



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

SANCO/3919/2008

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

Eradication programme of Rabies

Approved* for 2009 by Commission Decision 2008/897/EC

Hungary

* in accordance with Commission Decision 90/424/EEC

ANNEX I

Standard requirements for the submission of national programmes for the eradication, control and monitoring of the animal diseases or zoonoses referred to in Article 1(a)¹

1. Identification of the programme

Member State: HUNGARY

Disease(s)²: RABIES

Request of Community co-financing for³: 2009

Reference of this document: 02/1890/2008

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Date sent to the Commission: 30.04.2008

¹ In the case of the second and subsequent years of a multi-annual programme that has already been approved by a Commission Decision, only section 1, section 7 and section 8 need to be completed.

² One document per disease is used unless all measures of the programme on the target population are used for the monitoring, control and eradication of different diseases.

³ Indicate the year(s) for which co-financing is requested

2. Historical data on the epidemiological evolution of the disease(s)⁴:

In Hungary, rabies is a disease subject to an obligatory notification since 1928. At the beginning of the 20th century only the urbanic rabies was present in the country. By the end of the thirties - as a result of the introduction of strict rules for keeping dogs (keeping a record of dogs) and the obligatory immunization of dogs in each year - Hungary was the first country all over the world that became free from urbanic rabies. After the II. World War the country periodically lost its rabies free status. But carrying out consistently the measures against rabies (as before), finally the country became again free from urbanic rabies.

The sylvatic rabies was introduced into Hungary from the north in 1954 and until 1966 it occurred only sporadically east of the Danube. In 1967 the disease spread also to Transdanubia. By the end of 1971 the whole country had become infected.

At the beginning the protection against sylvatic rabies was carried out by diminishing the number of foxes (extermination in burrows with phosgene), but the results were insignificant.

Between 1978 and 1993 the number of rabies cases varied between 880 and 1465. Nearly 80 % of the rabies cases were found in foxes.

In Hungary, the oral vaccination of foxes started in autumn 1992 on Hungarian state expense, first with experimentally character in a 5.000 km² area near to the western border of Hungary. Between springs of 1993 and 1996 oral vaccinations were carried out in a 6000 km² area, two times a year. Between autumns of 1996 and 2000 the western part of the country (Transdanubia) was covered by baits. As a result of this procedure the rabies disappeared from Transdanubia by the end of 2000. From 2001 the territory between the river "Danube" and the river "Tisza" had been involved in the immunization campaigns, while in Transdanubia only emergency ring vaccinations (within a radius of 30-50 km) were carried out, where positive cases were detected. Since 2004 the bait distribution has been extended over the whole country within the scope of a PIARE project (CRIS Number of the project is 2003/004-347-01-03. Vaccine baits for three years for the whole territory of the country [3.716.280 €] and laboratory equipments for testing [321.878 €] were financed by this project).

The efficacy of the oral immunization of foxes can be demonstrated by the considerable decrease of the rabies cases in the country. In 2005 only 9 cases were found in the whole country, in 2006 only 3, and in 2007 only 4 positive cases could be detected (Table 1. and Table 2.).

⁴ 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 for distinct periods if the measures were substantially modified. The information is documented by relevant summary epidemiological tables, graphs or maps.

Table 1.: The distribution of rabies cases in Hungary between 1996 and 2007

County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Baranya (1)	95	37	17	4	2	4	6	7	1	1	0	1
Bács-Kiskun (2)	73	47	65	88	96	31	17	6	0	0	0	0
Békés (3)	46	38	51	32	62	22	14	13	10	0	0	0
Borsod (4)	133	64	59	49	81	23	5	6	7	0	0	0
Csongrád (5)	53	40	79	42	23	25	27	8	5	0	0	0
Fejér (6)	141	33	4	0	1	0	0	1	3	2	0	0
Győr-Ménfőcsanak (7)	15	5	3	0	0	1	3	0	0	0	0	0
Hajdú-Bihar (8)	56	30	37	51	51	40	21	57	41	4	0	1
Héves (9)	38	32	34	16	42	13	3	1	3	0	1	0
Miskolc-Nagykunszabolcs (10)	19	39	46	6	19	27	20	11	3	0	0	0
Komárom-Esztergom (11)	64	10	3	4	0	0	0	0	1	0	0	0
Nógrád (12)	42	22	28	24	23	21	3	0	2	0	0	0
Pécs (13)	119	46	72	48	78	68	7	5	3	1	0	0
Somogy (14)	179	49	8	3	1	0	1	3	0	0	0	0
Szabolcs-Szatmár-Bereg (15)	65	30	33	12	27	29	9	34	44	1	1	2
Tolna (16)	99	21	8	12	0	0	0	3	0	0	1	0
Vas (17)	3	2	2	2	1	2	13	5	0	0	0	0
Veszprém (18)	59	14	3	1	0	0	4	11	1	0	0	0
Zala (19)	36	7	0	0	0	0	3	2	0	0	0	0
Budapest (20) - capital of Hungary	22	5	6	4	7	6	2	0	1	0	0	0
Total	1357	571	558	398	514	310	160	172	125	9	3	4

Table 2.: Rabies cases in Hungary between 1996 and 2006 by species

Animal species	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Domestic animals</i>												
dog	59	21	24	19	24	14	4	5	6	0	0	0
cat	117	65	69	41	63	42	17	18	5	2	0	1
cattle	65	22	20	15	25	15	8	18	3	0	1	0
sheep	1	2	1	1	0	0	1	0	0	0	0	0
goat	4	1	0	1	0	1	0	0	0	0	0	0
horse	3	1	5	2	5	1	1	1	0	0	0	0
other	1	1	0	1	0	1	0	1	0	0	0	0
total	250	113	119	80	118	74	31	43	14	2	1	1
<i>Wild animals</i>												
fox	1082	445	429	310	393	231	122	128	111	7	2	3
raccoon	0	0	0	0	0	0	0	0	0	0	0	0
raccoon dog	0	0	0	0	0	1	0	0	0	0	0	0
bats	0	0	0	1	0	0	0	0	0	0	0	0
badger	2	0	0	0	0	0	0	0	0	0	0	0
marten	6	3	4	1	1	1	1	0	0	0	0	0
wolver	0	0	0	0	0	0	0	0	0	0	0	0
rodents	1	0	0	0	0	1	0	0	0	0	0	0
other	16	10	6	6	2	2	5	1	0	0	0	0
total	1107	458	439	318	396	236	129	129	111	7	2	3
altogether	1357	571	558	398	514	310	160	172	125	9	3	4

3. Description of the submitted programme⁵:

3.1. Aim of the submitted programme:

The aim of the submitted program is to eradicate (sylvatic) rabies from wild animal populations in the whole territory of Hungary.

From the year 2008, the distribution of the vaccine baits is going to be implemented in the designated territory of Hungary described below (and in point 4.3.) for the following reasons.

