

Official Surveillance and Disease Reporting Systems

**SURVEILLANCE AND RISK ANALYSIS WORKSHOP
16 FEBRUARY 2015**

**DR SUNELLE STRYDOM
EPIDEMIOLOGY SUB-DIRECTORATE
DIRECTORATE ANIMAL HEALTH**



**agriculture,
forestry & fisheries**

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Surveillance: Avian Influenza

- Avian influenza (any strain) is a controlled animal disease in terms of the Animal Diseases Act, 1984 (Act No 35 of 1984)
- DAFF has an extensive surveillance program in place for all domesticated ostriches, commercial and non-commercial chickens, to ensure that the introduction of the AI virus into the country is detected without delay and to provide guarantees to trading partners to facilitate trade of poultry and poultry products
- Appendix 9 of the HPNAI Contingency Plan stipulates the protocol for compulsory NAI surveillance in South Africa
- Each property is to be tested serologically at least **twice a year**
- Provincial Veterinary Services must supply 6 monthly surveillance summary reports to the National Director Animal Health during January and July of each year



Surveillance: Avian Influenza...

- All testing is to be carried out under official control:
 - **Prior notification of PSVS of intended sampling**
 - Direct
 - Indirect by auditing
 - Regulation 12B as amended, pertaining to the Animal Diseases Act, 1984 (Act No 35 of 1984) – person or lab doing diagnostic testing or screening for a controlled/notifiable animal disease shall be registered with the director
- Commercial chicken and ostrich operations are responsible for the costs of testing
- Serological testing designed to detect presence/absence of exposure to H5 and H7 AI at >10% prevalence with 95% confidence in every epi unit on each farm or site



Surveillance: Avian Influenza

Non-commercial chickens*

- As many randomly selected epi units as possible with a minimum of 50 flocks/units per Province
- Haemagglutination Inhibition or Commercial ELISA tests
- Number of birds to be tested depends on size of each epi group on every farm:

Size of epidemiological group	No. of birds to be sampled
≤ 10	10
≤ 20	16
≤ 50	22
≤ 100	25
≤ 200	27
≤ 900	28
> 900	29



Epidemiological calculation of sample size: A Field Manual for Veterinarians, Cannon and Roe 1982

TABLE 1(b)

95%

- (i) SAMPLE SIZE REQUIRED FOR DETECTING DISEASE
(ii) CONFIDENCE LIMITS FOR NUMBER OF POSITIVES

population size (N)	(i) percentage of diseased animals in population (d/N) O R											
	50%	40%	30%	25%	20%	15%	10%	5%	2%	1%	0.5%	0.1%
10	4	5	6	7	8	10	10	10	10	10	10	10
20	4	6	7	9	10	12	16	19	20	20	20	20
30	4	6	8	9	11	14	19	26	30	30	30	30
40	5	6	8	10	12	16	21	32	36	40	40	40
50	5	6	8	10	12	16	22	35	40	50	50	50
60	5	6	8	10	12	16	23	38	55	60	60	60
70	5	6	8	10	13	17	24	40	62	70	70	70
80	5	6	8	10	13	17	24	42	68	79	80	80
90	5	6	8	10	13	17	25	43	70	87	90	90
100	5	6	9	10	13	17	25	45	76	86	100	100
120	5	6	9	10	13	18	26	47	86	111	120	120
140	5	6	9	11	13	18	26	48	92	124	139	140
160	5	6	9	11	13	18	27	49	97	136	157	160
180	5	6	9	11	13	18	27	50	101	146	174	180
200	5	6	9	11	13	18	27	51	105	155	190	200
250	5	6	9	11	14	18	27	53	112	175	228	250
300	5	6	9	11	14	18	28	54	117	189	260	300
350	5	6	9	11	14	18	28	54	121	201	287	350
400	5	6	9	11	14	19	28	55	124	211	311	400
450	5	6	9	11	14	19	28	55	127	218	331	450
500	5	6	9	11	14	19	28	56	129	225	349	500
600	5	6	9	11	14	19	28	56	132	235	379	597
700	5	6	9	11	14	19	28	57	134	243	402	691
800	5	6	9	11	14	19	28	57	136	249	421	782
900	5	6	9	11	14	19	28	57	137	254	437	869
1000	5	6	9	11	14	19	29	57	138	258	450	950
1200	5	6	9	11	14	19	29	57	140	264	471	1102
1400	5	6	9	11	14	19	29	58	141	269	487	1236
1600	5	6	9	11	14	19	29	58	142	272	499	1354
1800	5	6	9	11	14	19	29	58	143	275	509	1459
2000	5	6	9	11	14	19	29	58	143	277	517	1553
3000	5	6	9	11	14	19	29	58	145	284	542	1895
4000	5	6	9	11	14	19	29	58	146	288	556	2108
5000	5	6	9	11	14	19	29	59	147	290	564	2253
6000	5	6	9	11	14	19	29	59	147	291	569	2358
7000	5	6	9	11	14	19	29	59	147	292	573	2437
8000	5	6	9	11	14	19	29	59	147	293	576	2498
9000	5	6	9	11	14	19	29	59	148	294	579	2548
10000	5	6	9	11	14	19	29	59	148	294	581	2568
a	5	6	9	11	14	19	29	59	149	298	598	2665

