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Unit 04 - Veterinary Control Programmes

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*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 2010 by Commission Decision 2009/883/EC

Sweden

* in accordance with Council Decision 2009/470/EC

Application from Sweden concerning co-financing of the survey programme for avian influenza in poultry and wild birds in 2010

1. Identification of the programme

Member State: SWEDEN

Disease: AVIAN INFLUENZA

Year of implementation: 2010

Reference of this document: 33-1789/09

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2. Description of the surveillance programme in poultry

2.1 Objectives, general requirements and criteria

The objectives of the surveillance programme in poultry are (in accordance with 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 2010. 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 major 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. For detailed information please see Tables 2.2.1 and 2.2.2.

Samples will always be accompanied by referrals specially designed for the AI-survey 2010. 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 CRL 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 381 in April 2009. In 2008 a total of around 3.1 million laying hens were slaughtered at the only slaughterhouse in Sweden that slaughters laying hens. 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 per flock from a total of 60 flocks (from different holdings) at slaughter.

Broilers

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. Also two producers with organic broiler production will be included in the sampling programme. These birds are slaughtered at the same slaughterhouse as the laying hens and will be sampled there. Birds from approximately 25 holdings with broilers (small-scale or organic production) will be slaughtered in 2010. 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 25 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 25 holdings will be sampled at slaughter. Forty

samples per holding will be taken but when less than 40 birds are slaughtered all birds will be sampled.

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. In 2007 this producer suffered from salmonella infection in the ducks and so far no information on when the production eventually will start again is available. In 2008 only 1 000 ducks from other producers were slaughtered at other slaughterhouses. Should any producer slaughter ducks at a slaughterhouse in 2010, 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 27 (April, 2009). Some of these are small holdings with only 5-10 birds. Ratites are slaughtered at three Swedish slaughterhouses (in 2008, 700 ostriches were slaughtered). All holdings that send birds to slaughter will be sampled through sampling at the slaughterhouses. This will result in approximately 10 sampled holdings. Ten blood samples will be collected from each holding, when less than 10 birds are slaughtered 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=38 in 2009) 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 by veterinarians who will take the blood samples at the holdings. From mallards (6 holdings in April, 2009) 40 blood samples and from pheasants (23 holdings in April, 2009) 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

Please note that all figures are estimates. The Swedish avian influenza surveillance programme are partly focusing on poultry categories that are raised on farms that have their birds as a side-line and therefore are very sensitive to the market situation.

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of broilers (small-scale and organic 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	1	1	10	20	-
SE12	1	1	10	20	HI (H5 and H7)
SE21	0	0	-	-	-
SE22	21	21	10	420	HI (H5 and H7)
SE23	2	2	10	40	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
	25	25	10	500	HI (H5 and H7)

* The total number of holdings to be sampled and their geographical distribution are estimates based on information from all Swedish slaughterhouses slaughtering broilers from small-scale and organic production and experiences from previous surveillance programmes of avian influenza in poultry.

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of 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	2	2	10	40	HI (H5 and H7)
SE21	1	1	10	20	HI (H5 and H7)
SE22	19	19	10	380	HI (H5 and H7)
SE23	3	3	10	60	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
	25	25	10	500	HI (H5 and H7)

* The total number of holdings to be sampled and their geographical distribution are estimates based on information from all Swedish slaughterhouses slaughtering fattening turkeys and experiences from previous surveillance programmes of avian influenza in poultry.

Serological investigation according to point B of Annex I to Commission Decision 2007/268/EC on holdings of chicken 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	11	11	10	220	HI (H5 and H7)
SE21	4	4	10	80	HI (H5 and H7)
SE22	16	16	10	320	HI (H5 and H7)
SE23	3	3	10	60	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
	34	34	10	680	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	HI (H5 and H7)
SE31	2	2	10	40	HI (H5 and H7)
SE32	0	0	-	-	-
SE33	0	0	-	-	-
	4	4	10	80	HI (H5 and H7)

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

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	2	10	40	HI (H5 and H7)
SE12	112	18	10	360	HI (H5 and H7)
SE21	59	7	10	140	HI (H5 and H7)
SE22	65	10	10	200	HI (H5 and H7)
SE23	103	20	10	400	HI (H5 and H7)
SE31	15	3	10	60	HI (H5 and H7)
SE32	8	0	-	-	-
SE33	8	0	-	-	-
	381	60	10	1 200	HI (H5 and H7)

* The geographical distribution of the holdings to be sampled is an estimate based on previous sampling within the surveillance programme of avian influenza in poultry.

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

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	2	2	10	40	HI (H5 and H7)
SE22	2	2	10	40	HI (H5 and H7)
SE23	1	1	10	20	HI (H5 and H7)
SE31	1	1	10	20	HI (H5 and H7)
SE32	0	0	-	-	-
SE33	0	0	-	-	-
	10	10	10	200	HI (H5 and H7)

* The total number of holdings to be sampled and their geographical distribution are estimates based on information from all Swedish slaughterhouses slaughtering ratites and experiences from previous surveillance programmes of avian influenza in poultry.

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

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	80	HI (H5 and H7)
SE21	0	0	-	-	-
SE22	14	14	10	260	HI (H5 and H7)
SE23	3	3	10	60	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	1	1	10	20	HI (H5 and H7)
	23	23	10	460	HI (H5 and H7)

Table 2.2.2 Duck, geese and mallard breeder holdings to be sampled according to point C of Annex I to Commission Decision 2007/268/EC

NUTS (2) code	Total number of holdings	Total number of holdings (duck/geese/mallard) 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	1/1/2	1/1/2	40	320	HI (H5 and H7)
SE21	0	0	-	-	-
SE22	2/23/4	2/23/4	40	2320	HI (H5 and H7)
SE23	0/1/0	0/1/0	40	80	HI (H5 and H7)
SE31	0	0	-	-	-
SE32	0	0	-	-	-
SE33	0	0	-	-	-
SE11-SE33	5/5/0	5/5/0	40	800	HI (H5 and H7)
	44	44	40	3 520	HI (H5 and H7)

* The total number of holdings of ducks and geese to be sampled and their geographical distribution are estimates based on information from all Swedish slaughterhouses slaughtering these poultry categories and experiences from previous surveillance programmes of avian influenza in poultry. In addition to the sampling at slaughterhouses, approximately five duck and five geese holdings (SE11-SE33) will be selected for sampling from the poultry register as described above.

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 Slomka *et al*, 2007, (*Avian Diseases*: Vol. 51, No. s 1, 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
SE11-33 (territory of Sweden)	All species found diseased or dead		500 x 2
SE21	Mainly waterfowl	1 000 x 2	
SE23	Mainly waterfowl	1 000 x 2	
Total		4 000	1 000

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

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

Within the EU surveillance programme for AIV, the following numbers of holdings have been tested during the years 2004-2008.

	2004	2005	2006	2007	2008
Laying hens	60	60	60	60	65
Turkeys	26	35	26	23	23
Ducks	21	16	2	3	8
Geese	25	22	28	16	30
Broilers ¹	0	0	7	17	28
Ratites	11	7	15	10	10
Breeding hens (parents)	40	40	40	40	42
Breeding turkeys (parents)	0	5	4	4	2
Game birds (mallards)	0	0	0	7	6
Game birds (pheasants)	0	0	0	23	23

¹ Small-scale production.

Before 2006 AIV had never been detected in Swedish poultry. In March 2006 highly pathogenic avian influenza virus subtype H5 was isolated in samples, taken due to findings in the wild bird population, from a mallard on a Swedish game farm. There were no clinical signs in the flock. Since 2006 no findings of low pathogenic H5 or H7 or high pathogenic strains of AIV have been done in Swedish poultry flocks. Several investigations have been performed, though, due to positive serological findings within the surveillance programme.

In 2007, farmed game birds were included in the Swedish AI surveillance programme for the first time. Holdings with breeders of mallards and pheasants 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).

In 2008 antibodies against AIV subtype H5 were found in blood samples from two holdings with farmed mallard breeders and one holding with breeder geese. Cloacal and oropharyngeal swabs were taken for further investigations of these holdings:

- Swabs taken from mallards on one of the game bird farms were negative for AIV when these were analyzed by PCR (no AIV detected on the holding).
- From the other mallard flock AIV subtype H4N6 was isolated.
- Swabs from breeder geese were found to be PCR-positive for AIV but H5 and H7 negative. No virus could be isolated.

4.1 Measures included in the programme for surveillance in poultry

4.1.1 Designation of the central authority charged with 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 are 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 fjäderfån
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 breeding establishments	All holdings with breeders for broiler, laying hen and turkey	Council Dir 1990/539/EEC	Statens jordbruksverks föreskrifter (1994:45) om obligatorisk hälsoövervakning

	production		av fjäderfä
OMNIS	All poultry holdings approved within the voluntary and preventive salmonella control programme	n.a.	Statens jordbruksverks föreskrifter (2007:78) om frivillig och förebyggande kontroll avseende salmonella hos fjäderfä

4.1.3 Data on vaccination

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 2009 six Swedish 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 six 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 2008 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 2008.

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 and Hornborgasjön.

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.

5.1.3 Estimation of the local and / or migratory wildlife population

The Swedish ornithologists work with a report system called svalan where the movements of migratory birds can be followed each year. The Swedish 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 – See attachment

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	0	0	0
Haemagglutination-inhibition-test (HI) for H5/H7	3 570 (H5) + 3 570 (H7)	73 SEK	521 220 SEK
Virus isolation test	10	660 SEK	6 600 SEK
PCR test	100	300 SEK	30 000 SEK
PCR test ¹	180	450 SEK	81 000 SEK
PCR test ²	120	675 SEK	81 000 SEK
Sequencing	10	1 200 SEK	12 000 SEK
Other measures to be covered	Specify activities		
Sampling			131 356 SEK
Others (sampling equipment transport, administration etc.)	-	-	155 700 SEK
Total			1 018 876 SEK

¹ Pooled samples.

² Pooled samples analysed out of normal working hours.

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	30	660 SEK	19 800 SEK
AIV matrix PCR test	5 000	300 SEK	1 500 000 SEK
H5/H7 PCR test	1 000	300 SEK	300 000 SEK
Sequencing	400	1200 SEK	480 000 SEK
Other measures to be covered	Specify activities		
Sampling	Taking 2 000 samples on live birds	1 200 SEK	2 400 000 SEK
Others (sampling equipment transport, etc.)	Transport of birds in the passive surveillance	440 SEK	220 000 SEK
Total			4 919 800 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.	150.000 SEK
Sampling	
Sampling equipment (tubes, plastic bags, envelopes etc)	5.000 SEK
Transport of sampling equipment	700 SEK
Collecting samples at slaughterhouses	50626 SEK
Collecting samples on farms	80 730 SEK
Analyses	
Haemagglutination-inhibition tests	521.220 SEK
Virological analyses of seropositive holdings	210.600 SEK
Total	1 018 876 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	87.600 SEK	18.750 SEK
Broilers	25	10	250	36.500 SEK	7.813 SEK
Turkeys	25	10	250	36.500 SEK	7.813 SEK
Breeders	38	10	380	55.480 SEK	0 SEK
Ducks	8	40	320	46.720 SEK	11 756 SEK
Geese	30	40	1200	175.200 SEK	22 069 SEK
Ratites	10	10	100	14.600 SEK	3.125 SEK
Game birds (mallards)	6	40	240	35.040 SEK	12 420 SEK
Game birds (pheasants)	23	10	230	33.580 SEK	47 610 SEK
Total			3570	521.220 SEK	131 356 SEK

post

HI-test (H5 and H7)	146 SEK
Sampling at slaughterhouses SEK/hour	625 SEK
Sampling on farms SEK/holding	2070 SEK

Virological analysis of seropositive holdings

Estimated no of seropositive holdings: 3 holdings

Estimated no of holdings with only one poultry category: 1 holding (holding no. 1)

Estimated no of holdings with two poultry categories: 2 holdings (holding no 2 and 3).

One of these to be analysed out of normal working hours (+50% cost/test) (holding no 3).

Samples/holding: 60 cloacal- and 60 traceal swabs per poultry category. Swabs from one bird will be pooled for the M-gene PCR

Estimated no of holdings positive in matrix PCR: 2 holdings (25 swabs per holding)

Estimated no of holdings positive in H5 or H7 PCR: 2 holdings (5 swabs per holding)

Test	Cost/test	No of holdings	Samples/ holding	No of tests	Laboratory costs
M-gene PCR holding no. 1	450 SEK	1	120	60	27.000 SEK
M-gene PCR holding no. 2	450 SEK	1	240	120	54.000 SEK
M-gene PCR holding no. 3	675 SEK	1	240	120	81.000 SEK
H5-PCR	300 SEK	2	25	50	15.000 SEK
H7-PCR	300 SEK	2	25	50	15.000 SEK
Sequencing	1.200 SEK	2	5	10	12.000 SEK
Virusisolation	660 SEK	2	5	10	6.600 SEK
Total					210.600 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.	150.000 SEK
Sampling	
Sampling equipment (tubes, plastic bags, envelopes etc)	5.000 SEK
Transport of sampling equipment	700 SEK
Collecting samples at slaughterhouses	50626 SEK
Collecting samples on farms	80 730 SEK
Analyses	
Haemagglutination-inhibition tests	521.220 SEK
Virological analyses of seropositive holdings	210.600 SEK
Total	1 018 876 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	87.600 SEK	18.750 SEK
Broilers	25	10	250	36.500 SEK	7.813 SEK
Turkeys	25	10	250	36.500 SEK	7.813 SEK
Breeders	38	10	380	55.480 SEK	0 SEK
Ducks	8	40	320	46.720 SEK	11 756 SEK
Geese	30	40	1200	175.200 SEK	22 069 SEK
Ralites	10	10	100	14.600 SEK	3.125 SEK
Game birds (mallards)	6	40	240	35.040 SEK	12 420 SEK
Game birds (pheasants)	23	10	230	33.580 SEK	47 610 SEK
Total			3570	521.220 SEK	131 356 SEK

post

HI-test (H5 and H7)	146 SEK
Sampling at slaughterhouses SEK/hour	625 SEK
Sampling on farms SEK/holding	2070 SEK

Virological analysis of seropositive holdings

Estimated no of seropositive holdings: 3 holdings

Estimated no of holdings with only one poultry category: 1 holding (holding no. 1)

Estimated no of holdings with two poultry categories: 2 holdings (holding no 2 and 3).

One of these to be analysed out of normal working hours (+50% cost/test) (holding no 3).

Samples/holding: 60 cloacal- and 60 traceal swabs per poultry category. Swabs from one bird will be pooled for the M-gene PCR

Estimated no of holdings positive in matrix PCR: 2 holdings (25 swabs per holding)

Estimated no of holdings positive in H5 or H7 PCR: 2 holdings (5 swabs per holding)

Test	Cost/test	No of holdings	Samples/ holding	No of tests	Laboratory costs
M-gene PCR holding no. 1	450 SEK	1	120	60	27.000 SEK
M-gene PCR holding no. 2	450 SEK	1	240	120	54.000 SEK
M-gene PCR holding no. 3	675 SEK	1	240	120	81.000 SEK
H5-PCR	300 SEK	2	25	50	15.000 SEK
H7-PCR	300 SEK	2	25	50	15.000 SEK
Sequencing	1.200 SEK	2	5	10	12.000 SEK
Virusesolation	660 SEK	2	5	10	6.600 SEK
Total					210.600 SEK