The occurrence of rabies in Hungary significantly decreased in the last years: in 2006 only 3, in 2007 only 4 cases were detected.

The disease can be introduced by foxes from the surrounding countries. Austria and Slovakia has approved vaccination programmes, so it is unlikely to introduce rabies from the north. It is more important to focus on the other borders, Ukraine, Romania, Serbia and Croatia do not immunize the foxes against rabies (Romania is going to commence an oral vaccination campaign only this year, by manual distribution of the baits and without any compensation to the hunting associates), so the vaccination is going to be carried out in the territories bordering these countries. On the east, in County Szabolcs-Szatmár-Bereg and County Hajdú-Bihar – where more rabies cases were detected in the past – the whole territory of the county is going to be vaccinated. On the southern border, in County Békés, County Csongrád and County Bács-Kiskun, the distribution of baits will be carried out within the 50 km buffer zone from the country border. The southern part of Transdanubia (where red fox density is higher) is going to be vaccinated as follows. However Slovenia has approved vaccination programme, Hungary intends to vaccinate in County Vas within the 50 km buffer zone from the Slovenian border. In County Zala, only the 50 km buffer zone will be vaccinated. In County Somogy, County Baranya and County Tolna the whole territory is going to be involved in the campaign. In County Fejér, only the territory south of the M7 motorway will be vaccinated. We would like to highlight that the motorway means such a significant barrier for the wild animals, that it is almost impossible for them to come through. It also has to be mentioned that since the population of foxes increases in Hungary, the foxes mainly cross the border outwards Hungary to the neighbouring countries.

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⁵ 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, testing and slaughter, testing and killing, qualification of herds and animals, vaccination), the target animal population and the area(s) of implementation and the definition of a positive case.

3.2. Legal background:

Rabies is a notifiable disease (since 1928):

- 2nd indent of Article 7 and the Annex of the Hungarian Act N° CLXXVI of 2005 on Animal Health, issued on 28th December 2005. (Attached)
- 104 § of Decree N° 41/1997 of Ministry of Agriculture (Animal Health Code (AHC)), issued on 28th May in 1997.

Domestic animals:

Detailed rules on rabies relating to domestic animals are prescribed in the AHC (15.§ (3); 193.§ (1), (2); 212.§ - 216.§; 418.§ - 430.§; 796.§ (6); Annex 39.). The AHC lays down detailed rules on the control of infectious diseases, including rabies, in domestic animals. (Relating parts of the AHC are attached).

Pursuant to the 2nd indent of Article 2 of the Decree N° 81/2002 of Ministry of Agriculture and Rural Development (MARD) on veterinary duties in the prevention of zoonoses, issued on 4th September in 2002, the immunization of dogs against rabies is obligatory. (Attached)

Wild animals:

217.§ (5) of AHC says that hunters are obliged to decrease the number of foxes in order to prevent rabies.

Decree N° 13/2002 of MARD on the vaccination of foxes against rabies, issued on 30th January in 2002. (Attached)

3.3. Actions taken between 2000 and 2007 (relevant costs see at point 5.)

Oral vaccination two times a year: - spring - April

- autumn - October

Type and number of vaccine baits distributed: see 3.3, Table 3.

Distribution of vaccine baits: - *Via fixed-wing airplanes* (since 2003 different types of CFSNA airplanes):

- o density = 20 baits/km² (gross);
- o arial distribution is the main method for distribution;
- o the GPS system is used for navigation and flying lines are recorded by computer and printed out on map;
- o distance between flying lines is usually 1000 m, the speed is: 100-120 km/h;
- o in each new campaign flying lines are rotated with a radius of 90° compared to the lines of the previous campaign.
- o In county "Fejér" in the last three years at spring and summer in the plain of "Dég" and "Mezőkomárom" rabies was detected. Autumn in 2005 and in 2006 in a square area bordered by "Énying" – "Kálóz" – "Sárgeres" – "Szabadhidvég" 500 m flying density was applied. In 2006 and 2007 no rabies was detected.

- *Manual distribution:*

Manual distribution has been used where flying is not allowed or where more targeted distribution is needed (i.e. the shores of lake Balaton, districts of Budapest, oil and power plants and railway transfer zones is carried out by qualified wild life biologists. The density of baiting is 20 baits/km² with the exception of Budapest where 60 baits/km² were distributed.

Monitoring: The efficiency of oral vaccination shall be monitored beside the registration of the occurred cases - by laboratory methods. According to national legislation, dead foxes should be collected between day 30 and day 100 following the completion of the vaccination campaign. At least one adult fox per 40 km² shall be shot for diagnostic purposes and shall be delivered to the designated animal health institute ("Budapest", "Debrecen" or "Kaposvár"). In 2007 the number of foxes to be delivered was increased to a minimum of one adult fox per 25 km².

Even though in 2008 and 2009 the distribution of the baits is going to be limited to the region described in point 3.1. (and 4.3.), the sampling for monitoring still refers to the whole territory of the country.

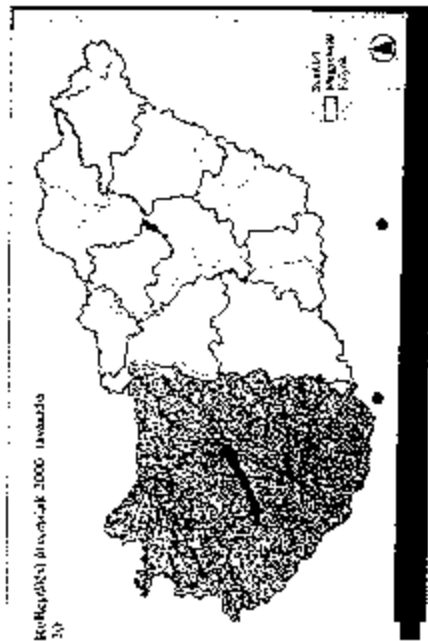
An area can be considered free of rabies if there is no occurrence of rabies for three consecutive years.

Table 3.

