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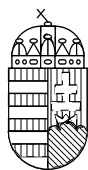
*Programmes for the eradication, control and monitoring of certain
animal diseases and zoonoses*

**The programme for
the eradication of rabies**

Hungary

Approved* for 2013 by Commission Decision 2013/766/EU

* in accordance with Council Decision 2009/470/EC



**National Food Chain Safety Office
Animal Health and Animal Welfare Directorate**

HUNGARY

**APPLICATION
FOR COMMUNITY CO-FINANCING OF
HUNGARIAN
NATIONAL PROGRAMME FOR THE ERADICATION, CONTROL AND MONITORING
OF
RABIES IN RED FOXES
FOR 2013**

SUBMITTED: 27th APRIL, 2012

In accordance with Council Decision 2009/470/EC of 25 May 2009 on expenditure in the veterinary field,
and
Commission Decisions 2008/425/EC, 2008/341/EC

Corrected : 17th September, 2012

Modified: 29th October, 2012

2. Historical data on the epidemiological evolution of the disease(s)⁽³⁾:

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 eastward from 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 red 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 cases/year. Nearly 80 % of the rabies cases were found in red foxes.

In Hungary, the oral vaccination of red foxes started in autumn 1992 on Hungarian state expense, initially 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 rabies is disappeared from Transdanubia by the end of 2000. From 2001 the territory between the river "Duna" (Danube) and the river "Tisza" had been involved in the immunization campaigns, while in Transdanubia only emergency ring vaccinations (within a circle with a radius of 18-20 km) were carried out, around the detected positive cases. In the years 2004, 2005 and 2006 the bait distribution has been extended over the whole country within the scope of a PHARE project (CRIS Number of the project is 2003/004-347-01-03).

Since 2007 the eradication, control and monitoring programme is approved and co-financed by the Community (Commission Decisions: 2006/875/EC, 2007/782/EC, 2008/897/EC and 2009/883/EC). In 2007 the vaccination of the whole territory of the country was continued. From the year 2008 the distribution of the vaccine baits is implemented in certain designated territories of Hungary (*Map 7.*, *Map 8.* and *Map 9.*).

The efficacy of the oral immunization of foxes can be demonstrated by the considerable decrease of rabies cases in the country. During the recent five years period the number of the detected positive cases remained under ten cases. In the calendar years 2005 only 9, in 2006 only 3, in 2007 only 4, in 2008 only 7 and in 2009 only 2 positive cases could be detected for the whole territory of the country. In 2010 fox rabies cases happened in Hungary: from this 6 cases in county Csongrád (close to the border of the country) and 1 dog in the same county, 1 case in county Hajdú-Bihar, 2 cases in county Szabolcs-Szatmár-Bereg. (See Table 1. and Table 2.) In 2011 two(2) rabies cases in bats were proved.

⁽³⁾ 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 2011

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Baranya (1)	2	4	6	7	1	1	0	1	1	0	0	0
Bács-Kiskun (2)	96	31	17	5	0	0	0	0	0	0	0	0
Békés (3)	62	22	14	13	10	0	0	0	3	0	0	0
Borsod-Abaúj-Zemplén (4)	81	23	5	6	7	0	0	0	1	0	0	0
Csongrád (5)	23	25	27	8	5	0	0	0	0	1	7	0
Fejér (6)	1	0	0	1	3	2	0	0	0	0	0	0
Győr-Moson-Sopron (7)	0	1	5	0	0	0	0	0	0	0	0	0
Hajdú-Bihar (8)	51	40	21	57	41	4	0	1	1	0	1	0
Heves (9)	42	13	3	1	3	0	1	0	0	0	0	0
Jász-Nagykun-Szolnok (10)	19	27	20	11	3	0	0	0	0	0	0	0
Komárom-Esztergom (11)	0	0	0	0	1	0	0	0	0	0	0	0
Nógrád (12)	23	21	3	0	2	0	0	0	0	0	0	0
Pest (13)	78	66	7	5	3	1	0	0	0	0	1	1
Somogy (14)	1	0	1	3	0	0	0	0	1	0	0	0
Szabolcs-Szatmár-Bereg (15)	27	29	9	34	44	1	1	2	0	1	2	0
Tolna (16)	0	0	0	3	0	0	1	0	0	0	0	0
Vas (17)	1	2	13	5	0	0	0	0	0	0	0	0
Veszprém (18)	0	0	4	11	1	0	0	0	0	0	0	0
Zala (19)	0	0	3	2	0	0	0	0	0	0	0	0
Budapest (20) = capital of Hungary	7	6	2	0	1	0	0	0	0	0	0	1
Total	514	310	160	172	125	9	3	4	7	2	11	2

Table 2.: Rabies cases in Hungary between 1996 and 2011 by species

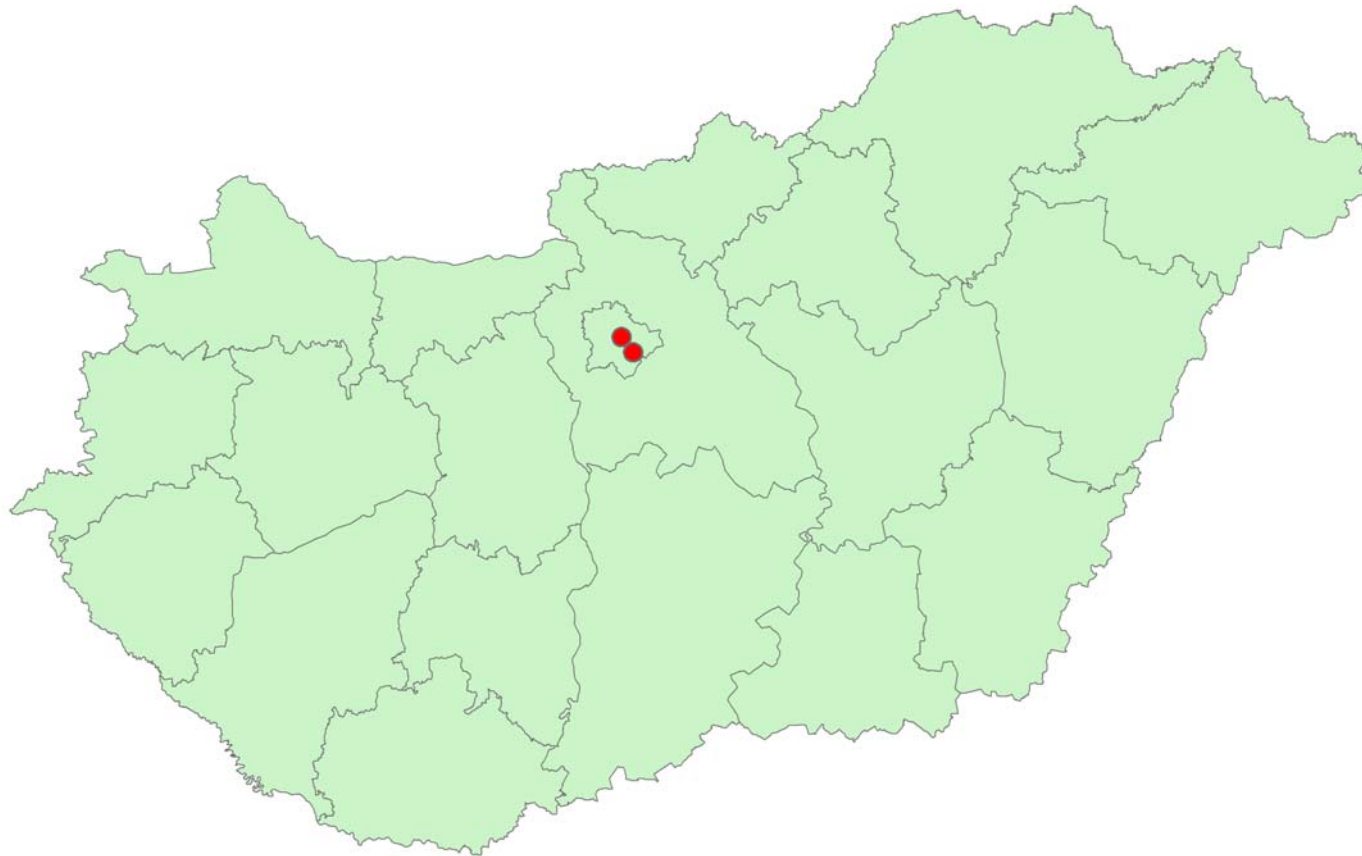
Animal species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Domestic animals												
dog	24	14	4	5	6	0	0	0	1	0	1	0
cat	63	42	17	18	5	2	0	1	0	0	0	0
cattle	25	15	8	18	3	0	1	0	0	0	0	0
sheep	0	0	1	0	0	0	0	0	0	0	0	0
goat	0	1	0	0	0	0	0	0	0	0	0	0
horse	5	1	1	1	0	0	0	0	0	0	0	0
other	0	1	0	1	0	0	0	0	0	0	0	0
Total	118	74	31	43	14	2	1	1	1	0	1	0
Wild animals												0
fox	393	231	122	128	111	7	2	3	6	2	9	0
raccoon	0	0	0	0	0	0	0	0	0	0	0	0
raccoon dog	0	1	0	0	0	0	0	0	0	0	0	0
bats	0	0	0	0	0	0	0	0	0	0	1	2
badger	0	0	1	0	0	0	0	0	0	0	0	0
marten	1	1	1	0	0	0	0	0	0	0	0	0
wolves	0	0	0	0	0	0	0	0	0	0	0	0
rodents	0	1	0	0	0	0	0	0	0	0	0	0
other	2	2	5	1	0	0	0	0	0	0	0	0
Total	396	236	129	129	111	7	2	3	6	2	11	2
Altogether	514	310	160	172	125	9	3	4	7	2	11	2

Confirmed rabies cases **between 01.01.2011 and 31.03.2011: There was no rabies case confirmed in Hungary**

Confirmed rabies cases: **between 31.03.2011 and 30.06.2011: There was no rabies case confirmed in Hungary**

Confirmed rabies cases **between 30.06.2011 and 30.09. 2011: There was two rabies case confirmed in bats in Hungary (Pest)**

Confirmed rabies cases **between 30.09.2011 and 31.12.2011: There was no rabies case confirmed in Hungary**



3. Description of the submitted programme ⁽⁴⁾:

3.1. Aim of the submitted programme:

The final aim of the submitted programme is to eradicate (sylvatic) rabies from wild animal (red fox – *Vulpes vulpes*) populations in the whole territory of Hungary, applying measures and methods in accordance with Community legislation.

