About this dossier

Output on: 2021/02/01 15:55 (Europe/Luxembourg)

Last updated: 2020/07/15 17:41

Status: closed (submitted)

Created: 2020/04/30 18:12

Eradication: Final report for Rabies 2019

For each approved annual or multi-annual programme Member States shall submit to the Commission by the 30 April each year an annual detailed technical and financial report covering the previous year. That report shall include the results achieved and a detailed account of eligible costs incurred (Art 14 of Regulation (EU) No 652/2014).

This form is for information only, no submission possible.

ID: 20200430-5H7IMUPY

Country code: EE

Reporting period

From: 2019 **To:** 2019 **Year of implementation:** 2019

1. Technical implementation of the programme

1.1 Description and evaluation of the evolution of the epidemiological situation, the technical implementation of the activities foreseen under the programme and the cost-effectiveness of the programme.

1.Technical data
The first (spring) oral rabies vaccination (ORV) of wildlife campaign in buffer area was carried out from13th to 18th May 2019. (general outline of flight-lines in spring, Figure 1 in attachment of report. Please note- majority of figures, tables, charts and maps are attached to the report as unique file and referred in text of report)
The second (autumn) ORV campaign in buffer area was enforced from 16th to 21th of September 2019. (general outline of flight-lines in autumn, Figure 2 in attachment of report).

1.1. Vaccination area: While in 2011-2014, ORV was carried out in buffer-zone with neighboring infected countries- Latvia and Russia, then starting from spring 2015 , due to achievement of Latvian Republic officially rabies free status in 2015, ORV has been enforced solely in buffer-zone bordering Russian Federation Leningrad Region in north-east and Pskov Region in south-east. Similar strategy was proceeded in 2019. Consequently a buffer – zone with area suitable for bait –lancing 6 100 sq km was covered by ORV. In north –east close to coast of river Narva the depth of the buffer-zone was 30 km, in south-east Estonian-Russian mainland border ORV was performed in 50 km wide area. Urban areas, roads, water bodies and wet fields were excluded from above-mentioned ORV area. Territory of the buffer- zone was divided into 28 squares, which average area 218 sq km. There has been no need to conduct emergency vaccination within

previous years nor year 2019.

1.2.Vaccine baits: according to the results of public tender launched in the beginning year 2019 the vaccine used for ORV in year 2019-2020 is Rabitec (attenuated live rabies vaccine virus, strain SPBN GASGAS). According to the contract concluded with the winner of the public procurement company OÜ Zoovetvaru the amount of purchased vaccine baits for year 2019 was 244 000 pierces (½ of them for spring campaign, ½ for autumn). Prior the vaccination campaigns samples from all batches planned for distribution (in reality 1 batch, in spring and 1 batch in autumn) in total in both times 30 baits from different stands of delivered package) of Rabitec were sent to the OIE Reference Laboratory for Rabies/WHO Collaborating Centre for Rabies Surveillance and Research Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health to control the vaccine titer accordance to the public procurement technical description. Samples were taken by representative of Veterinary and Food Board in refrigerator warehouse before start of ORV. According to the results (evaluation reports from 09.05.2019 in spring and 12.09.2019 in fall) the vaccine batchies delivered were suitable for oral vaccination. The titer detected was between 10 in stage 6.8 FFU* - 10 in stage 8.1 FFU*/dose- 10 in grade 7.014 per dose while tested the baits upon arrival in the laboratory in spring. Stability testing of baits in FLI gave favorable results: If exposed to 25°C for 7 days, the mean titer detected was 10 in grade 6.459 per ml (equal to 6,741 FFu/dose). In autumn, the titer detected was between 10 in stage 6.8 FFU* - 10 in stage 8.1 FFU*/dose- 10 in grade 7.36 per ml while tested the baits upon arrival in the laboratory.. Stability testing of baits in FLI gave favorable results: If exposed to 25°C for 7 days, the mean titer detected was 10 in grade 7,256 per ml (equal to 7,512 FFu/dose) The bait casing became sticky and soft, but remained intact when exposed to 40° for one hour in both testing rounds.
An average distribution density of vaccine baits used has always been 20 baits per sq km and it was decided, that despite we have had to change the vaccine in reasons not under our control in 2018, we intend to keep all other components of ORV strategy as similar as possible compared to previous years including the density of vaccine baits. Thus, 20 baits per sq km of Rabitec vaccine were distributed in 2019. In the frames of spring campaign 122 400 vaccine baits and for autumn campaign 122 400 vaccine baits were distributed per approximately 6 100 sq km. In total 244 800 baits were distributed in year 2019 (please note , in the frames of both campaigns, 400 baits were delivered extra by IDT, free of charge).