Year	Name of the regions vaccinated	Km ² vaccinated	Type and Number of baits used	No of foxes to be tested prescribed in the contracts
2000	Transdanubia	2 x 37.400 km ² = 74.800 km ²	1.500.000	1.870
2001	Between the Danube and the Tisza + 5 focuses at Transdanubia + manual: Paks 65 KFKI	2 x 36.918 km ² - 73.836 km ²	Rabifox: 1.500.000	1.846
2002	Between the Danube and the Tisza - 7 focuses at Transdanubia + manual: Paks, Bp. és KFKI	2 x 40.293 km ² - 80.586 km ²	Rabifox: 1.560.000	2.014
2003	Between the Danube and the Tisza + 19 focuses at Transdanubia ... manual: Paks, Bp. és KFKI	45.700 + 46.780 km ² = 92.480 km ²	Rabifox: 1.975.100	2.174
2004	The whole country	2 x 93.030 km ² - 186.060 km ²	Rabifox: 3.720.000	4.650
2005	The whole country	2 x 93.030 km ² - 186.060 km ²	Rabifox: 3.720.000	4.650
2006	The whole country	2 x 93.030 km ² - 186.060 km ²	Fuchisoral: 3.720.000	4.650
2007	The whole country	2 x 93.030 km ² - 186.060 km ²	Fuchisoral: 3.720.000	7440
2008 ongoing	County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Borsány, Somogy, Tolna; the whole territory County Békés, Csongrád, Bács- Kiskun, Zala; within the 50 km buffer zone from the country border County Fejér; south of the M7 motorway County Vas; within the 50 km buffer zone from the Hungarian-Slovenian border	2 x 45.000 km ² - 90.000 km ²	Lisvipen: 1.800.000	7440

Flying lines: 2000 – 2007

2000: spring and autumn



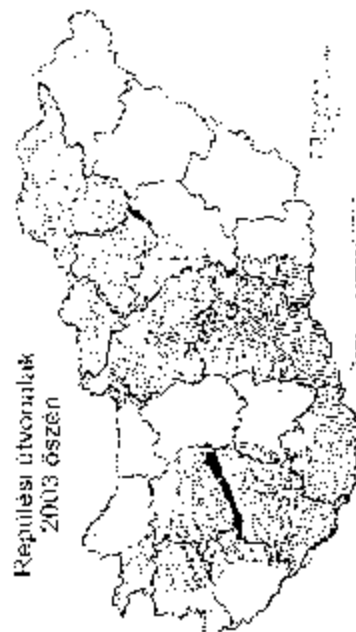
2001: spring and autumn

2002: spring and autumn

2003: spring



2003: autumn



2004-2007: spring and autumn

3.4. Applied diagnostics and testing methods:

A routine diagnostics of the rabies in animals of all species is carried out in the three laboratories (one central one in Budapest, and two regional in Debrecen and in Kaposvár) of the Veterinary Diagnostic Institute.

Applied tests:

- direct immunofluorescence of imprints of the brain with a monovalent anti-nucleocapside conjugate,
- isolation of the virus in mice,
- isolation of the virus in the neuroblastoma cells cultures,
- serological test (ELISA) test.

The monitoring tests on the efficiency of the oral immunization of foxes are also carried out in all animal health institutes via the following methods:

- immunofluorescence of the brain imprints - test for confirmation of rabies,
- RFFIT determination of the titre of antibodies of the rabies' virus in the blood serum (a clot from the heart or liquid from the chest) – test for immunisation
- bone polishing of the teeth – test for the presence of biomarker tetracyclines, test for bait uptake (this test is carried out only in Budapest)
- collection, handling and analysis of epidemiological data about diagnosed cases of the rabies within the area of vaccination.

3.5. Plans for the future:

Hungary intends to implement oral vaccination near to the borders of the infected countries in a minimum 50 km wide zone and simultaneously to apply emergency ring oral vaccination where positive rabies cases are detected.

4. Measures of the submitted programme

4.1. *Summary of measures under the programme – programme for wild animals (wild red foxes (Vulpes vulpes))*

Duration of the programme:

First year: 1992

Last year: until complete eradication of rabies from wild animals in the territory of Hungary

Control

- Testing
- Slaughter of positive animals
- Killing of positive animals
- Vaccination
- Treatment
- Disposal of products

Eradication

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

Monitoring or surveillance

Other measures (*specify*):

4.2.: *Organisation, supervision and role of all stakeholders⁶ involved in the programme*

I. National Authorities

a.) Central Agricultural Office

Animal Health and Animal Welfare Directorate
Division for Animal Health

- determines the date and territorial expansion of the immunization;
- keeps contact with national institutes (public health, disaster management), the Ministries of other countries and EU Institutes;
- coordinates and supervises the implementation procedures carried out by:

-*Central Agricultural Office, Directorate of Veterinary Medicinal Products*

Responsible for: - registration and testing of vaccines

- organisation of public procurements related to the eradication programme
- preparation of the programme

The national coordinator of the programme – appointed from this office – receives the reports for review from the contracted company on the preparation of vaccination campaign, progress of vaccination and completion of the work.

-*County Agricultural Office, Directorate of Food Chain Safety and Animal Health (19 counties)*

Prescribes restrictions on movements of dogs and prohibition of grazing.

The official veterinarians supervise the cold storages of vaccines and the airports, take over the fox-samples from the hunters and impose penalties on hunting associations which did not deliver the prescribed number of foxes.

⁶ Describe the authorities in charge of supervising and coordinating the departments responsible for implementing the programme and the different operators involved. Describe the responsibilities of all involved.

-Central Agricultural Office, Directorate of Veterinary Diagnostics (3 laboratories)

Responsible for laboratory diagnoses, which are carried out at three sites.

The central laboratory in Budapest is the National Reference Laboratory (NRL). Testing is also performed in the two regional laboratories in Debrecen and Kaposvár.

b.) Ministry of Agriculture and Rural Development

H-1055 Budapest

Kossuth square 11.

Department of Natural Resources

Division for Hunting, Fishing and Management of Water Supplies

- coordinates and supervises the implementation procedures carried out by:
 - Hunting and Fishing Inspectorates of the competent agricultural agencies in the counties
- Tasks: to inform the inhabitants about the campaigns
hunters shall kill and hand over foxes to the official veterinarians.

2. Business companies

a.) production of the vaccine baits

b.) carrying out the distribution of the vaccine baits (organising the whole campaign: to hold informative meetings for the hunters before each campaign in each county, to deliver sampling equipments to the hunters, to pay compensation to the hunters for deliveries of foxes.)

4.3. Description and demarcation of the geographical and administrative areas in which the programme is to be implemented³:

Marked with orange on the third map. See also point 3.1.

County	Area of vaccination	Area of vaccination (km ²)	Area of vaccination (ha)
Baranya	The whole territory	4 430	442 970,3
Bács-Kiskun	Within the 50 km buffer zone from the country border	4 145	414 534,3
Békés	Within the 50 km buffer zone from the country border	4 829	482 945,1
Csongrád	Within the 50 km buffer zone from the country border	3 536	353 594,8
Féjér	South of the M7 motorway	2 584	258 405,4
Hajdú-Bihar	The whole territory	6 209	620 870,3
Somogy	The whole territory	6 036	603 550,6
Szabolcs-Szatmár-Bereg	The whole territory	5 933	593 329,2
Tolna	The whole territory	3 703	370 285,4
Vas	Within the 50 km buffer zone from the country border	198	19 838,8
Zala	Within the 50 km buffer zone from the country border	3 053	305 331,5