The table gives:

- (i) the sample size (n) required to be 95% certain of including at least one positive if the disease is present at the specified level



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Surveillance: Avian Influenza

Commercial chickens**

- Every farm to be sampled
- Number of birds to be tested depends on size each group on every farm:

Size of epidemiological group	No. of birds to be sampled
≤ 10	10
≤ 20	16
≤ 50	22
≤ 100	25
≤ 200	27
≤ 900	28
> 900	29

- Haemagglutination Inhibition or Commercial ELISA tests (only if chickens not vaccinated with inactivated H6 vaccine)



Reporting

- Poultry disease control cannot succeed without commitment and transparency from all parties involved:
 - » Government
 - » Industry
 - » Veterinary Profession
- Essential factors to contain and eradicate an outbreak:
 - » Early detection (surveillance; clinical signs)
 - » **Early reporting**
 - » Early diagnosis of disease
 - » Swift imposition of effective eradication and movement controls



Reporting: AI Surveillance Data

- All AI surveillance results must be supplied by commercial chicken industry to the responsible State Veterinarian
- Must be supplied in time to enable Provincial Veterinary Services to supply 6 monthly surveillance summary reports to the National Director Animal Health during January and July of each year
- Contact details of Provincial State Veterinary Services:
www.daff.gov.za → Branches → Agricultural Production, Health and Food Safety → Animal Health → Contact → Provincial Veterinary Services
- If responsible Provincial State Vet cannot be reached, report to Director of relevant Province



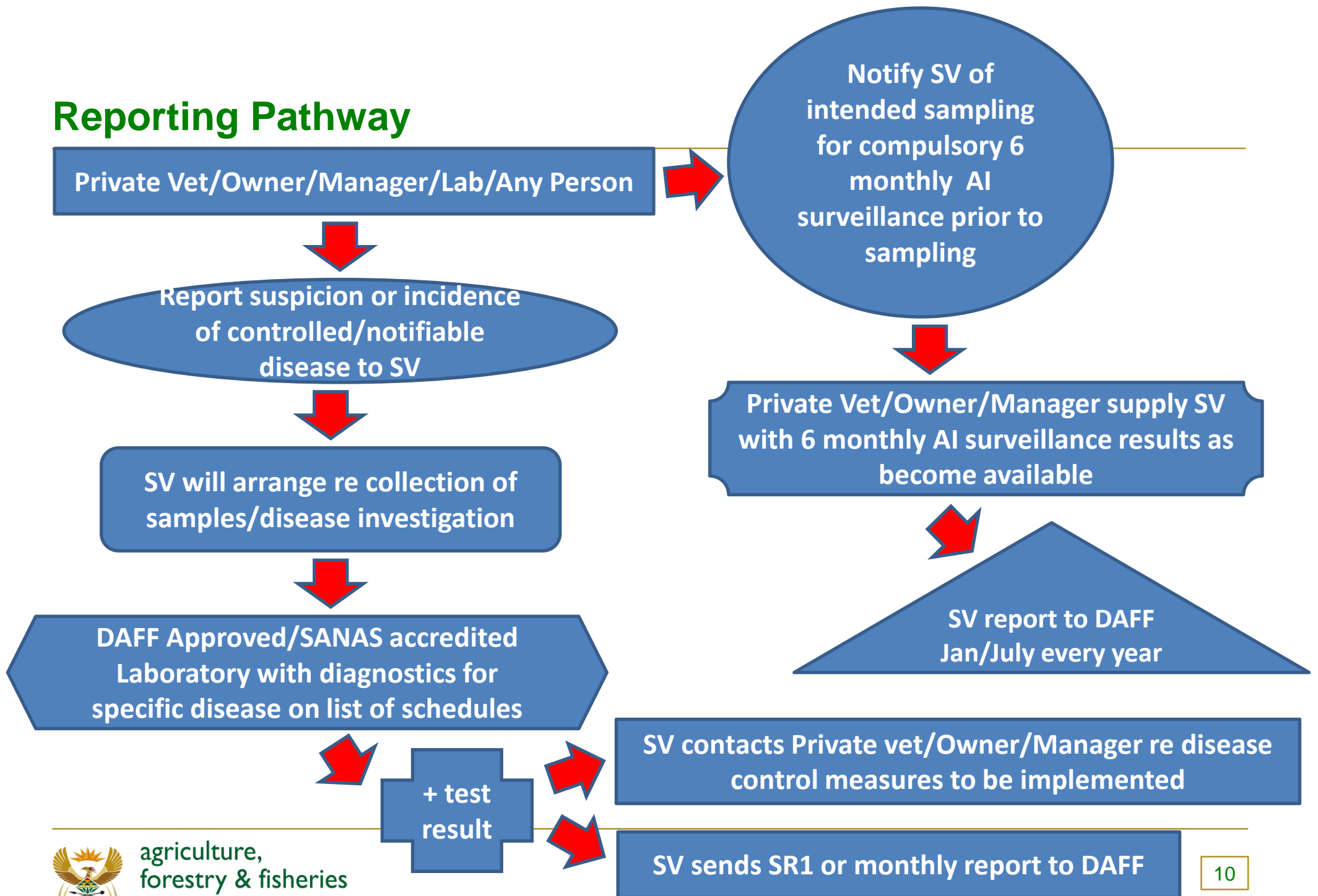
Reporting: Controlled And Notifiable Animal Diseases

