



EUROPEAN COMMISSION  
HEALTH AND CONSUMERS DIRECTORATE-GENERAL

Director General

SANCO/10684/2013

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

## **Survey programme for Avian Influenza**

**Croatia**

**Approved\* for 2013 by Commission Decision 2012/761/EU**

\* in accordance with Council Decision 2009/470/EC

# Standard requirements for the submission of surveillance programmes for avian influenza

version : 2.2

## 1. Identification of the programme

Member state : HRVATSKA

Disease : avian influenza in poultry and wild birds

Request of Community co-financing from beginning of:

2013

to end of

2013

### 1.1 Contact

Name : Ankica Labrovic

Phone : + 385 1 610 6670

Fax : + 385 1 610 9207

Email : labrovic@mps.hr

## 2. Description and implementation of the surveillance programme in poultry

### 2.1.1 Designation of the central authority in charge of supervising and coordinating the departments responsible for implementing the programme

(max. 32000 chars) :

Veterinary Directorate of the Ministry of Agriculture is the national competent authority responsible for supervision and coordination of implementation of the Program.

Animal Health Sector of the Veterinary Directorate (VD) is responsible to develop the Program in coordination with a AI diagnostic laboratory of the Croatian Veterinary Institute (CVI).

The program is implemented by authorised veterinarians who provide for sampling and submission of samples to the AI diagnostic laboratory.

Supervision of implementation of the Program on the field is carried out by veterinary inspectors

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(officials of the VD).

## 2.1.2 System in place for the registration of holdings

(max. 32000 chars) :

According to the provisions of Article 38, paragraph 1 of the Veterinary Act (Official Gazette 41/2007), farms of ungulates and equidae exceeding 20 conditional animal units, poultry and rabbit farms exceeding 10 conditional animal units, hatcheries, wild game breeding farms, establishments for farming of fish and molluscs and other facilities of aquaculture must comply with the stipulated veterinary-health and biosecurity conditions.

Pursuant to the provisions of Article 38, paragraph 3 of the Veterinary Act, all farms are to be registered in the Farms Register, which is an integral part of the Central Register of Domestic Animals (CRDA), the responsibility for which lies with the MA's Veterinary Directorate. The Directorate has entered into contract with the Croatian Agricultural Agency (CAA) delegating to the CAA maintenance of CRDA. All holdings keeping gallinaceous birds (chickens, turkeys, pheasants, partridges and quails) and ratites (ostriches) are registered. Also holdings keeping domestic waterfowl (e.g. ducks, geese and mallards for restocking supplies of game) are registered in the CDRA. For every holding CRDA contain information on unique holding number name of the keeper, address, geographical coordinates, animal species and number of animals.

## 2.1.3 Design (risk based or surveillance based on representative sampling)

(max. 32000 chars) :

All surveillance based on representative sampling scheme will be implemented. Number of poultry holdings to be sampled is calculated based on Tables 1 and 2 of the Annex I of the Commission Decision 2010/367/EU and according to the poultry species present on the poultry holding. Holdings to be subject of sampling will be randomly selected from the list of all holdings of a specific poultry species and production categories keeping more than 100 animals. This will assure representativeness so generalization of findings to all holdings of a specific poultry species and production categories keeping more than 100 animals.

Backyard poultry in settlements where poultry is kept in proximity to large surface waters and migratory birds resting or nesting areas as well as backyard poultry in holdings where more than 50 animals of different poultry species (e.g. gallinaceous and domestic waterfowl, mixed) are kept together will also be included in the Program.

Target population (poultry production categories) to be included in the surveillance program, are:

1. laying hens
2. free range laying hens
3. chicken breeders

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4. turkey breeders
5. fattening turkey
- 6 farmed game birds (pheasants, partridges and quails)
7. backyard flocks

Number of holdings from each of the production categories mentioned above, to be subject of sampling, will assure identification of at least one infected poultry holding if the prevalence of infected holdings of this category is 5% or more, with 95% confidence interval (CI).

As regards backyard poultry, those keeping more than 50 of animals of different poultry species (e.g. gallinaceous and domestic waterfowl, mixed) are considered as an independent sampling frame and number of holdings to be samples will ensure identification of at least one infected poultry holding if the prevalence of infected holdings in that group of backyard holdings is 5% or more, with 95% CI. In the sampling frame of backyard holdings, some holdings will be included based on the prior information on risk, collected within the frame of AI surveillance program (Tables providing an information of the results of AI surveillance in domestic poultry are attached to this document).

Number of birds to be sampled, per holding included in the Program, will ensure detection of at least one AI seropositive bird if the prevalence of seropositive birds on a holding is 30 % or more, with 95% confidence. Blood samples for serological examination will be collected from all poultry production categories and species and 10 birds will be sampled per one epidemiological unit on the holding (e.g on laying hens holdings in average there are 2 epidemiological units, while on chicken breeders in average there are 1,5 epidemiological unit).

Samples will be taken at farm level. Whenever possible samples will be taken at the slaughterhouse.

The following domestic waterfowl categories will be included in the program:

1. ducks breeders
2. geese breeders
3. fattening ducks
4. farmed game birds (waterfowl).

Number of duck, goose and mallard holdings to be sampled will ensure identification of at least one infected holding if the prevalence of infected poultry holdings of a specific poultry production category is 5% or more with 99% CI.

Number of ducks, geese and mallards to be sampled, per holding included in the program, will ensure detection of at least one AI seropositive bird if the prevalence of seropositive birds on a holding is 30 % or more, with 95% confidence.

Blood samples for serological examination will be collected form all poultry production categories and species and 20 birds will be sampled per one holding.

Samples will be taken at farm level. Whenever possible samples will be taken at the slaughterhouse.

In case of detection AI seropositive birds sampling for virological testing for AI will follow.

In case of change of epidemiological situation the Program will appropriately be amended.

## Responsibilities

1. To ensure the implementation of the Programme is the responsibility of the VD of the Ministry of Agriculture.
2. Bird samples shall be taken and submitted to the laboratory by authorised veterinarians.
  - 2.1 The authorised veterinary organizations shall:

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- once a month submit reports to the VD on the sampling of poultry in accordance with this Programme.
  - submit, together with reports referred in the previous paragraph, a copy of the completed Sample Submission Forms as specified in the Annex to this Programme.
3. The laboratory testing of samples shall be carried out by Poultry Centre of the Croatian Veterinary Institute, Heinzelova 55, Zagreb, which is the National reference laboratory for AI. The national reference laboratory shall:
- report all positive results to the Veterinary Directorate as soon as possible;
  - report all negative results to the Veterinary Directorate once a month.
4. Competent veterinary inspectors shall supervise the implementation of the Programme on the spot.

## 2.1.3.1 Short description of predominant poultry population and types of poultry production

(max. 32000 chars) :

Poultry production in Croatia may be described as follows: 92% of poultry production refers to hens, 2% to turkeys, 2% to ducks and 3% to geese.

Other types of poultry, such as guinea fowls, quails, pheasants are insignificant within poultry population. Fattening of broilers, as well as of turkeys assures significant meat production, while breeding of ducks and geese is not as represented, being just semi-intensive for local market supply. Croatia has enough supplies of poultry meat for its own market. Around 70% of fattened poultry originates from intensive systems, other 30% refers to traditional, semi-intensive production for individual consumption. In Croatia, there is a yearly production of 600 000 breeding broiler layers, 40 million broilers and around 1.2 million turkeys. There are also 22 000 breeding commercial layers and around 1.7 million layers for egg production. The existing poultry production capacities are greater, however they are not fully exploited. Egg production is intensive in large companies and on family farms. There is also extensive and semi-intensive seasonal production on family infields. Around 30% of egg production is realized within semi-intensive systems and 70% within intensive production systems.

Source: Kralik G. at al, Current condition and development perspectives of poultry production in Croatia. [http://www.cabi.org/animalscience/Uploads/File/AnimalScience/additionalFiles/WPSAAntalyaTurkey2009/9\\_kralik\\_mps2009.pdf](http://www.cabi.org/animalscience/Uploads/File/AnimalScience/additionalFiles/WPSAAntalyaTurkey2009/9_kralik_mps2009.pdf)

## 2.1.3.2 Criteria and risk factors for risk based surveillance(1)

(max. 32000 chars) :

n/a

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- (1) Including maps showing target sampling sites identified as being particularly at risk for the introduction of avian influenza virus, taking into account criteria set out in point 4 of Annex I to Commission Decision 2010/367/EC.

