



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

SANCO/3887/2008

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

Survey programme for Avian Influenza in poultry and wild birds

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

Sweden

* in accordance with Commission Decision 90/424/EEC

Application from Sweden concerning co-financing of the survey programme for avian influenza in poultry and wild birds in accordance with Commission Decision 2007/268/EC

1. Identification of the programme

Member State: SWEDEN

Disease: AVIAN INFLUENZA

Year of implementation: 2009

Reference of this document: 33-2741/07

Contact (name, phone, fax, e-mail): Christina Thörn, +46 36 15 59 25, +46 36 15 61 00, christina.thorn@sjv.se

Date sent to the Commission: April 30, 2008

2. Description of the surveillance programme in poultry

2.1 Objectives, general requirements and criteria

The objectives of the surveillance programme in poultry are (from Commission Decision 2007/268/EC):

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

The programme will run from the 1st of January to the 31st of December 2009. All laboratory testing will be performed at the National Veterinary Institute (SVA), Uppsala, Sweden. All results, virus isolates etc. will be sent to the Community Reference Laboratory (CRL) for Avian Influenza in accordance with Decision 2007/268/EC. The Swedish Board of Agriculture (SBA) will report to the Commission in accordance with the requirements set up in this decision. The Commission will be informed of any changes in the Swedish poultry population or production that will lead to consequences for the survey. Sweden will also provide additional information on request from the Commission.

2.2 Design and implementation

A risk assessment, based on demographic data and biosecurity levels, as well as the possibility to collect samples of good quality from the populations present in Sweden at a reasonable cost have been considered when deciding on the sampling strategy. Blood samples will be taken according to points B and C of Annex I to Decision 2007/268/EC (see Tables 2.2.1 and 2.2.2).

Samples will always be accompanied by referrals specially designed for the AI-survey 2009. It is mandatory for the person taking the samples to fill in information on name and address of the animal owner and the farm, species sampled, identity of the flock, date of sampling, place of sampling and name of the person taking the samples. This information will be filed at SVA.

All positive results will be further investigated at the holding and the Commission and the CRI will be informed of all results in accordance with point B of Annex I to Decision 2007/268/EC.

Laying hens

According to the Swedish register of laying hens the total number of holdings is 373 in April 2008. A total of around 3.2 million laying hens were slaughtered in 2007. Since then one small slaughterhouse has ceased with slaughter of this population and now laying hens are slaughtered at only one Swedish slaughterhouse. Birds from the southern and central parts of Sweden are sent to this slaughterhouse. All organic holdings sending their hens for slaughter will be sampled. In addition, the first laying hen flock slaughtered each week will be sampled regardless of housing system and biosecurity level. Blood samples will be taken from ten birds in each of these in total 60 flocks (from different holdings) at slaughter.

Broilers

Only the small-scale broiler production will be included in the sampling programme through sampling at small-scale slaughterhouses. These holdings have less developed hygiene and biosecurity than the large commercial broiler holdings. The small-scale slaughterhouses have estimated that birds from approximately 18 holdings with small-scale broiler production will be slaughtered in 2008. Blood samples will be taken from ten birds from each holding.

Turkeys

All Swedish turkey slaughterhouses will be involved in the sampling so that all holdings that send their birds for slaughter will be sampled at slaughter. This will result in approximately 22 sampled holdings. Blood samples will be collected from ten birds per holding.

Geese

Geese in Sweden are mainly bred and slaughtered in the most southern parts of the country. The majority of these birds are slaughtered during October and early November. During that period sampling will take place at all slaughterhouses that slaughter geese and all Swedish holdings that send birds to these slaughterhouses will be sampled. Approximately 16 holdings will be sampled with 40 samples per holding. When less than 40 birds are slaughtered all birds will be sampled. Since 2006, when HPAI H5N1 circulated in Europe, the number of holdings with

geese have decreased in Sweden. Therefore, in addition to sampling at slaughterhouses, a number of geese holdings that do not send their birds to any of the slaughterhouses participating in the survey will be sampled by a veterinarian taking samples at the holding. These, maximum five holdings, will be selected from the Swedish poultry register based on their flock size and production.

