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WORKING DOCUMENT

**GUIDELINES ON THE IMPLEMENTATION OF
SURVEY PROGRAMMES FOR
AVIAN INFLUENZA IN POULTRY AND WILD BIRDS
TO BE TO CARRIED OUT IN THE MEMBER STATES IN 2007**

**This document does not necessarily represent
the views of the Commission services**

Agreed at the Standing Committee on the Food Chain and Animal Health of 16 May 2006

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Guidelines on the implementation of survey programmes for Avian Influenza in poultry and wild birds to be carried out in Member States in 2007

1. Introduction and legal framework

Council Directive 92/40/EEC of 19 May 1992 introducing Community measures for the control of avian influenza¹ defines Community control measures to be applied in the event of an outbreak of highly pathogenic avian influenza (HPAI) in poultry. However, it does not provide for the control of low pathogenic avian influenza (LPAI) of H5 and H7 subtypes nor for regular surveys of that disease in poultry and wild birds.

However, the recent spread of the HPAI H5N1 of the Asian lineage (hereafter simply called HPAI H5N1) has indicated the clear need to strengthen surveillance and early detection systems, both in poultry and wild birds. In recent months experience has been gained in the EU in this regard, that should be taken into account in the 2007 surveillance programmes.

Council Decision 90/424/EEC of 26 June 1990 on expenditure in the veterinary field² provides in Article 20 for a Community financial contribution for the undertaking of technical and scientific measures necessary for the development of Community veterinary legislation and for veterinary education and training.

Since 2002 Member States have been implementing mandatory surveys for avian influenza in domestic poultry by submitting yearly surveillance programmes to the Commission as provided for under Commission Decisions 2002/649/EC³, 2004/111/EC⁴, 2005/464/EC⁵ and 2006/101/EC⁶.

¹ OJL 167, 22.6.1992, p. 1, Directive as last amended by the 2003 Act of Accession.

² OJL 224, 18.8.1990, p. 19. Decision as last amended by the Directive 2003/99/EC of the European Parliament and of the Council (OJ L 325, 12.12.2003, p. 31).

³ OJL 213, 9.8.2002, p. 38.

⁴ OJL 32, 5.2.2004, p. 20. Decision as amended by Decision 2004/615/EC (OJL 278, 27.8.2004, p. 59).

As of 1 July 2007, Council Directive 92/40/EEC shall be repealed by Council Directive 2005/94/EC⁷ adopting Community measures for the control of avian influenza, which will include also the control of outbreaks of LPAI caused by avian influenza of H5 and H7 subtypes in poultry. In order to detect the possible circulation of those viruses in poultry flocks, compulsory surveillance programmes have to be implemented in accordance with Article 4 of that Directive. Control measures aim at preventing the spread of LPAI H5 and H7 before they become widespread in the domestic poultry population so that the risk of a mutation into HPAI with possibly devastating consequences may be prevented.

Furthermore it should be born in mind that surveillance for Avian Influenza (AI) in poultry has to be applied by countries seeking recognition of a free status for notifiable AI in relation to trade taking into account Appendix 3.8.9. of the OIE Terrestrial Code⁸ on guidelines for the surveillance of AI. The OIE recognised that targeted surveillance may be an appropriate strategy for that purpose. It may for example be appropriate to target clinical surveillance at particular species likely to exhibit clear clinical signs (e.g. chickens). Similarly, virological and serological testing could be targeted to species that may not show clinical signs (e.g. ducks).

In case vaccination is carried out, Articles 53 to 56 of Directive 2005/94/EC and the OIE guidelines mentioned above require additional surveillance. The vaccination plans in place in Italy (Commission Decision 2005/926/EC⁹), the Netherlands (2006/147/EC¹⁰) and France (2006/148/EC¹¹) provide for this additional surveillance.

According to Directive 2005/94/EC surveillance programmes shall also be carried out in wild birds in order to contribute, on the basis of a regularly updated risk assessment, to the knowledge on the threats posed by wild birds in relation to any influenza virus of avian origin in birds. It is important to further strengthen surveillance activities given recent developments as regards the widespread occurrence of HPAI H5N1 in wild birds in Europe, taking into

⁵ OJL 164, 24.6.2005, p. 52, as amended by Decision 2005/726/EC, OJL 273, 19.10.2005, p. 21.