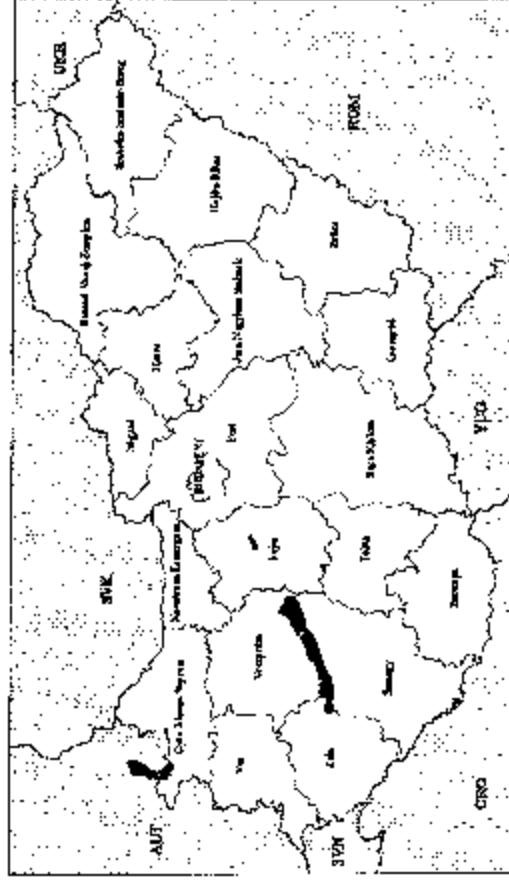
³ Describe the name and denomination, the administrative boundaries, and the surface of the administrative and geographical areas in which the programme is to be applied. Illustrate with maps.

Total:	44 656,6	4 465 653,7
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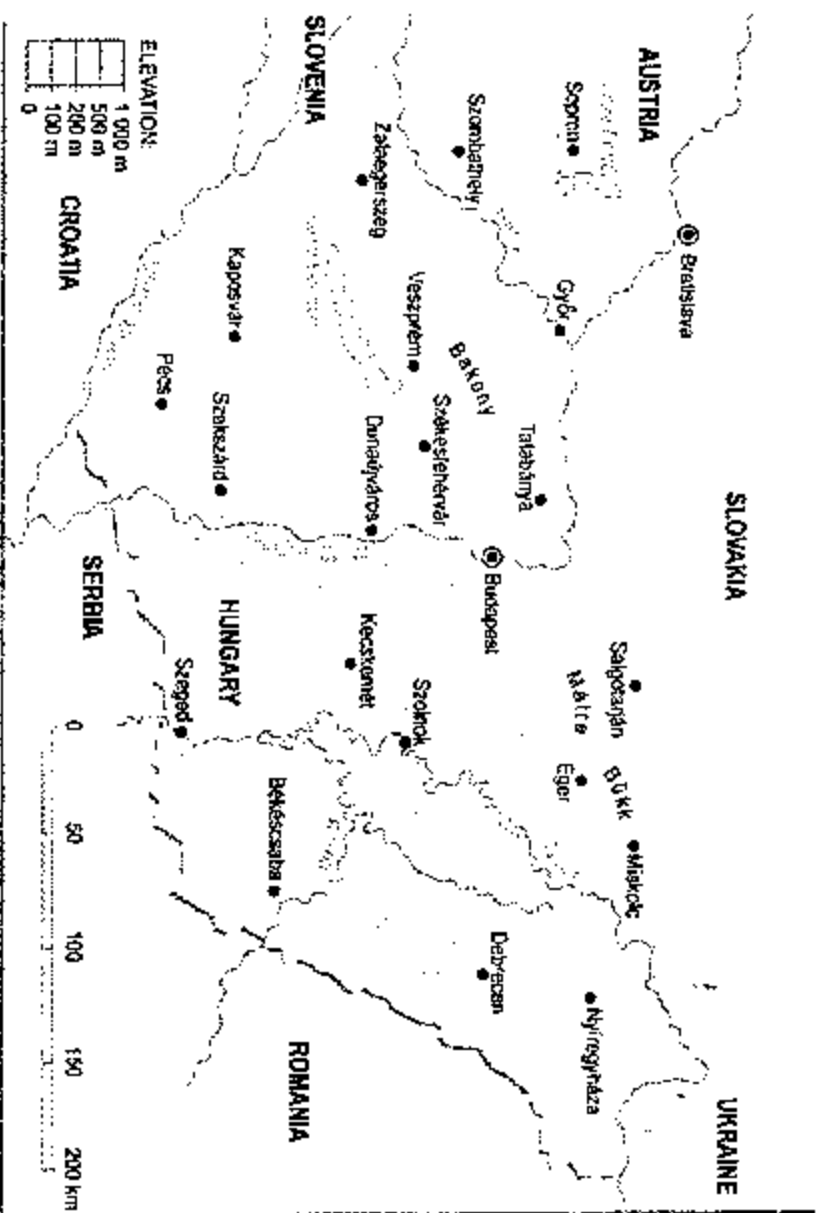
Hungary is surrounded by 7 countries (Austria, Slovakia, Ukraine, Romania, Serbia, Croatia, Slovenia). The country is divided into western (Transdanubia) and eastern Hungary by the river Danube. There are altogether 19 counties and Budapest, the capital.

Distribution of vaccine baits is not carried out in the urban area (town, villages etc). in the area of water (lakes, rivers, etc) and area of roads, highways and railways.