## 2.2 Target populations (2)

(max. 32000 chars) :

n/a

- (2) including MS specific exceptional circumstances as described in Annex I point 3 of Commission Decision 2010/367/EU)

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## 2.2.1 POULTRY HOLDINGS (a) (except ducks, geese and farmed game birds (waterfowl e.g. mallards) to be sampled

Serological investigation according to Annex I to Commission Decision 2010/367/EU

Category : backyard holdings (50 and more birds of different species)

delete this category

NUITS (2) (b)	Total number of holdings(c)	Total number of holdings to be sampled	Number of samples per holding	Total number of tests	Method of laboratory analysis	
Croatia	147	53	20	1 060	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	15	15	10	150	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	53	42	15	795	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	10	10	15	150	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	127	53	10	530	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	2	2	10	20	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	279	60	10	600	Haemagglutination-inhibition-test (HI)	<b>X</b>

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<b>Total</b>	633	235	90	3 305
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Add a new row

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

(b) Refers to the location of the holding of origin. In case NUTS (Nomenclature of Territorial Units for Statistics) can not be used, region as defined in the programme by the Member States is requested

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

Add a category

<b>Total Poultry</b>	633	235	90	3 305

2.2.2 DUCKS ,GEESE AND FARMED GAME BIRDS (WATERFOWL e.g. MALLARD) HOLDINGS (a) to be sampled.



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## Serological investigation according to Annex I to Commission Decision 2010/367/EU

Category : farmed game (waterfowl e.g. mallards)

**delete this category**

NUITS (2) (b)	Total number of duck and geese holdings	Total number of duck and geese holdings to be sampled	Number of samples per holding	Total number of tests	Method of laboratory analysis	
Croatia	5	5	20	100	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	1	1	20	20	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	3	3	20	60	Haemagglutination-inhibition-test (HI)	<b>X</b>
Croatia	1	1	20	20	Haemagglutination-inhibition-test (HI)	<b>X</b>
<b>Total</b>	10	10	80	200		

**Add a new row**

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

(b) Refers to the location of the holding of origin. In case NUTS (2) code can not be used, region as defined in the programme by the Member State is requested

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Add a category

<b>Total Ducks and geese</b>	10	10	80	200					

<b>Grand Total Poultry + Ducks/Geese</b>	643	245	170	3 505					

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## 2.3 Sampling procedures, sampling periods and frequency of testing

(max. 32000 chars) :

Blood samples will be taken at farm level. Whenever possible samples will be taken at the slaughterhouse.

Sampling on poultry holdings included in the Program will be carried out once a year, during the period from 1 January to 31 December, 2012.

Bird samples shall be taken and submitted to the laboratory by authorised veterinarians.

Samples shall be taken from poultry during their production age or, in the case of fattening poultry, during the final fattening phase.

Samples may be taken during the vaccination of poultry against Newcastle disease (in accordance with the Annual Order).

Blood samples taken to check immunity against Newcastle disease may also be used for the surveillance of antibodies to AI virus subtypes H5 and H7.

At least 2 ml of blood (without anticoagulants) shall be taken.

During storage and transportation, the samples must be kept at a temperature not exceeding 4°C and they must be submitted to the national laboratory for avian influenza within 48 hours. If a sample cannot be transported to the national laboratory within this period, the blood serum must be separated, frozen, and sent to the laboratory in the frozen state.

Blood samples shall be sent to the following national laboratory:

Croatian Veterinary Institute

Poultry Centre

Heinzlova 55, Zagreb 10000

Contact telephones: 01/2441 392; 2441 394; 2440 211.

Fax: 01/2441 396.

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## 2.4. Laboratory testing : description of the laboratory tests used and follow up investigations

*Description of the used serological tests : (max 32000 chars )*

The laboratory testing of samples shall be carried out by Poultry Centre of the Croatian Veterinary Institute, Heinzelova 55, Zagreb, which is the National reference laboratory for AI.

Standard haemagglutination inhibition test for detection of AI antibodies of H5 and H7 subtypes is used according to the Council Directive 2005/94/EC, OIE Terrestrial Manual 2009 (Chapter 2.3.4.) and Diagnostic Manual for Avian Influenza (Official Gazette 99/2008). For H5 subtype for initial testing teal/England/7894/06 (H5N3) antigen is used. All positives are tested with chicken/Scotland/59 (H5N1) antigen to eliminate N3 cross reactive antibodies; for H7 subtype for initial testing turkey/England/647/77 (H7N7 ) antigen is used. All positives are tested with African starling/983/79 (H7N1) antigen to eliminate N7 cross reactive antibodies. If standard antigens are not supplied by the EU AI reference laboratory, following antigen are used instead: for H5 primary antigen is Av-R5371/Croatia/2007 (H5N1) and secondary antigen is Mallard/Croatia/1/2006 (H5N3), for H7 primary antigen is Av-R7152/Croatia/2007 (H7N2) and secondary antigen is Turkey/Italy/3560/1999 (H7N1).

The national reference laboratory shall:

- report all positive results to the Veterinary Directorate as soon as possible;
- report all negative results to the Veterinary Directorate once a month.

## 3. Description and implementation of the surveillance programme in wild birds

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**3.1.1 Designation of the central authority in charge of supervising and coordinating the departments responsible for implementing the programme and relevant collaborating partners (e.g. epidemiologists, ornithologists, nature bird observation and hunter organisations).**

(max. 32000 chars):

VD of the Ministry of Agriculture is the national competent authority responsible for supervision and coordination of implementation of the Program. Animal Health Sector of the Veterinary Directorate is responsible to develop the Program in coordination with AI laboratory expert as well as ornithologist from Croatian Veterinary Institute and Institute of Ornithology of the Croatian Academy of Sciences and Arts. Ornithologist take major part in sampling and identification of a species of wild bird.

The implementation of the 2013 Programme for AI in Wild Birds will be the responsibility of the VD of the Ministry of Agriculture and the following institutions will participate in the implementation of the Programme:

- Croatian Veterinary Institute – Poultry Centre;
- Institute of Ornithology of the Croatian Academy of Sciences and Arts.

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

(max. 32000 chars):

The spatial distribution of the locations at which the survey for influenza virus in wild birds will be conducted in 2013 is shown on the Map provided in the attachment. Locations identified on the Map are areas in the country where abundance and diversity of birds, particularly water birds is significantly higher than on other areas in the country. Also on these locations a large number of different species of migratory birds (i.e. the sites are an important crossing of migration routes or a mixing sites of passage migrants from various areas) are present. It is expected that on such sites expected mortality or morbidity of wild birds is higher. Active searching and monitoring of dead or moribund wild birds in particular those of target species on such locations will allow for timely detection of HPAI of subtypes H5N1 in wild birds.

The following locations are of the main interest for active searching of dead or moribund wild birds:

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## Fish ponds

1. «Draganic», Jastrebarsko
2. «Fish pond», Orlovac/Jelas Polje, Slavonski Brod
3. «Fish pond», Donji Miholjac
4. «Fish pond» Končanica, Daruvar
5. «Fish pond Grudnjak», 33515 Grudnjak
6. «Fish pond 1905» Našička Breznica, Našice
7. «Fish pond Poljana», Poljana / «Riba Garešnica», Garešnica
8. «Fish pond Česmi» (Narta, Siščani, Vukšinec, Blatnica) Dubrava, Kostanj bb / Narta
9. «Fish pond» Lipovljani, Novska

## Artificial water reservoirs

10. Varazdin - Drava
11. Donja Dubrava - Drava
12. Šoderica - Koprivnica

## Major wetland areas (nature parks)

13. Lonjsko Polje Nature Park
14. Kopački Rit Nature Park
15. Vransko Lake
16. Delta of the Neretva river

## Waste disposal area

17. Prudinec (Jakusevac, Zagreb)
18. Waste disposal area Kosambra, Porec.

Also taking into consideration experience during the occurrence of HPAI of subtype H5N1 in wild birds in Croatia in 2005 and 2006, the majority of dead birds submitted to the laboratory for testing were originating from these locations. On two locations mentioned above HPAI of subtype H5N1 was confirmed in wild birds in 2005 and 2006.

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## 3.1.3 Estimation of the local and/or migratory wildlife population

(max. 32000 chars) :

Estimation of size of wild birds populations in the country was done by ornithologist from Croatian Veterinary Institute and Institute of Ornithology of Croatian Academy of Sciences and Arts and it is summarized in the Table attached to this Program.