⁶ OJL 46, 16.2.2006, p.40

⁷ OJL 10, 14.1.2006, p. 16.

⁸ OIE, Terrestrial Code, 14th edition, 2005, www.oie.int.

⁹ OJL 337, 22.12.2005, p.60.

¹⁰ OJL 55, 25.2.2006, p.47.

¹¹ OJL 55, 25.2.2006, 51

account the results of the surveys carried out in the Member States 2003-2006 and the scientific work recently undertaken by EFSA¹² in collaboration with the ORNIS Committee¹³ of Directorate General for Environment. These bodies will continue their work and outcomes thereof may lead to further updating of these guidelines. When implementing surveillance programmes in wild birds full regard shall be paid to the requirements of Directive 79/409/EEC¹⁴ on the protection and conservation of all naturally occurring wild bird species in the Community.

Following the adoption of Directive 2005/94/EC, Council Decision 90/424/EEC has been amended by Decision 2006/53/EC¹⁵ allowing that Community financial assistance may be also granted for those eradication measures carried out by the Member States to combat those LPAI strains known to have the potential to mutate to HPAI.

Article 24 of Council Decision 90/424/EEC lays down the procedures for the Community co-financing of programmes for the eradication and monitoring of animal diseases. These provisions envisage that each year Member States may, in accordance with Article 24 (3) of this Decision, submit to the Commission the programmes for which an application for a financial contribution from the Community is being made not later than 1 June each year. This contribution shall cover 50% of Member States' costs for laboratory testing. Member States have however highlighted the high costs involved in the sampling of wild birds and the Commission is currently seeking to address this issue due to this particular practical problem.

2. Objectives

2.1. Surveillance for avian influenza in poultry

Firstly, it must be pointed out that clinical surveillance of poultry flocks by the owner or person in charge and by its veterinarian is the most effective way for early detection of infection for both HPAI and LPAI. Whereas in most cases this appears obvious for infection for HPAI, it is also crucial for detecting LPAI infections when at least some changes in production data (decreased water or feed intake, drop in egg production) are noticeable.

¹² Scientific opinion on "Migratory birds and their possible role in the spread of highly pathogenic avian influenza" (EFSA, May 2006)

¹³ ORNIS Committee is a scientific working group of ornithological national representatives, in addition DG ENV has contracted EURING and Wetlands International to analyse ringing data and migratory patterns in view of the recent spread of HPAI to Europe.

¹⁴ OJL 103, 25.04.1979, p.1.

However in some species, in particular ducks and geese these indicators can be very slight or even absent (asymptomatic infection).

To strengthen early detection systems and biosecurity measures in poultry holdings in the face of the recent risk of HPAI H5N1 introduction from wild birds, Decision 2005/734/EC¹⁶ has been adopted requiring Member States to identify poultry holdings located in areas where the risk for disease introduction from wild birds to poultry is considered to be higher. Similar measures would also be useful, to prevent introduction of H5 or H7 LPAI viruses in poultry holdings in case they are detected in wild birds.

Objectives for surveys in poultry

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

- 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.
- Detecting infections of LPAI H5 and H7 subtypes in specifically targeted poultry populations at specific risk for infection due to their husbandry system or species specific susceptibility.
- 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.

2.2. Surveillance for avian influenza in wild birds

Due to the well-known reservoir function of wild birds (in particular of migratory waterbirds) for all LPAI subtypes, previous surveys have focused on sampling wild birds in order to detect LPAI H5 and H7 subtypes which may pose a risk to poultry.

Following the westward spread of HPAI H5N1 to Europe an intensified surveillance in wild birds was implemented by Decision 2005/726/EC¹⁷ by increased a) active surveillance in living or hunted birds in particular of species resident in or migrating from areas affected by

¹⁵ OJ L 29, 20.2.2006, p. 37.

¹⁶ OJ L 274, 20.10.2005, p. 105, as last amended by Decision 2005/855/EC (OJ L 316, 2.12.2005, p. 21.)

¹⁷ OJ L 273, 19.10.2005, p. 21.

HPAI H5N1 avian influenza outbreaks and identified as presenting a higher risk for avian influenza transmission, and b) passive surveillance on wild birds found dead.

