



EUROPEAN COMMISSION  
HEALTH AND CONSUMERS DIRECTORATE-GENERAL

04 - Veterinary control programmes

SANCO/10573/2010

REPORT ON THE  
**TASK FORCE MEETING  
OF THE  
RABIES SUBGROUP**

Vilnius, Lithuania  
27-28 October 2009



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OBJECTIVE	To improve animal disease eradication and to improve the cost-benefit ratio of animal disease eradication by producing conclusions, recommendations and specific action proposals
DATE OF MEETING	27-28 October, 2009
VENUE	Vilnius, Lithuania
PARTICIPANTS :	
Subgroup Members:	<ul style="list-style-type: none"><li>• As governmental experts from EU Member States: Petr Satran (CZ), Enel Niin (EE), Jakava-Viljanen Miia Kristiina (FI), Vilmos Pálfi (HU), Martins Serzants (LV), Marius Masiulis (LT), Marczin Smreczak (PL), Dalibor Polak (SK) and Jedrt Maurer Wernig (SI)</li><li>• As private experts : Florence Cliquet (AFSSA, Nancy, France) and Thomas Müller (Friedrich Loeffler Institute, Federal Research Institute for Animal Health, Wusterhausen, Germany)</li></ul>
Observers:	<ul style="list-style-type: none"><li>• Experts from Italy, Belarus, the Kaliningrad region of the Russian Federation, the Russian Federal Centre for Animal Health and Ukraine.</li></ul>
European Commission- DG SANCO	James Moynagh, Head of Unit SANCO 04, Olga Zorko and Panayiotis Demetriou, veterinary administrators SANCO 04



The two-day meeting was opened by Dr. Kazimieras Lukauskas, Director of the State Food and Veterinary Service (SFVS) of Lithuania followed by the introduction of the participants.

Participating countries provided brief information on their current rabies situation:

**Italy:** The country was declared free of rabies in 1997. Rabies cases reoccurred in October 2008 near the border with Slovenia and the virus spread to the North - Eastern part of the country. In 2009 33 cases (32 foxes and 1 dog) have been diagnosed. Oral vaccination on limited areas was done in January and May 2009. As the measures could not stop the spread of infection into the central part of the country, and many new cases were found outside the vaccinated zone the vaccinated area was extended to 5000 square km.

**Slovenia:** In 2009 21 cases have been detected. Vaccination is implemented in the whole territory.

**Estonia:** The oral vaccination campaign has been very successful. For more than a year, since March 2008 until April 2009, no cases were detected. The only cases diagnosed in 2009, were 3 rabid foxes very close to the narrow land border with Russia on the south-east of the country.

**Poland:** A significant reduction of disease occurrence took was observed in recent years. Now, most detected cases are located close to the Ukrainian and Belarusian border.

**Slovakia:** No rabies cases have been detected for three years, however, oral vaccination is still implemented.

**Latvia:** Due to the tendering problems in 2008 the programme was only partly implemented. In 2009 the whole territory of the country was vaccinated twice with the Fuchsoral vaccine. Along the Belarusian and Russian border supplementary vaccination was also carried out.

**Russia:** The disease is endemic throughout the Russian territory. In 2009 an increased number of cases has been reported with the problem being more serious on the western part of the country. Vaccination for humans and domestic animals is available free of charge. A EU financed plan is running in Kaliningrad and cooperation exists with Finland since several years for the creation of a rabies vaccination zone along parts of the border.

**Belarus:** The disease is endemic in the country and sporadically human cases occur. Many cases occur close to the Polish border. Oral vaccination is implemented in certain areas and a slight decrease in cases has been observed during the last couple of years.



**Ukraine:** A vaccination programme is implemented since 2007 in certain provinces of the country. Vaccine baits are locally prepared with antigen (V-RG) provided from Merial. Due to limited resources, only the north-eastern provinces with the most cases are included in the programme. A significant reduction in rabies cases has been observed recently.

Experts from Lithuania gave the following presentations:

1. Situation and epidemiological evaluation of rabies in Lithuania
  2. Control efficiency of oral vaccination campaigns in Lithuania
  3. Risk communication
1. **In the first presentation** a short summary was given about the history of oral vaccination of wildlife against rabies. The first program started in 1983 using the Russian vaccine-bait system. A reduction of 25-50 percent of the rabies cases was observed. The second oral vaccination campaign started in 1995. During the 6 year's program 43.000 square km territory was covered and 820.000 baits were distributed. Three different vaccines were used, namely SAG-1 (1995-1997, 1999), Lyspulven (1998), and Rabifox (2000). The vaccinated areas were changed year by year and the short vaccination period were the main factors limiting the success of the program. The size of the vaccinated area varied between 940 (1995) and 8000 (1999) square km.