## 3.2 Design, criteria, risk factors and target population(3)

(max. 32000 chars) :

Passive surveillance scheme will be implemented in order to provide for laboratory investigation of moribund or wild birds found dead so to allow for timely detection of HPAI of subtypes H5N1 in wild birds. Active searching and monitoring of dead or moribund wild birds of target species will in particular be focused on locations where increased incidence of morbidity and/or mortality wild birds is expected to be observed easier than on other areas of the country (e.g. areas close to lakes and waterways, wetlands, ponds, sea, waste disposal area).

Target population are mainly migratory water birds that have been shown to be at a higher risk of becoming infected with and transmitting the HPAI H5N1 virus. Wild bird species to be targeted for sampling and testing will be those as listed in Part 2 of the Commission Decision 2010/367/EU, that are present in the country.

The working group (made up of ornithologists, virologists and epidemiologists) continuously monitor and provide for analysis of results of the Programme. The group also provide for instructions on sampling and submission of samples to the laboratory as well as information dissemination about



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water bird species that are the main target for passive surveillance for HPAI .

- (3) *Areas at risk (wetlands in particular where links with high density poultry populations), previous positive findings as referred to in point 2 of Part 1 of Annex II to Commission Decision 2010/367/EC should be taken into account and if possible complemented by a map.*

## 3.2.1 WILD BIRDS focussed on target species

*Investigations according to the surveillance programme set out in Part 2 of Annex II to Decision 2010/367/EC*

NUTS (2) code/region (a)	Wild birds to be sampled (b)	Total number of birds to be sampled	Estimated total number of samples to be taken for active surveillance (c)	Estimated total number of samples to be taken for passive surveillance
Croatia	Target species found dead or moribund <sup>+</sup>	720	0	1 440
<b>Total</b>	0	720	0	1 440
<b>Add a new row</b>				

(a) *Refers to the place of collection of birds/samples. In case NUTS 2 (Nomenclature of Territorial Units for Statistics) can not be used, region as defined in the programme by the Member State is requested. Please fill-in these values directly in the field.*

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

(c) *Voluntary, to be included for information purposes, not eligible for cofinancing.*



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## 3.3 Sampling procedures and sampling periods

max 32000 chars :

Sampling will be carried out in accordance with the Diagnostic Manual.

Samples from wild birds will be taken by skilled persons (mainly ornithologists) who are equipped for collection and transport of samples. The ornithologist shall determine the species and, if possible, the age and sex of each wild bird caught.

At least 5 sick/dead wild birds (or all if number of sick or dead wild birds is lower than 5) found on a location must be adequately sampled for virological examination (molecular detection /RT-PCR/ followed by virus isolation in case of positives).

In case adequate sampling can not be assured on the location, sick or dead wild birds must be collected as a whole and submitted to the AI laboratory. Cloacal and tracheal/oropharyngeal swabs and/or organs (brain, heart, lung, trachea, kidney and intestines) from wild birds found dead or moribund, must be taken.

An appropriately taken cloacal swab must be covered with a visible quantity of faeces.

If available, swabs may be placed in an antibiotic or specific virus transport medium so that they are fully immersed. Regardless of whether the swabs are submitted in a transport medium or not, they must be chilled.

If a transport medium is not available, the swab must be placed in a protective casing and submitted dry to the laboratory.

Samples must not be frozen unless absolutely necessary. If rapid transport (in transport medium at 4oC) is not guaranteed, the samples must be immediately frozen and then transported on dry ice to the laboratory.

Samples must be submitted to Croatian Veterinary Institute; Poultry Centre; Heinzelova 55, Zagreb 10000 (Contact telephones: 01/2441 392; 2441 394; 2440 211) as soon as possible.

It is expected that majority of samples from dead or moribund wild birds will be taken during spring and in particular autumn migrations when birds are grouping but also during winter. During these periods of the year ornithologist are more frequently present on locations of interest.

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

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max 32000 chars :

Detection of AI viruses is carried out fully in accordance with the Council Directive 2005/94/EC and Diagnostic Manual for Avian Influenza (Official Gazette 99/2008). Both, classical and molecular pathways are used, and combined if needed. For molecular pathway, EU AI reference laboratory recommended Real Time PCR methods for detection of influenza A matrix gene, Eurasian H5 avian influenza, Eurasian H7 avian influenza and N1 AIV gene detection are used. In addition, EU AI reference laboratory recommended One Step RT PCR for detection of H5 & H7 avian influenza & cleavage site sequencing protocols are used.

Pathotyping of H5 and H7 positive samples is based on sequencing of HA-cleavage site and putative amino acid motif.

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

max 32000 chars :

No evidence of HPAI viruses was observed in poultry during the last five years.  
Information of results of testing of poultry for AI from 2008 to 2011 is attached to this document.

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

(max. 32000 chars) :

No evidence of HPAI viruses was observed in wild birds during the last five years.  
Information of results of testing of AI in wild birds from 2008 to 2011 is attached to this document.

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The last occurrence of HPAI of H5N1 subtype was detected in wild birds in March 2006. Description of introduction and spread of avian influenza A (H5N1) subtype in Croatia including seventeen isolates identified during the period from October 2005 to March 2006, is provided in the paper (Savic et al, 2009) that will be sent by email SANCO-BO@ec.europa.eu.

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

(max. 32000 chars):

According to the Veterinary Act (Official Gazette No 41/2007, Articles 13 to 16) owner of the animals and any veterinarian is obliged to notify an infectious disease suspicion or a case. Disease notification procedures and forms are prescribed in details in the Ordinance on the notification of animal diseases (Official Gazette No 62/12, 114/12).

In case of notification of AI suspicion measures are applied in accordance with Ordinance on measures to control and eradicate avian influenza (Official Gazette No 131/06). This Ordinance is fully aligned with Council Directive 2005/94/EC of 20 December 2005 on Community measures for the control of avian influenza and repealing Directive 92/40/EEC; and the Ordinance on the diagnostic manual for avian influenza (Official Gazette No 99/08). This Croatian ordinance is fully aligned with Commission Decision 2006/437/EC of 4 August 2006 approving a Diagnostic manual for avian influenza as provided in Council Directive 2005/94/EC).

## 7. Costs

### 7.1 Detailed analysis of the costs

#### 7.1.1 Poultry

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(max. 32000 chars) :

Serological test: HI test for H5 and H7

- Number of samples per holding are calculated based on epidemiological unit.

10 samples are taken per epidemiological unit. Average number of epidemiological units per Laying hens is 2 and Chicken breeders holdings is 1,5 so sample size is increased by 2 and 1,5 times, respectively, on such holdings. According to the design and taking into account the number of epidemiological units it is expected that 3505 samples will be serologically tested within the frame of this Program.

- It is assumed that up to 1% of samples might need to be further investigated due to positive serological test results. In such cases additional sampling for the purpose of serological and virological investigation on a holding concerned will be performed. For that reason additional 300 serological tests is included in the costs.

- So overall expected number of serological tests to be carried out within the frame of this Program is 3805.

Virological tests

- RT PCR test: it is assumed that 1% of samples might need to be further investigated due to positive serological test results. In such cases additional sampling for the purpose of serological and virological investigation on a holding concerned will be performed.

For that reason 150 RT PCR tests, 20 virus isolation tests are included in the costs.

When calculating costs only costs eligible to be reimbursed and those applied in the Decision 2011/807 (for MS programmes in 2012) are considered.

## 7.1.2 Wild birds

(max. 32000 chars) :

Virological testing

- Search for dead or moribund wild birds of target species will be carried out on 18 locations (specified under point 3.1.2).

It is assumed that on each location 40 dead or moribund wild birds will be found and submitted for laboratory investigation during the 2013.

This will result with 720 wild birds to be sampled and 1440 samples (cloacal sample and tracheal or organ sample) to be virological tested.

- In addition 50 virus isolation tests are included in the costs.

When calculating costs only costs eligible to be reimbursed and those applied in the Decision 2011/807 (for MS programmes in 2012) are considered.