Experience during early 2006 has shown that passive surveillance of sampling of dead wild birds and investigations of mortalities have provided an effective early warning system for the introduction of HPAI H5N1 infection into Member States, whereas active surveillance at present sampling levels has not met this purpose. It would appear that in order to be more effective, sampling levels for surveillance on live birds should be very much increased. This would pose problems of resources and therefore the appropriateness of this intensification could be questioned. However, lessons learnt with the introduction of HPAI H5N1 via wild birds and its spread over long distances suggest that there is a need for the intensification of surveillance of HPAI H5N1 firstly in those areas or flyways where its presence has been confirmed in order to provide answers to the following questions:

a) Where does the disease pose a risk to poultry or humans? b) Which are the species involved and might they get in contact with poultry? c) Does the disease persist in migratory and resident wild birds in an area?

Surveillance shall allow the assessment of the above risks to inform decision makers to adapt their prevention and control measures accordingly. In this context, it is advisable that Member States having experienced a similar epidemiological situation during spring 2006 co-ordinate amongst themselves their approach towards surveillance in order to ensure synergies between their activities.

Objectives for surveys in wild birds

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

- ensuring early detection of HPAI H5N1 by investigating increased incidence of morbidity and mortality in wild birds, in particular in selected “higher risk” species.
- in the event that HPAI H5N1 is detected in wild birds, then surveillance of live and dead wild birds should be enhanced to determine whether wild birds of other species can act as asymptomatic carriers or “bridge species”.
- 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

H5N1 and other HPAI, if present). “Higher risk species” will be targeted in particular.

Both, surveys in poultry and wild birds shall actively promote the co-operation between veterinary and public health authorities, influenza networks of virologists, epidemiologists, ornithologists and ecologists so as to contribute to an overall better understanding of the epidemiology of influenza viruses, and how to protect animal and human health from the threat they can pose.

3. Legal deadlines

The dates for submission of surveillance programmes for avian influenza in 2007 and reporting are set out below:

Note that these are strict legal deadlines that need to be met, by Member States and the Commission.

1 June 2006 Submission of the survey programmes (technical and financial) by Member States

Programmes submitted after the referred deadline of 1 June 2006 will not be taken into consideration for EU financial contribution.

15 July 2006 Request for additional information by Commission.

1 September 2006 End of the instruction period.

15 October 2006 Commission to fix the list of the programmes, which can benefit from a contribution of the Community as well as the amounts.

1 December 2006 Approval by the Commission of the individual programmes

1 January –

31 December 2007 Period during which surveys for avian influenza in poultry and wild birds are carried out

31 May 2008 Final submission of the survey results (technical and financial) by Member States to the Commission

The electronic version of the programmes should be submitted to the following electronic address:

SANCO-VET-PROG@cec.eu.int

ANNEX I – Poultry Surveys

Guidelines to implement the programmes for surveillance of avian influenza in poultry to be carried out in the Member States in 2007

A. GENERAL REQUIREMENTS AND CRITERIA FOR THE SURVEYS

1. Sampling shall not extend beyond 31 December 2007.
For poultry, sampling shall cover a period appropriate to production periods for each poultry category as required.
2. In order to save resources the use of samples collected for other purposes is recommended.
3. 31 May 2008 shall be the date for the submission of the final survey results.
4. Testing of samples shall be carried out at National Laboratories for avian influenza (NL) in Member States or by other laboratories authorised by the competent authorities and under the control of the NL.
5. All results (both serological and virological) 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.
6. All avian influenza virus isolates shall be submitted to the CRL in accordance with Community legislation, unless a derogation according to Chapter V paragraph 4 (Differential diagnosis) in the diagnostic manual laid down in Decision 2006/.../EC¹⁸ is granted. Viruses of H5/H7 subtype shall be submitted without delay and shall be subjected to the standard characterisation tests (nucleotide sequencing/IVPI) according to the said Diagnostic Manual..
7. Whenever possible NLs should submit to the CRL H5 or H7 positive sera collected from Anseriformes in order that an archive be established to facilitate future test development.