The occurrences of rabies cases in Hungary - comparing to 2004 and the years before – are significantly decreased in the last years: in 2006 only 3, in 2007 only 4, in 2008 only 7 and in 2009 only 2 cases were detected, in 2010 10 cases were detected, in 2011 2 bat cases were detected (*Table 1.* and *Table 2.*). From the year 2008 the distribution of the vaccine baits is implemented in certain designated territories of Hungary (*Map 7.*, *Map 8.* and *Map 9.*).

In 2013 Hungary intends to continue the programme as it is written below.

Rabies could be introduced by red foxes arising from the surrounding countries. Relating to the information we have, Slovenia, Serbia, Austria, Slovakia and Romania have approved vaccination programmes, so to introduce rabies from the north, seems to be unlikely. It is more important to focus the vaccination campaigns on the other borders, Ukraine do not immunize red foxes against rabies.

In accordance with the Hungarian national legislation a county could be considered free from rabies if there is no occurrence of rabies (in animals and in humans as well) for two consecutive years. In this case vaccination should be continued for two more years since the last confirmed case on the territory of the county. In case of reinfection, in a circle with 50 km radius around the place of confirmation, revaccination should be carried out.

In 2008 the vaccination in Hungary was carried out in the territories bordering Slovenia, Croatia, Serbia, Ukraine and Romania. From spring 2009 the territory of vaccination was slightly modified. Despite of our presumption in 2008 there was one rabies case detected in north part of the country, namely in County Borsod-Abaúj-Zemplén. Taking into consideration this fact since spring of 2009 Hungary vaccinates the eastern territory of this county from river “Sajó” as well. On the east, in County Szabolcs-Szatmár-Bereg and County Hajdú-Bihar – where more rabies cases were detected in the past – the vaccination of the whole territory of these counties intends to be continued. On the southern border of the country, in County Bács-Kiskun, the distribution of the baits intends to be carried out within the 50 km buffer zone from the border of the country. In countries Békés and Csongrád the vaccination of the whole territory of these counties intends to be continued, the frontier line of the vaccination was fitted into the administrative border in the case of both counties.

⁴ 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.

In the beginning of 2010 (until 31st march) there were 6 cases detected in foxes and was 1 case detected in the south part of County Csongrád. In this area from 2010 Hungary halved the flying distances to during vaccination to allocate double number of vaccines to this infected area. The southern part of Transdanubia (where red fox density is higher) intends to be vaccinated as follows. However Slovenia has approved vaccination programme, Hungary intends to vaccinate in County Vas within the 50 km buffer zone near to the Slovenian border. In County Zala, only the 50 km buffer zone from the border intends to be vaccinated. Basically at the south part of Transdanubia Hungary intends to vaccinate the 50 km buffer zone from the border as well. In County Baranya the whole territory intends to be involved in the campaigns. From the 2012/2013 hunting year, in Hungary, during the monitoring of OVF, the number of samples to be collected is be four foxes per 100 km² in a year, in accordance with the 2005 WHO recommendation and as it is approved on 16th October 2009 on the SCoFCAH meeting. Please see below.

*(„Rabies surveillance plays an important part in the planning, implementation and evaluation of rabies control programmes. Before oral vaccination programmes are carried out, rabies surveillance is usually sufficient. Generally, surveillance is also sufficient during vaccination campaigns, particularly where hunters and wildlife services are engaged in sampling of field animals and active sampling is supported by granting appropriate incentives to hunters and trappers. However, experience has shown that the intensity of surveillance activities decreases as successive cycles of oral vaccination campaigns are completed. Adequate surveillance is most important during this phase; the absence of rabies requires verification, and residual foci of rabies must be detected rapidly. It is important to collect animal samples, particularly from animals that are ill or found dead to monitor the impact of vaccination. For the monitoring of the efficacy of oral vaccination programmes (biomarker detection, serological testing and **rabies incidence**) a minimum of four target animals per 100 km² should be investigated annually .”)*

The oral vaccination of foxes against rabies (Report of the Scientific Committee on Animal Health and Animal Welfare, adopted on 23 October 2002)
Please see below.

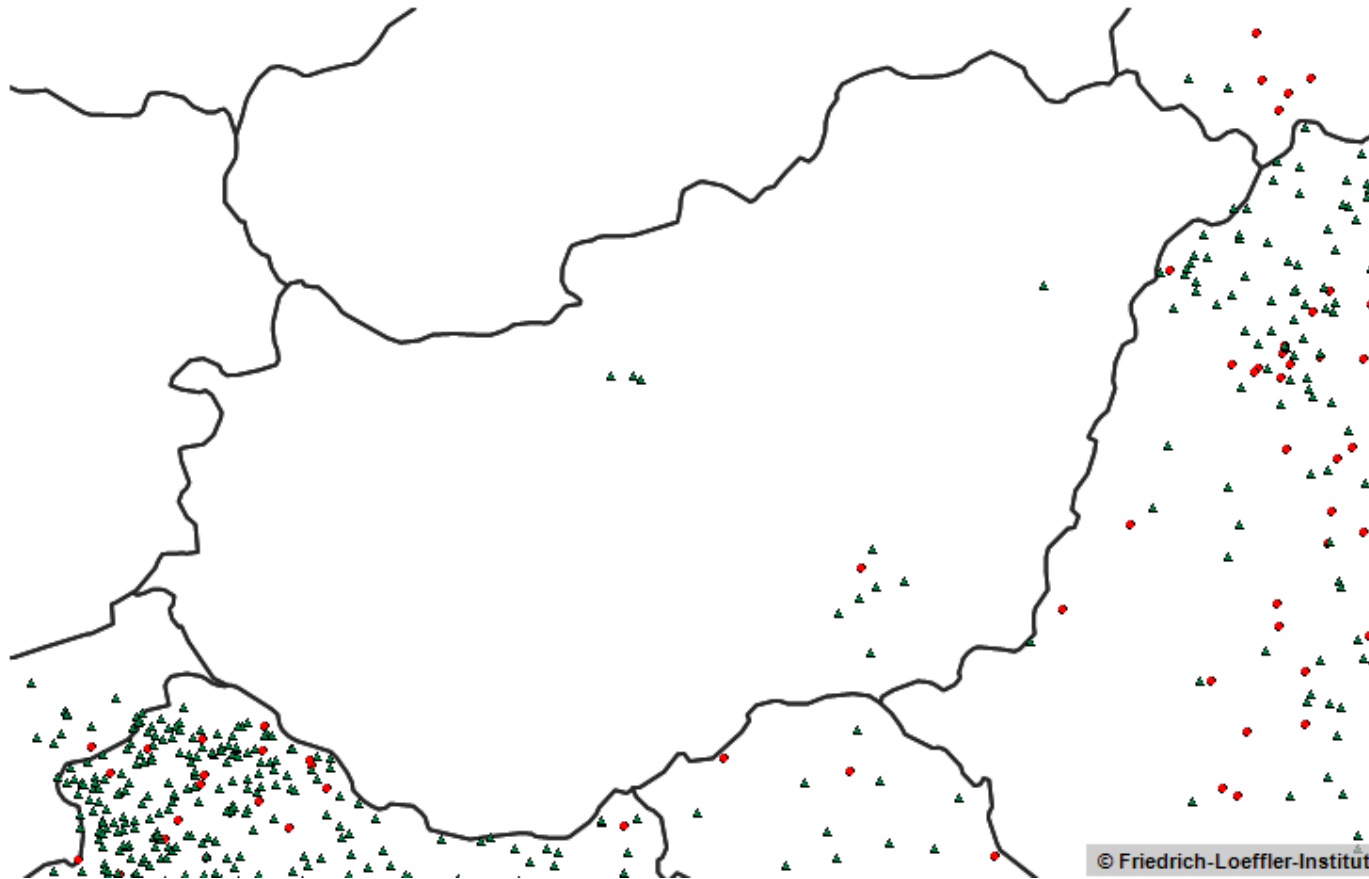
Rabies incidence

„WHO recommends the examination of at least 8 foxes/100 km² for rabies each year. Priority needs to be given to examining and testing those animals showing abnormal behaviour suggestive of rabies. Animals found dead, such as road-kills, are also useful sources for rabies diagnosis as these animals can be considered to be suspect animals.”

In the frame of the programme monitoring samples are collected on the whole area of Hungary. It means that samples are collected from the non vaccinated area (4 samples/100 sq Km) during the whole year. On the vaccinated areas 2 samples/50 sq Km are collected per campaign.

Passive surveillance of rabies disease exist in the whole territory of Hungary. It means that every suspect case has to be tested for Rabies in the NRL. For the notice of the reoccurrence of Rabies especially the wild animals we have to test not only the suspect animals but the whole fox population in our country. In our opinion this is very important because of Hungary has not naturally border to avoid/prevent new infected cases. Furthermore the incubation period for rabies is variable, and considered to be six months. The Hungarian aim to fulfill the OIE requirements.

Please see the downloaded map from the WHO rabies bulletin about the rabies epidemic situation between 2010 and 2012. Red circles mean domestic animals, green triangles mean wild life animals including bats as well.



3.2. Legal background:

The number and the title of Hungarian national pieces of legislation could be found in the list below, with a link to the current Hungarian version of their texts.