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## 7.2 Summary of the costs

### 7.2.1 Poultry surveillance

#### Detailed analysis of the cost of the programme - poultry

Laboratory testing	Number of tests	Unitary test cost (per method) in €	Total cost (€)
ELISA test	0	0	0
agar gel immune diffusion test	0	0	0
Haemagglutination-inhibition-test (HI) for H5 (specify number of tests for H5)	3 805	12	45660
Haemagglutination-inhibition-test (HI) for H7 (specify number of tests for H7)	3 805	12	45660
Virus isolation test	20	40	800
PCR test	150	20	3000
Other please specify here	0	0	0
<b>Add a new row</b>			



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## 7.2.2 Wild bird surveillance

### Detail analysis of the cost of the programme - wild birds

Laboratory testing				
Methods of laboratory analysis	Number of tests	Unitary test cost (per method) in €	Total cost (€)	
Virus isolation test	50	40	2000	
PCR test	1 440	20	28800	
Other please specify here	0	0	0	
				Add a new row
Sampling				
Number of samples	Unitary cost in €	Total cost (€)		
Samples	720	5	3600	
Other measures				

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Other please specify here	Number	Unitary cost in €	Total cost (€)
	0	0	0
			<b>Add a new row</b>
<b>Total wild birds Testing + Sampling + Other measures</b>	2210		34 400,00 €
<b>Grand Total Poultry + Wild birds</b>	13810		131 430,00 €

## Attachments

### IMPORTANT :

- 1) The more files you attach, the longer it takes to upload them .
- 2) This attachment files should have one of the format listed here : [.zip](#), [.jpg](#), [.jpeg](#), [.tiff](#), [.tif](#), [.xls](#), [.doc](#), [.bmp](#), [.pna](#).
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*Standard requirements for the submission of  
surveillance programmes for avian influenza  
version : 2.2*



**REPUBLIC OF CROATIA**  
**Ministry of Agriculture, Fisheries and Rural Development**  
**Veterinary Directorate**  
 10000 Zagreb, Miramarska 24  
 Phone:+385 1 61 06 207, Fax: +385 1 61 09 207

Table 1

No of Wild birds sampled by health status and tested in 2008											
Species (Lat)	No of wild birds found dead tested	No of hunted wild birds with observed clinical signs tested	No of hunted wild birds without clinical signs tested	No of injured wild birds tested	No of live wild birds with clinical signs tested	No of live wild birds without clinical signs tested	Total No of wild birds tested in passive surveillance	Total No of wild birds tested in active surveillance	Total No of wild birds sampled	Total No of wild birds tested	Total No of wild birds POSITIVE
Podiceps cristatus			1					1	1	1	
Phalacrocorax carbo			42			37		79	79	79	
Phalacrocorax aristotelis						2		2	2	2	
Phalacrocorax pygmaeus			1					1	1	1	
Ardea cinerea						49		49	49	49	
Egretta alba			1					1	1	1	
Ixobrychus minutus						2		2	2	2	
Ciconia ciconia	1						1		1	1	
Cygnus olor	20					56	20	56	76	76	
Anser anser			3					3	3	3	
Anas penelope			29					29	29	29	
Anas strepera			74					74	74	74	
Anas crecca			548			2		550	550	550	2
Anas platyrhynchos			504			99		603	603	603	
Anas acuta			5			1		6	6	6	
Anas querquedula			52			1		53	53	53	
Anas clypeata			34					34	34	34	
Anas discors			2					2	2	2	
Aythya ferina			53					53	53	53	
Aythya nyroca			3					3	3	3	
Aythya fuligula			5					5	5	5	
Haliaeetus albicilla	3						3		3	3	
Buteo buteo	2						2		2	2	
Phasianus colchicus	4						4		4	4	
Rallus aquaticus						6		6	6	6	
Porzana porzana						4		4	4	4	
Porzana parva						3		3	3	3	
Gallinula chloropus						17		17	17	17	
Fulica atra			89			4		93	93	93	
Himantopus himantopus						1		1	1	1	
Charadrius dubius						5		5	5	5	
Gallinago gallinago						3		3	3	3	
Tringa totanus						3		3	3	3	

Tringa glareola						33		33	33	33
Actitis hypoleucos						74		74	74	74
Calidris minuta						69		69	69	69
Calidris temminckii						2		2	2	2
Calidris ferruginea						8		8	8	8
Calidris alpina						6		6	6	6
Limicola falcinellus						3		3	3	3
Philomachus pugnax			2					2	2	2
Larus michahellis						453		453	453	453
Larus ridibundus			2					2	2	2
Sterna hirundo						2		2	2	2
Chlidonias hybridus			2					2	2	2
Columba livia domestica	12		8				12	8	20	20
Streptopelia decaocto	5						5		5	5
Delichon urbica	7						7		7	7
crow (species not identified)	1						1		1	1
owl (species not identified)	1						1		1	1
bird (species not identified)	5						5		5	5





REPUBLIC OF CROATIA

Ministry of Agriculture, Fisheries and Rural Development  
Veterinary Directorate

10000 Zagreb, Ul. Grada Vukovara 78. P.P. 1034

Telefon: 61 06 207, Telefax: 61 09 207

**Table 1: Report of poultry surveillance for AI in Croatia - First half of 2008**

Poultry category														
Chicken breeders			Laying hens			Broilers			Backyard poultry			Ducks		
Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of holdings	Number of positive holdings	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested
10	0	268	13	0	386	2	0	30	712	4*	6021	2	0	65

\* In six samples originating from three backyard holdings in the village of Draž (Osijek-baranja county), antibodies for H7 subtype of AI virus were found; furthermore antibodies for H7 subtype of AI virus were also found in one sample originating from one backyard holding in the village of Kraljeva Velika (Sisak-moslavina county). Due to above mentioned findings of antibodies for H7 subtype of AI virus, additional sampling (cloacal swabs) for virological testing was carried out in holdings in the village of Draž as well as Kraljeva Velika and its nearby villege of Piljenice. Total of 139 samples were taken in 20 backyard holdings in the village of Draž while in the villages of Kraljeva Velika and Piljenice 1204 samples from 92 backyard holdings were taken. All samples are tested by rRT-PCR for M gene. Influenza virus type A was not detected in any of the samples tested.

**ADDITIONAL INFORMATION:** During the year 2007, in intensive poultry production (farms) 683 laying hens, 231 broilers, 263 ducks, 180 geese, 66 turkeys, 228 pheasants, 6 quails and 14 ostriches were tested. Also in extensive production (backyard poultry) 14563 laying hens, 871 pheasant, 566 turkeys i 534 geese were tested. In all tested samples no antibodies for H5 and H7 subtypes of AI virus were found.

Andelko Gašpar

Director, CVO



REPUBLIC OF CROATIA  
Ministry of Agriculture, Fisheries and Rural Development  
Veterinary Directorate  
10000 Zagreb, Miramarska 24  
Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 1: Report of poultry surveillance for AI in Croatia -Second half of 2008**

Poultry category														
Chicken breeders			Laying hens			Broilers			Backyard poultry			Ducks		
Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of holdings	Number of positive holdings	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested
92	0	1081	23	0	264	19	0	305	1475	12	14688	16	0	395

\* In 7 samples originating from six backyard holdings in the village of Narta (Bjelovar-bilogora county) antibodies for H7 subtype of AI virus were found. In 1 sample originating from another backyard holding from the same village, antibodies for H5 were found. Furthermore, antibodies for H7 subtype of AI virus were also found in 5 samples originating from three backyard holdings in the village of Zokov Gaj (Virovitica-podravina county). Due to above mentioned findings of antibodies for H5 and H7 subtypes of AI virus, additional sampling (cloacal and tracheal swabs) for virological testing was carried out in holdings in the village of Narta (Bjelovar-bilogora county), Zovkov gaj (Virovitica-podravina county), Ribnjak (Osijek-baranja county) and Piljenice and Kraljeva Velika (Sisak-moslavina county). A total of 88 cloacal swabs were taken in 5 backyard holdings in the village of Narta, 796 cloacal and 796 tracheal swabs in 25 backyard holdings in the village of Zovkov Gaj, 70 cloacal and 70 tracheal swabs in 7 backyard holdings in the village of Ribnjak, 300 cloacal swabs in 29 backyard holdings in the village of Piljenice and 187 cloacal and 187 tracheal swabs in 20 backyard holdings in the village of Kraljeva Velika. All samples are tested by rRT-PCR for M gene. Influenza virus type A was not detected in any of the samples tested.

**ADDITIONAL INFORMATION:** During the year 2008, 40 dead domestic poultry were tested for presence of AI virus within the passive monitoring. All samples were tested by virus isolation in embryonated hen eggs. Influenza virus type A was not detected in any of the samples tested.