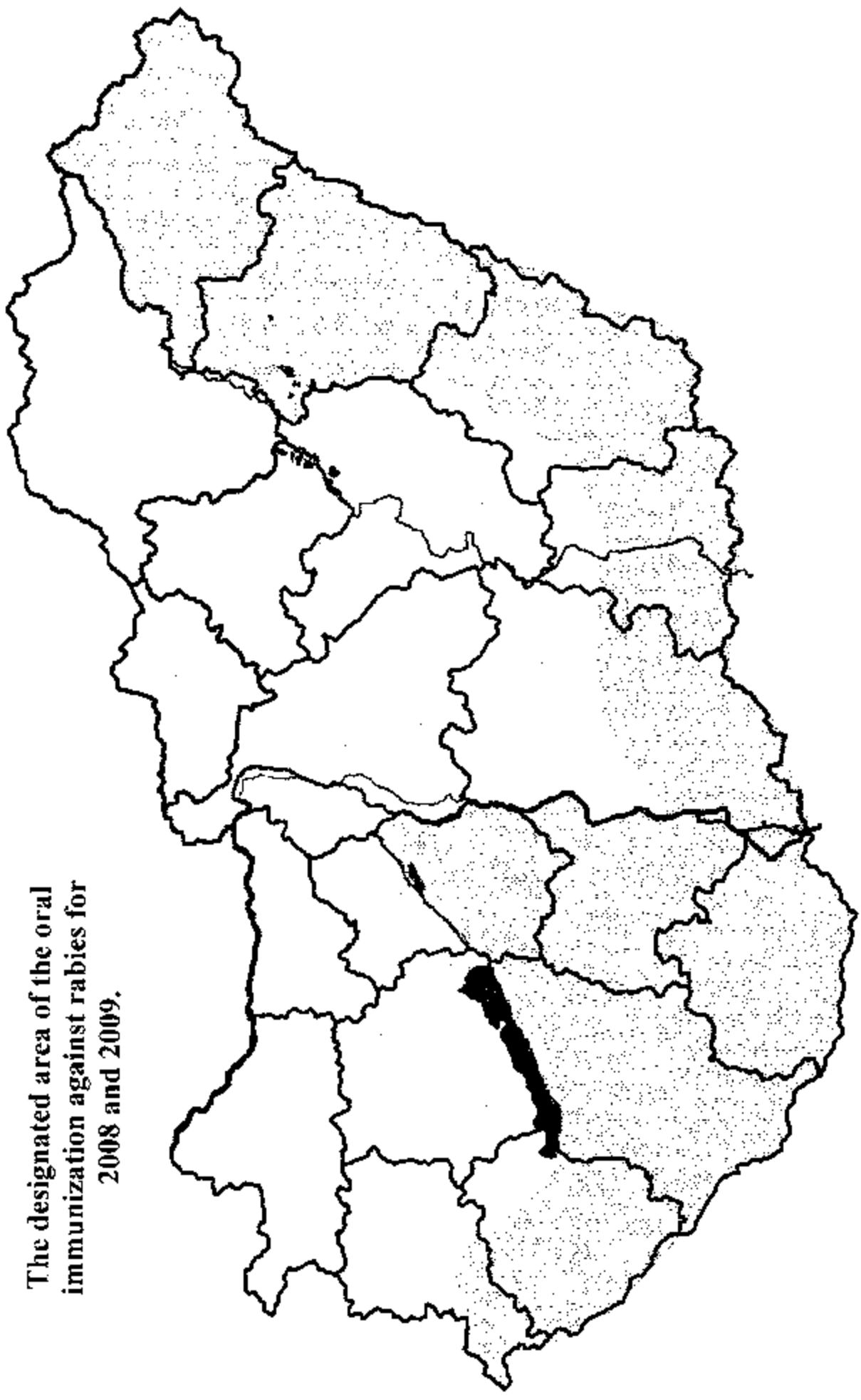
THE ADMINISTRATIVE BOUNDARIES OF HUNGARY



TOPOGRAPHIC MAP OF HUNGARY



The designated area of the oral immunization against rabies for 2008 and 2009.



4.4. *Description of the measures of the programme*⁸;

4.4.1. *Notification of the disease:*

Rabies is a disease subject to an obligatory notification (2nd indent of paragraph 7 and the Annex of the Hungarian Act N^o CLXXVI 2005 on Animal Health, issued on 28th December 2005).

It means that every fox or other wild species showing abnormal behaviour, found dead body of fox - hit by a car or died for unknown reason – has to be reported to the competent municipality or to the veterinarian.

4.4.2. *Target animals and animal population:*

Wild animals, especially red foxes (*Vulpes vulpes*). Population data can be found at point 6.6.

4.4.3. *Identification of animals and registration of holdings: NOT RELEVANT*

4.4.4. *Qualifications of animals and herds⁹: NOT RELEVANT*

4.4.5. *Rules on the movement of animals:*

418.§ - 430.§ of Decree N^o 41/1997 of MA (AIH), issued on 28th May in 1997

Animals which are infected, suspicious to be infected, or behave unnaturally – if the locking is practicable without any risk – shall be isolated where it cannot be in contact with any other animal.

⁸ A comprehensive description needs to be provided of all measures unless reference can be made to Community legislation. The national legislation in which the measures are laid down is mentioned.

⁹ To mention only if applicable.

4.4.6. Tests used and sampling schemes:

Decree N° 13/2002 of MARD on the vaccination of foxes against rabies, issued on 30th January in 2002.

Between day 30 and day 100 following the completion of the vaccination campaign at least one adult fox per 40 km² shall be shot for diagnostic purposes and shall be delivered to the designated animal health institute (Budapest, Debrecen or Kaposvár). In order to get samples with sufficient quality, the whole carcass of the fox has to be submitted.

At each fox direct IF test (for confirmation of the disease), AB-FIISA test (for control of immunization) and bone polishing of the mandible (test for presence of tetracycline, for the control of effectiveness of bait uptake) will be carried out. Along with the foxes delivered for monitoring of efficiency of rabies oral vaccination, both foxes found dead and foxes with abnormal behaviour (about 20% out of all tested animals) are routinely tested for the presence of the virus in the brain in the frame of the ongoing rabies eradication programme.

4.4.7. Vaccines used and vaccination schemes:

Decree N° 13/2002 of MARD on the vaccination of foxes against rabies, issued on 30th January in 2002.

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

418.§ - 430.§ of Decree N° 41/1997 of MA (AHC)

4.4.9. Measures in case of a positive result¹⁰:

In case of rabies positive results the protective and control measures will be imposed in accordance with the provisions of the 418.§ - 430.§ and Annex 39 of Decree N° 41/1997 of MA (AHC).

¹⁰ A short description is provided of the measures as regards positive animals (slaughter, destination of carcasses, use or treatment of animal products, the destruction of all products which could transmit the disease or the treatment of such products to avoid any possible contamination, a procedure for the disinfection of infected holdings, the therapeutic or preventive treatment chosen, a procedure for the restocking with healthy animals of holdings which have been depopulated by slaughter and the creation of a surveillance zone around the infected holding.).

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

Domestic animals:

-10. § and the Annex of the Hungarian Act N^o CLXXVI 2005 on Animal Health, issued on 28th December 2005, -141. § - 154. § of Decree N^o 41/1997 of MA (AHC)

Wild animals: there is no compensation

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

6.§ of Decree N^o 13/2002 of MARD on the vaccination of foxes against rabies.

According to the national legislation at least 1 adult fox per 40 km² (4.560 foxes annually) shall be delivered for the monitoring of the efficiency of oral vaccination (MOV) after each campaign.

We would like to emphasize that even though in 2008 and 2009 the distribution of the baits is going to be limited to the region described in point 3.1. (and 4.3.), the sampling for monitoring still refers to the whole territory of the country.

As announced in the tender specification for campaigns in 2007, the number of foxes planned to be delivered for the MOV has been increased to a minimum of 1 adult fox per 25 km² after each vaccination campaign (7.440 foxes annually). This information was distributed by the contracted company to all hunting units in March 2007.