General rules on animal health aspects:

- Hungarian Act N^o XLVI of 2008 on the Food Chain and its Official Control, issued on 28th June 2008 (AFCOC)
(http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0800046.TV)
(Previously there was in force Hungarian Act N^o CLXXVI of 2005 on Animal Health, issued on 28th December 2005)

Rules on obligatory notification of animal diseases:

- Decree N^o 113/2008 of Ministry of Agriculture and Rural Development (MARD) on the order of the notification of animal diseases, issued on 30th August 2008
(http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0800113.FVM)

Detailed rules on rabies relating to domestic and wild animals:

- Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies, issued on 20th December 2008, as it is amended by Decree N^o 42/2010 of the MARD, issued on 22nd April 2010
(http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0800164.FVM)
(<http://www.kozlonyok.hu/nkonline/MKPDF/hiteles/mk10059.pdf>)
(Previously there was in force Decree N^o 13/2002 of the MARD on the vaccination of foxes against rabies, issued on 30th January in 2002)
- Decree N^o 41/1997 of Ministry of Agriculture (MA) on Animal Health Code (AHC), issued on 28th May 1997
(domestic animals: Article 15., paragraph (3); Article 193., paragraph (1) and (2); Article 796. paragraph (6), wild animals: Article 217., paragraph (5))
(http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=99700041.FM)
- Decree N^o 81/2002 of MARD on veterinary duties in the prevention of zoonoses, issued on 4th September in 2002
(http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0200081.FVM)

Detailed Rules on Veterinary Medicinal Products (e.g.: vaccines)

- Decree N^o 128/2009 of the MARD on veterinary medical products, issued on 6th October 2009
(http://jogszabalykereso.mhk.hu/cgi_bin/njt_doc.cgi?docid=124537.177430)

3.3. Actions taken between 2000 and 2012 (relevant costs see under point 5.)

Descriptions below refer to the ongoing programme in 2012, and there is an intention to continue the programme in 2013 along the mentioned viewpoints as well.

Oral vaccination two times a year: - spring - April
 - autumn - October

Type and number of vaccine baits distributed: see under point 3.3. - *Table 3.*

Distribution of vaccine baits: - Via fixed-wing airplanes (since 2003 different types of CESNA airplanes are used):

Aerial distribution is the main method for distribution:

- density = 20 baits/km² (gross);
- GPS is used for flying navigation and for to define the exact places of dropping each vaccines;
- on each airplanes the vaccine dropping machine is controlled by a computer connected with GPS;
- flying lines and the places of each dropped vaccines are recorded by a computer (connected with the GPS system) and (could be) printed out on maps;
- distance between flying lines is usually 1000 m, the flying speed is usually between 100 and 120 km/h;
- in each new campaign flying lines are rotated with 90° compared to the lines of the previous campaign;
- In County Fejér in the years 2003, 2004 and 2005 on the plain of “Dég” and “Mezőkomárom” rabies was detected. From autumn 2005 till autumn 2006 inside a square area bordered by settlements called “Enying” – “Kálóz” – Sárgers” – “Szabadhídvég”, 500 m flying density was applied. Since 2006 no rabies case was detected in this region.
- As from the beginning of 2010 (until 31st March) there were detected 6 cases in foxes in the south part of County Csongrád, with the beginning of the spring vaccination in 2010, 500 m flying density was applied in a territory around “Makó”, in a circle with a 25 km radius, bordering by the river “Tisza” and the border of the country.
- During the spring of 2011 in Tizsakécske (county Bács-Kiskun) there was a positive result for rabies in the case of a quick test of a cattle. On the basis of risk valuation an emergency vaccination was started in a 25 km radius circle of the territory. The rabies positivism was not confirmed by the following examinations and the reference lab of Nancy also confirmed the negative finding, that’s why it was not necessary to make the autumn focus vaccination.

- Manual distribution:

Manual distribution is used where flying is not allowed or where more targeted distribution is needed (i.e. around the shores of lake Balaton, oil and power plants and railway transfer zones) manual distribution is carried out by qualified wildlife biologists. The density of baiting is 20 baits/km² .

Monitoring: The efficiency of oral vaccination shall be monitored – beside the registration of the occurred cases - by laboratory methods. According to the Hungarian national legislation adult red fox samples should be collected. Since 2007 at least eight adult red foxes per 100 km² shall be shot for diagnostic purposes and shall be handed over to the designated animal health institutes (“Budapest”, “Debrecen” or “Kaposvár”) per year. From the 2010/2011 hunting year the number of samples to be collected is four foxes per 100 km² in a year, in accordance with the 2005 WHO recommendation and as it is approved on 16th October 2009, on the SCoFCAH meeting.

Even though since 2008 the distribution of the baits is limited to certain regions of the country described in point 3.1., in *Table 3.* and in point 4.3., the sampling for monitoring still refers to the whole territory of the country.

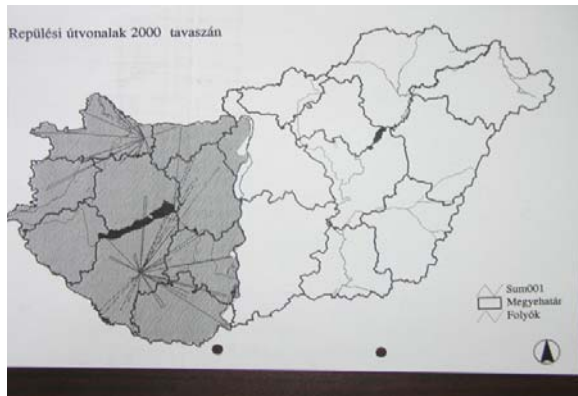
Table 3.: Type and number of vaccine baits distributed

Year	Names 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	Rabifox: 1.500.000	1.870
2001	Between the Danube and the Tisza + 5 focuses at Transdanubia + manual: Paks and 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. and 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. and 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	Fuchsoral: 3.720.000	4.650
2007	The whole country	2 x 93.030 km ² = 186.060 km ²	Fuchsoral: 3.720.000	7440
2008	County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy, Tolna: the whole territory County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country County Fejér: south of the M7 motorway County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border	2 x 45.000 km ² = 90.000 km ²	Lysvulpen: 1.800.000	7440
2009	County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy: the whole territory County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country County Borsod-Abaúj-Zemplén: the eastern part from river "Sajó" County Fejér: within the territory of the 50 km zone surrounded "Mernye" County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border	2 x 46.326 km ² = 92.652 km ²	Lysvulpen: 1.853.100	7442

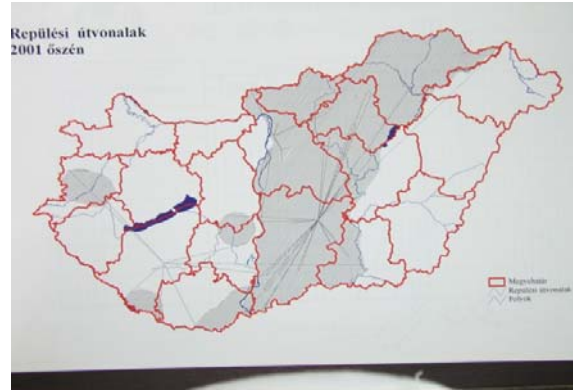
2010	<p>County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy: the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country</p> <p>In County Csongrád 500 m flying density was applied in a territory around “Makó”, in a circle with a 25 km radius, bordering by the river “Tisza” and the border of the country</p> <p>County Borsod-Abaúj-Zemplén: the eastern part from river “Sajó”</p> <p>County Fejér: within the territory of the 50 km zone surrounded “Mernye”</p> <p>County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border</p>	<p>$2 \times 46.326 \text{ km}^2 = 92.652 \text{ km}^2$</p> <p>$2 \times 1.300 \text{ km}^2 = 2.600 \text{ km}^2$</p>	<p>Lysvulpen: 1.853.100</p> <p>$2 \times 26.000 = 52.000$</p>	3722
2011	<p>County Baranya Borsod-Abaúj-Zemplén Szabolcs-Szatmár-Bereg, Hajdú-Bihar,; the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Somogy, Tolna, Vas, Zala: within the 50 km buffer zone from the border of the country</p> <p><i>In County Bács-Kiskun</i> due to one cattle rabies case in the 25 km zone of Tisza-Écske emergency ring vaccination has been ordered (decreed)</p>	<p>$2 \times 46.326 \text{ km}^2 = 92.652 \text{ km}^2$</p> <p>$1 \times 1.444 \text{ km}^2 = 2.888 \text{ km}^2$</p>	<p>Lysvulpen: 1.853.100</p> <p>$1 \times 28.880 = 57.760$</p>	3722
2012 ongoing	<p>County Baranya Borsod-Abaúj-Zemplén Szabolcs-Szatmár-Bereg, Hajdú-Bihar,; the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Somogy, Tolna, Vas, Zala: within the 50 km buffer zone from the border of the country</p>	<p>$2 \times 46.326 \text{ km}^2 = 92.652 \text{ km}^2$</p>	<p>Lysvulpen: 1.853.100</p>	3722