Ducks

The Swedish commercial production of ducks has for many years been small with only one producer on the market (100 % of the 20 700 ducks slaughtered in 2006). In 2007 this producer suffered from salmonella infection in the ducks and so far no information on when the production will start again is available. Should this or any other producer slaughter ducks at a slaughterhouse in 2009, 40 samples per holding will be taken. If less than 40 birds are slaughtered all birds will be sampled.

In addition to sampling at slaughterhouses duck holdings that do not send their birds to any of the slaughterhouses participating in the survey will be sampled by a veterinarian taking the samples at the holding. These, maximum five holdings, will be selected from the Swedish poultry register based on their flock size and production.

Ratites

The total number of ratite farms registered in the Swedish poultry register is 26 (April, 2008). Some of these are small holdings with only 5-10 birds. Ratites are slaughtered at three Swedish slaughterhouses (in 2007, 680 ostriches were slaughtered). All holdings that send birds to slaughter will be sampled through sampling at the slaughterhouses. This will result in approximately 12 sampled holdings. Ten blood samples will be collected from each holding, in flocks with less than 10 birds all birds will be sampled.

Breeders

Samples taken in parent flocks of laying hens, broilers and turkeys within the Poultry Health Control Programme will be used for the AI survey. We plan to analyze samples from one flock per holding (n=48) from the last sampling occasion (near slaughter) within the programme, ten samples from each flock.

Farmed game birds

Mallards (*Anas platyrhynchos*), pheasants (*Phasianus colchicus*) and partridges (*Perdix perdix*) are the most common farmed game birds in Sweden. Sometimes more than one species are present on the holding. All holdings with breeders of mallards or pheasants will be sampled, most of them in the spring before the breeding season starts. Veterinarians will take the blood samples at the holdings. From mallards (6 holdings in 2008) 40 blood samples and from pheasants (23 holdings in 2008) ten blood samples per flock/holding will be taken. Based on a risk assessment partridges have been excluded from the sampling programme since they are a small population bred under conditions with low risk for an introduction of AIV.

Table 2.2.1 POULTRY HOLDINGS (except ducks and geese) TO BE SAMPLED

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of broilers (small scale production)

The total number of holdings to be sampled is an estimate based on information from all Swedish slaughterhouses slaughtering broilers from small-scale production.

NUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	2	2	10	40	H1 (H5 and H7)
SE21	0	0	-	-	-
SF22	13	13	10	260	H1 (H5 and H7)
SE23	3	3	10	60	H1 (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
Total	18	18	10	360	H1 (H5 and H7)

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of fattening turkeys

The total number of holdings to be sampled is an estimate based on information from all Swedish slaughterhouses slaughtering fattening turkeys.

NUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	4	4	10	80	HI (H5 and H7)
SE21	1	1	10	20	HI (H5 and H7)
SE22	14	14	10	280	HI (H5 and H7)
SE23	2	2	10	40	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	1	1	10	20	HI (H5 and H7)
SE33	0	0	-	-	-
Total	22	22	10	440	HI (H5 and H7)

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of chicken breeders

NUIS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	17	17	10	340	HI (H5 and H7)
SE21	5	5	10	100	HI (H5 and H7)
SE22	15	15	10	300	HI (H5 and H7)
SE23	7	7	10	140	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
Total	44	44	10	880	HI (H5 and H7)

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of turkey breeders

NUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	0	0	-	-	-
SE21	0	0	-	-	-
SE22	0	0	-	-	-
SE23	2	2	10	40	H1 (H5 and H7)
SE31	2	2	10	40	H1 (H5 and H7)
SE32	0	0	-	-	-
SE33	0	0	-	-	-
Total	4	4	10	80	H1 (H5 and H7)

Serological investigation according to point B of Annex I in SANCO/10007/2007 rev. 2 on holdings of laying hens

The total number of holdings to be sampled per NUTS (2) code is estimates based on the sampling in 2006 and 2007.

NUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	11	1	10	20	HI (H5 and H7)
SE12	113	17	10	340	HI (H5 and H7)
SE21	57	7	10	140	HI (H5 and H7)
SE22	61	13	10	260	HI (H5 and H7)
SE23	102	19	10	380	HI (H5 and H7)
SE31	15	2	10	40	HI (H5 and H7)
SE32	7	1	10	20	HI (H5 and H7)
SE33	7	0	-	-	-
Total	373	60	10	1200	HI (H5 and H7)

Scrological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of rarties

The total number of holdings to be sampled is an estimate based on information from all Swedish slaughterhouses slaughtering rarties.

NUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	5	5	10	100	HI (I15 and H7)
SF21	2	2	10	40	HI (H5 and I17)
SF22	3	3	10	60	HI (H5 and H7)
SF23	1	1	10	20	HI (H5 and H7)
SE31	1	1	10	20	HI (H5 and I17)
SU32	0	0	-	-	-
SE33	0	0	-	-	-
Total	12	12	10	240	HI (I15 and H7)

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of farmed feathered game (pheasants)

NCUTS (2) code	Total number of holdings	Total number of holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	6	6	10	120	HI (H5 and H7)
SE21	1	1	10	20	HI (H5 and H7)
SE22	13	13	10	260	HI (H5 and H7)
SF23	2	2	10	40	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	1	1	10	20	HI (H5 and H7)
Total	23	23	10	460	HI (H5 and H7)

Table 2.2.2 DUCK AND GESE HOLDINGS TO BE SAMPLED according to point C of Annex I to Commission Decision 2007/268/EC

Serological investigation

The total number of duck and geese holdings to be sampled is an estimate based on information from all Swedish slaughterhouses slaughtering these birds.

In addition to the sampling at slaughterhouses, five duck and five geese holdings will be selected for sampling from the Swedish poultry register as described above.

NUTS (2) code	Total number of duck/geese/mallard holdings	Total number of duck/geese/mallard holdings to be sampled	Number of samples per holding	Total number of tests to be performed per method	Methods of laboratory analysis
SE11	0	0	-	-	-
SE12	1/1/3	1/1/3	40	400	ID (H5 and H7)
SE21	0	0	-	-	-
SE22	1/14/4	1/14/4	40	1 520	ID (H5 and H7)
SE23	0/1/0	0/1/0	40	80	ID (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
SE11-SE33	5/5/0	5/5/0	40	800	ID (H5 and H7)
Total	35	35	40	2 800	ID (H5 and H7)

2.3 Laboratory testing; description of the laboratory tests used

All laboratory investigations will be carried out in accordance with the avian influenza diagnostic manual (Commission Decision 2006/437/EC) and point D of Annex I to Decision 2007/268/EC. A haemagglutination inhibition test (for subtypes H5 and H7) will be used for the serological analysis.

Cloacal and oropharyngeal swabs for virological analysis will be taken in seropositive holdings. The methods described by Stomka *et al*, 2007. (*Avian Diseases*: Vol. 51, No. s1, pp. 227-234) will be used when analyzing these samples.

3. Description of the programme in wild birds:

3.1 Objectives, general requirements and criteria

Sweden wants to continue a surveillance of many different species of free-living migratory birds to identify the risk of spreading the low and high pathogenic AI viruses to domestic poultry.

In the case that HPAI H5 or H7 is detected in wild birds, the surveillance in wild birds found dead will be enhanced to determine how spread the virus is.

Testing of the samples will be carried out at the National Veterinary Institute and at Kalmar University.

