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Eradication: Final report for Bluetongue 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).

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Country code: HR

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. Historical overview:

First documented occurrence of bluetongue disease (BTD) in Croatia was in November 2001 in Dubrovnik-Neretva county, municipality Konavle, the southernmost part of Croatia. Following those outbreaks, serological surveillance started in 2002. Sero-surveillance data until 2005 have demonstrated that virus was circulating among cattle in Dubrovnik-Neretva county (serotype 9 and serotype 16 in the municipalities Metković, Ploče, around Dubrovnik and Konavle). Virus activity during 2006 was limited, and there was no evidence of BTV circulation from 2007 until October 2014. In October 2014 first outbreaks of serotype 4 were detected in Dubrovnik-Neretva county. Altogether 62 outbreaks of bluetongue serotype 4 were confirmed during 2014. The disease was detected in sheep, goats and bovine animals, mostly in small extensive herds. Clinical signs were detected only in sheep and goats. In addition to serotype 4 outbreaks during 2014, one outbreak of Serotype 1 was detected in Šibenik – Knin county. One animal in the flock of 110 animals revealed positive result on serotype 1. During 2015, 8 limited outbreaks of serotype 1 were detected in Dubrovnik – Neretva county, on island Lastovo. No clinical signs as well as any further spread of that serotype was detected. In total 142 outbreaks were detected from October 2014 to January 2017 involving 196 sheep, 77 goats and 96 bovine animals. Last outbreak of BTD in Croatia was confirmed on 16 January 2017. Total number of outbreaks is presented in attachment 1.

2. Vaccination campaign in 2019.

Vaccination of all domestic ruminants (bovines, sheep and goats) against BTB serotype 4 was obligatory and it was carried out by authorised veterinary organisations. Inactivated vaccine against serotype 4 was used. Vaccination coverage is very high in bovine animals and high, but lower than in previous years, in small ruminants. Detailed information of vaccination per region in 2019, and for the 5 year period of obligatory vaccination are attached (att 2). In some counties, proportion of vaccinated herds or animals is slightly higher than 100 % because the number of vaccinated animals or herds throughout the year is compared to the number of animals or herds on 31 December.

Detailed results of vaccination campaigns in 2019 and 5 previous years are presented in attachment 2.

3. Surveillance of BTB4 and 1 circulation in 2018

Surveillance during 2019 was carried out with the following two goals:

a) In order to monitor possible virus circulation and regain free status of the country, surveillance was carried out on the territory of whole Croatia. Surveillance was based on non-vaccinated young replacement animals at least 9 months of age. This surveillance was in line with Annex I point 3 of 1266/2007 Regulation. Testing was performed twice, in the time of year when the infection is most likely to be detected (September/October and November/December).

b) In order to early detect incursion of any other serotype other than BTB4 whole coastal area of Croatia (Istarska, Primorsko-goranska, coastal part of Ličko-senjska County, Zadarska, Šibensko-Kninska, Splitsko-Dalmatinska and Dubrovačko-Neretvanska County) was tested from September to December on monthly basis. The surveillance was also based on non-vaccinated young replacement animals at least 9 months of age.

Sample size was planned in order to detect disease if it was present in 5 % prevalence, with CI 95 %. Sampling was organised in administrative counties, each representing one or more geographical units (size of geographical unit 45*45 km²). Very high vaccination coverage and small animal density in certain counties created some difficulties in achieving planned number of sentinel animals.

In 2019, 2326 ELISA samples were tested that originated from bovine animals and 221 originated from sheep. All tests are performed in National Reference Laboratory for BTB, which is part of Veterinary Institute Split. In case of ELISA positive results, follow up PCR test is performed. PCR tests available are as follows: Real time PCR BTB that can detect all serotypes 1-27, Real time PCR BTB that detects specifically serotype 1 and Real time PCR BTB that detects specifically serotype 4. All samples intended for PCR testing (originating from ELISA positive animals) are first tested with Real time PCR which detects all serotypes from 1-27. In case of positive result, additional PCR for serotypes 1 and 4 are performed in parallel.

Sampling is performed by authorised veterinary organisations. Authorised veterinary organisations are private veterinary organisations, under contract with Ministry of Agriculture, Veterinary and Food Safety Directorate and supervision of veterinary inspectors from State Inspectorate.

Detailed information are attached:

- attachment 3- detailed results per region
- attachment 4 -ELISA & PCR data 2015-2019
- attachment 5- geographical distribution of samples in 2019

4. Entomological surveillance

In order to confirm or/and update historical data, entomological surveillance was carried out from March till December, on a monthly basis by permanent traps, distributed in 20 counties. Due to climate conditions and detection of vectors, vector free period was not established. Total number of 380 samples was analysed with 131 705 of *Culicoides*. Flowing species of *Culicoides* were detected: *C.obsoletus* complex, *C.pulicaris* complex and *C.nubeculosus* complex.