Maps 1-6.: Vaccinated areas and flying lines between 2000 – 2007

2000: spring and autumn



2001: spring and autumn



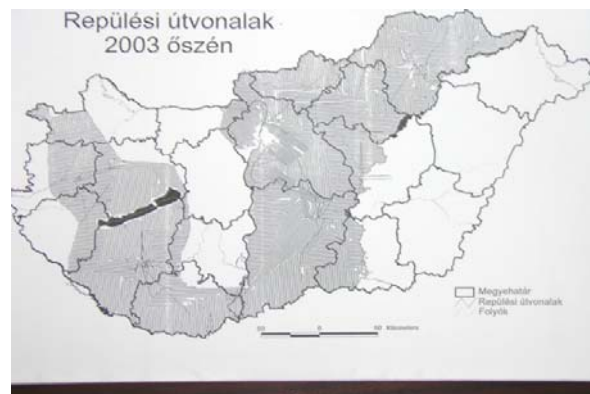
2002: spring and autumn



2003: spring



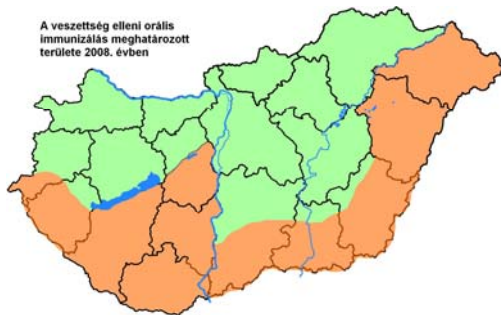
2003: autumn



2004-2007: spring and autumn



Map 7.: Areas vaccinated in 2008 (spring and autumn) – signed with orange colour



Map 8.: Areas vaccinated in 2009 (spring and autumn) – signed with red colour



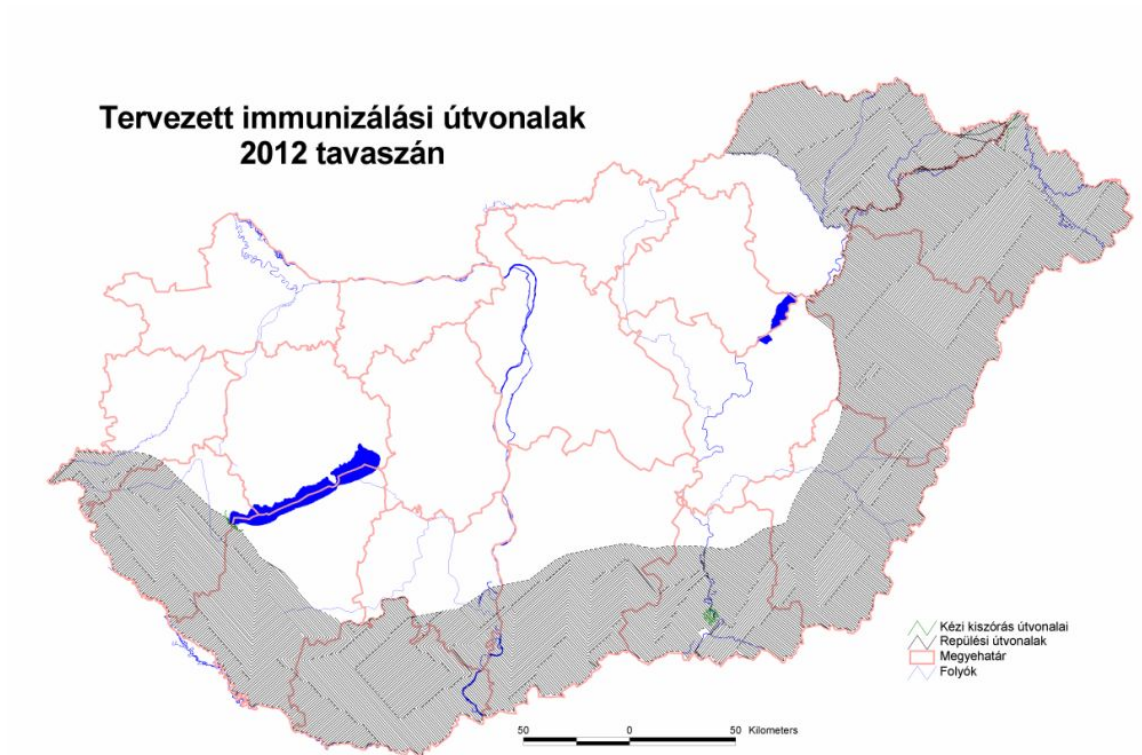
Map 9.: Areas vaccinated in 2010 (spring and autumn) (flying lines are showed with grey colour)



Map 10.: Areas vaccinated in 2011 (spring and autumn) – flying lines are showed with red colour



Map 11.: Areas vaccinated in 2012 (spring and autumn) – flying lines are showed with gray colour – ongoing programme



3.4. Applied diagnostics and testing methods:

Routine diagnostics of rabies in all animal species is carried out in three laboratories (a central one in Budapest, and two regional ones in Debrecen and in Kaposvár) of the Veterinary Diagnostic Directorate (VDD) of the National Food Chain Safety Office.

Applied tests:

- direct immunofluorescence (IF) 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 (ELISA) test (this test is carried out only in Budapest).

The monitoring tests on the efficiency of the oral immunization of foxes are also carried out in the laboratories of the VDD via the following methods:

- direct immunofluorescence (IF) of imprints of the brain – test for confirmation of rabies,
- bone polishing of the teeth – test for the presence of biomarker tetracyclines, test for bait uptake
- 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
- collecting, handling and analysing of epidemiological data on diagnosed cases of rabies.

3.5. Plans for the future:

In 2013 Hungary intends to implement oral vaccination near to the borders of Slovenia, Croatia, Serbia, Romania and Ukraine in a minimum 50 km wide zone and simultaneously intends to apply emergency ring oral vaccination where positive rabies cases are detected (radius of the circle is min. 50 km around the detected positive case).

The final aim of the submitted programme is to eradicate (sylvatic) rabies from red fox – *Vulpes vulpes* populations in the whole territory of Hungary, applying measures and methods in accordance with Community legislation.

4. **Measures of the submitted programme**

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

Duration of the programme:

First year: 1992

Last year: until two years after the complete eradication of rabies from red fox - *Vulpes vulpes* populations in the territory of Hungary

Control

Testing

Slaughter of animals tested positive

Killing of animals tested positive

Vaccination

Treatment

Disposal of products

Eradication, control or monitoring

Eradication

Testing

Slaughter of positive animals tested

Killing of animals tested positive

Extended slaughter or killing

Disposal of products

Other measures (specify):

4.2. Organisation, supervision and role of all stakeholders ⁽⁵⁾ involved in the programme

1. National authorities

1.1 National Food Chain Safety Office

a.) Animal Health and Animal Welfare Directorate

Animal Health Division

- Determines the date and territorial expansion of the immunization
- Keeps contact with the counties, the different national authorities (hunting authority, public health authority, disaster management), with the Ministries of other countries and with the EU Institutes
- Controls the implementation of the programme
- Coordinates (and supervises) the implementation procedures carried out by the
 - National Food Chain Safety Office, Veterinary Medicinal Products Directorate
 - Responsible for: - registration and testing of vaccines
 - organisation of public procurements related to the eradication programme
 - supervising the implementation of the programme
 - The national coordinator of the implementation of the programme is appointed from this Directorate.
 - National Food Chain Safety Office, Veterinary Diagnostics Directorate (3 laboratories)
 - Have responsibility for carrying out laboratory tests
 - The central laboratory in Budapest is the National Reference Laboratory (NRL)
 - Testing is also carried out in the two regional laboratories in Debrecen and in Kaposvár
 - Government Office for ...County, Food Chain Safety and Animal Health Directorate (in all 19 counties)
 - Prescribes restriction on movements of dogs and prohibits of grazing during the vaccination campaigns in accordance with national legislation
 - Official veterinarians supervise the cold storages of vaccines (and the airports)
 - Organizes the collection of fox samples from the hunters
 - Determines for each hunting association the number of foxes should be shot in a year
 - Imposes penalties on hunting associations handed over less number of fox samples prescribed

⁽⁵⁾ 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.

b) National Food Chain Safety Office
Agricultural Directorate
Hunting and Fishing Division

- Informs the hunting authorities in the counties about the programme and their duties
- Cooperates with the Animal Health and Animal Welfare Directorate

Government Office for County, Agriculture Directorate, Hunting and Fishing Division (in all 19 counties)

- Informs the hunters about their duties
- Contributes in determination for each hunting association the number of foxes should be shot in a year

Hunting associations

- Responsible to inform the inhabitants via information materials get from the contracted business company and used on the hunting area and at local governments of the hunting area
- To shot and hand over fox samples to the animal health authority

1.2. Ministry of Rural Development

a) Food Chain Control Department
Animal Health Division

- Responsible for Hungarian legislation on animal health issues (e.g.: on rabies)

b) Natural Resources Department

Hunting, Fishing and Management of Water Supplies Division

- Responsible for Hungarian legislation on hunting
- Coordinates and supervises the implementation procedures carried out by the hunting authority

2. Business companies

a.) To produce vaccine baits

- b.) To distribute vaccine baits (organising the whole vaccination campaign: holding informative meetings for the stakeholders before each campaign in each vaccinated counties, handing over information materials to the hunters and for the inhabitants, handing over sampling equipments to the hunters, to pay compensation to the hunting associations for handing over of fox samples.)

4.3. Description and demarcation of the geographical and administrative areas in which the programme is to be implemented ⁽⁶⁾:

Map 10.: Geographic map of Hungary



Map 11.: Administrative borders of Hungary and the Hungarian counties



⁽⁶⁾ 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.

Hungary is surrounded by 7 countries (Austria, Slovakia, Ukraine, Romania, Serbia, Croatia and Slovenia). The country is divided into western (Transdanubia) and eastern Hungary by the river “Duna” (Danube). There are altogether 19 counties in the country. The name of the capital is Budapest.

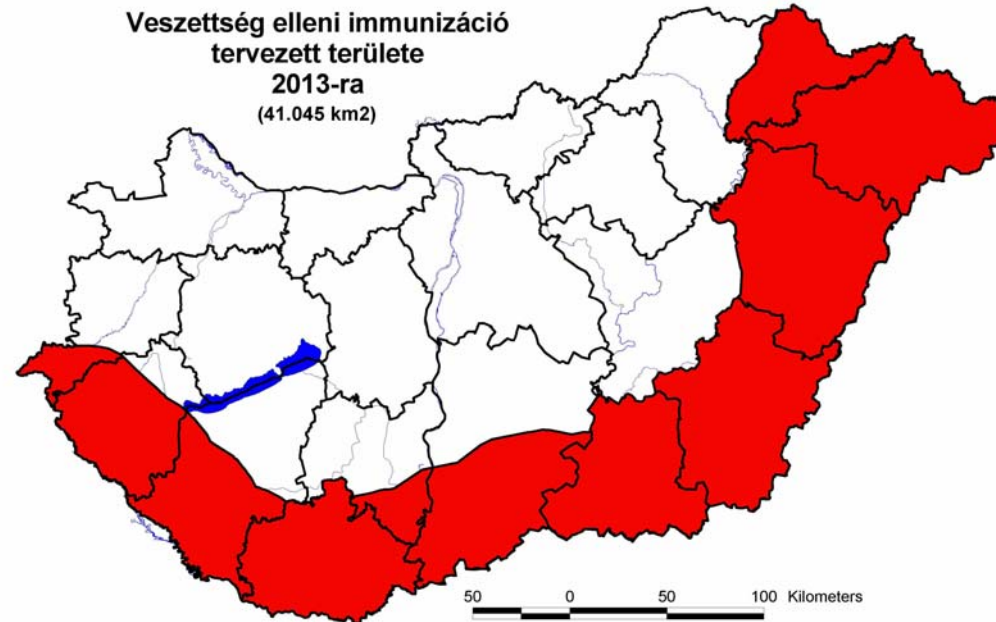
Distribution of vaccine baits is not carried out in the urban areas (town, villages, etc.), in the areas of water (lakes, rivers, etc.), areas of public roads (roads, highways, etc.) and railways. In case of arial distribution this can be provided and controlled by using GPS for flying navigation and for to define the exact places of dropping each vaccine baits (see point 3.3. as well).