B. SURVEYS FOR AVIAN INFLUENZA IN POULTRY

1. All positive findings shall be retrospectively investigated at the holding and the conclusions of this investigation shall be reported to the Commission and the CRL. In case of positive virological results for H5 and H7 the legal requirements for notification apply.
2. Specific protocols to accompany the sending of material to the CRL and reporting tables for collection of survey data shall be provided by the CRL. In those tables the laboratory testing methods used shall be indicated. The tables provided shall be used to submit results in a single document.

¹⁸ Reference to document under development: SANCO/10212/2006–Rev.3

3. Blood samples for serological examination shall be collected from all species of poultry including those reared in free-range systems, from at least five 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.
4. 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; (see Table 1) 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 $\geq 30\%$.
5. 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, outdoor keeping and backyard flocks plus taking into account other factors such as multi age, use of surface water, a relatively longer life span, the presence of more than one species on the holding or other relevant factors
 - (b) The number of turkey, duck and goose 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 (see Table 2).
 - (c) Member State shall include in the programme holdings producing game birds for restocking, ratites and quails in particular when participating in intra-Community trade. With regard to quails only adult (or laying) breeders shall be sampled.
 - (d) The time period for sampling shall coincide with seasonal production. However, where appropriate, sampling can be adapted to other identified periods at local level, during which time the presence of other poultry hosts on a holding might pose a greater risk for disease introduction.
 - (e) Member States that must carry out sampling for Newcastle disease to maintain their status as Newcastle disease non-vaccinating countries in accordance with Commission Decision 94/327/EC¹⁹ may utilise these samples from breeding flocks for the surveillance of H5/H7 antibodies.

¹⁹

OJL 146, 11.6.1994, p. 17.

Table 1: Number of holdings to be sampled of each poultry category (except turkey, duck and goose holdings)

Number of holdings per poultry category per Member State	Number of holdings to be sampled
Up to 34	All
35 -50	35
51-80	42
81-250	53
>250	60

Table 2: Number of turkey, duck and goose holdings to be sampled

Number of holdings per Member State	Number of holdings to be sampled
Up to 46	All
47 -60	47
61-100	59
101-350	80
>350	90

C. SPECIFIC REQUIREMENTS FOR DETECTION OF INFECTIONS WITH H5/H7 SUBTYPES OF AVIAN INFLUENZA IN DUCKS, GEESE AND QUAILS

1. Blood samples for serological testing shall be taken preferably from birds which are kept outside in fields.
2. From each selected holding 40-50 blood samples shall be taken for serological testing.

D. LABORATORY TESTING

1. Laboratory tests shall be carried out in accordance with the avian influenza diagnostic manual (Commission Decision 2006/.../EC¹⁶) 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 Laboratories for avian influenza by a haemagglutination-inhibition test, using designated strains supplied by the Community Reference Laboratory for Avian Influenza:

H5 (a) Initial test using Ostrich/Denmark/72420/96 (H5N2)

- (b) Test all positives with Duck/Denmark/64650/03 (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.

E. REPORTING ON SAMPLING OF POULTRY HOLDINGS AND SURVEY RESULTS

For the 2006 surveys the standard reporting requirements are laid down in Decision 2006/314/EC²⁰.

For 2007, the standard reporting format as laid down in Decision 2006/314/EC shall be used for poultry.

Member States shall report to the Commission positive and negative results of investigations detected during their surveillance of poultry every three months by the end of the following month using the standard reporting format and submit a final report (technical and financial) by 31 May 2008.

This reporting is without prejudice to the obligation of the Member States, laid down in the respective Community legislation, to notify cases of HPAI to the Commission immediately, irrespective of the host and LPAI of H5 and H7 subtypes as of 1 July 2007.

F. PUBLIC HEALTH ASPECTS OF SURVEYS AND SURVEILLANCE

Because of the small but significant risk to human health from some avian influenza strains, staff engaged in surveillance and surveys, working in laboratories, responding to outbreaks should take the necessary precautions conforming to guidance specified by Member States or such as that of the European Centre for Disease Prevention and Control.²¹

²⁰ OJL 116, 29.4.2006, p. 61.

