEDOARA	6764	50	2	3.800
13	SIBIU	5217	50	2	3.600
14	COVASNA	3704	50	2	2.100
15	TIMIS	8272	50	2	3.200
16	BRASOV	4491	50	2	2.800
	<b>TOTAL</b>	<b>94.293</b>	<b>50</b>	<b>2</b>	<b>50.000</b>

## 8. Detailed assessment of programme's costs:

Costs related to the following measures:	Task books	Number of doses (pieces of bait)/sample	Unitary cost in EURO	Total amount in EURO	Community finances required (yes)
1. Tests					
1.1. Cost of analyses	FAT	1000	1	1.000	500
	ELISA	3000	8	24.000	12.000
	UV	7200	8	57.600	28.800
1.2. Cost of sampling		7200	6	43.200	21.600
1.3. Other costs					
2. Vaccination					
2.1. Buying of vaccines		3.800.000	0.62	2.356.000	1.178.000
2.2. Distribution expenses	manual	50.000 doses/1000 km <sup>2</sup>	19 euro/ km <sup>2</sup>	19.000	9.500
2.3. Distribution expenses	aerial	3.750.000 doses/100.000 km <sup>2</sup>	0.38	1.425.000	712.500
2.4. Administrative expenses				40.000	
2.5. Control expenses				10.000	
2.6. Storage expenses				50.000	
3. Scarification and destruction					
3.1. Transport expenses				50.000	
3.2. Distruction expenses				10.000	
4. Cleaning and disinfection					
5. Remuneration				100.000	

6. Training			30.000	
6. Disposable materials and special equipments			20.000	
7. Other costs			100.000	
<b>Total</b>			<b>4.335.800</b>	<b>1.962.900</b>

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