The Commission will be informed of any changes that will lead to consequences for the survey. Sweden will also provide additional information on request from the Commission.

3.2 Design and implementation

To ensure optimal flow of information the Swedish Board of Agriculture has a working group on wild birds. In that working group people from bird watching institution, the Swedish environmental protection agency, The National Veterinary Institute and the Lunds and Kalmar University are discussing issues concerning the surveillance. Sampling in the active surveillance is focused on spring and autumn migration. Sampling in the passive surveillance is ongoing the whole year.

Table 3.2.1 WILD BIRDS – investigation according to Annex II

NUT (2) code ^a	Wild birds to be sampled	Total number of samples active survey	Total number of samples passive survey
Territory of Sweden	All species found diseased or dead		500 x 2
SE21	Mainly waterfowl	1500 x 2	
SE23	Mainly waterfowl	1500 x 2	
SE33	Mainly waterfowl	500 x 2	
Total		7000	1000

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

In March 2006 highly pathogenic avian influenza virus subtype H5 was isolated from a mallard on a Swedish game farm. Both before and after this case AIV has never been detected in Swedish poultry.

During the previous years, within the EU surveillance programme for AIV, the following numbers of holdings have been tested, all with negative results:

	2003	2004	2005	2006	2007
Laying hens	60	60	60	60	60
Turkeys	26	26	35	26	23
Ducks	13 ¹	21	16	2	3
Geese	30 ¹	25	22	28	16
Broilers	2 ²	0	0	7 ³	17 ³
Ratites	0	11	7	15	10
Breeding hens (parents)	0	40	40	40	40
Breeding turkeys (parents)	0	0	5	4	4

^a Refers to the place of collection of birds/samples

¹ Swabs for virus isolation.

² Organically produced broilers.

³ Small-scale production.

In 2007, farmed game birds were included in the Swedish AI surveillance programme for the first time. Holdings with breeders of mallards (n=7) and pheasants (n=23) were sampled. Three holdings with mallard breeders were serologically positive against AIV subtype H5 and H7. Further investigations in these holdings, by PCR-analysis of cloacal and oropharyngeal swabs, were all negative (no AIV detected on the holding).

4.1 Measures included in the programme for surveillance in poultry

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

The Swedish Board of Agriculture (SBA) is the authority under the Ministry of Agriculture with mandate to decide about sampling, disease surveillance, eradication of epizootic diseases etc. SBA also compensates the farmer for economic losses due to decisions taken in accordance with the act on epizootic diseases.

The National Veterinary Institute (SVA) is also an authority under the Ministry of Agriculture and the National Reference Laboratory for Avian Influenza. SVA has been appointed by SBA to organize and perform the surveillance programme for avian influenza in poultry since 2002. The Department of Animal Health and Antimicrobial Strategies is responsible for the programme at SVA and handles the planning of the programme, administration, giving instructions to veterinarians involved in the sampling, sending out sampling material etc. The Department of Virology, Immunobiology and Parasitology performs the analyses.

The National Food Administration (SLV, an authority under the Ministry of Agriculture) has official veterinarians employed regionally. These veterinarians will be responsible for the sampling at the slaughterhouses.

4.1.2 System in place for the registration of holdings

The different Swedish poultry registers are briefly presented in the table below. All registers are administered by SBA.

Register	Population covered	EU-legislation	National legislation
The Swedish poultry register	All commercial poultry holdings (mandatory)	Council Dir. 2005/94/EC Council Dir. 92/66/EEC	Statens jordbruksverks föreskrifter (2006:11) om registrering av anläggningar med fjäderfän
The Swedish register of laying hens	All holdings with a capacity of 350 laying hen and sell eggs for consumption	Council Dir. 1999/74/EC Commission Dir. 2002/4/EC	Statens jordbruksverks föreskrifter (2003:20) om registrering av anläggningar med värphöns
Register of	All holdings with	Council Dir	Statens jordbruksverks

breeding establishments	breeders for broiler, laying hen and turkey production	1990/539/EEC	föreskrifter (1994:45) om obligatorisk hälsoövervakning av fjäderfå
OMNIS	All poultry holdings approved within the voluntary and preventive salmonella control programme	n.a.	Statens jordbruksverks föreskrifter (1995:79) om frivillig förebyggande salmonellakontroll av fjäderläbesättningar

4.1.3 Data on vaccination carried out

Vaccination of poultry against avian influenza is prohibited in Sweden. In 2006 vaccination with Nobilis® Influenza H5N2 (Intervet) was introduced in Swedish zoos after approval of the vaccination programme by the Commission (Com. Dec. 2006/474/EEC). In 2008 six of these zoos will continue with the vaccination programme.

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

Until spring 2006 High pathogenic avian influenza virus (HPAI) has never been detected in wild birds in Sweden. Previous surveillance since autumn 2002 at the bird conservation station at Ottenby, Öland, has demonstrated that HPAI was not present during that period. Mallards are the species that most samples come from.

At the National Veterinary Institute surveillance in all diseased or dead wild bird species is ongoing since a long period (exceeding the last five years). On birds found dead or diseased in the wild necropsy is performed and if changes are observed that lead to a suspicion concerning AI or ND further tests are performed. At the moment all birds found dead are tested for AI.

HPAI has been detected in 65 wild birds during spring 2006. Low pathogenic Avian influenza virus (LPAI) has been found in Mallards with a quite high prevalence but has been found even in several other species like for example Black headed gull, Mew gull, Bean goose, and Teal.

During 2007 no case of HPAI has been detected in Sweden in wild birds. LPAI has been found mostly in Mallards and in a few Eurasian wigeons in the active surveillance during the autumn 2007.

5.1 Measures included in the programme for wild birds survey

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

The programme will be supervised of the Swedish Board of Agriculture in close cooperation with a working group on wild birds and the National Veterinary Institute. The working group on wild birds consists of ornithologists as well as epidemiologists.

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

The passive surveillance will be carried out in the whole area of Sweden.

The active surveillance will be carried out in Ottenby, Hornborgasjön, and Umedeltat.

Ottenby is located in Kalmar County. Ottenby is on the flight line of many coastal species. Especially during the migration period it is possible to take samples even from a high number of birds if necessary. The main brooding place for these species is Sweden, but they also brood in Russia and Finland.

Hornborgasjön is located in Västra Götaland County. It is one of the lakes with a wide variety of birdlife. It is located in a highly agricultural area in proximity to poultry farms.

Umedeltat is located in Västerbotten County. Umedelta is a river delta located in the northern part of Sweden. Even there are not that many poultry farms in Västerbotten county umedeltat is well known for a high number of water fowl and shorebirds breeding and mixing in that area.

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

The Swedish ornithologists work with a report system called svalan were the movements of migratory birds can be followed each year. The board of agriculture and the National Veterinary Institute are using this reporting system to continuously update the wild birds situation. <http://www.artportalen.se/birds/default.asp>

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

Avian influenza is included in the Swedish act on epizootic diseases (Epizootilagen, SFS 1999:657). According to this act both animal owners and veterinarians are obliged to report suspect cases of avian influenza. This applies to both clinical and laboratory suspicions. If AI is suspected or confirmed on a farm, measures will be taken according to Council Directive 2005/94/EC.

7 Costs

7.1 Detailed analysis of the costs

7.1.1 Poultry – Se attachment

7.1.2 Wild birds

7.2 Summary of the costs

7.2.1 Poultry surveillance

Measures eligible for co-financing surveillance in poultry			
Methods of laboratory analysis	Number of tests to perform per method	Unitary test cost (per method)	Total cost
Serological pre-screening ¹	0	0	0
Haemagglutination-inhibition-test (HI) for H5/H7 ²	3 230 (H5) + 3 230 (H7)	60 SEK	387 600 SEK
Virus isolation test	5	545 SEK	2 725 SEK
PCR test	410	320 SEK	131 200 SEK
Sequencing	5	1 200 SEK	6 000 SEK
Other measures to be covered	Specify activities		
Sampling			124 153 SEK
Administration			80 000 SEK
Others (sampling equipment transport, etc.)			8 000 SEK
Total			739 678 SEK

¹ Specify the laboratory test to be used.

² Specify number of tests for H5 and for H7.

7.2.2

Wild bird survey

Measures eligible for co-financing survey wild birds			
Methods of laboratory analysis	Number of tests to perform per method	Unitary test cost (per method)	Total cost
Serological pre-screening	0	0	0
Haemagglutination-inhibition-test (HI) for H5/H7	0	0	0
Virus isolation test	60	545 SEK	32 700 SEK
AIV matrix PCR test	8000	300 SEK	2 400 000 SEK
H5/H7 PCR test	1200	300 SEK	360 000 SEK
Sequencing	600	1200 SEK	720 000 SEK
Other measures to be covered	Specify activities		
Sampling	Taking 3500 samples on live birds	800 SEK	2 800 000 SEK
Others (sampling equipment transport, etc.)	Transport of birds in the passive surveillance	400 SEK	200 000 SEK
Total			6 512 700 SEK

7.1 Detailed analysis of the costs:

7.1.1 Poultry

Definition of the cost	Amount
Administration	
Planning, administration of the programme, information, reporting, follow up etc.	80.000 SEK
Sampling	
Sampling equipment (tubes, plastic bags, envelopes etc)	6.200 SEK
Transport of sampling equipment	1.800 SEK
Collecting samples at slaughterhouses	41.353 SEK
Collecting samples on farms	82.800 SEK
Analyses	
Haemagglutination-inhibition tests	387.600 SEK
Virological analyses of seropositive holdings	139.925 SEK
Total	739.678 SEK

Break down for the laboratory and sampling costs

Haemagglutination-inhibition tests

Serology	No. of	Samples/	Total no. of	Laboratory costs	Collecting samples
	holdings	flock	Samples		
Layers	60	10	600	72.000 SEK	17.850 SEK
Broilers	18	10	180	21.600 SEK	5.355 SEK
Turkeys	22	10	220	26.400 SEK	6.545 SEK
Breeders	48	10	480	57.600 SEK	0 SEK
Ducks	7	40	280	33.600 SEK	11.243 SEK
Geese	21	40	840	100.800 SEK	17.490 SEK
Ratites	12	10	120	14.400 SEK	3.570 SEK
Game birds (mallards)	7	40	280	33.600 SEK	14.490 SEK
Game birds (pheasant)	23	10	230	27.600 SEK	47.610 SEK
Total			3230	387.600 SEK	124.153 SEK

post

HI-test (H5 and H7)	120 SEK
Sampling at slaughterhouses SEK/hour	595 SEK
Sampling on farms SEK/holding	2 070 SEK

Virological analysis of seropositive holdings

Estimated no of seropositive holdings: 2 game bird farms (mallards) and one duck farm

Samples/holding: 60 cloacal- and 60 traceal swabs

Estimated no of holdings positive in matrix PCR: 1 game bird farm (mallards)

Estimated no of holdings positive in H5 or H7 PCR: 1 game bird farm (mallards)

Test	Cost/TEST	No of holdings	Samples/ holding	No of samples	Laboratory costs
M-gene PCR	320 SEK	3	120	360	115.200 SEK
H5-PCR	320 SEK	1	25	25	8.000 SEK
H7-PCR	320 SEK	1	25	25	8.000 SEK
Sequencing	1.200 SEK	1	5	5	6.000 SEK
Virus isolation	545 SEK	1	5	5	2.725 SEK
Total					139.925 SEK