1.3. Distribution: distribution of baits was performed from the small airplanes type Cessna-127.
Technical parameters followed for bait – lancing : altitude form ground – 100- 150 m, flight speed – 150 - 200 km/h and distance between parallel distribution lines 550- 600 m.
Distribution was performed by distributors manually through the constructed special tube inside the plane. Navigation tool used for navigation was Garmin- Aera500. This system allows recording of flight tracks and making offprint afterwards. Reports of the flight-tracks are available with underlying ground –map in Power Point format and with all flight details in GPR Track Maker (GTM fail) program. Due to large volume of GTM fails they are not included into this report, but in case Commission would like to have the corresponding data of flight tracks for more targeted control, we are ready to provide them on short notice.

1.4. Rabies surveillance and bait consumption evaluation: Continuous rabies surveillance is carried out in the total territory of the country. Samples from rabies-suspected domestic and wild animals are collected by authorized veterinarians. In addition, testing material is collected from indicator animals (foxes and raccoon dogs found dead, incl. road-kills, animals behaving unnaturally) by Estonian Hunters Association and sent to the laboratory for investigations to confirm or overrule disease appearance. Surveillance is conducted throughout the country territory including ORV area with target to collect as many samples as possible from indicator animal without excluding also any suspect case. From spring 2015 all healthy hunted animals without an exception have been excluded from testing-group of surveillance. Fluorescent Antibody Test is used for laboratory investigations of virus detection as a gold standard.
Monitoring of ORV has been carried out in vaccinated buffer-zone from July 2019 to end of March 2020. The head and blood samples are collected from hunted foxes and raccoon dogs in ORV area with density up to 4 animals per 100 km2. Detection of tetracycline in teeth and bone specimens by fluorescence is carried out on these samples (up to 250 pc.); additionally age of all tested animals is determined. The enzyme-linked immune-sorbent assay (ELISA) technique is in use for testing of wildlife sera after ORV to confirm population immunity level achieved.
250 blood samples were planned to be collected for control of seroconversion.
The members of Estonian Hunters Association performed hunting and sampling from July 2019 until late March 2020. Samples were sent to Veterinary and Food Laboratory central laboratory in Tartu via local veterinary centers. The Veterinary and Food Laboratory is responsible for investigations of tetracycline detection, age determination, antibody titration level and virus detection.

1.5. Awareness campaign: campaign started at the time of the beginning of ORV on national TV, Estonian and Russian speaking radio-channels and in local newspapers in order to inform publicity concerning vaccination activities. Brochures in Estonian and Russian languages were elaborated in 2017, as well as posters; also commercial radio-clip recorded for Estonian and Russian-speaking audience. Those were used also in year 2019. A dome www.marutaud.ee (rabies.ee) has been created, registered and kept active to assemble easy to understand key topics about the disease including its prevention among wild and

domestic warm-blooded animals. In 2019 a new social media clip was or subscribed, filmed and made widespread via internet portals (including Facebook of our Board). Also a brand new initiative was conducted in 2019: two -days free of charge vaccination campaigns in the most endangered area of country- South-East Estonia for accompanying animals. 3 teams of veterinarians of Central Office of Veterinary and Food Bard, local veterinary offices and authorized veterinarians vaccinated ~500 cats and dogs. Campaign was widely popularized in national and local media, newspapers, internet portals, radio e.c.