Table 4.: Territories of counties intended to be vaccinated in 2013. (See point 3.1. and Map 12. as well).

Name of the county	Area of vaccination	Area of vaccination (km²)
Baranya	The whole territory	4 430
Bács-Kiskun	Within the 50 km buffer zone from the country border	4 145
Békés	The whole territory	5627
Borsod-Abaúj-Zemplén	East part of the county from river “Hernád”	2562
Csongrád	The whole territory	4264
Hajdú-Bihar	The whole territory	6 209
Somogy	Within the 50 km buffer zone from the country border	3 273
Szabolcs-Szatmár-Bereg	The whole territory	5 933
Tolna	Within the 50 km buffer zone from the country border	834
Vas	Within the 50 km buffer zone from the country border near to Slovenia	717
Zala	Within the 50 km buffer zone from the country border	3 053
Total:		41 047

The area planned to be vaccinated in 2013 is showed on the map below (*Map 12.*) and is detailed under point 3.1. and under point 4.3. in *Table 4* and under point 7.3.2.. In case of having confirmed positive rabies case(s) on the non-vaccinated area or near to its border during the year 2012, the area planned to be vaccinated in 2013 would be modified in accordance with the decision of the responsible Hungarian competent authorities (see under point 4.4.11. “evaluation meeting”). In case of detecting positive case in the non-vaccinated area emergency vaccination is intended to be carried out in (a) circle(s) with a min. 50 km radius around the detected positive case. In the counties of Békés and Csongrád the vaccination of the whole territory of these counties intends to be continued, the frontier line of the vaccination was fitted to the administrative border. There were no rabies cases in the last years of the territory of county Borsod-Abaúj-Zemplén, and thanks to the successful Slovakian anti-rabies program it seems that it is not necessary to vaccinate the previous territory in what follows so instead of the line river “Sajó” river ”Hernád” will be the new borderline.

(*Map 12.: Area planed to be vaccinated in 2013 (spring and autumn) – signed with red colour*)



4.3. Description of the measures of the programme ⁽⁷⁾:

As the measures of the programme for the eradication, control and monitoring of (sylvatic) rabies in red foxes is only a part of the measures of the eradication programme of rabies in Hungary, in some points measures relating to domestic animals and animals kept in captivity are also mentioned below. (Hungary is free from urbanic rabies and to maintain this situation there are lot of measurements in force, prescribed in national legislation concerning to domestic animals and animals kept in captivity.)

Below could be found mainly references on Hungarian legislation in force. Only the original (Hungarian) version of the referred articles is authentic (Hungarian versions could be reach through reference links under point 3.2.) As there are many pieces of national legislation in force concerning rabies (see point 3.2.) and there are lot of references included inside them, the measures mentioned below may not cover all the measurements in force. If it is requested official translated versions of the relevant pieces of the Hungarian national legislation will be provided.

In this programme under some point not official translations of the relevant articles of the Hungarian national legislation in force are given.

In this programme under some point summaries (topic) of the relevant articles of the national legislation in force are given.

4.4.1. Notification of the disease:

Rabies in Hungary is a disease subject to obligatory notification.

- Article 18., paragraph (1), point f) and Article 51., paragraph (1) of the Hungarian Act N^o XLVI of 2008 on the Food Chain and its Official Control (AFCOC)

Article 18., paragraph (1): Keepers of animals shall:

f): notify forthwith the food chain supervisory authority and the private veterinarian of any animal infected with a disease, or suspected to be infected, and shall have the infected or suspected animal examined and, in the case of epizootic animal diseases, carry out the instructions given by the food chain supervisory authority or the private veterinarian for the treatment of the animal or animals in question, or to prevent any further spreading of the disease, and to carry out the obligations prescribed in the emergency measures applied;

Article 51., paragraph (1): The notifiable animal diseases are specified in legislation adopted for the implementation of this Act.

- Article 1., paragraph (3), Article 3., paragraph (5) and Annex 1 of Decree N^o 113/2008 of Ministry of Agriculture and Rural Development (MARD) on the order of the notification of animal diseases

Article 1., paragraph (3): Annex 1 contains the notifiable animal diseases.

Article 3., paragraph (5): Who perceive a stray dog, cat or animal living in the wild behaving abnormally, shall notify as well.

⁷ 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.

Annex 1 to Decree N^o 113/2008 of MARD: Notifiable animal diseases,
Section A: Diseases affecting terrestrial animals
point 35. Rabies

- Article 13. of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 13.: Furthermore of the notifying commitments described in the separate legislation concerns the notifiable animal diseases, and of the advising commitments described in Article 18. paragraph (1) point f) of the AFCOC

- a) the percipient must notify to the animal health authority foxes or other wild mammal animals behaving unnaturally, the fact of a cadaver of a dead fox run over by a vehicle or wasted away due to unknown reasons;
 - b) the person responsible in accordance with Article 19. of the AFCOC must ensure that animal or unauthorised person could not be able to get at the dead animal until the removing of the cadaver of the dead fox, or rather until the provision of the official veterinarian;
 - c) the animal being suspected to be diseased or behaving unnaturally must be quarantine in a place where there is no possibility to have contact with other animals, if the quarantine is possible and could be done without any danger.
- Annex 1 of Decree N^o 81/2002 of MARD on veterinary duties in the prevention of zoonoses
Annex 1., Section I.: Notifiable zoonoses
point g) rabies (lyssa)

4.4.2. Target animals and animal population:

- Red foxes (*Vulpes vulpes*). Population data can be found under point 6.6.1.

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

4.4.4. Qualifications of animals and herds (⁸): **NOT RELEVANT**

4.4.5. Rules on the movement of animals:

- Article 51., paragraph (3), points a) - g) and Article 52., paragraph (1) of the AFCOC

These articles prescribe the rules of movement of animals in general – relates rather on domestic animals or on animals kept in captivity

Article 51., paragraph (3): With a view to preventing the introduction and spread of animal diseases, to eradicate infections by such animal diseases and to repair the damage caused, and – consistent with the nature and distribution of animal diseases – to the extent and for the time required for the elimination of any threat, the food

⁸ To mention only if applicable.

chain supervisory authority shall have powers to take the following emergency epidemiological measures in the cases described in legislation adopted for the implementation of this Act and directly applicable Community legislation to the extent and for the time deemed necessary:

- a) isolation;
- b) quarantine for surveillance (official surveillance);
- c) movement restriction;
- d) local quarantine;
- e) restriction on the settlement (protective area);
- f) protection zone (surveillance zone);
- g) prohibition of validation of cattle certificate;

Article 52., paragraph (1): Different emergency epidemiological measures may be imposed collectively.

➤ Article 8., paragraph (5), Article 11., paragraph (1) and Article 17., paragraph (1) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 8., paragraph (5): For 14 days counted from the beginning of the vaccination the competent district veterinarian must to order the closure of the dogs and the prohibition of grazing in the involved areas.

Before every vaccination campaign a letter is send to all Food Chain Safety and Animal Health Directorates of County Government Office, which contains – among other directions - a direction to make the relevant measures to ensure the closure of the dogs and the prohibition of grazing in the involved areas as it is prescribed in the national legislation.

Article 11., paragraph (1): For the sake of restricting of spreading rabies amongst red foxes, furthermore spreading rabies on other animal species

- a) the minister – for the suggestion of the chief veterinarian officer – may order the increased hunting or decreasing of the number of foxes with another method;
- b) the district veterinarian may order the killing of the dogs straying, not being able to cramp on the hunting area.

Article 17., paragraph (1):...(second sentence): Life of animal straying or living in the wild and suspected being diseased in rabies shall be released, and about this fact the official veterinarian shall be informed immediately.

There are other Articles in Decree N^o 164/2008 of the MARD containing rules on movement of animals (Article 12. - detailed rules of the closure of dogs, Article 17.: detailed rules on the animals being suspected to be diseased and animals being suspected to be infected with the disease, Article 19.: detailed rules on the observation of the animals being suspected to be diseased and animals being suspected to be infected with the disease), but these articles concern to domestic animals or animals kept in captivity.

4.4.6. Tests used and sampling schemes:

- Article 9., paragraphs (1) to (4) of Decree N^o 164/2008 of the MARD, as it is amended by Decree N^o 42/2010 of the MARD on detailed rules of the protection against rabies

Article 9., paragraph (1): The control of the efficiency of the protection – beside the annual surveying of the population of red foxes living in the wild – shall be carry out for state expense with laboratory methods, which shall be equally cover the certification of the uptake of the vaccine and the detection of rabies.

paragraph (2): After finishing vaccination annually four adult foxes per 100 km² area shall be shot, which shall be passed to the competent district office of the place of the blastoff by the entitled for hunting, which shall pass the dead foxes to the animal health laboratory designated with the procedure in accordance with laid down in Article 16.

paragraph (3): The number shall be shot by each entitled for hunting is determined by the director veterinarian of the competent county before fifteen days of

- a) every sampling period on the territories vaccinated,
- b) every sampling period in spring on the territories not vaccinated.

paragraph (4): Beside the examination of the foxes shot in accordance with paragraph (2), the examination for rabies shall be carried out on the cadavers of dead foxes and other mammals living in the wild as well. In case of small game the whole cadaver, in case of big game the head shall be sent for examination in accordance with the proceedings prescribed in paragraph (2).