In terms of Regulation 12A as amended, pertaining to the Animal Diseases Act, 1984 (Act No 35 of 1984):

A veterinarian, person in control of a laboratory, or any other person who finds the incidence or suspected incidence of a controlled or notifiable animal disease in any animal or progeny or product thereof, shall immediately report such incidence to the responsible state veterinarian



Reporting Pathway



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

List of Controlled and Notifiable Animal Diseases



agriculture,
forestry & fisheries
Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Private Bag X136, Pretoria, 0001
Delpen Building, c/o Annie Botha & Union Street, Riviera, 0084
From: Directorate Animal Health
Tel: +27 12 319 7466
Fax: +27 12 329 7218
E-mail: PA.DVS@daff.gov.za
Enquiries: Dr DF Keet

18 June 2010

LIST OF CONTROLLED AND NOTIFIABLE ANIMAL DISEASES (ACT 35 OF 1984)

Controlled Animal Diseases (in terms of the Animal Diseases Act, Act 35 of 1984)

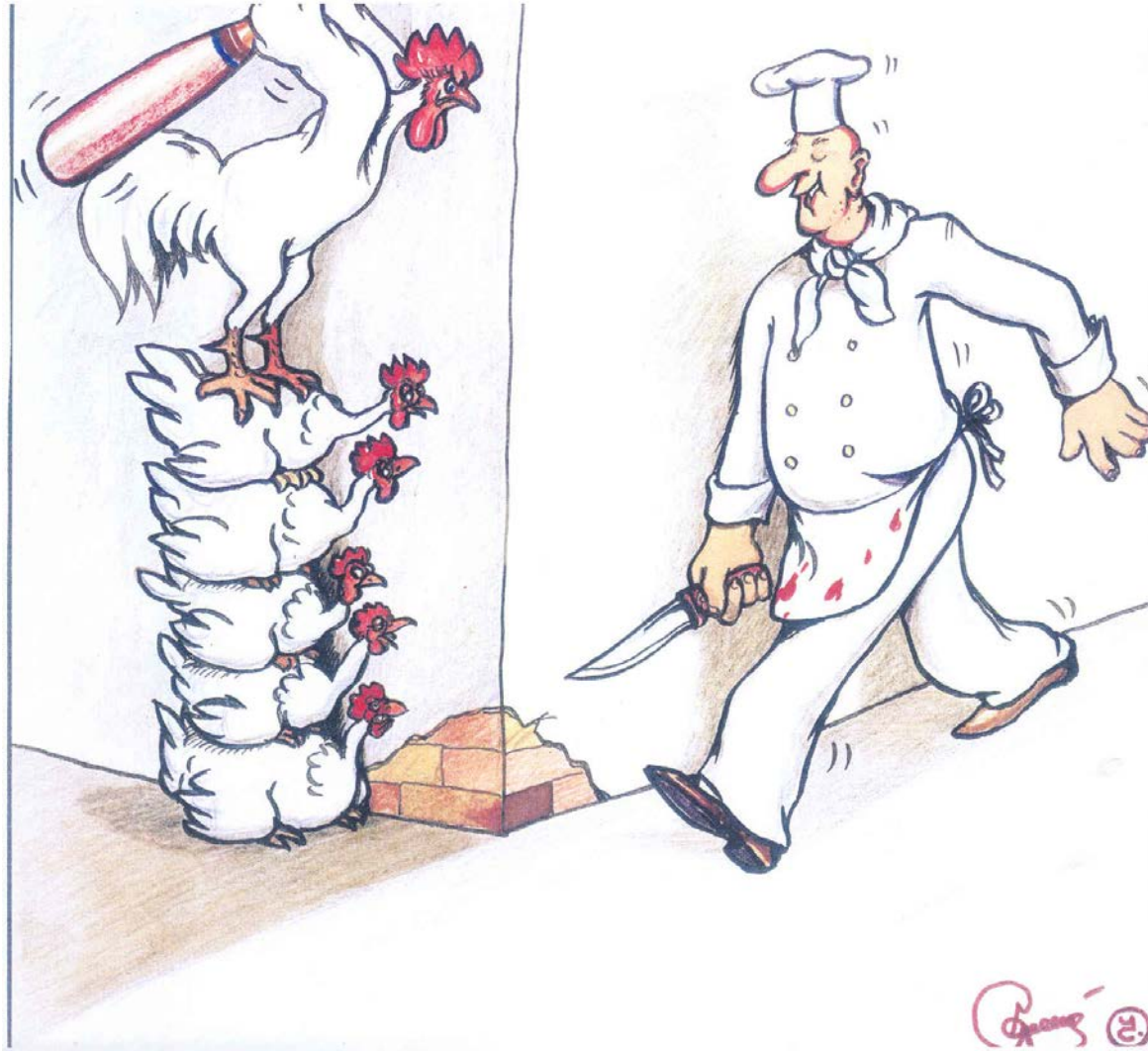
- Any animal disease or infectious agent that is not known to occur in South Africa
- African horse sickness (AHS)
- African swine fever (ASF)
- Anthrax
- Aujeszky's disease
- Bacterial kidney disease (in fish)
- Bovine contagious pleuropneumonia (CBPP)
- Bovine spongiform encephalopathy (BSE)