²¹ ECDC http://www.ecdc.eu.int/avian_influenza/index.php

ANNEX II – Wild Bird Surveys

Guidelines to implement the programmes for surveillance of avian influenza in wild birds to be carried out in the Member States in 2007

A. GENERAL REQUIREMENTS AND CRITERIA FOR THE SURVEYS

1. Sampling shall not extend beyond 31 December 2007.
2. 31 May 2008 shall be the date for the submission of the final survey results.
3. Testing of samples shall be carried out at National Laboratories for avian influenza (NL) in Member States or by other laboratories authorised by the competent authorities and under the control of the NL.
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 survey 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 Chapter V paragraph 4 under Differential diagnosis in the avian influenza Diagnostic Manual laid down in Decision 2006/.../ EC¹⁶ is granted. Viruses of H5/H7 subtype shall be submitted without delay and shall be subjected to the standard characterisation tests (nucleotide sequencing/IVPI) according to the said diagnostic manual.

B. SURVEY FOR AVIAN INFLUENZA IN WILD BIRDS

Survey design and implementation

Close co-operation with epidemiologists and ornithologists and the competent authority for Nature conservation should be ensured for designing the survey, assisting in species identification and optimising sampling. The design of the survey will need to be adapted to the national situation as regards selection of species to be sampled according to species predominance and bird population sizes. Sampling must consider the seasonality of migration patterns, which may vary in different Member States. It should 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 surveys during 2003-2006.

For H5N1 HPAI all the factors above should 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 of the European Union.

To assess those probabilities, the decision trees and tables in the recent opinion of EFSA²², which were drawn up in collaboration with DG Environment can provide an effective tool for Member States' local risk assessments to adapt to an evolving situation based on a close collaboration and exchange of views between Member States.

Liaisons with bird conservation/watching institutions and ringing stations are strongly encouraged. Sampling, where appropriate, shall be carried out under the supervision of staff from these groups/stations, by hunters and other ornithologically skilled persons.

1. Passive surveillance of sick and dead wild birds shall be targeted on:
 - a) areas where increased incidence of morbidity and mortality in wild birds occurs;
 - b) 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;
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 or hunted²³ birds shall be targeted on:
 - a) migratory birds belonging to the order of Anseriformes (water fowl) and Charadriiformes (shorebirds and gulls);

²² Scientific opinion on "Migratory birds and their possible role in the spread of highly pathogenic avian influenza" (EFSA May 2006)

²³ Hunting by respecting the requirements of Council Directive 79/409/EEC¹⁴ on the protection and conservation of all naturally occurring wild birds.

- 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 species²⁴.

Sampling procedures

1. Oropharyngeal and/or cloacal swabs for virological examination shall be taken from apparently healthy free living birds. If for any reason it is impractical to take cloacal swabs from live birds carefully collected fresh faeces samples may serve as an alternative. However, traceability in case of mixed sites frequented by different bird species should be ensured.
2. Cloacal and/or tracheal/oropharyngeal swabs and/or tissues (namely the brain, heart, lung, trachea, kidney and intestines) from wild birds found dead or shot shall be sampled for virus isolation and molecular detection (PCR).
3. Specific care has to be taken for the storage and transport of samples. Swabs should be chilled immediately on ice or with frozen gel packs and submitted to the laboratory as quickly as possible. Samples should not be frozen unless absolutely necessary. If available, swabs should be placed in antibiotic or specific virus transport medium so that they are fully immersed. Placing samples in medium for transportation should be done in addition to chilling and not as an alternative to chilling. In the absence of such medium, swabs should be returned to their casing and submitted dry. If rapid transport within 48 hours to the laboratory (in transport medium at 4° Celsius) is not guaranteed, samples shall be immediately frozen, stored and then transported on dry ice. Storage and transport of samples will be affected by a variety of factors so the method selected should be fit for purpose.

C. LABORATORY TESTING

1. Laboratory tests shall be carried out in accordance with the avian influenza diagnostic manual (Commission Decision 2006/.../EC¹⁶) laying down the procedures for the confirmation and differential diagnostic 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 survey for avian influenza in wild birds shall be tested as soon as possible by molecular techniques if available and according to the diagnostic manual (Commission Decision 2006/.../EC¹⁶). These tests shall only be carried out in laboratories able to guarantee quality assurance and using methods recognised by the CRL for avian influenza. In addition, methods used

²⁴

Soon to be provided by DG Environment.

should 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 should 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. At the laboratory, pooling of up to five samples taken from the same species collected at the same site and same time may be permitted when it can be ensured that, in case of a positive finding, the individual samples can be identified and retested.
5. 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 should 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).