On each dead foxes direct IF test of the brain (for confirmation of the disease), AB-ELISA test of the blood (for control of immunization) and bone polishing of the mandible (test for presence of tetracycline, for the control of effectiveness of bait uptake) is carried out. Tests are carried out in the designated competent animal health institutes in Budapest, Debrecen or Kaposvár in case of IF tests and bone polishing of the mandibles. AB-ELISA tests are carried out only in Budapest. (See point 3.4. as well.)

4.4.7. Vaccines used and vaccination schemes:

- In general: Article 8., paragraph (1) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 8., paragraph (1): (first sentence) The resistance of the population of foxes living in the wild shall be provide by oral vaccination of foxes for the aim to prevent rabies in foxes and to combat the disease.

- Vaccines: Article 8., paragraph (3), and Article 10. of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies, and Article 5., paragraph (1) of Decree N^o 128/2009 of the MARD on veterinary medical products

Article 8., paragraph (3) of D. 164/2008 of the MARD: For the oral vaccination of foxes only bait vaccines with licence for market circulation for Hungary, in accordance with separate piece of legislation should be used.

Article 5., paragraph (1) of D. 128/2009 of the MARD: Veterinary medicinal products - in a form mixed to feed as well - in internal market should be put in circulation, turn over or use up only with licence for market circulation, after national or mutual recognition procedure in accordance with Regulation 726/2006/EC. To begin the manufacture for putting in circulation a licence for market circulation is needed as well.

In accordance with European Regulation 726/2004/EC of the European Parliament and the Council, and the Hungarian legislation in force in Hungary veterinary medicinal products (VMP) should be put in circulation, turn over or use up only with licence for market circulation, after national procedure (NP) or mutual recognition procedure (MRP). The NP and MRP provide that in Hungary VMPs could be used up only if they match to the EU and national professional prescriptions. In case of vaccination against rabies in red foxes means that only those vaccines shall be used, which are suit to the prescriptions in Chapter 2.1.13., point C (http://www.oie.int/eng/normes/mmanual/2008/pdf/2.01.13_RABIES.pdf) of the O.I.E. Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, issued in 2008 and the prescriptions could be found in the relevant monograph (PH. EUR. 01/2008:0764) of the European Pharmacopoeia (issues of the European Pharmacopoeia are available at Directorate of Veterinary Medicinal Products of the National Food Chain Safety Office in printed version).

Taking into consideration the above mentioned facts, there are four types of vaccines have authorisation to put in circulation in Hungary (Fuchsoral, Rabigen SAG-2, Lysvulpen). (See point 8. as well.)

Type of vaccines used so far and using in 2009 in Hungary during the campaigns could be found in *Table 3.* under point 3.3.

➤ Vaccination schemes: Article 10 of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 10., paragraph (1): Vaccination prescribed in Article 8, paragraph 1 shall be carried out two times (in spring and in autumn) in a year, and shall be carried out minimum during four consecutive years.

paragraph (2): If in a county there was not occurred rabies of human or animal origin in the previous two years, that county could be declared as free of rabies. Vaccination shall be carried out two more years counted from the last diagnosed case of rabies.

paragraph (3): In case of reinfection emergency vaccination shall be carried out in a circle area with min. 50 km radius around the place of the diagnosed case.

paragraph (4): The free status of a county in accordance with paragraph (2) is declared by the chief veterinary officer, or in case of reinfection repeals it.

Details about the method used so far, using in 2009 and planned to be used for distribution of vaccine baits could be found under point 3.3.

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

- Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies
In relation to the case of oral vaccination of foxes, where no holdings, but free areas are involved in the programme this could be consider in a special way.

4.4.9. Measures in case of a positive result ⁽⁹⁾:

Relating articles in Hungarian legislation, in case of positive red fox samples:

(In case of positive results in other species the relevant pieces of legislation could prescribe different measurements.)

- Article 2., point a) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 2.: in application of this decree

- a) an animal is diseased in rabies, when during its laboratory examination rabies is diagnosed in a way excluded any doubt,

- Article 16., paragraph (2) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 16., paragraph (2): It is the laboratory's appointed in accordance with paragraph (1), to inform the veterinarian sent the examination material in, in case of biting of a human being the district veterinarian competent relating to the place of the biting, furthermore the competent territorial institute of the National Human Health and Medical Officer Service about the result of the tests, in case of positive result from the aspect of rabies without fail, and per fax as well.

- Article 4., paragraph (2) and (3) of Decree N^o 113/2008 of MARD on the order of the notification of animal diseases

Article 4., paragraph (2): (first sentence) The district veterinarian through the director veterinarian of the county, about the suspect and the diagnosis of the notifiable animal disease must inform without fail the National Food Chain Safety Office (henceforth: Centre).

Article 4., paragraph (3): The Centre about the diagnosis of the notifiable animal disease informs without fail the Chief Veterinary Officer.

- Article 10., paragraph (3) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

⁽⁹⁾ 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.).

Article 10., paragraph (3): In case of reinfection emergency vaccination shall be carried out in a circle area with min. 50 km radius around the place of the diagnosed case.

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

➤ Article 18., paragraph (3) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 18., paragraph (3): Killing of dog, cat, ferret, additionally animal captured under authorisation in six months and other animal living in the wild shall be order without state compensation, killing of other domestic animals shall be ordered with state compensation.

- Domestic animals (without dogs, cats and ferrets):
 - Article 55. of Hungarian Act N^o XLVI of 2008 (AFCOC)
 - (1) In connection with the implementation of emergency epidemiological measures referred to in Article 51. (3) *i)-q)*, the following shall be entitled to state compensation, subject to the exceptions set out in paragraphs (2) and (3):
 - a)* the owners of animals that have died in any of the diseases specified in legislation adopted for the implementation of this Act following the time of notification prescribed in Article 18. (1) *f)*, or killed in consequence of emergency epidemiological measures, if notified, as well as the owners of products, materials, equipment and means that have been destroyed;
 - b)* the owner and user of the landed property, vehicle, building, equipment, asset and material specified in Article 51. (3) *p)*, if used or applied specifically under the resolution therefore;
 - c)* the business association specified in Article 51. (3) *q)*, if the order was imposed specifically under the resolution therefore.
 - (2) No compensation shall be paid:
 - a)* in connection with illegally imported animals, including any materials, equipment and means used for keeping such animals;
 - b)* in the event of keeper's or the food business operator's failure to report the suspected presence of a disease in the animal, or the infringement of prescribed obligations;
 - c)* if the owner knew about the disease of the animal obtained by way of transfer, at the time of the transfer;
 - d)* if the emergency epidemiological measures had to be imposed for reasons within the keeper's or the food business' control;
 - e)* for wild animals, except if captured under authorisation and kept or bred in a fenced area (wildlife park, wildlife preservation area, bird cage) for at least six months, and wild game shot for diagnostics purposes under emergency epidemiological measures, and protected animals;
 - f)* for manure and bedding;
 - g)* for animals kept, transported, slaughtered and placed on the market in violation of the relevant animal health regulations, including products of such nature.

- (3) For the purposes of state compensation, compliance with the obligations prescribed under the emergency epidemiological measures specified in Article 51. (3) *a)-h*) and *r*) shall not be treated as active participation within the meaning of Article 51. (3) *p*) and *q*).
- (4) The amount of compensation shall be the market value of the animal, material, substance or object affected, whereas in the cases defined in Article 51. (3) *p*) and *q*) it shall be adjusted to the value of damage or loss sustained because of the use or participation, exclusive of lost profits.
- (5) The detailed regulations for the estimation of damages and the terms of settlement shall be laid down in legislation adopted for the implementation of this Act. The terms of payment of compensation shall be defined in the resolution therefore.

➤ Articles 141. - 155. of Decree N^o 41/1997 of MA (AHC)

These articles contain detailed rules concern to state compensation.

- Dogs, cats, ferrets, animals captured under authorisation in six months, other animal living in the wild:

There is no state compensation available in case of rabies in red foxes.

To reach the shooting of the prescribed number of samples, fee for the shots is paid by the state to Hunting Associations.

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

(The role of the Competent Authorities in charge of the control, please see under point 4.2. as well)

➤ Article 9., paragraph (5) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies

Article 9., paragraph (5): For the sake of developing the method of vaccination, the efficiency of the vaccination is evaluated continuously on the basis of viewpoints of animal health, public health, biology of wild animals, ecology and etology by the animal health and food control service and the hunting authority.

To suit to Article 9., paragraph (5) of Decree N^o 164/2008 of the MARD on detailed rules of the protection against rabies, in practice after the vaccination campaign in autumn, an evaluation meeting is held with the participation of the representatives of the involved stakeholders. During this meeting the evaluation of the programme of the actual year is carried out and in the light of its result, the main lines and frames of the next year programme is decided. The last evaluating meeting was held in Budapest, on 01st of December 2009. The evaluation meeting was planned to be held at the end of the year 2010 as well, but it could not have been realized. In the first half-year of 2011 Hungary gives the EU Presidency, the evaluation meeting is planned to be held after the Presidency with the participation of all the parties concerned. The planning and evaluation of the actual programme part - before and after the half-year vaccination campaigns - was done as scheduled all occasions, with the concerned participants.

The National Food Chain Safety Office signs a contract with the winner of the public procurement for the implementation of the actual programme of the actual year. Some of the phases of the implementation of the programme included in the contract are controlled by all means and some phases are controlled “random sample – like” by the official clerk(s) of the National Food Chain Safety Office. The contractor should report the procurer (National Food Chain Safety Office) in words and in writing about the tasks carried out. These are usually provided by points of the contract with the winner of the public procurement. In 2013 these requirements are intended to be part of the contract as well. Usually one of the annexes (still part) of the contract is the contract notice, which usually includes prescriptions for the connection between the procurer and the contractor. The contractor should carry out his tasks in accordance with these documents. More details could be found in the contracts of the actual year.