Sanja Šeparović

Director, CVO



REPUBLIC OF CROATIA

Ministry of Agriculture, Fisheries and Rural Development

Veterinary Directorate

10000 Zagreb, Miramarska 24

Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 1: Report of surveillance for AI in poultry in Croatia in 2009**

Poultry category																							
Chicken breeders			Laying hens			Broilers			Backyard poultry			Ducks			Geese			Pheasants			Turkeys		
Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of holdings	Number of positive holdings	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested
26	0	801	28	0	896	5	0	68	2017	2*	16768	8	0	420	1	0	50	2	0	36	3	0	243

\* Two seum samples, each from one of two different backyards in Jelisivac, sampled in May 2009 were positive for H7 subtype of AI antibodies. Due to above mentioned findings of antibodies, additional sampling (cloacal and pharyngeal swabs) for virological testing **was carried out in holdings in villages Jelisivac, Kraljeva Velika and its nearby village of Piljenice**. Total of 4774 samples were taken from 3156 poultry as shown in the table below. **All samples were tested by rRT-PCR for M gene. Influenza virus type A was not detected in any of the samples tested.**

Village(s)	Number of poultry sampled	Number of cloacal swabs	Number of tracheal swabs	Total number of samples
Jelisivac	1618	1618	1618	3236
Piljenice, Kraljeva Velika	1538	1538	0	1538
Total	3156	3156	1618	4774

**Sanja Šeparović, DVM, MSc**

**Director, CVO**





Fulica atra			51			5		56	56	56	
Himantopus himantopus											
Charadrius dubius						2		2	2	2	
Gallinago gallinago			1					1	1	1	
Tringa totanus											
Tringa glareola											
Actitis hypoleucos											
Calidris minuta											
Calidris temminckii											
Calidris ferruginea											
Calidris alpina			1					1	1	1	
Limicola falcinellus											
Philomachus pugnax											
Larus michahellis	1					395	1	395	396	396	
Larus ridibundus						385		385	385	385	1
Sterna hirundo						2		2	2	2	
Chlidonias hybridus						25		25	25	25	
Columba livia domestica	3		1			17	3	18	21	21	
Streptopelia decaocto											
Delichon urbica											
Anser albifrons			5					5	5	5	
Aythya sp. (species not identified)			3					3	3	3	
Mergus albellus			1					1	1	1	
Netta rufina	1		1				1	1	2	2	
Vanellus vanellus			3					3	3	3	
Anser sp. (species not identified)	1						1		1	1	
Puffinus yelkouan						84		84	84	84	
Calonectris diomedea						44		44	44	44	
Scolopax rusticola	1						1		1	1	
Larus canus						8		8	8	8	
Larus cachinnans						1		1	1	1	
crow (species not identified)											
owl (species not identified)											
bird (species not identified)											

Sanja Šeparović, DVM, MSc

Director, CVO



**REPUBLIC OF CROATIA**  
**Ministry of Agriculture, Fisheries and Rural Development**  
**Veterinary Directorate**  
 10000 Zagreb, Miramarska 24  
 Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 3**  
**Number of wild birds found positive on PCR test / virus isolation / serology test in 2009**

Species (Lat)	HPAI		LPAI		Other subtypes	Type of test			TOTAL
	HPAI H5/N1	HPAI H5	LPAI H5	LPAI H7		PCR	Virus isolation	Serology	
Anas platyrhynchos					H3N8		2		2
Anas platyrhynchos					non H5/H7	4			4
Anas crecca					H3N8		2		2
Anas crecca					H6N7		1		1
Anas crecca					H12N2		1		1
Anas crecca					non H5/H7	5			5
Anas penelope					non H5/H7	2			2
Larus ridibundus					H16N3		1		1

Sanja Šeparović, DVM, MSc

Director, CVO

Table: Date of hunting, locations and species of wild birds found positive in 2009

<b>Date of hunting</b>	<b>Location</b>	<b>Species</b>	<b>Subtypes</b>
February 22, 2009.	Jakuševac - Zagreb	Rječni galeb ( <i>Larus ridibundus</i> )	H16N3
September 5 and 6, 2009.	Našice	Kržulja ( <i>Anas crecca</i> )	H3N8
September 5 and 6, 2009.	Našice	Divlja patka ( <i>Anas platyrhynchos</i> )	H3N8
September 19, 2009.	Našice	Kržulja ( <i>Anas crecca</i> )	H3N8
September 26, 2009.	Našice	Divlja patka ( <i>Anas platyrhynchos</i> )	H3N8
September 26, 2009.	Lipovljani	Kržulja ( <i>Anas crecca</i> )	H6N7
October 17, 2009.	Našice	Kržulja ( <i>Anas crecca</i> )	non H5/H7
October 17, 2009.	Grudnjak	Kržulja ( <i>Anas crecca</i> )	non H5/H7
October 17, 2009.	Grudnjak	Divlja patka ( <i>Anas platyrhynchos</i> )	non H5/H7
October 17, 2009.	Grudnjak	Divlja patka ( <i>Anas platyrhynchos</i> )	non H5/H7
October 31, 2009.	Lipovljani	Kržulja ( <i>Anas crecca</i> )	H12N2
November 7, 2009.	Našice	Divlja patka ( <i>Anas platyrhynchos</i> )	non H5/H7
November 14, 2009.	Lipovljani	Divlja patka ( <i>Anas platyrhynchos</i> )	non H5/H7
November 15, 2009.	Lipovljani	Kržulja ( <i>Anas crecca</i> )	non H5/H7
November 28, 2009.	Končanica	Kržulja ( <i>Anas crecca</i> )	non H5/H7
November 28, 2009.	Grudnjak	Zviždara ( <i>Anas penelope</i> )	non H5/H7
November 28, 2009.	Našice	Kržulja ( <i>Anas crecca</i> )	non H5/H7
November 28, 2009.	Našice	Zviždara ( <i>Anas penelope</i> )	non H5/H7



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**Ministry of Agriculture, Fisheries and Rural Development**  
**Veterinary Directorate**  
 10000 Zagreb, Miramarska 24  
 Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 1**

**Number of wild birds by health status, sampled and tested in 2010**

Species (Lat)	No of wild birds found dead tested	No of hunted wild birds with observed clinical signs tested	No of hunted wild birds without clinical signs tested	No of injured wild birds tested	No of live wild birds with clinical signs tested	No of live wild birds without clinical signs tested	Total No of wild birds tested in passive surveillance	Total No of wild birds tested in active surveillance	Total No of wild birds sampled	Total No of wild birds tested	Total No of wild birds POSITIVE
Podiceps cristatus											
Phalacrocorax carbo											
Phalacrocorax aristotelis						25		25	25	25	
Phalacrocorax pygmaeus			1					1	1	1	
Ardea cinerea						33		33	33	33	
Egretta alba											
Ixobrychus minutus											
Ciconia ciconia	2						2		2	2	
Cygnus olor	11					88	11	88	99	99	
Anser anser			9					9	9	9	
Anas penelope			104					104	104	104	
Anas strepera			73					73	73	73	
Anas crecca			774					774	774	774	3
Anas platyrhynchos			443					443	443	443	
Anas acuta			19					19	19	19	
Anas querquedula			41					41	41	41	
Anas clypeata			33					33	33	33	
Anas discors								64	64	64	
Aythya ferina			64								
Aythya nyroca			102					102	102	102	
Aythya fuligula			10					10	10	10	
Haliaeetus albicilla	3					8	3	8	11	11	
Buteo buteo											
Phasianus colchicus											
Rallus aquaticus											
Porzana porzana											
Porzana parva											
Gallinula chloropus											
Fulica atra			160					160	160	160	
Himantopus himantopus						1		1	1	1	
Charadrius dubius											
Gallinago gallinago											
Tringa totanus						3		3	3	3	
Tringa glareola											
Actitis hypoleucos						12		12	12	12	
Calidris minuta						4		4	4	4	
Calidris temminckii											
Calidris ferruginea						2		2	2	2	

Calidris alpina					7		7	7	7	
Limicola falcinellus										
Philomachus pugnax										
Larus michahellis					266		266	266	266	
Larus ridibundus					737		737	737	737	
Sterna hirundo										
Chlidonias hybridus										
Columba livia domestica	2					2		2	2	
Streptopelia decaocto										
Delichon urbica										
Puffinus yelkouan					27		27	27	27	
Calonectris diomedea					2		2	2	2	
Larus canus					13		13	13	13	
Larus cachinnans					1		1	1	1	
Ardeola ralloides					11		11	11	11	
Bucephala clangula			2				2	2	2	
Charadrius alexandrinus					2		2	2	2	
Corvus frugilegus					2		2	2	2	
Egretta garzetta					10		10	10	10	
Larus argentatus					1		1	1	1	
Larus melanocephalus					1		1	1	1	
Cairina moschata	1					1		1	1	
Nycticorax nycticorax					6		6	6	6	
paserine (species not identified)					147		147	147	147	
Platalea leucorodia					60		60	60	60	
Tringa nebularia					2		2	2	2	
crow (species not identified)										
owl (species not identified)										
bird (species not identified)										