D. LIST OF WILD BIRD SPECIES PRESENTING A HIGHER RISK IN RELATION TO AVIAN INFLUENZA*

COMMON NAME	SCIENTIFIC NAME
Bewick's Swan	<i>Cygnus columbianus</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Geese	
Pink-footed Goose	<i>Anser brachyrhynchus</i>
Bean Goose	<i>Anser fabalis</i>
Greater White-fronted Goose (European race)	<i>Anser albifrons albifrons</i>
Lesser White-fronted Goose	<i>Anser erythropus</i>
Greylag Goose	<i>Anser anser</i>
Barnacle Goose	<i>Branta leucopsis</i>
Brent Goose	<i>Branta bernicla</i>
Red-breasted Goose	<i>Branta ruficollis</i>
Canada Goose	<i>Branta canadensis</i>
Ducks	
Eurasian Wigeon	<i>Anas penelope</i>
Common Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</i>
Northern Pintail	<i>Anas acuta</i>
Garganey	<i>Anas querquedula</i>
Northern Shoveler	<i>Anas clypeata</i>
Marbled Teal	<i>Marmaronetta angustirostris</i>
Red-crested Pochard	<i>Netta rufina</i>
Common Pochard	<i>Aythya ferina</i>
Tufted Duck	<i>Aythya fuligula</i>
Waders	
Northern Lapwing	<i>Vanellus vanellus</i>
Eurasian Golden Plover	<i>Pluvialis apricaria</i>
Black-tailed Godwit	<i>Limosa limosa</i>
Ruff	<i>Philomachus pugnax</i>
Gulls	
Black-headed Gull	<i>Larus ridibundus</i>
Common Gull	<i>Larus canus</i>

* This list is not a limiting list but is only meant to identify migratory species that may pose a higher risk for introduction of avian influenza into the Community based on their migratory pattern involving areas where H5N1 HPAI has either occurred in wild birds or poultry. It is based on the Scientific opinion on "Migratory birds and their possible role in the spread of highly pathogenic avian influenza" adopted by the Animal Health and Welfare Panel of EFSA on 12 May 2006 and the work carried out by ORNIS Committee and contractors to DG ENVIRONMENT. However, this list could be updated following results of further scientific studies as they become available and based on the risk assessment carried out by national authorities taking into account their specific ornithological situation.

E. LIST OF BIRDS LIVING IN PROXIMITY TO DOMESTIC POULTRY**

Common name	Scientific name	Probability of contact with poultry
Group 1. Species intimately associated with poultry production in Europe		
Domestic Goose	<i>Anser anser domesticus</i>	High
Domestic Mallard	<i>Anas platyrhynchos</i>	High
Domestic Muscovy Duck	<i>Cairina moschata</i>	High
Feral Pigeon	<i>Columba livia</i>	High
House Sparrow	<i>Passer domesticus</i>	High
Group 2. Species which may share farmland also used by domesticated poultry in north Europe		
Eurasian Golden Plover	<i>Pluvialis apricaria</i>	Low
Northern Lapwing	<i>Vanellus vanellus</i>	Medium
Black-headed Gull	<i>Larus ridibundus</i>	High
Common Gull	<i>Larus canus</i>	High
Herring Gull	<i>Larus argentatus</i>	Low
Wood Pigeon	<i>Columba palumbus</i>	High
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	High
Ring-necked Pheasant	<i>Phasianus colchicus</i>	High
Larks species	<i>Alauda & Galerida spp</i>	Low
Pipits		Low
Wagtails		Medium
Fieldfare	<i>Turdus pilaris</i>	Medium
Redwing	<i>Turdus iliacus</i>	Medium
Black-billed Magpie	<i>Pica pica</i>	High
Eurasian Jackdaw	<i>Corvus monedula</i>	High
Rook	<i>Corvus frugilegus</i>	Medium
Carrion Crow	<i>Corvus corone</i>	Medium
Raven	<i>Corvus corax</i>	Low
Starling	<i>Sturnus vulgaris</i>	High
Spotless Starling	<i>Sturnus unicolor</i>	High
House Sparrow	<i>Passer domesticus</i>	High
Eurasian Tree Sparrow	<i>Passer montanus</i>	High
Finches		Medium
Buntings	<i>Miliaria, Emberiza spp</i>	Medium

Group 3. Species which may share wetlands also used by domesticated water birds in

Northern Europe

Egrets	<i>Egretta</i> spp.	Low
Hérons	<i>Ardea</i> and other spp.	Medium
Comorant	<i>Phalacrocrax carbo</i>	Medium
Storks	<i>Ciconia</i> spp.	Low
Mute Swan	<i>Cygnus olor</i>	Medium
Greylag Goose	<i>Anser anser</i>	Medium
Canada Goose	<i>Branta canadensis</i>	Low
Ducks	<i>Anas & Aythya</i> spp.	Low
Mallard	<i>Anas platyrhynchos</i>	High
Common Coot	<i>Fulica atra</i>	Medium
Moorhen	<i>Gallinula chloropus</i>	Medium

** This list is not an exhaustive list but is only meant to identify resident or non-migratory European bird species that live in proximity to domestic poultry (especially in NW Europe) and which have the theoretical potential to transfer HPAI H5N1 from potential asymptotically infected wild birds ('bridge species'). It is based on the Scientific opinion on "Migratory birds and their possible role in the spread of highly pathogenic avian influenza" adopted by the Animal Health and Welfare Panel of EFSA on 12 May 2006 and the work carried out by ORNIS Committee and contractors by DG ENVIRONMENT. However, this list could be updated and expanded following results of further scientific studies as they become available and based on risk assessments carried out by national authorities taking into account their specific ornithological situation.

F. REPORTING ON SURVEY RESULTS IN WILD BIRDS

Member States shall report to the Commission the positive and negative results for sample investigation detected during their surveillance of wild birds every three months by the end of the following month using the standard format below. It is crucial that the wild bird species is accurately identified. If this cannot be done at the time of sampling, it is strongly recommended to take a photograph to allow subsequent identification by an ornithological expert.

This reporting is without prejudice to the obligation of the Member States, laid down in the respective Community legislation, to notify cases of HPAI to the Commission immediately, irrespective of host. In case of a positive finding for HPAI this shall immediately be notified to the Commission via the ADNS²⁵ by indicating the species and location by geographical coordinates.

²⁵ Animal Disease Notification System.



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Reporting of surveilla

In the inserted excel file the minimum data to be reported are listed. Please see Annex III on recommendations given by ornithological experts on further information that would be worth collecting and recording.

G. PUBLIC HEALTH ASPECTS OF SURVEYS AND SURVEILLANCE

Because of the small but significant risk to human health from some avian influenza strains, staff engaged in surveillance and surveys, working in laboratories, responding to outbreaks should take the necessary precautions conforming to guidance specified by Member States or such as that of the European Centre for Disease Prevention and Control.²⁶

²⁶

ECDC http://www.ecdc.eu.int/avian_influenza/index.php

ANNEX III

RECOMMENDATIONS PROVIDED BY ORNITHOLOGICAL EXPERTS

A. Useful information to be collected:

1. All birds from which samples are taken should be identified to species. Where clearly distinguishable sub-species or discrete populations exist as for some geese, this information should also be collected and reported²⁷. Age²⁸ and sex should be recorded wherever possible.
2. Close collaboration with ornithologists in the capture and sampling of live birds not only facilitates identification of birds but also gives the opportunity to collect additional information on the sampled live birds (such as weight, age, sex and condition), important to developing better understanding of viral ecology and epidemiology. Standard protocols exist for the collection of such data through national ringing schemes (details of which are available via EURING²⁹). Recording individual ring numbers³⁰ in the reporting spreadsheet provides a means of accessing these data for future analysis.
3. To provide an audit of identification, it is highly desirable that a clear digital photograph³¹ is taken of each sampled bird (especially those found dead and/or not identified by ornithologists) and stored at least until confirmation of laboratory tests. In the event of positive results further examination of such photos can provide additional information on the age and sex of the bird, in addition to proving the identity of the species beyond doubt and thus allowing the case to be correctly put into context. To facilitate this each individual bird should be given a code that is used on the cloacal and oro-pharyngeal swabs taken, and this code should be on a piece of card that is visible in each photograph taken.
4. Especially related to sampling in the vicinity of outbreaks, it is desirable to collect a range of contextual information so as to better understand the viral epidemiology of HPAI H5N1 in wild bird populations. Such information should include:
 - a. clear locational data about the catching site, ideally GPS co-ordinates, and including habitat description (e.g. lake, river, village pond, fish farm, etc.) and distance to human settlement, agricultural land, and poultry farms;
 - b. type of catching site, e.g. lake, river, village pond, fish farm, etc. and whether away from or close to human settlement and poultry farms;