5. Benefits of the programme¹¹:

Benefits: Gain free status from a zoonosis which is fatal also for humans

- Costs:**
- costs of the vaccine baits
 - costs of the distribution
 - costs of refund paid to the hunters for each "shot" fox (for incentive, to deliver sufficient number of fox-samples)
 - costs of the control tests
 - other (costs of the storage of vaccine baits, costs of transaction of public procurements)

Costs were paid for the programme between 2001 – 2007 (without the costs of the tests and other costs)

(1 euro = 253,3 Hungarian Forint 24 /04/ 2008 rate of exchange Hungarian National Bank)

Year	Costs of the Vaccine baits (without VAT) [€]	Costs of the Distribution (without VAT 15 %, until 01. 09. 2006 VAT = 20%) [€]	Total costs (without VAT 15 %)[€]
2001		See total cost	977.825
2002			1.040.927
2003			1.291.678
2004	1.238.760 (PHARE)	1.225.745	
2005	1.238.760 (PHARE)	1.322.395	
2006	1.238.760 (PHARE)	1.398.379	
2007	2.232.000 (by co-financing)	1.396.921	3.929.313

¹¹ A description is provided of the benefits for farmers and society in general.

2008	<p style="text-align: center;">Ongoing.</p> <p>Remark: 1 public procurement process was established. In this tender the winner must provide the vaccine baits and the distribution also.</p>	1 613 721
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6. Data on the epidemiological evolution during the last five years¹²

6.1. Evolution of the disease¹³ NOT RELEVANT

6.1.1. Data on herds^(a) (one table per year and per disease/species)

Year:

Situation on date:

Disease^(b):

Animal species:

Region ^(c)	Total number of herds ^(d)	Total number of herds under the programme	Number of herds checked ^(e)	Number of positive herds ^(f)	Number of new positive herds ^(g)	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
								Period herd prevalence	Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = 17.5x100	9 = (4.3)x100	10 = (5.4)x100	11 = (6.4)x100
Total										

¹²

The data on the evolution of the disease are provided according to the tables below where appropriate.

¹³

No data to provide in case of rabies.

- (a) Herds equal flocks, or holdings as appropriate.
- (b) Disease and animal species if necessary.
- (c) Region as defined in the eradication programme of the Member State.
- (d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.
- (e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd should not be counted twice even if has been checked more than once.
- (f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.
- (g) Herds which status in the previous period was Unknown, Not free-negative, Free, Officially Free or suspended and have at least one positive animal in this period.

6.2. Stratified data on surveillance and laboratory tests: NOT RELEVANT

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

Year: _____ Disease^(a): _____ Animal species/category^(b): _____

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests:

Region ^(a)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ^(b)	Number of positive samples ^(c)	Number of samples tested ^(d)	Number of positive samples ^(e)	Number of samples tested ^(f)	Number of positive samples ^(g)
Total						

- (a) Disease and animal species if necessary.
- (b) Breeders, laying hens, etc, when appropriate
- (c) Region as defined in the approved eradication programme of the Member State.
- (d) Number of samples tested, all confounded.
- (e) Number of positive samples, all confounded

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

Year: 2003

Disease^(a): Rabies

Animal species: Wild animals

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
HUNGARY		
Fox		128
Other		1
Total		129

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

Year: 2004

Disease^(a): Rabies

Animal species: Wild animals

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
HUNGARY		
Fox		111
Total		111

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

Year: 2005

Disease^(a): Rabies

Animal species: Wild animals

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
HUNGARY		
Total	7	7

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

Year: 2006

Disease^(a): Rabies

Animal species: Wild animals

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
HUNGARY		
Total	2	2

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

Year: 2007

Disease^(a): Rabies

Animal species: Wild animals

	Region ^(b)	Number of herds infected ^(c)	Number of animals infected
Fox	HUNGARY		3
Total			3

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

6.6. Data on wildlife¹⁶

6.6.1. Estimation of wildlife population

Year: 2000-2006

Method of estimation^(a): Hunting bag of wild red foxes (National Game Management Database <http://www.vvt.gau.hu/adattar/>)

^(b)Here are also (rough) population of golden jackals (*Canis aureus* (Linnæus)) and of raccoon dogs (*Nyctereon procyonoides*) in Hungary, but the size of their populations is far smaller (concerning to the size of the population of wild red foxes (*Vulpes vulpes*)).

Year	Region ^(b)	Estimation of the population of the concerned wild species	
		Species: Wild red fox (<i>Vulpes vulpes</i>) No. of shot foxes	Species:-
2001	HUNGARY	41,509	Species:-
2000		49,815	
2001		63,509	
2002		74,571	
2003		63,165	
2004		56,349	
2005		57,348	
2006		59,317	
Total			

(a) The hunting bag is considered to be the standard method of estimation. If other method is used, explain

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

Peculiarities of the hunting bags of foxes between 1990-2003 (Source: National Game Management Database)

Year of the hunting bag	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Size of the hunting bag	14,260	14,237	14,388	12,843	13,951	13,301	18,192	18,511	22,637	27,876	39,977	38,705	39,653	21,540	19,429
Female Sex	16,170	16,064	17,602	16,374	17,216	19,115	20,219	21,161	22,231	26,818	38,200	33,291	43,914	47,163	38,238
Handley	32,571	29,432	31,997	34,156	37,369	36,506	38,311	41,702	44,968	54,613	59,816	61,596	74,571	63,165	56,148
Number of the hunting bag	41,465	44,231	45,083	43,674	45,976	43,785	47,475	49,375	50,296	56,984	57,179	47,235	49,235	33,985	34,074

¹⁶

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

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004
Density of foxes (pieces/1000 ha)	56,3%	55,8%	54,4%	53,1%	51,7%	50,3%	48,9%	47,5%	46,1%
Transdanubia	3,7	3,7	3,3	3,0	2,8	2,6	2,4	2,2	2,0
To the east of the Danube	3,4	3,2	3,0	2,8	2,6	2,4	2,2	2,0	1,8
Hungary	3,5	3,5	3,3	3,1	2,9	2,7	2,5	2,3	2,1

Estimation of the population of wild red foxes was also carried out via questionnaires filled out by hunters.