At each Food Chain Safety and Animal Health Directorates of the Government Offices there are one person, so called coordinator, who takes care about the implementation and control of the programme at county level.

The laboratory in Budapest (NRL) of the Veterinary Diagnostics Directorate of the National Food Chain Safety Office is accredited by the National Accrediting Body; the accreditation of the two other laboratories (in Kaposvár and in Debrecen) was ongoing in 2009. The NRL (in Budapest) takes part on all international circle tests organised by the AFSSA Nancy Laboratory (EU reference laboratory): once in a year rabies antibody titer detection from so called PET animals, once in a year rabies virus isolation with IF, in mice and with PCR methods. Until 2009 the NRL is suited well to the prescriptions. The laboratory in Debrecen in 2008 and 2009, the laboratory in Kaposvár in 2008 took part on international circle tests aimed at rabies virus detection with IF method. Both laboratories suited well to the prescriptions. The NRL (in Budapest) in 2007 made an internal audit (control) aimed at rabies virus detection with IF method. The laboratory suited well to the prescriptions. The NRL in 2009 carried out an internal audit for tetracycline marker detection (bone polishing of the mandible). The two participating laboratories suited well to the prescriptions.

In 2011 the Animal Health and Animal Welfare Directorate of the Central Agricultural Office intended to carry out internal audit (control) in the light of the results of the internal audit (control) focusing on the work of its colleagues on the accepted programme in the planned one or two counties. The two controlled counties were Csongrád and Szabolcs-Szatmár-Bereg. During the internal audit both the counties met the requirements excellent.

5. **Benefits of the programme** ⁽¹⁰⁾:

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

- Costs:**
- costs of testing (analysis, sampling, other)
 - costs of vaccine baits and of their storage
 - costs of distribution of the baits
 - other costs (costs of transaction of public procurements)

Table 4.: Costs paid for the programme between 2001 – 2011 (costs of vaccine baits and distribution of the baits)

For the years 2001 – 2005: Exchange rate from 04/2006

For the year 2006: Exchange rate from 04/2007

For the year 2007: Exchange rate from 04/2008

For the year 2008: 1 Euro = 289,20 HUF (source: Euro foreign reference exchange rates of the European Central Bank, 29/04/2009)

For the year 2009: 1 Euro = 266,75 HUF (source: Euro foreign reference exchange rates of the European Central Bank, 27/04/2010)

For the year 2010: 1 Euro = 265,72 HUF (source: Euro foreign reference exchange rates of the European Central Bank, 31/03/2011)

For the year 2011: 1 Euro = 294.92 HUF (source: Euro foreign reference exchange rates of the European Central Bank, 30/03/2012)

⁽¹⁰⁾ A description is provided of the benefits for farmers and society in general.

Year	Costs of the vaccine baits (without VAT 20 % (from 2009 without VAT 25%) from 2012 without VAT 27%) [€]	Costs of the distribution (without VAT 20 % (from 2009 without VAT 25%) from 2012 without VAT 27%) [€]	Total costs of the vaccine baits and the distribution (without VAT 20 %) [€]
2001			977.825
2002	See total costs		1.040.927
2003			1.291.678
2004	1.238.760 (PHARE)	1.225.745	2.464.505
2005	1.238.760 (PHARE)	1.322.395	2.561.155
2006	1.238.760 (PHARE)	1.398.379	2.637.139
2007 (co-financing)	1.253.640	1.396.921	2.650.561
2008 (co-financing)	1.379.668,05		1.379.668,05
2009 (co-financing)	1.538.897		1.538.897
2010 (co-financing)	2.297.882,45		2.297.882,45
2011 (co-financing)	≈1.775759,95		1.775759,95
2012 (co-financing)	Ongoing. Remark: one public procurement process was established for the whole year. In this tender the winner must provide the vaccine baits and the distribution of the baits as well		There is no information available yet

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

Year: 2003

Disease (a): Rabies

Animal species: Wild animals

Region (b) HUNGARY	Number of herds infected (c)	Number of animals infected
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 or flocks or holdings as appropriate.

Year: 2004

Disease (a): Rabies

Animal species: Wild animals

Region (b) HUNGARY	Number of herds infected (c)	Number of animals infected
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 or flocks or holdings as appropriate.

Year: 2005

Disease (a): Rabies

Animal species: Wild animals

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

(a) Disease and animal species if necessary.

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

(c) Herds or flocks or holdings as appropriate.

Year: 2006

Disease (a): Rabies

Animal species: Wild animals

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

(a) Disease and animal species if necessary.

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

(c) Herds or flocks or holdings as appropriate.

Year: 2007

Disease (a): Rabies

Animal species: Wild animals

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

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

Year: 2008

Disease (a): Rabies

Animal species: Wild animals

Region (b) HUNGARY	Number of herds infected (c)	Number of animals infected
Fox	-	6
Total	-	6

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

Year: 2009

Disease (a): Rabies

Animal species: Wild animals

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

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

Year: 2010

Disease (a): Rabies

Animal species: Wild animals

Region (b) HUNGARY	Number of herds infected (c)	Number of animals infected
Fox	-	9
Other	-	2
Total	-	11

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

Year: 2011

Disease ^(a): Rabies

Animal species: Wild animals

Region ^(b) HUNGARY	Number of herds infected ^(c)	Number of animals infected
Fox	-	0
Other (bat)	-	2
Total	-	2

(a) Disease and animal species if necessary.

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

(c) Herds or flocks or holdings as appropriate.

6.6. Data on wildlife ⁽¹³⁾

6.6.1. Estimation of wildlife population

Year: 2000-2009

Method of estimation ^(a): Hunting bag of wild red foxes

(National Game Management Database <http://www.vvt.gau.hu/adattar/index.html>)

There are also remarkable populations of golden jackals (*Canis aureus syriacus*) and of raccoon dogs (*Nyctereutes procynoides*) in Hungary but the size of these populations is far smaller comparing to the size of the population of wild red foxes (*Vulpes vulpes*). Despite it is remarkable, that in accordance with hunting bag data we could state, that golden jackal species is settled in three counties (Somogy, Baranya, Bács-Kiskun) in the south part of the country from the 2003/2004 hunting year, and in the recent two years (comparing data from 2007 and 2009) the assessed number of these animals is duplicated.

Regions ^(b) HUNGARY	Estimation of the population of the concerned wild species			
	Species: Wild red fox (<i>Vulpes vulpes</i>) N ^o of shot foxes	Species: -	Species: -	Species: -
2001	63509			
2000	59816			
2001	63509			
2002	75571			
2003	63463			
2004	56149			
2005	57348			
2006	50017			
2007	66180			
2008	66671			
2009	71719			
2010	56351			
Total	750303			

^(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.

⁽¹³⁾ Data only to provide in case the programme comprises measures as regards wildlife or if the data are epidemiologically relevant for the disease.

Peculiarities of the hunting bags of foxes between 1990-2004 (Source: National Game Management Database)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Size of the hunting bags															
Transdanubia	14,200	13,227	14,395	12,582	15,051	15,791	18,192	18,541	22,437	27,820	30,567	30,305	29,657	21,540	19,429
East	18,170	16,665	17,602	16,274	17,716	20,315	20,219	23,161	22,231	26,858	29,249	33,204	45,914	42,103	36,720
Hungary	32,370	29,892	31,997	28,856	32,767	36,106	38,411	41,702	44,668	54,678	59,816	63,509	75,571	63,463	56,149
Distribution of the hunting bags															
Trandanubia	43,9%	44,2%	45,0%	43,6%	45,9%	43,7%	47,4%	44,5%	50,2%	50,9%	51,1%	47,7%	39,2%	33,9%	34,6%
East	56,1%	55,8%	55,0%	56,4%	54,1%	56,3%	52,6%	55,5%	49,8%	49,1%	48,9%	52,3%	60,8%	66,1%	65,4%
Density of hunting bags (piece/1000 ha)															
Trandanubia	3,7	3,4	3,7	3,3	3,9	4,1	4,7	4,8	5,8	7,2	7,9	7,8	7,6	5,5	4,9
East	3,4	3,1	3,3	3,0	3,3	3,8	3,8	4,3	4,1	5,0	5,4	6,1	8,5	7,8	6,8
Hungary	3,5	3,2	3,5	3,1	3,5	3,9	4,2	4,5	4,8	5,9	6,5	6,9	8,2	6,9	6,1

Peculiarities of the hunting bags of foxes between 2005-2010 (Source: National Game Management Database)

County/year	Territory	2005	2006	2007	2008	2009	2010
Transdanubia				data not available			
Baranya	441925	2502	2259		2563	2836	2507
Fejér	428423	3228	2086		3443	3821	2909
Győr	423682	2707	2693		4079	4254	3149
Komárom	225677	1302	951		1590	1578	1144
Somogy	581550	3074	2149		2957	3206	2537
Tolna	386765	2935	2936		3579	4282	3286
Vas	330387	1443	1009		1726	1817	1641
Veszprém	427694	1828	1485		2484	2315	1730
Zala	382662	2086	1757		2066	2044	2060
Total	3628765	21105	17325		24487	26153	20963
Density of the fox population (piece/1000 ha)		5,82	4,77		6,75	7,21	5,78
To the east of the Danube							
Bács	826767	5098	4540		5757	6699	5554
Békés	568497	4873	4779		6365	6690	5572
Borsod	715633	2101	1785		2500	3077	2139
Csongrád	425335	3905	3066		4227	4643	3753
Hajdú	618793	4498	4053		4365	4231	3537
Heves	375129	1833	1721		2820	2915	2282
Nógrád	241899	741	856		897	1154	954
Pest	690218	3037	3021		4116	4847	3614
Szabolcs	587430	4767	4133		4134	4420	3726
Szolnok	557767	5390	4738		6503	6890	4257
Total	5607468	36243	32692		41684	45566	35388
Density of the fox population (piece/1000 ha)		6,46	5,83		7,43	8,13	6,31