²⁷ Wetlands International's publication *Waterbird Population Estimates* [Wetlands International 2002. *Waterbird Population Estimates - Third Edition*. Wetlands International Global Series No. 12. Wageningen, The Netherlands. 226 pp.] should be used as a source of information on the taxonomy and populations of waterbirds.

²⁸ Waterbirds are aged mainly by the size and shape of their wing feathers (mainly on greater covert and tertial shape - www.bto.org/ringing/ringinfo/resources/topography.pdf) and their tail feathers (juveniles having notched tail feathers).

²⁹ www.EURING.org

³⁰ Records of previously ringed or colour-ringed birds provide especially valuable information and should always be reported to national ringing offices or to EURING - www.ring.ac. Colour-rings on birds should always be photographed *in situ*.

³¹ In order to facilitate identification of bird species (which can sometime vary in quite minor plumage details, especially at certain times of the year), photos should be taken according to the guidance given in part B of this Annex.

- c. record of the numbers of each species of other live birds in the catching area that were not caught;
- d. if available, records of bird movements (arrivals/departures) which occurred at the sampling site prior to the sampling;
- e. assessment of the numbers of each species of live bird in the catching area that were not caught but that were showing signs of ill health; and
- f. given that birds of some species (such as Mallards) can occur either as free-living birds which are able to move between sites, or occur in a feral state, habituated to foods provided by man, distinguishing between these categories would be useful. Sometimes the presence of unusual plumage patterns - indicating domestication - is useful in this respect.

B. Guidance on taking photographs of dead birds for identification purposes

The following simple guidance will assist non-specialists in taking photographs, especially of dead birds, that will allow subsequent identification to species. Different bird species are identified by differing characteristics, so it is difficult to provide universal guidance applicable in all situations. However, the following is a minimum standard that should be followed.

All wild birds collected for analysis for HPAI should have digital photographs³² taken as soon as possible after collection. The bird should fully fill the photograph and wherever possible include a ruler or other scale measure. Photographs should be taken of:

- the whole bird, dorsal side, with one wing stretched out and tail spread and visible;
- the head in profile clearly showing the beak;
- close-up photos of the tips of wing feathers can often determine whether the bird is an adult or a juvenile (bird in its first year);
- ideally photographs of both dorsal and ventral views of the bird should be taken³³; and
- any ventral photographs should show the legs and feet (since leg colour is often an important species diagnostic). If any rings (metal or plastic) are present on the legs, these should be photographed in situ as well as recording ring details.
- Any conspicuous markings/patterns should be photographed.

In late summer (July - late August) many waterbirds and especially ducks and geese undergo moult and can be especially difficult to identify by non-specialists. At this time of year there is especially the need for clear photographs to aid identification of duck carcasses. The patch of colour on the open wing (called the “speculum”) is often especially useful. The identification of young gulls at any time of the year is also difficult and typically they will also need to be photographed and identified by specialists.

³² Each photograph should be taken at the highest resolution possible and if the camera has a ‘date stamp’ feature then this should be enabled so that the image is saved with a time reference – this may help verify the sequence of images taken at a site on a day. Images should be downloaded to a computer as soon as possible and information about location and date added to the file properties.

³³ Photographs of the upper and under surfaces of the wing and spread tail will facilitate aging and sexing of birds (e.g. Pintail *Anas acuta*).

Photographs should be retained, linked to an individual specimen, at least until laboratory tests are returned as negative for AI.

Photographs can be used immediately if identification of the species of bird is in any doubt, and for subsequent checking of the identification if necessary.