A new rabies eradication strategy was launched in 2006 containing the following key elements:

- Oral vaccination of wild animals with vaccine which must create sufficient immunity
- Rabies eradication campaign should last not less than 2 years after the last case in the country
- Compulsory vaccination of dogs and cats
- Implementation of identification and registration system for dogs and cats
- Control of stray animals

The Lithuanian Veterinary Service determined the basic rules for oral vaccination and the requirements for vaccine used during the oral vaccination campaign. The main points are the following:

1. Oral vaccination:

- Oral vaccination should be carried out twice a year
- Estimated optimal number of baits per square km is not less than 20 baits.



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- Vaccines are dropped at regular time
- Requirements for aerial distribution include the intervals along parallel lines separated by 1000 meters at maximum flight speed of 150-180 km/h and maximum altitude at 150-200 meters

2. Requirements for the vaccine

- Have a national market authorization for oral immunization of foxes
- Safe in target and non target species
- Bait envelope should contain 150 mg of tetracycline to mark the bait consumers
- Vaccine strain should be efficient for protecting 100 per cent of foxes after uptake 1 vaccine dose
- The melting point of the bait casing should be at 40 centigrade to ensure that the capsule of the vaccine is still covered
- The titer of the vaccine should not fall below the indicative 100 per cent protective dose following exposure to 25 centigrade for seven days
- Vaccine should not have less than 12 months expiry date stored at minus 20 centigrade or below

As regards for the geographical conditions in Lithuania at the planning of the campaigns 60,3 % agriculture, 30,5 forest, 5.6 % water, 2.8% urban and 0,6% other territories should be considered. For covering the whole country the need for two campaigns per year is 2.600.000 baits. The aerial bait distribution is checked by bait distribution records. The date, temperature, number of flights, number of distributed baits are registered on bait delivery records. An electronic counter counts the disseminated baits.

Data on rabies dynamics between 1997- 2007 were presented. The peak incidence was seen in 2005-2006. Since that time a considerable decay has been observed. In 2008 69, and until 26 10 2009 52 cases were found mostly along the border with Belarus and the Kaliningrad region of Russia.

In 2009 until October 167.765 animals have been vaccinated against rabies including 110.288 dogs, 23624 cats and 32691 cattle between 2001 and 2008 in the country 114.580 foxes (9450 -21900) and 37.471 racoon dogs (3055 – 7061) were hunted.

The Orders of the legal acts governing vaccination of wildlife against rabies issued by the Director of SFVS in 2007-2009 have been approved. The legal basis for control of stray and pet animals has been laid down in the following laws:



- Law on veterinary activities
- Law on the care, keeping and use of animals
- Law on the fundamentals of local government
- Veterinary requirements for animal shelters

An important element in rabies control is the pet animal registration and identification. The SFVS Order on rabies control commits the animal keepers the vaccination of dogs, cats and ferrets and in an infected holding all the susceptible animals against rabies.

The Lithuanian central database for identified pets named Regivet is connected both to the Database in municipalities and to the European database for identified pets (EuroPetNet).

2. The second presentation was concerned the **Control of Efficiency of oral vaccination campaigns in Lithuania.**

The evaluation of oral vaccination includes

- Testing for the presence of biomarker
- Examining sera from target species for rabies antibodies
- Analysing the incidence of rabies before and during the campaigns
- Bait uptake is controlled by testing foxes and racoon dogs not less than 8 samples per 100 square km

In 2009 1874 samples were taken. Samples are uniformly collected from all the 10 counties of Lithuania. Data on efficacy of oral vaccination are presented in Table 1. Table 1. Efficacy of oral vaccination Period 01/01/2009 - 01/10/2009

Test	Number of samples	% of Positives in Species		Positive% in average
		Fox	Racoon dog	
Tetracycline marker	1921	79,63	58.35	75.32
Serology	214	49.16	42.85	48.13

Field trials were done to test the bait uptake under different meteorological conditions in spring and autumn, the deformation of bait casing in spring and autumn and stability of rabies vaccine virus strain at different environmental conditions.