2. Legislation
The state programme for rabies prevention carried out in Estonia is based on the Infectious Animal Disease Control Act, the Rabies Control Rules and the state programme for infectious animal disease control. Under the state programme for rabies prevention, the state budget funds are used to cover the costs of laboratory tests of animals on rabies presence and the costs of anti-rabies vaccination of dogs and cats mainly. The only preventive method used in Estonia until autumn 2005 against rabies was the vaccination of dogs and cats, as these species are supposed to be the source of infection of humans. The cost of the vaccine is covered by the State Budget. Pursuant to the Minister of Agriculture Regulation No. 67 “Rabies Control Rules” of 20.11.2000 (RTL 2000, 120, 1876) an animal owner is required to ensure that the cats and dogs belonging to him or her are vaccinated once a year. According to amendments in above-mentioned regulation, since 20.07.09, it is allowed to make booster vaccination in accordance with instructions described in product information sheet of vaccine used, but not sparse, than 24 months have passed from last vaccination. The vaccination of farm animals that graze on woodland pastures and pastures adjacent to forests is recommended. Animals are vaccinated by veterinary supervisory officials, authorized veterinary surgeons or licensed veterinarians. In Estonia, mainly wild animals that behave unnaturally and/or enter the premises of households and are killed are tested on rabies presence. Domestic animals suspected to have rabies are also tested after death. All bovine animals with nervous symptoms who died or who are emergency slaughtered are also tested on rabies. The samples are taken and tested in the laboratory throughout the year.
According to § 10 of Rabies Control Rules for oral vaccination of wild animals the Veterinary and Food Board determines the region, time and method of spreading the vaccine bait.
Legislation concerning vaccination of wild animals against rabies:
Consolidated version of Infectious Animal Disease Control Act is available in Estonian: https://www.riigiteataja.ee/akt/104122019022
Consolidated version of the Minister of Agriculture Regulation of 20 November 2000 No 67 “Rules for Rabies Control” is available in Estonian: https://www.riigiteataja.ee/akt/111122019011

3. Information on diagnostic tests
3.1 Tetracycline detection test
Detection of tetracycline in teeth and bone specimens by fluorescence. Tetracycline is used as bio-marker in the baits used for oral vaccination of wildlife because this antibiotic has the property to fix on growing bone and teeth. The detection method uses the fluorescence of tetracycline in ultra-violet light.
Lower jaws are collected in the necropsy room, they are cut in front of the first premolar tooth, next lower jaw is divided into two parts and only one of the canine teeth is isolated from the bone.
The sectioning is done with ISOMET diamond saw. The canine tooth is fixed by its point and transversal section is done. The cut is done between 2 and 3 mm from the end of the root. The result is acceptable when the section is 0,2 to 0,6 mm thick and when different elements may be identified such as the end of the root, pulp cavity, dentine, cementum and some pieces of bone.
The section is put on the microscope slide on a drop of buffered glycerol. Tetracycline lines will appear as more or less intense yellow lines on the bluish background. Different elements are characterised: number of lines of tetracycline, period of bait uptake, age determination according to the joined procedure.

3.2 Antibody titration
The enzyme-linked immuno-sorbent assay (ELISA) technique for testing of wildlife sera after oral vaccination – Bio-Rad kit Platelia Rabies II Ad usum veterinarum (registered diagnostic kit certified by the OIE as validated fit for the purpose 05-Jul-2007). OIE Manual (2.1.13 2011 web version)

3.3 Virus detection
Fluorescent Antibody Test (FAT) - test corresponds to the method prescribed in OIE Manual (2.1.13 2011 web version). Test uses two anti-Rabies FITC conjugates (Bio-Rad Cat. No.3572114 and Bioveta Cat. No. NP 262/E/2x1ml/GB/3)

