



EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL

Unit 04 - Veterinary Control Programmes

SANCO/10232/2009

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

Surveillance and Eradication programme of Bluetongue

Approved* for 2010 by Commission Decision 2009/883/EC

Denmark

* in accordance with Council Decision 2009/470/EC

European Commission
D1 - Animal Health and Standing Committees
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File: 2009-20-221-00044/TM

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Plan for implementation of vaccination and surveillance programmes for bluetongue to be carried out in Denmark in 2010 and application for financial contribution with reference to article 24 of Council Decision 90/424/EEC

1. **Identification of the programme**

Member State: **Denmark**

Disease(s)¹: **Bluetongue**

Request of Community co-financing for²: **2010**

Reference of this document: **File no. 2009-20-221-00044/TM**

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Date sent to the Commission: **27 April 2008**

¹ One document per disease is used unless all measures of the programme on the target population are used for the monitoring, control and eradication of different diseases.

² Indicate the year(s) for which co-financing is requested.

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

Denmark experienced the first outbreak of bluetongue serotype 8 (BTV8) in October 2007. In 2008 Denmark had 15 outbreaks of bluetongue (see table 6.3). Compulsory vaccinations were introduced in 2008 and continue in 2009 and 2010.

3. **Description of the submitted programme**⁴:

Vaccination:

The objective with the plan for vaccination against BTV8 in Denmark in 2010 is to protect the animals from getting diseased and thereby prevents economic and financial damage. The objective is also to eradicate the disease in Denmark within a few years.

The vaccination in 2010 will be the third year of vaccination against BTV8 in Denmark. The vaccination is compulsory and covers the whole country. Cattle, sheep and goats are included in the vaccination programme.

Some specific provisions have to be followed:

- All unvaccinated cattle have to be basis vaccinated (2 vaccinations) before 31 May.
- All unvaccinated sheep have to be basis vaccinated before 31 August.
- All calves and lamb have to be vaccinated before the age of 4 months.
- All vaccinated animals have to be revaccinated within one year from first vaccination.

Derogations for compulsory vaccination

- All herds with less than 10 animals (3% of the population)
- Calves of beef cattle born after 31 May (4% of the population)
- Bulls at semen collection centres and embryo donor cows
- Calves of cattle used for grassing of nature reserves

Farmers are recommended to vaccinate their animals although vaccination is not compulsory.

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.

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.

Vaccination and vaccine delivery

- Veterinarians have to prescribe all vaccine
- Vaccination may be carried out by veterinarians
- Farmer may vaccinate his own herd if having proper experience in handling medicine
- Farmers may arrange “vaccination circles” for mutual assistance e.g. if a farmer does not have proper experience in handling medicine he may engage an experienced person

The farmer has to report the vaccination to the Central Husbandry Register within 7 days after the vaccination is conducted.

- Cattle data on individual basis
- Sheep data on herd basis – vaccination data have to be registered in herd register

The farmers bear all costs for vaccine and vaccine administration.

Surveillance:

The objective with the surveillance in Denmark in 2010 is to confirm the presence or absence of circulating bluetongue virus. The surveillance consists of an animal part and an entomological part as requested in Regulation 1266/2007.

Surveillance in animals

Monthly sampling and examination of blood from bovines at slaughterhouses will perform the surveillance. The sampling will take place in five months from July to November. The samples will be tested by PCR in order to detect possible circulation of bluetongue virus of all serotypes. It is not possible to use serological surveillance as all the animals will be vaccinated.

The extent of the surveillance will be as follows:

- Number of geographical grids: 22
- Number of tested animals in each grid monthly: 150
- Number of months with surveillance each year: 5

In order to reduce the expenses to laboratory test, the samples will be tested in pools of five.

The cost of the surveillance is estimated to the following:

- Laboratory cost of each PCR test: 500 DKK
- Cost of sampling and shipment of each sample: 15 DKK

Total cost for the animal surveillance:

$$(5 * 22 * 150) * 15 \text{ DKK} + (5 * 22 * 150) * 500 / 5 \text{ DKK} = \quad \quad \quad \mathbf{1.897.500 \text{ DKK}}$$

Entomological surveillance

According to Regulation 1266/2007 a minimum of at least one aspiration trap with UV light must be placed in each grid and operated one night each week. This shall at least be done during the period of the year necessary to determine the end and the start of the vector-free period. In addition this shall also be done one time monthly in the vector-free period. An adequate proportion of the midges must be sent to a specialised laboratory capable of identifying and counting Culicoides species on a routine basis.