Based on the results of the trials the following conclusions could be drawn:

- Bait uptake was satisfactory both in spring and in autumn
- Trial periods and bait location made possible distinctions between bait uptake under different environmental conditions
- Efficacy of oral vaccination could be influenced by multiple variables therefore the bait uptake is the only indicator of bait contact with target animals
- Vaccine virus stability and efficacy of oral vaccination could be compromised by weather conditions like sunlight and rain
- The loss of vaccine titer is presumably caused by disintegration of bait casing
- Bait stability laboratory results do not always correspond with that on field

The rabies incidence is monitored by testing 8 foxes/ 100 square km for rabies each year. Furthermore all the animals showing abnormal behaviour, found dead and other suspect ones should be examined for rabies.

Detailed data were presented on investigations and a prevalence of rabies between years 1994 and 2009. Selected data are shown in Table 2.

Table 2. Selected data on rabies investigations and positive cases

Year	Number of tested animals	Number of positive animals		Total number of positive
		Wild life	Domestic	
2000	1549	571	283	854
2002	1639	681	251	932
2004	2123	408	145	553
2005	2901	1312	340	1652
2006	4200	1883	349	2232
2007	1974	377	141	518
2008	1502	47	22	69
2009 (25/10)	746	42	12	54

3. The third presentation was on **Risk communication**. A key responsibility of the SVFS is to communicate animal health, welfare, food and feed safety advice to the stakeholders and the public in a timely, clear and helpful way in order to bridge the gap between the control institution and the public. Risk communication is a consumer's right. It serves for disease prevention, gaining trust, preventing public opinion outrage, finding better solutions and obtaining better understanding and support. Risk communication, should be integrated with risk assessment activities, closely cooperate with scientific authorities and embrace the needs of consumers.



The centralized structure of SFVS with close cooperation with county and district level is an important tool for effective risk communication.

The organization of public communication is undertaken by the Information and IT department of the SFVS. This department organizes the community relations, the event management and media relations.

Rabies suspicions can be reported through the emergency response phone line (112), the free phone line of SFVS, of the SFVS website and private veterinarians. Besides, to inform the public about rabies, booklets, leaflets, posters and monthly newspapers are published. The education of the public starts with the young generation in kindergartens and schools.

The implementation of rabies eradication strategy including risk communication is an important element of the rabies eradication programme and simultaneously builds and promotes the SFVS reputation.

#### **Lectures given by the private experts**

F.Cliquet and Enel Niin: Rabies Control in Estonia

F. Cliquet: Vaccine bait is safe and efficacious in racoon dogs

Thomas Müller: Principles of rabies eradication





The subgroup discussed about the Lithuanian and regional rabies epidemiological situation and laid down the following conclusions and recommendations:

### Conclusions

1. Oral vaccination programme covering the whole territory of the country since 2006 is proving to be effective and successful. In the last 2 years a considerable decrease of rabies cases could be observed.
2. Considerable efforts have been made by the Lithuanian authorities to decrease the incidence of rabies in domestic animals by strengthening controls on the implementation of mandatory vaccination of dogs and cats.
3. In the case of suspicion/confirmation of rabies mandatory vaccination of all domestic animals is implemented in the area and surrounding surveillance zone.
4. The surveillance system and the follow up investigations are of high level.
5. Lithuania has put large resources to establish a communication and education system to ensure public awareness on rabies.
6. A permanent risk of rabies re-infection from neighbouring third countries is perceived. Lithuania is unique in that it is flanked by rabies endemic areas in the east and west.
7. Excellent exchange of information with neighbouring MS, e.g. Latvia and Poland, on the rabies situation and oral vaccination programmes implemented has been established. There are annual multilateral meetings. Also, attempts were made to establish similar cooperation with neighbouring third countries, e.g. Russia (Kaliningrad region) and Belarus.

### Recommendations

1. Lithuania should be prepared for long term vaccination because of the rabies situation in the neighbouring third countries though the successful vaccination activities in those countries may reduce the need.
2. Despite the financial crisis Lithuanian authorities should provide long term financial support as any interruption of the programme could result in a loss of substantial financial investment already made.
3. Attempts should be made to increase sample size for serological testing to get more accurate figures on the herd immunity in foxes and raccoon dogs.
4. Typing of rabies virus strains from vaccination areas to distinguish field from vaccine strains should be continued.
5. Flight line spacing should be reconsidered taking changes in rabies situation into account. In the long run flight lines should be reduced to 500 m.