3.4 Tests carried out in case of rabies suspicion
Fluorescent Antibody Test (FAT) - test corresponds to the method prescribed in OIE Manual (2.1.13 2011 web version). Test uses two anti-Rabies FITC conjugates (Bio-Rad Cat. No.3572114 and Bioveta Cat. No. 262/E/2x1ml/GB/3
Virus isolation on cell culture (CC) - Test corresponds to the method prescribed in OIE Manual (2.1.13 2011 web version). Test uses Murine neuroblastoma cell line (MNA).

Polymerase chain reaction (Real-time RT-PCR). - Main reference: Heaton et al., Heminested PCR Assay for Detection of Six Genotypes of Rabies and Rabies-Related Viruses, Journal of Clinical Microbiology, Nov. 1997, p. 2762-2766.
Testing procedure for samples which are tested by FAT with negative or suspicious result and had a contact with unvaccinated animal or person: additional testing by CC and RT-PCR is followed.
Testing procedure for samples which are tested by FAT with positive result: result will be reported without additional testing.

4. Data on infection
No rabies has been diagnosed since January 2011 until nowadays in territory of Estonian Republic. (see epidemiological maps of cases in 2008-2011 attached to report, figures 3-5)
There was no virus positive animal detected among suspected cases of all species nor indicator animals of small carnivores involved (foxes and raccoon dogs) in 2019.(see attached tables 1 and 6)

1.2 Details on the level of achievement of the targets set in the approved programme and technical difficulties.

1. Achievement of targets and technical difficulties
Oral vaccination of wildlife has been implemented since 2005 to reduce rabies cases among wildlife and domestic animals, to protect animal lives and via aforementioned, diminish threat to human health. In longer perspective, eradication of disease from territory of Republic has been the scope of program. Based on intensive surveillance data, it can be concluded, that aforementioned targets have been achieved. With the exception of the areas adjacent to the south-eastern borders with Russia, rabies cases have not been detected in the Estonian territory for already 9 years (last case in part of Estonia was dog in Harju county in March 2008). Thereof, the only rabies cases occurred, have been three rabid foxes found in May and July 2009 in Põlva and Võru county and 1 raccoon dog in January 2011 in Põlva county in short-range (less, than 5 km) of Estonian-Russian Federation land border.
The only condition of the Terrestrial Animal Health Code Article 8.13.3 unreachable for Estonia until recent time- freedom for infection within last two year period- was fulfilled for the beginning of year 2013. Consequently in early April 2013 Estonia declared that as its county complies with the conditions to be considered a rabies free country in accordance with the Terrestrial Animal Health Code (2012) of OIE, the Republic has regained its rabies-free status.
To protect areas freed from rabies from re-emerging infection due to movements of infected wild animals, since year 2011 bait-lancing in a buffer zone along the borders with neighboring countries where rabies is still present has been officiated. In years 2011-2014 buffer area covered areas with both bordering countries Russia and Latvia. Starting from year 2015 ORV of wild fauna has been carried out solely in north-eastern and south-eastern borders with Russian Federation.
No re-infection has occurred and Estonia has preserved its official rabies freedom to this day. That is why in can be concluded strategy chosen has been successful and justified.