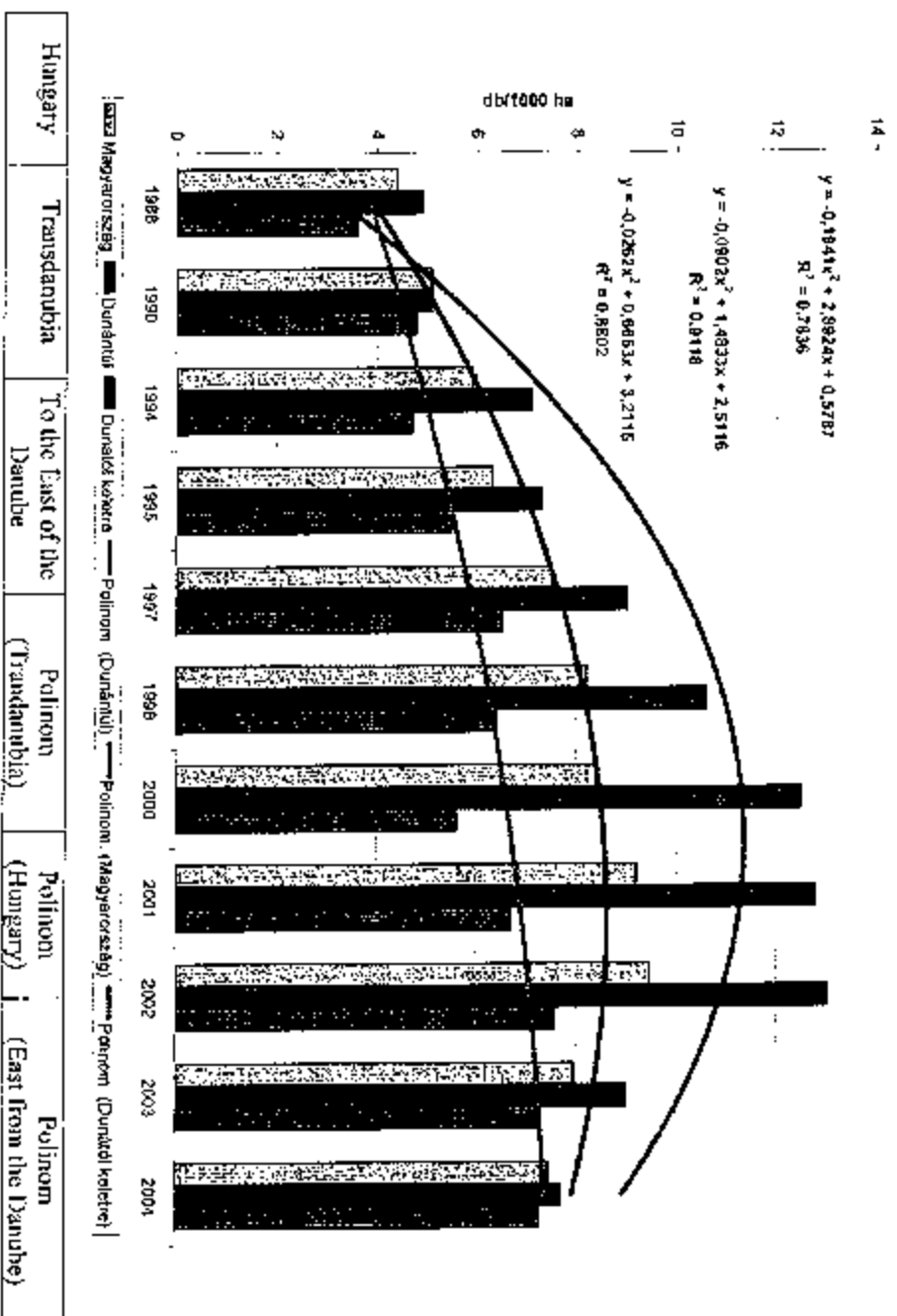
Density of the fox population (pieces/1000 ha) between 1988-2004 (—: mean, SD: standard deviation, n: N° of the respondents) I

Year	Hungary		Transdanubia		To the east of the Danube	
	Mean	SD	n	SD	N	n
1988	4,4	3,2	233	3,7	97	136
1990	5,1	3,8	186	3,6	74	112
1994	5,9	4,9	280	4,7	119	161
1995	6,3	4,8	377	5,5	141	236
1997	7,5	5,8	299	6,8	121	178
1998	8,2	6,8	448	8,1	193	255
2000	8,4	9,1	551	12,3	220	328
2001	9,2	7,6	413	8,5	167	245
2002	9,47	14,0	458	9,44	159	299
2003	7,95	6,7	455	6,84	173	282
2004	7,45	7,45	455	6,19	175	280

Density of the fox-burrows inhabited between 1988-2004 (piece/1000 ha): —: mean, SD: standard deviation, n: N° of the respondents

Year	Transdanubia		To the east of the Danube	
	Mean	SD	n	SD
1988	2,3	1,7	101	1,4
1990	2,1	1,4	75	1,6
1994	3,1	2,1	129	1,5
1995	3,0	2,1	141	1,8
1997	3,9	2,8	169	2,4
1998	4,3	2,6	215	2,6
2000	4,4	3,4	222	1,9
2001	4,2	2,9	191	2,0
2002	3,74	2,62	197	2,03
2003	3,16	2,28	204	1,86
2004	3,00	5,82	197	1,98

Changes in the density of the population of the wild red foxes between 1988-2004



Source: M. Helán and L. Szendrői 2005:
 Changes in the fox population, in the last 15 years. How effect the immunization on the population of foxes?
 NIMRÓD 93(10): 23-25. p.

6.6.2. *Monitoring of wildlife (one table per year and per disease/species)*

Year: 2001-2007

Disease^{a)}: Rabies

Animal species: Red foxes (*Vulpes vulpes*)

Description of the used serological tests:

A13-FLISA test - determination of the titre of antibodies of the rabies' virus in the blood serum (a clot from the heart or liquid from the chest).

Description of the used microbiological or virological tests:

Direct immunofluorescence of the brain imprints - test for rabies.

Description of the other used tests:

Bone polishing of the mandible – test for the presence of tetracyclines.

Region ^{b)}	Microbiological or virological tests		Serological tests		Other tests (Bone polishing)	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
HUNGARY						
2001*	1.212	231	485	152	485	185
2002	2.199	122	667	357	1031	794
2003	2.178	128	642	563	939	698
2004**	4.758	111	1556	743	2010	1951
2005	5.711	7	2105	1526	2538	1941
2006	6621	3	2113	639	5841	4104
2007	7777	3	4525	1324 (ongoing)	7628	1368 (ongoing)
Total	30456	605	12093	5304	21372	11041

(a) Disease and species if necessary

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

Remarks:

* data from year 2001 contains only 1 campaign

** laboratory control of oral immunization of foxes was extended over the foxes sent for diagnostic examination (found dead, road kills, suspected)

6.6.3. Data on vaccination or treatment of wildlife

Year: 2003-2007

Disease^(a): Rabies

Animal species: Wild red foxes (*Vulpes vulpes*)

Description of the used vaccination, therapeutic or other scheme: see 3.2 and 3.3.

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
Between the Danube and the Tisza + 19 focuses in Transdanubia + annual: Paks, Bp. Es KEKI	2003 Spring: 45.700 Autumn: 46.780	Spring: 976.010 Autumn: 999.090	2	1.975.100
The whole territory of HUNGARY	2004 (annual: 920)	1.860.000	2	3.720.000
The whole territory of HUNGARY	2005 93.030 (annual: 920)	1.860.000	2	3.720.000
The whole territory of HUNGARY	2006 93.030 (annual: 920)	1.860.000	2	3.720.000
The whole territory of HUNGARY	2007 93.030 (annual: 920)	1.860.000	2	3.720.000
Total				16.855.100

(a) Disease and species if necessary

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

7. Targets

7.1. Targets related to testing (one table for each year of implementation)

7.1.1. Targets on diagnostic tests

Disease ^(a)	Animal species:		Target population ^(b)	Type of sample ^(c)	Objective ^(d)	Number of planned tests
	Region ^(e)	Type of the test ^(f)				
RABIES	HUNGARY	Immunofluorescence of the brain imprints	Red fox (<i>Vulpes vulpes</i>)	Brain	Confirmation of rabies	7410
			Red fox (<i>Vulpes vulpes</i>)	Blood	Control of immunisation	7440
		AB-ELISA test (Rivotat)	Red fox (<i>Vulpes vulpes</i>)	Mandible	Monitoring of campaigns (bait uptake)	7440
			Red fox (<i>Vulpes vulpes</i>)	Vaccine baits	Control of virus titre in vaccine baits	12
		Bait titration		Vaccine baits	Contains only vaccine	12
		Vaccine sterility				
Total						

(a) Disease and species if necessary

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

(c) Description of the test (e.g. SN-test, AB-ELISA, RBT, ...)