The costs of the surveillance is estimated to the following:

- Operation of the laboratory: 950.000 DKK
- Period of trapping: 5 weeks around the end of the vector free period, 5 weeks around the start of the vector free period, 3 months vector free period. Total: 13
- Identification and counting of Culicoides, cost for one trap and one catch: 500 DKK
- Number of geographical grids: 22
- Meteorological data (end and start of the vector free period): 50.000 DKK

Total cost for the entomological surveillance:

$$950.000 + (500 * 22 * 13) + 50.000 \text{ DKK} = \quad \quad \quad \mathbf{1.143.000 \text{ DKK}}$$

Total cost of serological and entomological surveillance

$$1.897.500 \text{ DKK} + 1.143.000 \text{ DKK} = \quad \quad \quad \mathbf{3.040.500 \text{ DKK}}$$

$$\sim \quad \quad \quad \mathbf{408.120 \text{ EURO}}$$

The planned programme for vaccination and surveillance can be adjusted, if the epidemiological situation changes.

4. **Measures of the submitted programme**

4.1. *Summary of measures under the programme*

Duration of the programme: 2010

First year: 2008

Last year: ?

Control

Eradication

Testing

Testing

Slaughter of animals tested positive

Slaughter of animals tested positive

Killing of animals tested positive

Killing of animals tested positive

Vaccination

Extended slaughter or killing

Treatment

Disposal of products

Disposal of products

Eradication, control or monitoring.

Other measures (*specify*):

4.2. *Organisation, supervision and role of all stakeholders⁵ involved in the programme:*

Vaccination:

- The Danish Veterinary and Food Administration, is in charge of preparing the vaccination plan.
- The Danish Cattle Association is in charge of the practical performance of the vaccination and reporting of number of registered vaccinated animals / holdings to the Danish Veterinary and Food Administration.
- The Regional Veterinary and Food Control Authority are responsible for follow-up on holdings, which has not been vaccinated.

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.

Surveillance:

- Superior coordination and supervision of the animal and entomological surveillance and reporting of PCR results to Bluetongue-Net is performed by The Danish Veterinary and Food Administration
- Coordination of blood sampling is performed by The Danish Cattle Association
- Blood samples are tested at the Danish national laboratory for bluetongue, The National Veterinary Institute, Technical University of Denmark, Lindholm.
- Maintenance of traps for Culicoides is performed by farmers on a voluntary basis under the supervision of veterinary officers from the Regional Veterinary and Food Administrations.
- Counting and identification of Culicoides species, including reporting of entomological results to Bluetongue-Net is performed by The National Veterinary Institute, Technical University of Denmark, Frederiksberg.

4.3. Description and demarcation of the geographical and administrative areas in which the programme is to be implemented⁶:

The whole territory of Denmark is a protection zone for BTV8. The programme will cover all of Denmark.

4.4. Description of the measures of the programme⁷:

4.4.1. Notification of the disease:

In accordance with the Animal Health Act and Order no. 97 of 22 February 2002 on combating bluetongue, a farmer is obliged to immediately call a veterinarian if the farmer suspects bluetongue. The veterinarian shall immediately notify the Regional Veterinary and Food Control Authority (RVFCA) if the veterinarian suspects bluetongue. A veterinary officer from the RVFCA will inspect the farm and inform the Veterinary Department about the suspicion. If the veterinary officer cannot rule out the suspicion of bluetongue

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.

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.

the farm is placed under official surveillance and test material is collected and dispatched to the National Veterinary Institute.

4.4.2. Target animals and animal population:

Farmed cattle, sheep and goats are target animals.

4.4.3. Identification of animals and registration of holdings:

Will be identified and registered in the Danish Central Husbandry Register by the owners.

4.4.4. Qualifications of animals and herds⁸: -

4.4.5. Rules on the movement of animals:

Rules for movement of animals are laid down in Commission Regulation no. 1266/2007 on implementing rules for Council Directive 2000/75/EC as regards the control, monitoring, surveillance and restrictions on movements of certain animals of susceptible species in relation to bluetongue.

4.4.6. Tests used and sampling schemes:

Test used in surveillance:

- PCR for virus identification: Modified method described by Shaw et al.

Sampling scheme:

- Blood samples are taken from 3.300 bovines every month from July to November. The animals come from all of the country.

4.4.7. Vaccines used and vaccination schemes:

Inactivated, monovalent, bluetongue serotype 8. Vaccination scheme will be in accordance with the recommendation from the vaccine producer.

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

⁸ To mention only if applicable.

4.4.9. Measures in case of a positive result⁹:

Movement restrictions will be placed on the affected holding.

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

Rules for compensation to owners of slaughtered and killed animals are laid down in Order no. 239 of 12 April 1991 concerning expenses and compensation related to eradication and prevention of animal diseases.

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

Control of the vaccination programme is done in connection with 5% welfare control.

5. Benefits of the programme¹⁰:

Outbreaks of bluetongue have caused serious production losses in affected herds. In addition mortality among affect animals can in sheep holdings be very high.

Denmark plans to vaccinate against BTV8 to avoid an epidemic of bluetongue in Denmark and the corresponding losses for herd owners.

The surveillance is used to document presence or absence of bluetongue virus and freedom for disease.

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,).

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

6. Data on the epidemiological evolution during the last five years¹¹ Not relevant

6.1. Evolution of the disease¹²

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

Year:

Situation on date:

Disease^(b):

Animal species:

Region ^(c)	Total number of herds ^(d)	Total number of herds under the programme	Number of herds checked ^(e)	Number of positive herds ^(f)	Number of new positive herds ^(g)	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5) x 100	9 = (4/3) x 100	10 = (5/4) x 100	11 = (6/4) x 100
Total										

(a) Herds or flocks or holdings as appropriate.

(b) Disease and animal species if necessary.

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

(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.

(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining or upgrading, the health status of the herd. In this column a herd must not be counted twice even if has been checked more than once.

(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.

(g) Herds which status in the previous period was *Unknown, Not free-negative, Free, Officially Free or Suspended* and have at least one animal tested positive in this period.

¹¹ The data on the evolution of the disease are provided according to the tables below where appropriate.
¹² No data to provide in case of rabies.

6.1.2. Data on animals (one table per year and per disease/species) Not relevant

Year:

Situation on date:

Disease^(a):

Animal species:

Region ^(b)	Total number of animals ^(c)	Number of animals ^(d) to be tested under the programme	Number of animals ^(d) tested	Number of animals tested individually ^(e)	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered ^(f)	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9= $(4/3) \times 100$	10= $(6/4) \times 100$
Total									

(a) Disease and animal species if necessary.

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

(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.

(d) Includes animals tested individually or under bulk level scheme.

(e) Include only animals tested individually, do not include animals tested by bulk level samples (for instance: milk bulk tank tests).

(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

6.2. Stratified data on surveillance and laboratory tests tests described under 4.4.6

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

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

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests:

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

(a) Disease and animal species if necessary.

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

(c) Number of samples tested.

(d) Number of positive samples.

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

Year: 2007

Disease^(a): bluetongue

Animal species: sheep

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
Region East, Lolland municipality	1	1
Total		

Year: 2008

Disease^(a): bluetongue

Animal species: sheep and cattle

Region ^(b)	Number of herds infected ^(c)	Number of animals infected
Region South, Tønder municipality	4	8
Region South, Billund municipality	2	4
Region South, Vårde municipality	7	10
Region South, Hedensted municipality	1	4
Region North, Ringkøbing-Skjern municipality	1	1
Total	15	27

(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.

6.4. Data on the status of herds at the end of each year¹³ Not relevant

Year: _____

Disease^(a): _____

Animal species: _____

Region ^(b)	Status of herds and animals under the programme ^(c)													
	Total number of herds and animals under the programme		Unknown ^(d)		Not free or not officially free from disease		Last check negative ^(f)		Free or officially free from disease status suspended ^(g)		Free from disease ^(h)		Officially free from disease ⁽ⁱ⁾	
					Herds	Animals ^(j)	Herds	Animals ^(j)	Herds	Animals ^(j)	Herds	Animals ^(j)	Herds	Animals ^(j)
Total														

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

¹³ Only data to provide for bovine tuberculosis, bovine brucellosis, ovine and caprine brucellosis (*B. melitensis*), enzootic bovine leucosis (EBL) and Aujeszky's disease.

6.5. Data on vaccination or treatment programmes¹⁴

Year: 2008

Disease^(a): bluetongue

Animal species: Cattle, sheep and goats

Description of the used vaccination, therapeutic or other scheme:

Region ^(b)	Total number of herds ^(c)	Total number of animals	Information on vaccination or treatment programme					
			Number of herds ^(c) in vaccination or treatment programme	Number of herds ^(c) vaccinated or treated	Number of animals vaccinated or treated	Number of doses of vaccine or treatment administered	Number of adults ^(d) vaccinated	Number of young ^(d) animals vaccinated
Zealand, Funen and South and Central Jutland		1.251.257		19.638	1.086.347	2.119.717		
Total								

(a) Disease and species if necessary

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

(c) Herds or flocks or holdings as appropriate

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

¹⁴ Data to provide only if vaccination has been carried out.

6.6. Data on wildlife¹⁵ Not relevant

6.6.1. Estimation of wildlife population

Year:

Method of estimation^(a):

Regions ^(b)	Estimation of the population of the concerned wild species		
	Species:	Species:	Species:
Total			

(a) The hunting bag is considered to be the standard method of estimation. If other method is used, explain
 (b) Region as defined in the approved eradication programme of the Member State

¹⁵ Data only to provide in case the programme comprises measures as regards wildlife or if the data are epidemiologically relevant for the disease.

6.6.2. *Monitoring of wildlife (one table per year and per disease/species) Not relevant*

Year: _____ Disease^(a): _____ Animal species: _____

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests:

Region ^(b)	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
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): _____ **Animal species:** Cattle

Region ^(b)	Type of the test ^(c)	Target population ^(d)	Type of sample ^(e)	Objective ^(f)	Number of planned tests
The whole territory of Denmark = 22 grids (98 municipalities)	ID-VET Bluetongue Competition PCR	Bovines for slaughter	Blood	Surveillance	16.500 samples tested in pools of five = 3.300 PCR (see point 3)
Total					3 300 PCR

(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, ...)

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

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

(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, ...)

7.1.2. Targets on testing herds and animals¹⁶

7.1.2.1 Targets on the testing of herds^(a)

Disease^(b):

Animal species:

Region ^(c)	Total number of herds ^(d)	Total number of herds under the programme	Number of herds expected to be checked ^(e)	Number of expected positive herds ^(f)	Number of expected new positive herds ^(g)	Number of herds expected to be depopulated	% positive herds expected to be depopulated	TARGET INDICATORS		
								Expected % herd coverage	% positive herds Expected period herd prevalence	% new positive herds Expected herd incidence
1	2	3	4	5	6	7	$8 = (7/5) \times 100$	$9 = (4/3) \times 100$	$10 = (5/4) \times 100$	$11 = (6/4) \times 100$
Total										

(a) Herds or flocks, or holdings as appropriate.

(b) Disease and animal species if necessary.

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

(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.

(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd must not be counted twice even if it has been checked more than once.

(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.

(g) Herds which status in the previous period was *Unknown*, *Not free-negative*, *Free*, *Officially Free* or *Suspended* and have at least one positive animal in this period.

¹⁶ Data not to provide in case of rabies.

7.2. Targets on qualification of herds and animals¹⁷ (one table for each year of implementation) Not relevant

Disease^(a):

Animal species:

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

(a) Disease and species if necessary

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

(c) Unknown: No previous checking results available

(d) Not free and last check positive: Herd checked with at least one positive result in the latest check

(e) Not free and last check negative: Herd checked with negative results in the latest check but not being *Free or Officially Free*

(f) Suspended as defined for the respective disease in Community or national legislation where appropriate or according national legislation.

(g) Free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation

(h) Officially free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation

(i) Include animals under the programme in the herds with the referred status (left column)

¹⁷

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

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

<i>Costs related to</i>	<i>Specification</i>	<i>Number of units</i>	<i>Unitary cost in €</i>	<i>Total amount in €</i>	<i>Community funding requested (yes/no)</i>
1. Testing (see point 3)					
<i>1.1. Cost of the analysis</i>	<i>Surveillance of animals:</i>				
	<i>PCR test on blood</i>	3.300	67,11	221.463	Yes
	<i>Entomological surveillance</i>			153.423	Yes
<i>1.2. Cost of sampling</i>	<i>Animals:</i>				
	<i>Blood tests</i>	16.500	2,01	33.165	Yes
<i>1.3. Other costs</i>	<i>Administration</i>			201.500	Yes
2. Vaccination or treatment					
<i>2.1. Purchase of vaccine/treatment</i>					
<i>2.2. Distribution costs</i>					

<i>3. Administering costs</i>									
<i>2.4. Control costs</i>									
3. Slaughter and destruction									
<i>3.1. Compensation of animals</i>									
<i>3.2. Transport costs</i>									
<i>3.3. Destruction costs</i>									
<i>3.4. Loss in case of slaughtering</i>									
<i>3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)</i>									
4. Cleaning and disinfection									