2. Results of efficiency control
2.1. Rabies incidence
Number of positive cases decreased from hundreds to zero after the oral vaccination campaigns started in autumn of 2005 in ~2/3 part of territory of
Estonia, in total territory of Estonia twice a year since 2006. (see chart 1). In 2005 rabies was diagnosed in 266 animals, in 2006 in 114 animals. In 2007 4 positive cases were diagnosed: 2 cows, badger and raccoon dog. In 2008 three positive cases were found in the beginning of the year: 1 fox, 1 dog and 1 sheep (see figure 3). In 2009 rabies diagnose was verified in three foxes (see figure 4). In year 2010, for the first time over last 42 years, no a rabies case have been found. In the beginning of year 2011 one rabid raccoon dog detected (see figure 5), until nowadays, this has been the only case
diagnosed since then. Estonia was recognized officially rabies-free by OIE in April 2013 (relevant information with supporting documentation can be found in OIE bulletin no. 3, 2013, pages 58-61 http://www.oie.int/en/publications-and-documentation/bulletins-online/)
The number of animals from whom authorized veterinarians have collected samples for laboratory investigations due to rabies suspicion has been in continual decrease since start of ORV. Subsidizing of collection of samples from suspected wildlife from State Budget since autumn 2011 has not given remarkable effect to stop this decline. Consequently the general number of animals investigated due to rabies suspicion has remain stable in latest years and testing is more targeted to small wild carnivores. Nevertheless, as in 2015 official number of animals tested due to rabies suspicion has been relevantly low, at the beginning of year 2016 Veterinary and Food Board made written proposition to Ministry of Rural Affairs to upward remarkably price paid to official veterinarians for collection of samples from suspected wild animals. In early 2019 Ministry of Rural Affairs approved amendment of Regulation and raised remarkably price paid to official veterinarians for collection of samples from suspected wild animals (foxes, raccoon dogs, jackals) once more. As a result, number of suspected cases being unacceptably moderate in 2018 (in total 102 rabies suspected animals were tested in VFL), went into increase again. In 2019, in total 207 suspected animals were tested in VFL for rabies, 177 of investigated head samples originated from wildlife. Rabies-suspicion was set up in 30 domestic animals as well, dominantly in bovines, but also in

cats, dogs and sheep were suspected to be infected by rabies. (see table 1).

2.2. Collection of samples for efficiency control

Samples collection for ORV monitoring and virus surveillance was carried into force by using services of Estonian Hunters Association. To avoid mixing up the targeted testing groups of ORV monitoring and rabies surveillance by hunters, two separate contracts have been undersigned with Estonian Hunters Association since spring 2015 and also for the year 2019. Contract undersigned in early January 2019, so called "surveillance samples contract" to collect as much as possible head samples from the indicator animals of reservoir species (e.g. road kills, animals found dead or behaving unnaturally) in total territory of the Republic covered the period till 31.12.2019. It was targeted to collect up to 999 head samples from suitable foxes and raccoon dogs within year 2019. To facilitate the sample collection procedure and homogenize sampling suggestible division of samples was presented in annex of the contract by counties.

Following spring ORV campaign in May a second contract limited to ORV area to collect blood and teeth samples from healthy small predators hunted to monitor ORV efficiency in vaccination area was undersigned in 25th of June 2019. By this contract, hunters collect brain samples from up to 4 healthy hunted foxes or raccoon dogs per 100 km2 bait-distribution range and send to the laboratory for relevant investigations.

In the frames of first contract no. 1, so-called “indicator animals contract” in total 1010 heads from indicator animals (foxes and raccoon dogs) were collected and sent for laboratory investigation from total territory of country from 01.01.-31.12.2019 among them 470 foxes heads and 540 raccoon dogs heads (see table 3). Respectively, on country level plan of sample collection was fulfilled in a level of 101 %; in county level variation was ranging from 76 % to 116%.

The quality of all brain-samples was sufficient to conduct testing for rabies virus in the laboratory.

In the frames of second contract no. 216, ORV monitoring contact, the target to sample 250 healthy indicator animals per ORV area from July 2019 to March 2020 was pursued. This target was not fully achieved due to emergency situation of COVID-19 pandemic. Head and blood samples from 232 animals (93%) arrived to the laboratory for the Easter holidays. Number of foxes sampled and number of sampled raccoon dogs was 125 and 107 respectively.

The percentage of implementation of hunting-contract was ranging from 88 % to 100 % depending on county. (see table 4 and 5). The average sampling density obtained for detection of bait-uptake and immunisation-rate was 3,8 animals per 100 sq km.

The quality of all teeth and serum samples was sufficient to conduct adequate testing procedures nearly in all cases.

The data concerning sampling density obtained for head and serum samples is also analyzed in district level, but due to high volume of the material, latter is not included into this report.

2.3. Results of rabies virus detection

All animals from whom hunters submitted the samples for detection of rabies virus by FAT in year 2019 were rabies indicator animals- road kills, animals found dead, having unnatural behavior or clinical signs of illness at the time of hunting as indicated by the local veterinary center in the accompanying document.

By the information written in the accompanying document there were 559 animals found dead (including road kills), 403 animals were culled due to unnatural behavior and 48 due to obvious signs of sickness.

All 1035 virus investigations (479 foxes, 556 raccoon dogs) gave negative results. (see table 6.).

The data concerning animals tested for virus investigation is also analyzed in district level, but due to high volume of the material, the outcome is not included into this report.

NB! Please note, that the number of indicator animals submitted (1010) and number of indicator animals tested for virus (1035) within year 2019 is not equal as due to delivery- 25 indicator animals sent to laboratory in late December 2018 were actually tested by FAT in January 2019 (with negative result).

2.4. Results of tetracycline detection

From head samples collected in ORV area in monitoring period July 2019 - March 2020, teeth-material was investigated to determine age-group of the animal and presence of biomarker. All head samples collected were suitable for detection of TC; also age-class was verified for all animals.

Investigation of these target animals proved, that 70% (range 40% – 79%) of all investigated animal teeth have showed tetracycline line with a high intensity (consumed baits). On average, 68 % of the foxes and 73% of raccoon dogs were positive for tetracycline marker (see table 7). The average bait uptake level was 81% in adult target species and 60% in young animals (see table 8).

Tetracycline was found in 80% of examined samples taken from adult foxes and 56% of young foxes. The data for raccoon dogs were 84% for adult animals and 65% for young, respectively. Bait uptake level in species and age-group bases can be observed in table 9.

Unfortunately, change in vaccine distributed have lead to remarkable drop in bait uptake in 2018 and the same moderate results can be observed in last year as well. In general it can be concluded, that an average percentage of animals consuming the bait has been 10% lower, if to compare with ORV campaigns of previous years, when Rabigen SAG 2 was used. The setback has been quite equal in both animal species and in all age groups. The level of bait consumption between young and adult animals was in harmony with experience of former years; animals under an age of one year have had (~10 %) less opportunity to

consume the baits.
The data concerning results of TC detection in ORV area is also analyzed in district level, but due to high volume of material, outcome is not included into this report.

2.5. Humoral response
38% of 232 blood samples collected from target species in vaccinated buffer-zone areas showed rabies antibody titres higher than 0,3 EU/mL with ELISA technique. The percentage of foxes with rabies antibodies was 33% and for raccoon dogs 43%. (see table 10). In year 2017 year spectacular results of seroconvertion were met (67% as an average). In 2018 when Rabitec vaccine was in use for the first time, seroconvertion rate was 44%. If to compare this years results, with an average results obtained in buffer area as an average of years 2011-2017 (48%), latter are clearly moderate, 10% lower than faced before.
All collected blood-samples were accompanied with corresponding head-sample, giving possibility to detect age-group of animal investigated.
Specific rabies virus neutralizing antibodies were detected in 47% of adult foxes and in 64% of adult raccoon dogs. In case of young animals these figures were 18% in foxes and 29% in raccoon dogs. (see table 11). As can be followed by table 12 the percentage of adult individuals of both target species with rabies antibodies was approximately 54% and of young animals 23%.
The bait-uptake rate determined and the level of humoral response among adult and juvenile animals was in logical correlation. The proportion of adult versus young animals under 1 year age among test-group has been nearly equal 47%/53% as an average.
The data concerning results of seroconvertion is also analyzed in district level, but due high volume of material, the outcome is not included into this report.