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

Targets set for testing were not achieved in all counties because of difficulties in finding appropriate sentinel animals. Selection of sentinel animals is in general very limited since whole ruminant population is vaccinated several times during previous years and in some counties there is very low animal density. Many of young non vaccinated animals originate from vaccinated mothers and react positive on ELISA test even at 10 or sometimes 11 months of age. In addition, some cases of ELISA positive sentinels were actually vaccinated animals, but the vaccination was not properly and on time recorded in the database. Those animals were not retested with PCR. Vaccination coverage was again very high in bovine population, and slightly lower in small ruminant population, compared to previous years. Overall vaccination targets are considered to be fulfilled. It was planned that 90 % of bovine animals will be vaccinated. Final results were 96 %. For small ruminants, target was 92 % and the result was 74 %. Detailed information per region can be found in attachments.

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 attachment feature) Use the textbox below to provide clarifications for the maps you attach, if needed.

Last outbreak of BTB occurred in January 2017. During 2019 total number of 1367 animals in 817 herds was tested. In total 216 animals were positive on ELISA. All ELISA positive animals had to be tested again with

PCR. All PCR result were negative. Detailed information can be found in attachments and in tables in point 2.

2. TECHNICAL IMPLEMENTATION ON BLUETONGUE 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 A - DATA ON HERDS

Table A is not to be filled in for Bluetongue

Table B - DATA ON ANIMALS

Region	Animal species	Total number of animals	Number of animals under the programme	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Number of outbreaks
Croatia	Cattle	419,670	1,649	1,649	1,232	1,232	201	0
Croatia	Sheep	767,679	0	0	135	135	15	0
Total		1,187,349	1,649	1,649	1,367	1,367	216	0

Table C - DATA ON VACCINATION PROGRAMMES

Region	Animal species	Total number of herds	Total number of animals	Serotype	Number of herds in vaccination programme	Number of herds vaccinated	Number of animals vaccinated	Number of doses of vaccine administered	Number of adults vaccinated	Number of young animals vaccinated	Number of animals with primary vaccination (initial+ booster)
Croatia	Cattle	21,178	419,670	BTV-4	21,178	20,460	401,901	538,420	264,574	137,327	137,327
Croatia	Sheep and Goats	21,933	767,679	BTV-4	21,933	16,283	541,388	543,675	541,388	0	0
Total		43,111	1,187,349		43,111	36,743	943,289	1,082,095	805,962	137,327	137,327

Table D - DATA ON STATUS OF HERDS AT THE END OF THE PERIOD

Table D is not to be filled in for Bluetongue

Table E - SUSPENSION/WITHDRAWAL OF THE FREE OR OFFICIALLY FREE STATUS

Table E is not to be filled in for Bluetongue

Table F - STRATIFIED DATA ON SURVEILLANCE AND LABORATORY TESTS

Region	Animal species	Number of samples	Test type	Number of tests	Number of positive tests
Croatia	Cattle	2,326	Elisa test	2,326	201
Croatia	Sheep	221	Elisa test	221	15
Croatia	Cattle	165	PCR test	165	0
Croatia	Sheep	21	PCR test	21	0
Total		2,733		2,733	216
			Methods of laboratory analysis	Total number of tests	
			Total - Elisa test	2,547	
			Total - PCR test	186	

COMMENT / ADDITIONAL CLARIFICATION

Calculation of vaccine costs:

Total number of administered doses during 2019 is 538 420 for bovine animals and 543 675 for small ruminants, which is total number of 1 082 095 of doses. The vaccine is administered according to manufacturers instructions. Dose for 1 bovine animal is 4 mL and vaccine has to be administered twice in animals that are vaccinated for the first time in 2019. Dose for 1 sheep is 2 mL of vaccine (vaccine is administered only once). Total number of spent vaccine in mL is 3 241 030 mL. Total amount of purchased vaccine in mL is 3 375 150 mL. According to Financial Guidelines SANTE 12250/2015 rev 4/Feb 2019, up to

15 % of losses can be included. Since whole amount of vaccine has been used, we have calculated 4,36 % vaccine loss for bovine animals and 3,7 % losses for small ruminants, which gives total number of 1 125 684 units for whole vaccinated population. Total cost of vaccine actually incurred was [REDACTED] HRK (VAT excluded), which gives [REDACTED] euros. Inclusion of 7 % of overhead gives total amount of [REDACTED] euros. The cost of 1 vaccine dose for bovine animal (4 mL) is [REDACTED] HRK = [REDACTED] eur. The cost of 1 vaccine dose for sheep or goat is [REDACTED] HRK = [REDACTED] eur. Exchange rate used in calculations is 1 euro = 7.579 HRK.