- Brucellosis (in all animal species)
- Classical swine fever (CSF)
- Contagious equine metritis (CEM)
- Contagious haemopoietic necrosis (in fish)
- Contagious pancreatic necrosis (in fish)
- Corridor or Buffalo disease (Theileriosis)
- Dourine
- East coast fever
- Equine infectious anaemia (EIA)
- Equine influenza (EI)
- Equine viral arteritis (EVA)
- Foot and mouth disease (FMD)
- Glanders
- Haemorrhagic septicaemia (in fish)
- John's disease (in sheep, cattle and goats)
- Nagana (Trypanosomiasis)
- Newcastle disease
- Notifiable avian influenza (NAI)
- Porcine reproductive and respiratory syndrome (PRRS)
- Psittacosis
- Rabies
- Rinderpest
- Salmonella Enteritidis
- Salmonella Gallinarum (Fowl typhoid)
- Salmonella Pullorum (Bacillary white diarrhoea)
- Scrapie
- Sheep scab
- Skin conditions in sheep
- Swine vesicular disease
- Tuberculosis (in all animal species)

Notifiable Animal Diseases (in terms of the Animal Diseases Act, Act 35 of 1984)

- Bovine malignant catarrhal fever (Snotsiekte)
- Bluetongue
- Lumpy skin disease
- Rift valley fever
- Strangels
- Swine erysipelas

DR DF KEET
ACTING DIRECTOR: ANIMAL HEALTH

www.daff.gov.za → Branches → Animal Production, Health and Food Safety → Animal Health → Disease Control → List of Controlled Diseases



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA