



EUROPEAN COMMISSION  
HEALTH & CONSUMERS DIRECTORATE-GENERAL  
Unit 04 - Veterinary Control Programmes

**SANCO/3879/2008**

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

## **Survey programme for Avian Influenza in poultry and wild birds**

**Approved\* for 2009 by Commission Decision 2008/897/EC**

**The Netherlands**

\* in accordance with Commission Decision 90/424/EEC



**The Surveillance programme for Avian Influenza in poultry and wild birds for 2009  
carried out by The Netherlands, co-financed by the Community**

**1. Identification of the programme**

**Member State: *The Netherlands***

**Disease: *Avian Influenza***

**Year of implementation: *2009***

**Reference of this document: *VD 08.***

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**Date sent to the Commission:**

2. **Description of the surveillance programme in poultry**

Monitoring in poultry: serological surveillance for LPAI subtypes H5 and H7 according to Annex IV of draft Commission Decision SANCO/10034/2007/Rev2, draft Commission Decision SANCO/10522/2007/Rev2 and Commission Decision 2007/268/EG

2.1 **Objectives, general requirements and criteria**

**Objectives**

Serological surveillance for LPAI subtypes H5 and H7 in poultry shall aim at:

1. Detecting subclinical infections with LPAI of subtypes H5 and H7 thereby complementing early detection systems and subsequently preventing possible mutation of these viruses to HPAI.
2. Detecting infections of LPAI H5 and H7 subtypes in specifically targeted poultry populations at specific risk for infection due to their husbandry system or the susceptibility of specific species.
3. Contributing to the demonstration of a free status of a certain country, region or compartment from notifiable avian influenza in the frame of international trade according to OIE rules.

**General requirements and criteria**

1. Sampling shall not extend beyond 31 December of the year of implementation of the programme
2. Testing of samples is carried out at Animal Health Service (GD) authorised by the competent authorities and under the control of the NRL, Central Veterinary Institute of Wageningen UR (CVI), former known as CIDC-Lelystad (CIDC)
3. All results (both serological and virological) shall be sent to the Community Reference Laboratory for Avian Influenza (CRL) for collation.
4. All avian influenza virus isolates shall be submitted to the CRL in accordance with Community legislation, unless a derogation according to paragraph 4 of Chapter V (Differential diagnosis) in the diagnostic manual laid down in Decision 2006/437/EC is

granted. Viruses of H5/H7 subtype shall be submitted without delay and shall be subjected to the standard characterisation tests (nucleotide sequencing/VP1) according to that Diagnostic Manual.

## 2.2 Design and implementation

Sampling shall be stratified throughout the territory of the whole Member State, so that samples can be considered as representative for the whole of the Member State, taking into account:

- (a) the number of holdings to be sampled (excluding ducks, geese and turkeys); that number shall be defined so as to ensure the identification of at least one infected holding if the prevalence of infected holdings is at least 5%, with a 95% confidence interval; and
- (b) the number of birds sampled from each holding shall be defined so as to ensure 95% probability of identifying at least one positive bird if the prevalence of sero-positive birds is  $\geq$  30%.
- (c) Blood samples for serological examination shall be collected from all species of poultry including those reared in free-range systems, from at least 5 to 10 birds (except ducks geese and quail) per holding, and from the different sheds, if more than one shed is present on a holding. In case of several sheds the sample size per holding should be increased appropriately. It is recommended to take at least 5 birds per shed.

Based on a risk assessment and the specific situation in the Member State concerned, the sampling design shall also consider:

- (a) The types of production and their specific risks, shall be targeted to free range production and outdoor keeping
- (b) The number of turkey and duck holdings to be sampled shall be defined to ensure the identification of at least one infected holding if the prevalence of infected holdings is at least 5%, with a 99% confidence interval
- (c) From each, selected duck holding 40-50 blood samples shall be taken for serological testing.

**Table 2.2.1 A) POULTRY HOLDINGS <sup>(a)</sup> (except ducks and geese) TO BE SAMPLED**

Serological investigation according to point B of Annex I to Commission Decision 2007/268EC on holdings of broilers/only when at risk/fattening/turkeys/chicken breeders/turkey-breeders/laying-hens/free-range-laying-hens/rattles/farmed feathered game (pheasants, partridges, quails...)/"backyard flocks"/fathers

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding 2.2 stables per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	10	1	22	Elisa pre-screening: 1320	ELISA and HAR (H1)
NL 12 Friesland	22	1	22		
NL 13 Drenthe	7	1	22		
NL 21 Overijssel	114	10	220	confirmation tests: HAR H5 en H7	
NL 22 Gelderland	83	10	220		
NL 23 Flevoland	18	1	22		
NL 31 Utrecht	9	1	22		
NL 32 Noord-Holland	3	0	0		
NL 33 Zuid Holland	1	0	0		
NL 34 Zeeland	2	0	0		
NL 41 Noord-Brabant	162	30	660		
NL 42 Limburg	35	5	110		
<b>Total</b>	<b>466</b>	<b>60</b>	<b>1320</b>		

- (a) Holdings equals herds, flocks or establishments as appropriate.  
 (b) Refers to the location of the holding of origin.  
 (c) Total number of holdings of one category of poultry in concerned NUTS 2 region.

**Table 2.2.1 B) POULTRY HOLDINGS<sup>(a)</sup> (except ducks and geese) TO BE SAMPLED**

Serological investigation according to point B of Annex I to Commission Decision 2007/268EC on holdings of broilers (only when at risk)/fattening turkeys/chicken breeders/turkey breeders/laying hens/free-range laying hens/rattles-farmed-feathered game (pheasants, partridges, quails...)/"backyard-flocks"/fathers

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding: est. 2.2 stables per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.	
NL 11 Groningen	3	1	22	Elisa pre-screening: 1034	ELISA and HAR (HI)	
NL 12 Friesland	0	0	0	confirmation tests: HAR H5 en H7:		
NL 13 Drenthe	3	1	22			
NL 21 Overijssel	4	1	22			
NL 22 Gelderland	7	5	110			
NL 23 Flevoland	3	1	22			
NL 31 Utrecht	0	0	0			
NL 32 Noord-Holland	0	0	0			
NL 33 Zuid Holland	0	0	0			
NL 34 Zeeland	0	0	0			
NL 41 Noord-Brabant	8	7	154			
NL 42 Limburg	31	31	682			
Total	59	47	1034			

(a) Holdings equals herds, flocks or establishments as appropriate.

(b) Refers to the location of the holding of origin.

(c) Total number of holdings of one category of poultry in concerned NUTS 2 region.

**Table 2.2.1 C) POULTRY HOLDINGS <sup>(a)</sup> (except ducks and geese) TO BE SAMPLED**

Serological investigation according to point B of Annex I to Commission Decision 2007/268EC on holdings of breeders (only when at risk of fattening turkeys/chickens/breeders/turkey breeders/laying hens/free range laying hens/rattles/farmed feathered game (pheasants, partridges, quails...)/backyard flocks/others

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding 2,2 stables per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	13	3	66	Elisa pre-screening: 1166	ELISA and HAR (HI)
NL 12 Friesland	8	2	44		
NL 13 Drenthe	19	3	66		
NL 21 Overijssel	24	5	110	confirmation tests: HAR H5 en H7	
NL 22 Gelderland	66	20	440		
NL 23 Flevoland	10	2	44		
NL 31 Utrecht	8	2	44		
NL 32 Noord-Holland	0	0	0		
NL 33 Zuid Holland	1	1	22		
NL 34 Zeeland	1	1	22		
NL 41 Noord-Brabant	35	11	242		
NL 42 Limburg	18	3	66		
Total	203	53	1166		

- (a) Holdings equals herds, flocks or establishments as appropriate.  
 (b) Refers to the location of the holding of origin.  
 (c) Total number of holdings of one category of poultry in concerned NUTS 2 region.



**Table 2.2.1 D) POULTRY HOLDINGS <sup>(a)</sup> (except ducks and geese) TO BE SAMPLED**

Serological investigation according to point B of Annex I to Commission Decision 2007/268EC on holdings of broilers (only when at risk)/fattening turkeys/chicken-breeders/turkey-breeders/laying hens/free-range-laying hens/ratites/farmed feathered game (pheasants, partridges, quails...)/backyard flocks/others

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	43	1	22	Elisa pre-screening: 1320	ELISA and HAR (HI)
NL 12 Friesland	30	1	22		
NL 13 Drenthe	66	2	44		
NL 21 Overijssel	134	5	110	confirmation tests: HAR H5 en H7	
NL 22 Gelderland	494	25	550		
NL 23 Flevoland	39	1	22		
NL 31 Utrecht	76	2	44		
NL 32 Noord-Holland	10	1	22		
NL 33 Zuid Holland	10	1	22		
NL 34 Zeeland	28	1	22		
NL 41 Noord-Brabant	248	10	220		
NL 42 Limburg	217	10	220		
<b>Total</b>	<b>1395</b>	<b>60</b>	<b>1320</b>		

(a) Holdings equals herds, flocks or establishments as appropriate.

(b) Refers to the location of the holding of origin.

(c) Total number of holdings of one category of poultry in concerned NUTS 2 region.

**Table 2.2.1 E) POULTRY HOLDINGS <sup>(a)</sup> (except ducks and geese) TO BE SAMPLED**

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of broilers(only when at risk)/fattening turkeys/schickens breeders/turkey breeders/laying hens/free-range laying hens/rattles/farmed feathered game (pheasants, partridges, quails...)/"backyard flocks"/others

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding 2.2 stables per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	0	0	0		Elisa pre-screening: 44 confirmation tests: HAR H5 en H7 ELISA and HAR (HI)
NL 12 Friesland	0	0	00		
NL 13 Drenthe	0	0	0		
NL 21 Overijssel	1	1	22		
NL 22 Gelderland	1	1	22		
NL 23 Flevoland	0	0	0		
NL 31 Utrecht	0	0	0		
NL 32 Noord-Holland	0	0	0		
NL 33 Zuid Holland	0	0	0		
NL 34 Zeeland	0	0	0		
NL 41 Noord-Brabant	0	0	0		
NL 42 Limburg	0	0	0		
Total	2	2	44		

- (a) Holdings equals herds, flocks or establishments as appropriate.  
 (b) Refers to the location of the holding of origin.  
 (c) Total number of holdings of one category of poultry in concerned NUTS 2 region.

Table 2.2.1 F) POULTRY HOLDINGS<sup>(a)</sup> (except ducks and geese) TO BE SAMPLED

Serological investigation according to point B of Annex 1 to Commission Decision 2007/268EC on holdings of broilers free range (only when at risk)/fattening turkeys/chicken-breeders/turkey-breeders/laying hens/free-range laying hens/rattles/farmed-feathered game (pheasants, partridges, quails...)/"backyard flocks"/others

NUTS 2 code <sup>(b)</sup>	Total number of holdings <sup>(c)</sup>	Total number of holdings to be sampled	Number of samples per holding, 2.2 stables per holding, 10 samples per stable	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	0	0	0	Elisa pre-screening 550	Elisa and HAR (HI)
NL 12 Friesland	0	0	0		
NL 13 Drenthe	0	0	0		
NL 21 Overijssel	0	0	0	confirmation tests: HAR H5 en H7	
NL 22 Gelderland	16	16	352		
NL 23 Flevoland	1	1	22		
NL 31 Utrecht	0	0	0		
NL 32 Noord-Holland	0	0	0		
NL 33 Zuid Holland	0	0	0		
NL 34 Zeeland	0	0	0		
NL 41 Noord-Brabant	8	8	176		
NL 42 Limburg	0	0	0		
Total	25	60	550		

(a) Holdings equals herds, flocks or establishments as appropriate

(b) Refers to the location of the holding of origin.

(c) Total number of holdings of one category of poultry in concerned NUTS 2 region.

Table 2.2.2 A) fattening DUCK AND GEESE HOLDINGS TO BE SAMPLED<sup>(a)</sup> according to point C of Annex I to Commission Decision 2007/268/EC

Serological investigation

NUTS 2 code <sup>(b)</sup>	Total number of duck and geese holdings	Total number of duck and-geese holdings to be sampled	Number of samples per holding: 40 samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	5	2	80	Elisa pre-screening: 2360	ELISA and HAR (HI)
NL 12 Friesland	1	1	40		
NL 13 Drenthe	4	2	80	confirmation tests: HAR H5 en H7	
NL 21 Overijssel	6	3	120		
NL 22 Gelderland	30	28	1120		
NL 23 Flevoland	20	18	720		
NL 31 Utrecht	5	2	80		
NL 32 Noord-Holland	0	0	0		
NL 33 Zuid Holland	0	0	0		
NL 34 Zeeland	0	0	0		
NL 41 Noord-Brabant	4	2	80		
NL 42 Limburg	2	1	40		
Total	77	59	2360		

- (a) Holdings equals herds, flocks or establishments as appropriate  
 (b) Refers to the location of the holding of origin

Table 2.2.2 B) DUCK breeders AND-GEESE HOLDINGS TO BE SAMPLED<sup>(a)</sup> according to point C of Annex I to Commission Decision 2007/268/EC

Serological investigation

NUTS 2 code <sup>(b)</sup>	Total number of duck and-geese holdings	Total number of duck and-geese holdings to be sampled	Number of samples per holding: 40 samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis.
NL 11 Groningen	0	0	0	Elisa pre-screening: 520	ELISA and HAR (HI)
NL 12 Friesland	0	0	0		
NL 13 Drenthe	0	0	0		
NL 21 Overijssel	1	1	40	confirmation tests: HAR H5 en H7	
NL 22 Gelderland	11	11	440		
NL 23 Flevoland	1	1	40		
NL 31 Utrecht	0	0	0		
NL 32 Noord-Holland	0	0	0		
NL 33 Zuid Holland	0	0	0		
NL 34 Zeeland	0	0	0		
NL 41 Noord-Brabant	0	0	0		
NL 42 Limburg	0	0	0		
Total	13	13	520		

(a) Holdings equals herds, flocks or establishments as appropriate

(b) Refers to the location of the holding of origin. In case Nuts 2 code can not be used, coordinates (long/lat) are requested

## 2.3

### Laboratory testing: description of the laboratory tests used

1. Laboratory tests shall be carried out in accordance with the avian influenza diagnostic manual (Commission Decision 2006/437/EC) laying down the procedures for the confirmation and differential diagnosis of avian influenza (including examination of sera from ducks and geese by haemagglutination-inhibition (HI) test).
2. However, if laboratory tests not laid down in the avian influenza diagnostic manual nor described in the OIE Terrestrial Manual are envisaged, Member States shall provide the necessary validation data to the CRL, in parallel to submitting their programme to the Commission for approval.
3. All positive serological findings shall be confirmed by the National Reference Laboratories for avian influenza, Central Veterinary Institute of Wageningen UR (CVI), former known as CIDC-Lelystad, by a haemagglutination-inhibition test, using designated strains supplied by the Community Reference Laboratory for Avian Influenza:
  - H5 (a) Initial test using Ostrich/Denmark/7242/96 (H5N2)
  - (b) Test all positives with Duck/Denmark/6465/03 (H5N7) to eliminate N2 cross reactive antibody.
  - H7 (a) Initial test using Turkey/England/647/77 (H7N7)
  - (b) Test all positives with African Starling/983/79 (H7N1) to eliminate N7 cross reactive antibody.

	<u>Laboratory tests used for poultry</u>
Serological pre-screening	ELISA poultry except ducks
Haemagglutination-inhibition-test (HI) for H5 and H7 (Confirmation test)	poultry except ducks
Serological pre-screening: DUCKS	ELISA
Haemagglutination-inhibition-test (HI) for H5 and H7: DUCKS	RT-PCR
Virus isolation test	

3. Description of the surveillance programme in wild birds:

Virological surveillance for avian influenza in wild birds aims to identify the risk of introduction of AI viruses (LPAI and HPAI) to domestic poultry according to Annex IV of draft Commission Decision SANCO/10034/2007/Rev2, draft Commission Decision SANCO/10522/2007/Rev2 and Commission Decision 2007/268/EG

3.1 Objectives, general requirements and criteria

Objectives

Virological surveillance for avian influenza in wild birds aim to identify the risk of introduction of AI viruses (LPAI and HPAI) to domestic poultry by:

- (1) Ensuring early detection of HPAI H5N1 by investigating increased incidence of morbidity and mortality in wild birds, in particular in selected "higher risk" species.
- (2) In the event that HPAI H5N1 is detected in wild birds, then surveillance of live and dead wild birds shall be enhanced to determine whether wild birds of other species can act as asymptomatic carriers or "bridge species".
- (3) Continuing a "baseline" surveillance of different species of free living migratory birds as part of continuous monitoring of LPAI viruses. Anseriformes (water fowl) and Charadriiformes (shorebirds and gulls) shall be the main sampling targets to assess if they carry LPAI viruses of H5 and H7 subtypes (which would in any case also detect HPAI H5N1 and other HPAI, if present). "Higher risk species" must be targeted in particular.

General requirements and criteria

- (1) Sampling shall not extend beyond 31 December of the year of implementation of the programme.
- (2) Testing of samples (active surveillance) is carried out at Erasmus MC, Rotterdam (NL) is authorised by the competent authorities and under the control of the Central Veterinary Institute of Wageningen UR (CVI).
- (3) Testing of the dead birds and their samples (passive surveillance) is carried out at the Central Veterinary Institute of Wageningen UR (CVI).



- (4) All results shall be sent to the Community Reference Laboratory for Avian Influenza (CRL) for collation. A good flow of information must be ensured. The CRL shall provide technical support and keep an enlarged stock of diagnostic reagents. Antigens for use in the surveillance shall be supplied to NLs by the CRL to ensure uniformity.
- (5) All avian influenza virus isolates of cases in wild birds shall be submitted to the CRL in accordance with Community legislation, unless a derogation according to paragraph 4 of Chapter V under Differential diagnosis in the avian influenza Diagnostic Manual laid down in Decision 2006/437/EC is granted. Viruses of H5/H7 subtype shall be submitted without delay and shall be subjected to the standard characterisation tests (nucleotide sequencing/VPT) according to the said diagnostic manual.

### 3.2 Design and implementation

Within Close co-operation with virologists, epidemiologists, ornithologists, bird conservation/watching institutes, ringing institutes and the competent authority for Nature this surveillance program is designed. The design of the surveillance is adapted to the national situation as regards selection of species to be sampled according to species predominance and bird population sizes. The sampling has considered the seasonality of migration patterns in The Netherlands. It shall take into account the behaviour of bird species as regards migratory flyways, main habitats, gregariousness and degree of mixing during migration and the results obtained from previous surveillance during 2003-2007.

For H5N1 HPAI, all those factors shall be considered in relation to the probability of wild bird exposure to infected poultry and wild birds in outbreak areas and the probability of contact of wild birds with domestic poultry in the poultry husbandry systems in the different Member States.

The surveillance plan considers:

1. **Passive surveillance** of sick and dead wild birds:
  - a) In areas where increased incidence of morbidity and mortality in wild birds occurs;
  - b) In areas close to the sea, lakes and waterways where birds were found dead; and in particular when these areas are in proximity to domestic poultry farms;
  - c) birds belonging to identified "higher risk" species listed in part D and other wild birds living in close proximity with them

- d) This part of the surveillance is carried out by SOVON vogelonderzoek Nederland: collecting dead birds throughout the whole country by bird watchers, bird ringers etc. and the Food Consumer Product safety Authority (VWA): they collect dead birds when they are found dead in clusters by civilians.
2. In addition, investigations of living and dead wild birds shall be targeted on birds.
- a) in areas where cases of HPAI H5N1 have been identified in wild birds or poultry to possibly identify asymptomatic carriers;
  - b) in areas epidemiologically linked to these cases;
  - c) coming possibly in close contact to domestic poultry holdings, which might function as "bridge species", in particular those that are listed in part E.
3. **Active surveillance on living and clinically healthy and/or clinically diseased, injured or hunted birds:**
- a) migratory birds belonging to the order of Anseriformes (water fowl) and Charadriiformes (shorebirds and gulls);
  - b) at identified areas for concentration and mixing of high number of migratory birds involving different species and in particular when these areas are in proximity to domestic poultry farms;
  - c) a selection of higher risk species.
  - d) Erasmus MC in Rotterdam carries out this part of the surveillance: catching and sampling live wild birds throughout the whole country by bird ringers, ornithologists and bird catchers.

Table 3.2.1 WILD BIRDS - investigation according to the surveillance programme for avian influenza in wild birds set out in Annex II to Commission Decision 2007/268/EC

NUT (2) code <sup>(b)</sup>	Wild birds to be sampled <sup>(b)</sup>	Total number of birds to be sampled	Estimated total number of samples to be taken for active surveillance	Estimated total number of samples to be taken for passive surveillance <sup>(c)</sup>
NL 11 Groningen	Swans, several species	650	250	400
NL 12 Friesland	Ducks, several species	2800	2500	300
NL 12 Friesland	Geese, several species	800	500	300
NL 13 Drenthe	(c)	50		50
NL 21 Overijssel	(c)	100		100
NL 22 Gelderland	Geese, several species	600	500	100
NL 22 Gelderland	Gulls, several species	600	500	100
NL 23 Flevoland	Swans	450	250	200
NL 31 Utrecht	(c)	100		100
NL 32 Noord-Holland	Geese, several species	1900	1000	900
NL 33 Zuid-Holland	Wigeon	2100	2000	100
NL 33 Zuid-Holland	Mallard	5600	5500	100
NL 34 Zeeland	Geese, several species	600	500	100
NL 41 Noord-Brabant	Geese, several species	600	500	100
NL 42 Limburg	(c)	50		50
Total		17.000	14.000	3.000

a) Refers to the place of collection of birds/samples. In case Nuts 2 code can not be used, coordinates (long/lat) are requested

b) General description of the wild birds are intended to be sampled in the framework of the active and passive surveillance.

c) Passive surveillance focuses on Swans, Geese, Ducks, Cormorants, Herons, Grebes, Common buzzard, Rails, Waders, Skuas, Gulls&Terns

### 3.3

#### Laboratory testing: description of the laboratory tests used

##### Sampling procedures

1. Oropharyngeal and cloacal swabs for virological examination are taken from apparently healthy free living birds.
2. Cloacal and tracheal/oropharyngeal swabs and/or tissues (namely the brain, heart, lung, trachea, kidney and intestines) from wild birds found dead are sampled for virus isolation and molecular detection (PCR).
3. Specific care has to be taken for the storage and transport of samples.

##### Laboratory testing

1. Laboratory tests are carried out in accordance with the avian influenza diagnostic manual (Commission Decision 2006/437/EC) laying down the procedures for the confirmation and differential diagnosis of avian influenza.
2. However, if laboratory tests not laid down in the avian influenza diagnostic manual nor described in the OIE Terrestrial Manual are envisaged, Member States shall provide the necessary validation data to the CRL, in parallel to submitting their programme to the Commission for approval.
3. All samples collected in the surveillance for avian influenza in wild birds are tested as soon as possible by molecular techniques if available and according to the diagnostic manual (Commission Decision 2006/437/EC). These tests are carried out in laboratories, Erasmus MC Rotterdam and the CVI Lelystad, able to guarantee quality assurance and using methods recognised by the CRL for avian influenza. In addition, methods used must have produced acceptable results in the most recent comparative ring test of national laboratories. Initial screening using M gene PCR is recommended, with rapid testing of positives for H5 (but within 2 weeks) and in case of a positive finding analysis of the cleavage site must be undertaken as soon as possible to determine whether or not it has a highly pathogenic avian influenza (HPAI) or a low pathogenic avian influenza (LPAI) motif.
4. Serological surveillance shall not be applied for avian influenza investigations in wild birds because serological methods cannot distinguish between HP and LP strains and antibody findings do not allow inference in relation to the likely location where wild birds might have become infected. However, serological surveillance might be important to study in which resident or migrating bird species H5/H7 viruses are/were prevalent (or endemic). Such analysis shall only be performed by specialised laboratories using a carefully selected panel of antigens to ensure the detection of haemagglutinin specific antibodies (i.e. to eliminate the possibility of interference from N specific antibodies).

**laboratory tests used for wild birds**

Haemagglutination-inhibition-test (HI)
RNA isolation
MA RT-PCR
H5/H7 PCR
Virus isolation test
Sequencing H5 or H7 from positive samples

**4. Description of the epidemiological situation of the disease in poultry during the last five years**

The Netherlands is free of Avian Influenza.

In 2003 there has been a large outbreak of HPAI in poultry, since November 2003 The Netherlands has declared itself free of AI.

**4.1 Measures included in the programme for poultry surveillance**

**4.1.1 Designation of the central authority charged with supervising and coordinating the departments responsible for implementing the programme**

Ministry of Agriculture, Nature and Food Quality. Department of Food Quality and Animal Health.

**4.1.2 System in place for the registration of holdings**

Registration system is in place in accordance with 90/539/EC article 6.

**4.1.3 Data on vaccination**

Vaccination against Avian influenza is carried out according to 2007/598/EG (zoos) and 2007/590/EG (poultry).

In The Netherlands, it is possible to vaccinate commercial free-range poultry and hobby poultry against Avian influenza and the zoos in The Netherlands vaccinate their birds against Avian influenza. These are voluntary programmes.

**5. Description of the epidemiological situation of the disease in wild birds during the last five years**

There has not been found HPAI in wild birds during the last 5 years.

**5.1. Measures included in the programme for wild birds surveillance**

**5.1.1 Designation of the central authority charged with supervising and coordinating the departments responsible for implementing the programme:**

Ministry of Agriculture, Nature and Food Quality, Department of Food Quality and Animal Health.

**5.1.2 Description and delimitation of the geographical and administrative areas in which the programme is to be applied:**

There is an active and a passive surveillance system in place in the whole of The Netherlands. The geographical and administrative areas are the NUTS-2 codes.

**5.1.3 Estimation of the local and/or migratory wildlife population**

See annex I: map with risk areas in The Netherlands

**6. Measures in place as regards the notification of the disease**

Notification of HPAI and LPAI in poultry is mandatory for poultry owners, veterinarians and Laboratories with article 15 of the Dutch Animal Health and Welfare Act.

7. Costs

7.1. Detailed analysis of the costs:

7.1.1 Poultry

See 7.2.1

7.1.2 Wild birds

See 7.2.2.1 and 7.2.2.2



## 7.2 Summary of the costs

### 7.2.1 Poultry surveillance

Measures eligible for co-financing surveillance in poultry			
Methods of laboratory analysis	Number of tests to perform per method	Unitary test cost (per method) €	Total cost
Serological pre-screening ELISA (poultry) GD	4.114	3,36	13.823
Haemagglutination-inhibition-test (HI) for H5/H7 (poultry) confirmation 2% from Elisa, CVI	(82 x 2) 164	10	1.640
Serological pre-screening ELISA ducks, CVI	2.880	7	20.160
Haemagglutination-inhibition-test (HI) for H5/H7 (Ducks) ) confirmation 2% from Elisa, CVI	(58 x 2) 116	11	1.276
Virus isolation test (only when positive results HI), CVI	-	-	-
PCR test (only when positive results HI), CVI	-	-	-
<b>Total</b>	<b>7.274</b>		<b>36.899</b>
<b>Other measures to be covered</b>			
	Specify activities		
	Number of tests		
Logistics, administration, mailing	6.994	0,45	3.148
Reception, splitting dispatching of samples, administration	3.160	1,10	3.476
<b>Total</b>			<b>€ 43.523,-</b>

Please note,

The complete Dutch surveillance program for Avian influenza for poultry is far more extensive than in the requirements of Commission Decision 2007/268/EC is foreseen.

Since the outbreak of H7N7 Avian influenza in 2003, The Netherlands has a very extensive monitoring program in place for poultry. In this program every poultry holding is sampled and serologically tested at least once a year, also every broiler holding. The holdings at risk, like the free range poultry and the turkeys, are sampled 3 or 4 times a year.

The enclosed program for the implementation of the AI surveillance plan for The Netherlands for poultry, is just a small part of the complete Dutch AI poultry surveillance program.

## 7.2.2 Wild bird surveillance

### 7.2.2.1 Active wild bird surveillance (live birds)

Measures eligible for co-financing surveillance in live wild birds				
Methods of laboratory analysis	Number of tests to perform per method	Unitary test cost (per method) €	Total cost €	
Serological pre-screening	0	0	0	
Haemagglutination-inhibition-test (HI)	600	4,08	2.448	
Virus isolation test	600	30,57	18.342	
RNA-isolation	14.000	6,62	92.680	
PCR test (MA RT-PCR + RT-PRR H5/H7)	15.400	8,66	133.364	
Sequencing H5 or H7 from positive samples	84	76,43	6.420	
<b>Other measures to be covered</b>				
	Specify activities			
Sampling	14.000	1,78	24.920	
Others	(material and sampling costs) 14.000 (logistics)	1,19	16.660	
<b>Total</b>			<b>€ 294.834,-</b>	

- 14.000 birds will be tested
- Every sample will be tested in an RNA-isolation test
- Every sample will be tested in a MA RT-PCR: 14.000 MA RT-PCR
- An average of 700 samples (5%) will be tested again for H5 and H7 in a RT-PCR: 1.400 RT-PCR
- H5/H7 positive samples will be sequenced for LPAI or HPAI (6%), 84 samples
- H5/H7 negative samples but positive for AI will be tested in a virus isolation test
- H5/H7 negative samples but positive for AI will be tested in HI

## 7.2.2.2 Passive wild bird surveillance (dead birds)

Measures eligible for co-financing surveillance in wild birds found dead

Methods of laboratory analysis	Number of tests to perform per method	Unitary test cost (per method) €	Total cost €
Serological pre-screening	0	0	0
Haemagglutination-inhibition-test (HI) for H5/H7	0	0	0
Virus isolation test	-	-	-
PCR cloaca	3.000	33	99.000
PCR trachea	3.000	33	99.000
PCR for H5 and H7	100X2= 200	33	6.600
Other measures to be covered	Specify activities		
Sampling and post-mortem	3.000	42	126.000
Others			
<b>Total</b>			<b>€ 330.600,-</b>

- Cloacal and tracheal/oropharyngeal swabs will be taken
- Every sample will be tested in a RT-PCR: 3.000 samples times two (cloaca and tracheaswabs): 6.000 RT PCR.
- An average of 100 samples will be tested again for H5 and H7 by PCR: 200 PCR.
- When necessary tissues (namely the brain, heart, lung, trachea, kidney and intestines) from wild birds found dead are sampled for virus isolation and molecular detection (PCR).











The number of 3.000 found dead birds for 2009 is an estimated number.

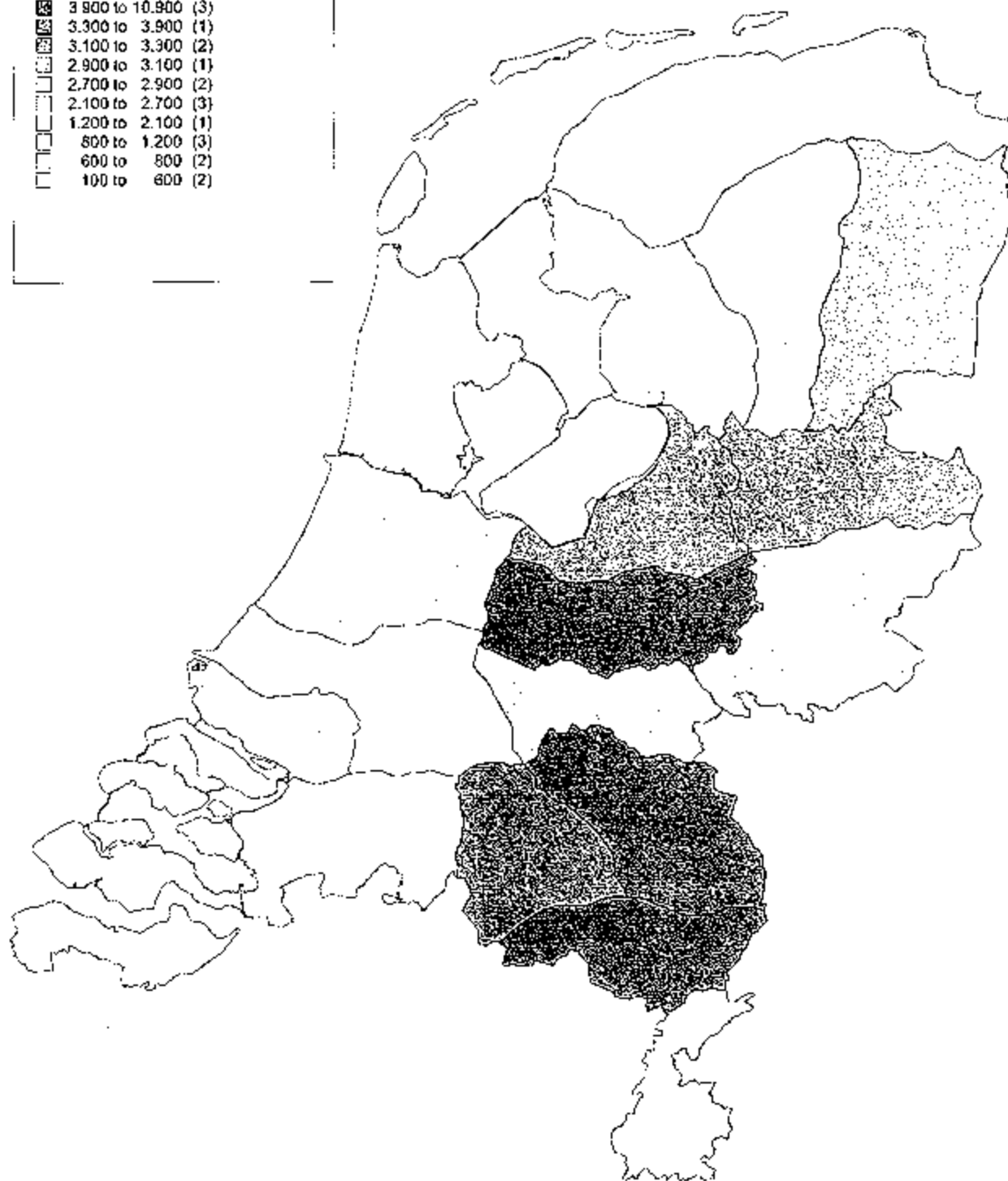
3 E.H.M. Wieringa, 24 april 2008

# Gemiddelde pluimveedichtheid

## Gemiddelde pluimveedichtheid

# pluimvee / km<sup>2</sup>

	3.900 to 10.900 (3)
	3.300 to 3.900 (1)
	3.100 to 3.300 (2)
	2.900 to 3.100 (1)
	2.700 to 2.900 (2)
	2.100 to 2.700 (3)
	1.200 to 2.100 (1)
	800 to 1.200 (3)
	600 to 800 (2)
	100 to 600 (2)





Gemiddeld aantal  
watervogels / km<sup>2</sup>