1.3 Epidemiological maps for infection and other relevant data on the disease/activities (information on serotypes involved,...) (Please attach files of data using the PDF attachement feature) Use the textbox below to provide clarifications for the maps you attach, if needed.

Surveillance tests- see Figure 6 in attachment, epidemiological map with the number of animals tested by passive surveillance presented per county.
Numeric values about suspected cases and indicator animals are presented in the map. All test results were negative, so to spare map-space, relevant zeros are not marked in the map. Corresponding data is also visible in tables 1 and 6 of the attachment.
Biomarker tests- see figure 7 in attachment, data about positive TC tests and number of tests performed per county territory inside ORV area is presented in map format. More specific data is also visible in tables 7-9 in the attachment.
Serological tests- see figure 8 in attachment, data about animals seroconverting by test-results and number of tests performed per county territory inside
ORV area is presented in map format. More specific data is also visible in tables 10-12 in the attachment.

ANNEX VI TECHNICAL REPORT ON RABIES PROGRAMMES

VERY IMPORTANT: Please fill out the following tables with figures corresponding to measures performed during the implementing period (1/1 to 31/12).

Table A1 - TEST FOR THE MONITORING OF VACCINATION EFFECTIVENESS

Region	Species and age	Type of test	Test description	Number of tests	Number positive	% positive
ORV area	Foxes adult	Biomarker	Tetracycline in bones	64	51	79.69 %
ORV area	Foxes juvenile	Biomarker	Tetracycline in bones	61	34	55.74 %
ORV area	Racoon dogs adult	Biomarker	Tetracycline in bones	44	37	84.09 %
ORV area	Racoon dogs juvenile	Biomarker	Tetracycline in bones	63	41	65.08 %
ORV area	Foxes adult	Serological	VNT/FAVN/ELISA	64	30	46.88 %
ORV area	Foxes juvenile	Serological	VNT/FAVN/ELISA	61	11	18.03 %
ORV area	Racoon dogs adult	Serological	VNT/FAVN/ELISA	44	28	63.64 %
ORV area	Racoon dogs juvenile	Serological	VNT/FAVN/ELISA	63	18	28.57 %
Total				464	250	53.88 %

Table A2 - SURVEILLANCE TESTS

Region	Animal species	Category	Test description	Number of tests	Number of cases
Estonia	Foxes	Passive	Fluorescent antibody test (IF)	541	0
Estonia	Racoon dogs	Passive	Fluorescent antibody test (IF)	647	0
Estonia	Roe deer	Passive	Fluorescent antibody test (IF)	5	0

Estonia	Marten	Passive	Fluorescent antibody test (IF)	3	0
Estonia	Badger	Passive	Fluorescent antibody test (IF)	10	0
Estonia	Other mustelidaes	Passive	Fluorescent antibody test (IF)	2	0
Estonia	Bat	Passive	Fluorescent antibody test (IF)	2	0
Estonia	Squirrel	Passive	Fluorescent antibody test (IF)	2	0
Estonia	Bovine	Passive	Fluorescent antibody test (IF)	13	0
Estonia	Ovine	Passive	Fluorescent antibody test (IF)	4	0
Estonia	Cats	Passive	Fluorescent antibody test (IF)	6	0
Estonia	Dogs	Passive	Fluorescent antibody test (IF)	6	0
Estonia	Equidae	Passive	Fluorescent antibody test (IF)	1	0
Estonia	Foxes	Passive	PCR	6	0
Estonia	Racoon dogs	Passive	PCR	1	0
Estonia	Roe deer	Passive	PCR	1	0
Estonia	Badger	Passive	PCR	1	0
Estonia	Bat	Passive	PCR	2	0
Estonia	Bovine	Passive	PCR	6	0
Estonia	Cats	Passive	PCR	4	0
Estonia	Dogs	Passive	PCR	6	0
Estonia	Equidae	Passive	PCR	1	0
Estonia	Foxes	Passive	Virus characterisation test	1	0
Estonia	Racoon dogs	Passive	Virus characterisation test	7	0
Estonia	Badger	Passive	Virus characterisation test	2	0
Estonia	Ovine	Passive	Virus characterisation test	2	0
Estonia	Dogs	Passive	Virus characterisation test	2	0
Total				1,284	0

Number of rabies virus isolates typed for differentiation from vaccine	0
Typing results (please indicate the number of field strains/vaccine strains, and (optional) comment)	NA

Table B - WILDLIFE ORAL VACCINATION

Aerial distribution data files:

Sent via post (USB, DVD, etc...)	As PDF files with flight routes of campaigns are to big to attach we are ready to send them by e-mail on first notice.

Description of the analysis performed by the Competent Authority on the aerial distribution data and conclusions of the assessment for the quality of the distribution:

Reports of the flight-tracks with underlying ground –map in PDF format can not be attached to the report as the total file size of the attached files should not exceed 2 500Kb and their size in total is ~3,1 Mb.
In addition flight routs with all flight details in GPR Track Maker (GTM fail) program have been analyzed by Veterinary and Food Board one -by -one within both campaigns.
Due to large volume of GTM data fails (~23 Mb) they are not attached to this report as well, but in case Commission would like to have the corresponding data of flight tracks for more targeted control, we are ready to provide them on short notice.
Aforementioned files, paper reports and on the spots controls prove technical parameters of distribution flights have been fulfilled, flight -routs prescribed were strictly followed and baiting done in accordance with requirements.

Start date of First Campaign	13/5/2019	**End date of First Campaign**	18/5/2019
Start date of Second Campaign	16/9/2019	**End date of Second Campaign**	21/9/2019

Region/Area	Product used	Number of doses	Size of vaccinated area (km^2)	Distribution method
Buffer-zone along border with Russia	Rabitec (SPBNGASGAS)	122,000	6,100	Aerial
Buffer-zone along border with Russia	Rabitec (SPBNGASGAS)	122,000	6,100	Aerial
Total		244,000	12,200	

Table C - OFFICIAL CONTROL OF ORAL VACCINES BEFORE THEIR DISTRIBUTION

Number of batches distributed	Number of batches controlled by CA	Number of batches rejected
2	2	0

Batch number	Manufacturer	Sampling date	Virus titration result	Outcome of the titration
0020318-A	IDT	28/4/2019	7.014 log FFU/dose	Acceptable
0151118-B	IDT	26/8/2019	7.615 log FFU/dose	Acceptable

COMMENT / ADDITIONAL CLARIFICATION

Please be aware, that due to characteristics of ORV monitoring period in Estonia the numbers of samples collected and tests done in technical part of report (in particular samples collected by hunters for ORV monitoring and TC detection and ELISA-tests done on those samples) will reflect actual monitoring period of 2019 programme. Period to collect samples for monitoring ORV of 2019 programme has been from July 2019 till March 2020 (head
and blood samples tested for TC and AB detection). As hunting season in Estonia starts in second half of year and ends in April next year, it has not been possible to undersign contract with Estonian Hunters Association to collect needed amount of samples (4 animals/100 km2 ORV area) for the end of the possible to undersign contract with Estonian Hunters Association to collect needed amount of samples (4 animals/100 km2 ORV area) for the end of the year. Despite this has been a constant problem in recent years while drafting report, negotiations to have a new contract for collection of ORV monitoring samples with ending date coinciding with the end of calendar year have not been successful.
The numbers of samples collected, tests done and their costs included in the financial claim are those incurred within calendar year 2019 from 1 January
2019 to 31 December 2019.
In above-mentioned reason the figures in technical part of report and in the financial claim are not matching in all occasions.
For simplification, all sums of smaller invoices have been rounded to euros (no cents)
All main costs of Rabies programme in year 2019, including ineligible costs, are included in attachment, table 13.