(d) Specification of the targeted species and the categories of targeted animals (e.g. sex, age, breeding animal, slaughter animal, ...)

(e) Description of the sample (e.g. blood, serum, milk, ...)

(f) Description of the objective (e.g. qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, seroconversion, control on deleted vaccines, testing of vaccine, control of vaccination, ...)

7.1.2. Targets on testing herds and animals¹⁷ NOT RELEVANT

7.1.2.1 Targets on the testing of herds⁽⁸⁾

Disease ⁽⁹⁾ :	Animal species:							TARGET INDICATORS		
	Total number of herds ⁽⁶⁾	Total number of herds under the programme	Number of herds expected to be checked ⁽⁷⁾	Number of expected positive herds ⁽⁶⁾	Number of expected new positive herds ⁽⁶⁾	Number of herds expected to be depopulated	% positive herds expected to be depopulated	Expected % herd coverage	% positive herds expected period herd prevalence	% new positive herds Expected herd incidence
1	2	3	4	5	6	7	8 (75)X100	9 = (413)X100	10 = (34)X100	11 (6.4)X100
Total										

- (a) Herds equal flocks, or holdings as appropriate.
- (b) Disease and animal species if necessary.
- (c) Region as defined in the approved eradication programme of the Member State.
- (d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.
- (e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd should not be counted twice even if has been checked more than once.
- (f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.
- (g) Herds which status in the previous period was Linkdown. Not free-negative, Free, Officially Free or suspended and have at least one positive animal in this period.

¹⁷ Data not to provide in case of rabies.

7.2. Targets on qualification of herds and animals¹⁸ (one table for each year of implementation): NOT RELEVANT

Disease^(a):

Animal species:

Region ^(b)	Total number of herds and animals under the programme	Targets on the status of herds and animals under the programme ^(c)													
		Expected unknown ^(d)		Expected not free or not officially free			Expected free or officially free			Expected free ^(h)			Expected officially free ⁽ⁱ⁾		
		Herds	Animals ^(f)	Herds	Animals ^(f)	Animals ^(f)	Herds	Animals ^(f)	Animals ^(f)	Herds	Animals ^(f)	Animals ^(f)	Herds	Animals ^(f)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Total															

- (a) Disease and species if necessary;
 (b) Region as defined in the approved eradication programme of the Member State
 (c) At the end of the year
 (d) Unknown: No previous checking results available
 (e) Not free and last check positive; Herd checked with at least one positive result in the latest check
 (f) Not free and last check negative; Herd checked with negative results in the latest check but not being "free" or "officially free"
 (g) Suspended as defined for the respective disease in Community or national legislation where appropriate or according national legislation.
 (h) Free herd as defined for the respective disease in Community or national legislation where appropriate or according national legislation
 (i) Officially free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation
 Include animals under the programme in the herds with the referred status (left column)

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Data to provide only for bovine tuberculosis, bovine brucellosis, ovine and caprine brucellosis (B. melitensis), enzootic bovine leucosis (EBL) and Aujeszky's disease

7.3. Targets on vaccination or treatment

7.3.1. Targets on vaccination or treatment¹⁹; NOT RELEVANT

Disease ^(a)	Animal species:								
	Region ^(b)	Total number of herds ^(c) in vaccination or treatment programme	Total number of animals in vaccination or treatment programme	Number of herds ^(c) in vaccination or treatment programme	Number of herds ^(c) expected to be vaccinated or treated	Number of animals expected to be vaccinated or treated	Number of doses of vaccine or treatment expected to be administered	Number of adults ^(d) expected to be vaccinated	Number of young ^(d) animals expected to be vaccinated
Total									

(a) Disease and species if necessary

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

(c) Herds equal flocks, or holdings as appropriate

(d) Only for Bovine brucellosis and Ovine, caprine brucellosis (*B. melitensis*) and zoonotic salmonella and as defined in the programme

¹⁹ Data to provide only if appropriate.

7.3.2. Targets on vaccination or treatment²⁰ of wildlife

Disease²¹: Rabies 2009

Animal species: Wild animals

Region ²²	Square km	Targets on the vaccination or treatment programme		
		Number of doses of vaccine or treatments expected to be administered in the campaign	Expected number of campaigns	Total number of doses of vaccine or treatment expected to be administered
County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Borsod-Abaúj-Zemplén, Tolna: the whole territory	45 000	900 000	2	1 800 000
County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the country borders				
County Fejér: south of the M7 motorway				
County Vas: within the 50 km buffer zone from the Hungarian-Slovenian border				
Total	45 000	900 000	2	1 800 000

(a) Disease and species if necessary

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

²⁰ Data to provide only if appropriate.

8. Detailed analysis of the cost of the programme (one table per year of implementation)

Estimated costs for the year 2009 (Estimation based on the data from 2004-2008, (VAT is 20 %, 1 € =253,3 HUF)

Costs related to	Specification	Number of units	Unitary cost in €	Total amount in €	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis	Test: IF	7440 [piece]	15.26	113,534.40	yes
	Test: ELISA7440 [piece]	7440 [piece]	11.42	84,984.80	yes
	Test: Bone polishing	7440 [piece]	7.62	56,692.80	yes
1.2. Cost of sampling	Shooting of the animals and passing them to the official veterinarians	7440 [piece]	27.026	201,073.50	yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment	4 type of vaccine has marketing authorisation in Hungary (Rabifox, Fuchsoral, Rabigen SAG-2, Lisvilpen)	2 x 900.000 = = 1.800.000	0.4	720,000.00	yes
2.2. Distribution costs	Distribution of vaccines via airplanes and manual	2 x 45.000 = = 90.000 [km ²]	7.51	675,900.00	yes
2.3. Administering costs					

2.4. Control costs	See at 1.1. Costs of the analysis	See 1.1	See 1.1	See 1.1	yes
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					
5. Salaries (staff contracted for the programme only)					

Abbreviations:

MA – Ministry of Agriculture (until 1997)

MARD = Ministry of Agriculture and Rural Development (since 1998)

AHC = Animal Health Code

Bp. = Budapest, capital of Hungary

KFKI = Központi Fizikai Kutató Intézet (Central Physical Research Institute)