Sanja Šeparović, DVM, MSc

Director, CVO  
Zagreb, April 8, 2011



REPUBLIC OF CROATIA

Ministry of Agriculture, Fisheries and Rural Development

Veterinary Directorate

10000 Zagreb, Miramarska 24

Phone:+385 1 61 06 207, Fax: +385 1 61 09 207

Table 2

**No of wild birds found positive on PCR test / virus isolation / serology test in 2010**

Species (Lat)	HPAI		LPAI		Other subtypes	Type of test			TOTAL
	HPAI H5/N1	HPAI H5	LPAI H5	LPAI H7		PCR	Virus isolation	Serology	
<i>Anas crecca</i>					H3N8		2		2
<i>Anas crecca</i>			1			1			1

Sanja Šeparović, DVM, MSc

Director, CVO  
Zagreb, April 8, 2011



**REPUBLIC OF CROATIA**  
**Ministry of Agriculture, Fisheries and Rural Development**  
**Veterinary Directorate**  
 10000 Zagreb, Miramarska 24  
 Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 1: Report of surveillance for AI in poultry in Croatia in 2010**

Poultry category																	
Chicken breeders			Laying hens			Broilers			Backyard poultry			Ducks			Turkeys		
Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of holdings	Number of positive holdings	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested
21		957	98		1852	3		60	2329	6*	20901	5		268	4		140

\* Three serum samples from backyard in village Batina and one serum sample from a backyard in village Draž (both from Osijek-baranja county) sampled in April 2010 were found positive for H7 subtype of AI antibodies. Furthermore eight serum samples from the same backyard in Batina and one serum sample from the same backyard flock in Draž were tested positive in September 2010 for H7 subtype of AI antibodies. One serum sample from a backyard in village Zokov Gaj (Virovitica-podravina county) sampled in May 2010 was positive for H5 subtype of AI antibodies and also two serum samples from the same backyard in Zokov Gaj sampled in November 2010 were tested positive for H5 subtype of AI antibodies. In addition three serum samples, from three backyards in Veliko Svinjičko village (Sisak-moslavina county) sampled in May 2010 were tested positive for H7 subtype of AI antibodies. In reference with these findings additional testing of 4180 backyard poultry from the above mentioned villages was carried out. Results of the additional testing are shown in the Table below.

**Table 2**

Virological testing for AI in villages where H5/H7 seropositive backyard poultry was found								
Village(s)	Sampling time	Number of poultry sampled	Number of cloacal swabs	Number of tracheal swabs	Total number of samples	AI positive (M gene rRT-PCR)	H5 positive (H5 gene rRT-PCR)	H5 positive (H5 gene rRT-PCR)
Batina, Draž	May 2010	1324	1324	1324	2648	3	0	0
Veliko Svinjičko	May 2010	210	210	210	420	1	0	0
Zokov Gaj	June 2010	663	663	663	1326	2	0	0
Batina, Draž	September 2010	1303	1303	1303	2606	5	0	0
Zokov Gaj	January 2011	680	680	680	1360	1	0	0
Total		4180	4180	4180	8360	12	0	0

Sanja Šeparović, DVM MSc

Director, CVO  
 Zagreb, April 8, 2011











**REPUBLIC OF CROATIA**  
**Ministry of Agriculture**  
**Veterinary Directorate**  
 10000 Zagreb, Miramarska 24  
 Phone: +385 1 61 06 207, Fax: +385 1 61 09 207

**Table 1: Report of surveillance for AI in poultry in Croatia in 2011**

	Poultry category																	Total No. of samples tested	
	Chicken breeders			Laying hens			Broilers			Backyard poultry			Ducks			Turkeys			
	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of holdings	Number of positive holdings	Number of blood samples tested	Number of farms	Number of positive farms	Number of blood samples tested	Number of farms	Number of positive farms		Number of blood samples tested
First half	19	0	548	47	0	867	2	0	38	1236	4	12028	1	0	50	0	0	0	
Second half	22	0	708	57	0	1258	3	0	48	1295	2	12382	1	0	50	3	0	27	
<b>Samples/year</b>			<b>1256</b>			<b>2125</b>			<b>86</b>			<b>22410</b>			<b>100</b>			<b>27</b>	<b>26004</b>

Two serum samples, each from a different backyard in Zokov Gaj (Virovitičko-podravaska County) sampled in May 2011 were positive for H5 subtype of AI antibodies.

Three serum samples from two different backyards in Veliko Svinjičko (Sisačko-moslavačka County) sampled in May 2011 were positive for H7 subtype of AI antibodies.

A serum sample from backyard poultry in Bapska and seven serum samples from one backyard poultry holding in Opatovac (both from Vukovarsko-srijemska County) sampled in September 2011 were positive for H7 subtype of AI antibodies.

Subsequently 1923 poultry from the seropositive villages were sampled and tested for presence of the virus as shown in the table below.

**Table 2 - 2011**

Virological testing for AI in villages where H5/H7 seropositive backyard poultry was found								
Village(s)	Sampling time	Number of poultry sampled	Number of cloacal swabs	Number of tracheal swabs	Total number of samples	AI positive (M gene rRT-PCR)	H5 positive (H5 gene rRT-PCR)	H7 positive (H7 gene rRT-PCR)
Veliko Svinjičko	6. June 2011	270	270	270	540	0	0	0
Zokov Gaj	8-10. June 2011	624	624	624	1248	0	0	0
Opatovac	29. Sept. 2011	372	372	372	744	0	0	0
Bapska	4-7. Oct. 2011	657	657	657	1314	0	0	0
<b>Total</b>		<b>1923</b>	<b>1923</b>	<b>1923</b>	<b>3846</b>	<b>0</b>	<b>0</b>	<b>0</b>



Ministry of Agriculture  
Veterinary Directorate

# AVIAN INFLUENZA

SAMPLING FORM AND FORM TO COLLECT INFORMATION WILD BIRDS FOUND  
DEAD OR MORIBUND AT THE SITE  
ON THE DAY OF SAMPLING

Date of sampling: ...../...../.....

Reference number of the Form(s) under which the samples have been sent for testing:.....

Name of the site/location:.....

Address:.....

Place.....Municipality.....

County.....

## 1. TYPE OF SAMPLE

- Cloacal swab
- Tracheal/oropharyngeal swab
- Faeces
- Organs (brain, heart, lung, kidney, piece of intestine)

## 2. WILD BIRD SPECIES FROM WHICH SAMPLES HAVE BEEN TAKEN

### List 1: Higher risk species of wild birds

LATIN NAME	CROATIAN NAME (English name)	Number of birds sampled	Age or age category
<i>podicipediformes</i> <b>gnjurci</b>			
<i>Podiceps cristatus</i>	Ćubasti gnjurac (Great Crested Grebe)		
<i>Tachybaptus ruficollis</i>	Mali gnjurac (Little Grebe)		
<i>anseriformes</i> <b>guščarice</b>			
<i>Anser brachyrhynchus</i>	Kratkokljuna guska (Pink-footed Goose)		
<i>Anser erythropus</i>	Mala guska (Lesser White-fronted Goose)		
<i>Branta leucopsis</i>	Bjelolica guska (Barnacle Goose)		
<i>Branta bernicla</i>	Grivasta guska (Brent Goose)		
<i>Branta ruficollis</i>	Crvenovrata guska (Red-breasted Goose)		
<i>Branta canadensis</i>	Kanadska guska (Canada Goose)		
<i>Marmaronetta angustirostris</i>	Pjegava patka (Marbled Teal)		
<i>Cygnus olor</i>	Crvenokljuni labud (Mute Swan)		
<i>Cygnus cygnus</i>	Žutokljuni labud (Whooper Swan)		
<i>Cygnus columbianus</i>	Mali labud (Bewick's Swan)		
<i>Anser fabalis</i>	Guska glogovnjača (Bean Goose)		
<i>Anser albifrons albifrons</i>	Lisasta guska (Greater White-fronted Goose)		
<i>Anser anser</i>	Siva guska (Greylag Goose)		
<i>Anas penelope</i>	Zviždara (Eurasian Wigeon)		
<i>Anas crecca</i>	Kržulja (Common Teal)		
<i>Anas clypeata</i>	Patka žličarka (Northern Shoveler)		
<i>Anas acuta</i>	Patka lastarka (Northern Pintail)		
<i>Anas platyrhynchos</i>	Divlja patka (Mallard)		
<i>Anas querquedula</i>	Patka pupčanica (Garganey)		
<i>Aythya nyroca</i>	Patka njorka (Ferruginous Duck)		
<i>Aythya ferina</i>	Glavata patka (Common Pochard)		
<i>Aythya fuligula</i>	Krunata patka (Tufted Duck)		
<i>Netta rufina</i>	Patka gogoljica (Red-crested Pochard)		

<i>gruiformes</i> ždralovke			
<i>Rallus aquaticus</i>	Kokošica (Water Rail)		
<i>Porzana porzana</i>	Riđa štijoka (Spotted Crane)		
<i>Porzana parva</i>	Siva štijoka (Little Crane)		
<i>Gallinula chloropus</i>	Mlakuša (Moorhen)		
<i>Fulica atra</i>	Liska (Common Coot)		
<i>charadriiformes</i> šljukarice			
<i>Vanellus vanellus</i>	Vivak (Northern Lapwing)		
<i>Pluvialis apricaria</i>	Troprsti zlatar (Eurasian Golden Plover)		
<i>Limosa limosa</i>	Crnorepa muljača (Black-tailed Godwit)		
<i>Philomachus pugnax</i>	Pršljivac (Ruff)		
<i>Larus canus</i>	Burni galeb (Common Gull)		
<i>Larus ribibundus</i>	Riječni galeb (Black-headed Gull)		
<i>Larus michahellis</i>	Galeb klaukavac (Yellow-legged Gull)		
<i>Larus minutus</i>	Mali galeb (Little Gull)		
<i>Larus cachinnans</i>	Pontski galeb (Caspian Gull)		

**Bird species living in proximity to domestic poultry and having a high probability of coming in contact with domestic poultry:**

**List 2.1: Bird species intimately associated with poultry production in Europe**

LATIN NAME	CROATIAN NAME (English name)	Probability of contact with domestic poultry	Number of birds sampled	Age or age category
<i>Anser anser domesticus</i>	Domaća guska (Domestic Goose)	High		
<i>Anas platyrhynchos</i>	domesticirana Divlja patka (Domestic Mallard)	High		
<i>Cairina moschata</i>	Mošusna patka (Domestic Muscovy Duck)	High		
<i>Columba livia</i>	Divlji golub (Feral Pigeon)	High		
<i>Passer domesticus</i>	Vrabac (House Sparrow)	High		

**List 2.2: Species of wild birds which may come in contact with domestic poultry**

LATIN NAME	CROATIAN NAME (English name)	Probability of contact with domestic poultry	Number of birds sampled	Age or age category
<i>Pluvialis apricaria</i>	Troprsti žalar (Eurasian Golden Plover)	Low		
<i>Vanellus vanellus</i>	Vivak (Northern Lapwing)	Medium		
<i>Larus ridibundus</i>	Riječni galeb (Black- headed Gull)	High		
<i>Larus canus</i>	Burni galeb (Common Gull)	High		
<i>Larus argentatus</i>	Srebrnasti galeb (Herring Gull)	Low		
<i>Columba palumbus</i>	Golub grivnjaš (Wood Pigeon)	High		
<i>Streptopelia decaocto</i>	Gugutka (Eurasian Collared Dove)	High		
<i>Phasianus colchicus</i>	Fazan (Ring-necked Pheasant)	High		
<i>Alauda &amp; Galerida spp</i>	ševe (Larks species)	Low		
<i>Oenanthe spp</i>	trepteljke (Wheatears)	Low		
<i>Motacilla spp</i>	pastirice (Wagtails)	Medium		
<i>Turdus pilaris</i>	Drozd bravenjak (Fieldfare)	Medium		
<i>Turdus iliacus</i>	Mali drozd (Redwing)	Medium		

<i>Pica pica</i>	Svraka (Black-billed Magpie)	High
<i>Corvus monedula</i>	Čavka (Eurasian Jackdaw)	High
<i>Corvus frugilegus</i>	Gačac (Rook)	Medium
<i>Corvus corone cornix</i>	Siva vrana (Carrion Crow)	Medium
<i>Corvus corax</i>	Gavran (Raven)	Low
<i>Sturnus vulgaris</i>	Čvorak (Starling)	High
<i>Sturnus unicolor</i>	Crni čvorak (Spotless Starling)	High
<i>Passer domesticus</i>	Vrabac (House Sparrow)	High
<i>Passer montanus</i>	Poljski vrbac (Eurasian Tree Sparrow)	High
<i>fringillidae</i>	zebovke (Finches)	Medium
<i>Miliaria, Emberiza spp</i>	strnadice (Buntings)	Medium

**List 2.3: Species of wild birds which may come in contact with domestic poultry in water areas**

LATIN NAME	CROATIAN NAME (English name)	Probability of contact with domestic poultry	Number of birds sampled	Age or age category
<i>Egretta spp.</i>	čaplje(Siva i danguba) (Egrets)	Low		
<i>Ardea and other spp.</i>	čaplje(Bijela i Mala bijela) (Herons)	Medium		
<i>Phalacrocorax carbo</i>	Veliki vranac (Cormorant)	Medium		
<i>Ciconia spp.</i>	rode (Storks)	Low		
<i>Cygnus olor</i>	Crvenokljuni labud (Mute Swan)	Medium		
<i>Anser anser</i>	Siva guska (Greylag Goose)	Medium		
<i>Branta canadensis</i>	Kanadska guska (Canada Goose)	Low		
<i>Anas &amp; Aythya spp.</i>	patke (Ducks)	Low		
<i>Anas platyrhynchos</i>	Divlja patka (Mallard)	High		
<i>Fulica atra</i>	Liska (Common Coot)	Medium		
<i>Gallinula chloropus</i>	Mlakuša (Moorhen)	Medium		



### 3. ESTIMATED NUMBER OF WILD BIRDS AT THE SITE AT THE TIME OF SAMPLING

LATIN NAME	CROATIAN NAME (English name)	ESTIMATED NUMBER OF BIRDS AT THE SAMPLING SITE
<i>podicipediformes</i> <b>gnjurci</b>		
<i>Podiceps cristatus</i>	Ćubasti gnjurac (Great Crested Grebe)	
<i>Tachybaptus ruficollis</i>	Mali gnjurac (Little Grebe)	
<i>anseriformes</i> <b>gušćarice</b>		
<i>Anser brachyrhynchus</i>	Kratkokljuna guska (Pink-footed Goose)	
<i>Anser erythropus</i>	Mala guska (Lesser White-fronted Goose)	
<i>Branta leucopsis</i>	Bjelolica guska (Barnacle Goose)	
<i>Branta bernicla</i>	Grivasta guska (Brent Goose)	
<i>Branta ruficollis</i>	Crvenovrata guska (Red-breasted Goose)	
<i>Branta canadensis</i>	Kanadska guska (Canada Goose)	
<i>Marmaronetta angustirostris</i>	Pjegava patka (Marbled Teal)	
<i>Cygnus olor</i>	Crvenokljuni labud (Mute Swan)	
<i>Cygnus cygnus</i>	Žutokljuni labud (Whooper Swan)	
<i>Cygnus columbianus</i>	Mali labud (Bewick's Swan)	
<i>Anser fabalis</i>	Guska glogovnjača (Bean Goose)	
<i>Anser albifrons albifrons</i>	Lisasta guska (Greater White-fronted Goose)	
<i>Anser anser</i>	Siva guska (Greylag Goose)	
<i>Anas penelope</i>	Zviždara (Eurasian Wigeon)	
<i>Anas crecca</i>	Kržulja (Common Teal)	
<i>Anas clypeata</i>	Patka žličarka (Northern Shoveler)	
<i>Anas acuta</i>	Patka lastarka (Northern Pintail)	
<i>Anas platyrhynchos</i>	Divlja patka (Mallard)	
<i>Anas querquedula</i>	Patka pupčanica (Garganey)	
<i>Aythya nyroca</i>	Patka njorka (Ferruginous Duck)	
<i>Aythya ferina</i>	Glavata patka (Common Pochard)	
<i>Aythya fuligula</i>	Krunata patka (Tufted Duck)	
<i>Netta rufina</i>	Patka gogoljica (Red-crested Pochard)	