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

Density of the fox population (piece/1000 ha) between 1988-2004 (□□: mean, SD: standard deviation, n: N^o of the respondents)

Year	Hungary			Transdanubia			To the east of the Danube		
	□:	SD	n	□:	SD	N	□	SD	n
1988	4,4	3,2	233	4,9	3,7	97	3,6	2,7	136
1990	5,1	3,8	186	5,1	3,6	74	4,8	4,0	112
1994	5,9	4,9	280	7,1	4,7	119	4,7	4,6	161
1995	6,3	4,8	377	7,3	5,5	141	5,5	4,1	236
1997	7,5	5,8	299	9,0	6,8	121	6,5	4,7	178
1998	8,2	6,8	448	10,6	8,1	193	6,4	4,8	255
2000	8,4	9,1	551	12,5	12,3	220	5,6	4,4	328
2001	9,2	7,6	413	12,8	8,5	167	6,7	5,8	245
2002	9,47	14,0	458	13,04	9,44	159	7,57	15,58	299
2003	7,95	6,7	455	8,99	6,84	173	7,31	6,56	282
2004	7,45	7,45	455	7,71	6,19	175	7,28	8,14	280

Estimation of the population of wild red foxes was also carried out via questionnaires filled out by hunters (2007-2011)

County/year	Territory (ha)	2007	2008	2009	2010	2011
Transdanubia						
Baranya	441925	5165	4973	5274	5046	5222
Fejér	428423	4258	5532	4257	4457	3976
Győr	423682	2756	3036	3258	3472	3280
Komárom	225677	2105	1721	2027	2248	2128
Somogy	581550	8388	7651	7779	7528	7473
Tolna	386765	3390	3197	3331	3700	3752
Vas	330387	2390	2586	2867	2895	2778
Veszprém	427694	3407	3560	3947	4379	4064
Zala	382662	3203	3331	3757	4063	4225
Total	3628765	35062	35587	36497	37788	36898
Density of the fox population (piece/1000 ha)		9,66	9,81	10,06	10,41	10,17
To the east of the Danube						
Bács	826767	5315	5338	5544	5938	4283
Békés	568497	3071	3421	3574	4098	4044
Borsod	715633	3699	4362	4587	4802	4617
Csongrád	425335	2524	2853	2994	3200	3257
Hajdú	618793	4915	4613	4709	4666	3913
Heves	375129	2629	3151	2894	2943	2848
Nógrád	241899	2047	2252	2139	2051	2108
Pest	690218	4184	4365	4249	4906	4880
Szabolcs	587430	4915	5072	4709	4430	4646
Szolnok	557767	3068	3462	3260	3093	3116
Total	5607468	36367	38889	38659	40127	37712
Density of the fox population (piece/1000 ha)		6,49	6,94	6,89	7,16	6,73

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

Year: 2001-2010

Disease (a): Rabies

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

Description of the used serological tests:

AB-ELISA 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 immunfluorescence 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) HUNGARY	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
2001*	1212	231	485	152	485	185
2002	2199	122	667	357	1031	794
2003	2178	128	642	563	939	698
2004**	4758	111	1556	743	2910	1951
2005	5711	7	2105	1526	2538	1941
2006	6621	3	2113	639	5841	4104
2007	7777	3	4568	1357	7644	5325
2008	8609	6	1936	596	5902	3895
2009	7872	2	2033	586	3767	2273
2010	5036	10	1519	370	2600	1535
2011	4575	0	553	173	2201	1432
Total	56548	623	18177	7062	35858	24133

(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

** laboratorial 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: 2003-2011

Disease ^(a): Rabies

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

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

Year	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
2003	Between the Danube and the Tisza + 19 Focuses at Transdanubia + manual. Paks, Bp. and KFKI	Spring: 45.700 Autumn: 46.780	Spring: 976.010 Autumn: 999.090	2	1.975.100
2004	The whole territory of HUNGARY	93.030 (includes 920 km ² manual distributed area)	1.860.000	2	3.720.000
2005	The whole territory of HUNGARY	93.030 (includes 920 km ² manual distributed area)	1.860.000	2	3.720.000
2006	The whole territory of HUNGARY	93.030 (includes 920 km ² manual distributed area:)	1.860.000	2	3.720.000
2007	The whole territory of HUNGARY	93.030 (includes 920 km ² manual distributed area)	1.860.000	2	3.720.000
2008	County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy, Tolna: the whole territory County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country County Fejér: south of the M7 motorway County Vas: within the 50 km buffer zone from the Hungarian-Slovenian border	45.000 (includes 210 km ² manual distributed area)	900.000	2	1.800.000

2009	<p>County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy: the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country</p> <p>County Borsod-Abaúj-Zemplén: the eastern part from river "Sajó"</p> <p>County Fejér: within the territory of the 50 km zone surrounded "Mernye"</p> <p>County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border</p>	<p>46.326</p> <p>(includes 210 km² manual distributed area)</p>	926.520	2	1.853.100
2010	<p>County Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Baranya, Somogy: the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Zala: within the 50 km buffer zone from the border of the country</p> <p>In County Csongrád 500 m flying density was applied in a territory around "Makó", in a circle with a 25 km radius, bordering by the river "Tisza" and the border of the country</p> <p>County Borsod-Abaúj-Zemplén: the eastern part from river "Sajó"</p> <p>County Fejér: within the territory of the 50 km zone surrounded "Mernye"</p> <p>County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border</p>	<p>46.326 km² = 92.652 km²</p> <p>1.300 km² = 2.600 km²</p>	<p>Lysvulpen: 926.520</p> <p>26.000</p>	2	1.905.100
2011	<p>County Baranya Borsod-Abaúj-Zemplén Szabolcs-Szatmár-Bereg, Hajdú-Bihar.: the whole territory</p> <p>County Békés, Csongrád, Bács-Kiskun, Somogy, Tolna, Vas, Zala: within the 50 km buffer zone from the border of the country</p> <p><i>In County Bács-Kiskun</i> due to one cattle rabies case in the 25 km zone of Tiszakécske emergency ring vaccination has been ordered (decreed)</p>	<p>2 x 46.326 km² = 92.652 km²</p> <p>1 x 1.444 km²</p>	<p>Lysvulpen: 926.520</p> <p>1 x 28.880</p>	<p>2</p> <p>1</p>	<p>1.853.100</p> <p>28.880</p>
	Total	-	-	-	

(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): Rabies

Animal species: Red fox (*Vulpes vulpes*)

Region ^(b) HUNGARY	Type of the test ^(c)	Target population ^(d)	Type of sample ^(e)	Objective ^(f)	Number of planned tests
	Immunofluorescence test of the brain imprints	Red fox (<i>Vulpes vulpes</i>)	Brain	Confirmation of rabies	1.642
	AB-ELISA test (Biorad)	Red fox (<i>Vulpes vulpes</i>)	Blood	Control of immunisation	1.642
	Bone polishing of the mandible	Red fox (<i>Vulpes vulpes</i>)	Mandible	Monitoring of campaigns (bait uptake)	1.642
	Bait titration	-	Vaccine baits	Control of virus titre in vaccine baits	8
	Vaccine sterility	-	Vaccine baits	Contains only vaccine	8
Total					4.942

^(a) Disease and species if necessary.

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

^(c) Description of the test (for instance SN-test, AB-Elisa, RBT, etc.).

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

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

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

7.3.2. Targets on vaccination or treatment ⁽¹⁴⁾ of wildlife

Disease ^(a): Rabies 2013

Animal species: Wild carnivores (wild red fox *Vulpes vulpes*)

Region ^(b)	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 Baranya, Békés, Csongrád, Szabolcs-Szatmár-Bereg, Hajdú-Bihar: the whole territory County Bács-Kiskun, Tolna, Somogy, Zala: within the 50 km buffer zone from the border of the country County Borsod-Abaúj-Zemplén: the eastern part from river "Hernád" County Vas: within the 50 km buffer zone along the Hungarian-Slovenian border	41.050	821.000	2	1.642.000
Total	82.100			1.642.000

^(a) Disease and species if necessary.

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

Hungary intends to implement oral vaccination near to the borders of Slovenia, Croatia, Serbia, Romania and Ukraine in a minimum 50 km wide zone and simultaneously intends to apply emergency ring oral vaccination where positive rabies cases are detected ($r = \text{min. } 50 \text{ km}^2$).

⁽¹⁴⁾ Data to provide only if appropriate.

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

Estimated costs for the year 2013 (Estimation is based on the data from 2006-2012)

1 Euro = 294,92 HUF (source: Euro foreign reference exchange rates of the European Central Bank, 31/03/2012), VAT is 27 %

Costs related to	Specification	Number of units	Unitary cost in EUR	Total amount in EUR	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis	Test: IF	1.642 [piece]	15,6	25 615,20	yes
	Test: ELISA	1.642 [piece]	11,74	19 277,08	yes
	Test: Bone polishing	1.642 [piece]	3,95	6 485,90	yes
1.2. Cost of sampling	Shooting of the animals and passing them to the official veterinarians	1.642 [piece]	23,75	38 997,50	yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment (including the costs of the storage of vaccines)	4 type of vaccines are authorised to put in circulation in Hungary (Rabifox, Fuchsoral, Rabigen SAG-2, Lysvulpen)	2 x 821.000 [piece] = = 1.642.000 [piece]	0,80	1 313 600,00	yes
2.1.1 Purchase of vaccine/treatment for the case of one emergency ring vaccination / campaign		2x 157.000 [piece]	0,8	251 200	yes
2.2. Distribution costs		2 x 41.050 [km ²]= = 82.100 [km ²]	11,2	919.520,00	yes
2.2.1 Distribution costs for the case of one emergency ring vaccination / campaign	Distribution of vaccines via airplanes and manual	2x 7850 [km ²]=	10,4	163.280,00	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)					
6. Consumables and specific equipment					
7. Other costs	Costs of transaction of public procurement	2 [transaction]	3400	3400	yes
	Costs of titration of vaccine baits	8 [production number]	270	2.160,00	yes
Total				2 743 535,68	yes

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)