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*gruiformes* **ždralovke**

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<i>Rallus aquaticus</i>	Kokošica (Water Rail)
<i>Porzana porzana</i>	Riđa štijoka (Spotted Crane)
<i>Porzana parva</i>	Siva štijoka (Little Crane)
<i>Gallinula chloropus</i>	Mlakuša (Moorhen)
<i>Fulica atra</i>	Liska (Common Coot)

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*charadriiformes* **šljukarice**

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<i>Vanellus vanellus</i>	Vivak (Northern Lapwing)
<i>Pluvialis apricaria</i>	Troprsti zlatar (Eurasian Golden Plover)
<i>Limosa limosa</i>	Crnorepa muljača (Black-tailed Godwit)
<i>Philomachus pugnax</i>	Pršljivac (Ruff)
<i>Larus canus</i>	Burni galeb (Common Gull)
<i>Larus ribibundus</i>	Riječni galeb (Black-headed Gull)
<i>Larus michahellis</i>	Galeb klaukavac (Yellow-legged Gull)
<i>Larus minutus</i>	Mali galeb (Little Gull)
<i>Larus cachinnans</i>	Pontski galeb (Caspian Gull)

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**4. COMMERCIAL DOMESTIC POULTRY PRODUCTION FACILITIES LOCATED WITHIN A 10-KILOMETER RADIUS AROUND THE WILD BIRD SAMPLE COLLECTION SITE**

NAME OF THE FACILITY	DISTANCE (km)
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	
6. _____	
7. _____	

8. \_\_\_\_\_

9. \_\_\_\_\_

**5. THE METHOD OF KEEPING THE POULTRY REFERRED TO IN ITEM 4**

Poultry house: YES / NO Authorisation number .....

Standardised poultry house: YES / NO

Ventilation system in poultry houses referred to in item 4:

- Natural
- Natural with forced (mechanical) ventilation
- Artificial (exclusively mechanical ventilation)

Poultry free-range system (open-air runs for poultry): YES / NO m<sup>2</sup>.....

Protective nets preventing the entry of wild birds: YES / NO

Possibility of contact with wild birds: YES / NO

**6. DATA ON MORTALITY AND MORBIDITY OF WILD BIRDS AT THE LOCATION**

1. There has been an unusually large number of deaths among wild birds in the last three months YES / NO
2. Approximate number of wild birds that have died (if any) \_\_\_\_\_
3. Birds found dead were sent for laboratory testing: YES / NO
4. Name of the laboratory to which the birds were sent for testing:  
\_\_\_\_\_

**7. PIG FARMS**

There is a pig farm in proximity to the sample collection site: YES / NO

Name of the person who took the samples and collected data on the samples:

\_\_\_\_\_

Signature of the authorised /official veterinarian:

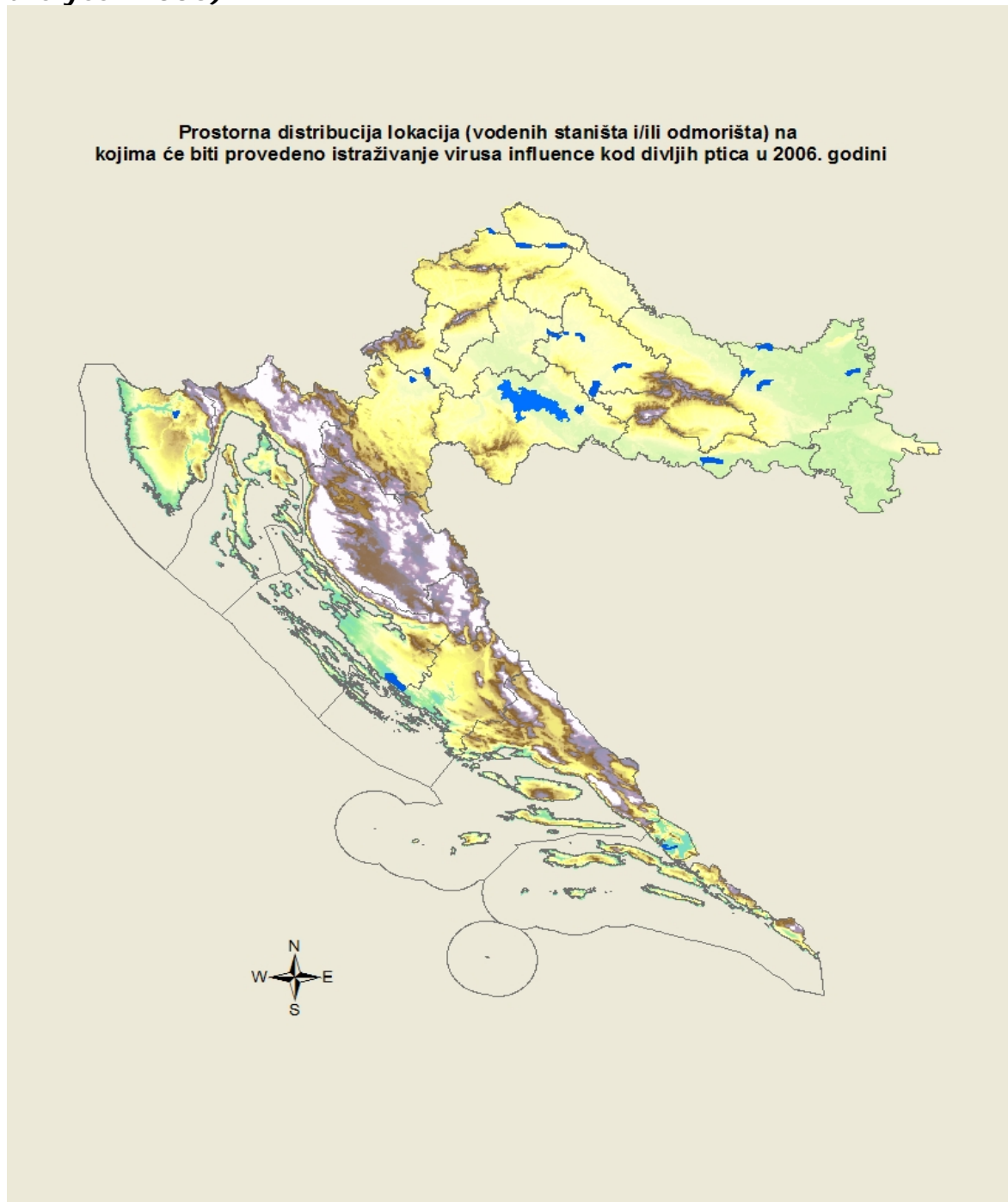
\_\_\_\_\_

Authorisation number \_\_\_\_\_

Date of submission of the samples to the authorised laboratory (Poultry Centre of the CVI):

\_\_\_\_\_

**Map 1: Spatial distribution of locations/sites at which the 2013 passive surveillance for avian influenza in wild birds will be conducted (the same locations are included in AI surveillance from the year 2006)**





REPUBLIC OF CROATIA  
MINISTRY OF AGRICULTURE  
Veterinary Directorate

### Avian influenza - SAMPLE SUBMISSION FORM

Date of sampling: _____		Name of the facility: _____	
Poultry keeper: _____		Address: _____ Telephone: _____	
Place: _____		Municipality: _____ County: _____	
Poultry owner: _____		Address: _____ Telephone: _____	
Veterinarian who took the samples: _____		<b>Type of holding: <u>in housing / free-range / backyard flocks</u></b>	
Veterinarian submitting the samples to the CVI _____		Date of submission _____	
Authorised veterinary organisation: _____		Telephone: _____	

Type of production: laying hens ; free range laying hens ; chicken breeders ; turkeys breeders ; fattening turkey ; ducks ; geese ; ostriches ; farmed game birds (pheasants, partridges and quails)  other (specify) \_\_\_\_\_

Number of sub-units (from which the sampled poultry originate): \_\_\_\_\_

Purpose of sampling (tick as appropriate):

- Active surveillance (under the 2013 Programme)
- First suspicion of AI in this area  New suspicion of AI in the protection/surveillance zone
- Sampling of poultry at the time of killing  Sampling of poultry at the time of slaughter
- Sampling of poultry before their removal/sending for emergency slaughter
- Sampling before the lifting restrictions  Sampling of sentinel poultry
- Other (please specify) \_\_\_\_\_

#### SAMPLE IDENTIFICATION

No.	Sample identification mark	Poultry species	Poultry category	No.	Sample identification mark	Poultry species	Poultry category
1.				11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Tests required (tick as appropriate): Serological testing   
Virological testing

Signature of authorised person  
who took the samples

\_\_\_\_\_

