



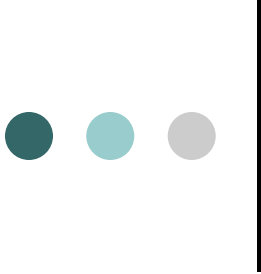
Republic of Turkey
Ministry of Agriculture and Rural Affairs
General Directorate of Protection and Control

COUNTRY REPORT
Avian Influenza in Poultry and Wild Birds:
Lessons Learned
By
H. Haluk AŞKAROĞLU

**Key role played by the Black and Caspian Sea countries in the early
detection and management of HPAI and other TADs: In wildlife and
livestock disease interface 29 June-1 July 2009**

Istanbul-TURKEY





Organization of Veterinary Services in Turkey

Veterinary services are rendered by the GDPC through:

- **Provincial and District Directorates**
- **8 Veterinary Control and Research Institutes**
- **1 National Foot and Mouth Disease Institute**
- **5 Veterinary Border Inspection Posts**
- **Provincial Control Laboratory Directorates**

LIVESTOCK INDUSTRY

Animal Species	1998	2002	2006
Cattle	11.031.000	9.804.000	10.130.594
Buffalo	176.000	121.000	79.940
Total (Large Ruminants)	11.207.000	9.925.000	10.210.534
Sheep	29.435.000	18.394.000	22.292.553
Goats	8.057.000	6.780.000	6.123.197
Total (Small Ruminants)	37.492.000	25.174.000	28.415.750
Horse	330.000	249.000	222.175
Mule	133.000	95.000	68.912
Donkey	603.000	417.000	293.688
Total (Equidae)	1.066.000	761.000	584.775
Camel	1.400	880	750
Pig	5.000	3.600	1.217
Chicken	236.997.651	245.776.000	225.650.000
Duck	1.339.468	832.000	920.000
Goose	1.771.327	1.400.000	1.250.000
Turkey	3.805.345	3.092.000	2.980.000
Total (Avian Population)	243.913.791	251.100.000	230.801.967

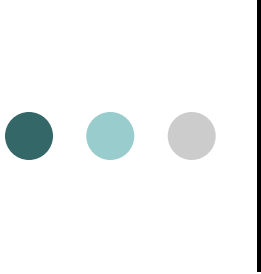
NOTIFIABLE DISEASES

1	Rinderpest
2	Foot and Mouth Disease
3	Bovine Tuberculosis
4	Bovine Brucellosis
5	BSE
6	Anthrax
7	Rabies
8	Sheep and Goat Pox
9	Caprine and Ovine Brucellosis
10	PPR
11	Blue Tongue
12	African Horse Sickness
13	Glanders
14	Dourine
15	Equine Infectious Anemia
16	Vesicular Stomatitis

17	Equine Encephalomyelitis
18	Fowl Plague (Avian Influenza) *
19	Newcastle
20	Salmonella pullorum
21	Salmonella gallinarum
22	American Foul Brood
23	Scrapie
24	FSE
25	Bonamiosis
26	Marteiliosis
27	Spring Viraemia of Carp (SVC)
28	Viral Haemorrhagic Septicemia (VHS)
29	Infectious Pancreatic Necrosis (IPN)
30	Bacterial Kidney Disease (BKD)
31	Crayfish Plague



THE POULTRY SECTOR IN TURKEY



POULTRY INDUSTRY (1)

- **2 million people employed in the sector.**
- **Annual endorsement of the sector: 3 billion \$.**
- **Total number of poultry holdings: 10,067.**
- **Total number of flocks : 16,581.**
- **All broiler flocks are of private ownership.**
- **90 % of flocks for laying hens are of private ownership, 10 % belong to cooperatives.**
- **All flocks registered.**



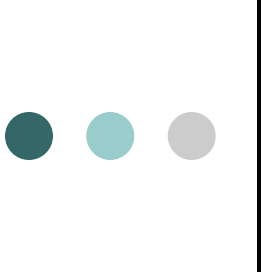
POULTRY INDUSTRY (2)

Broiler Sector

- **Closed modern facilities, semi-closed rearing (Marmara and Aegean regions)**
- **Ministerial Permission (under regular inspections and health controls)**
- **Integrations on contractual basis**
- **Integrations distribute feed to the contractual farms (for 42-45 days) and transport birds to slaughterhouses**
- **Contractual farmers paid for rearing, based on the live weights of animals**
- **Slaughtered animals processed or directly placed on the market**

Egg Sector

- **Integration is not prevalent in the egg sector**



POULTRY INDUSTRY (3)

- **Integrations employ contractual veterinarians**
 - **Weekly controls**
 - **General condition**
 - **Health status**
 - **Bio-security measures**
- **Official veterinarians**
 - **Regular inspections, controls**
 - **Use of veterinary medicinal drugs**
 - **Vaccinations**
 - **Bio-security measures**
 - **Hygienic conditions**
- **Backyard poultry in rural areas is common (roughly 60 million)**
- **Number of animals per family varies from 2 to 30**

MIGRATION OF BIRDS (1)



Spring flood of soaring birds
storks, raptors (eagles, buzzards, kites and hawks)

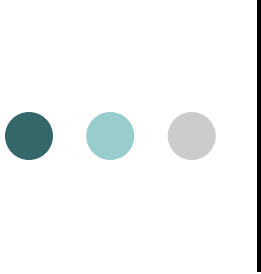
MIGRATION OF BIRDS (2)



Autumn and winter flood of waterfowl (ducks and geese) from the north

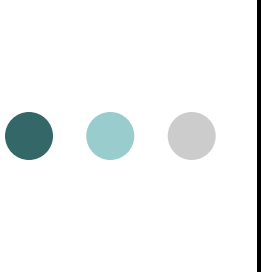


FRAMEWORK FOR COMBAT WITH AI



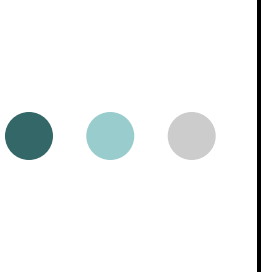
LEGISLATIVE FRAMEWORK (1)

- **Law No: 3285 on Animal Health Control**
- **Implementing Regulation on Animal Health Control**
- **Implementing Regulation on Protection Against and Combat with AI**
- **Implementing Regulation on the Operation and Health Control of Hatcheries and Breeder Holdings**
- **Instruction on Protection Against and Combat with AI**
- **Contingency Plan for Avian Influenza**
- **Annual Programme for Combat with Animal Diseases**



LEGISLATIVE FRAMEWORK (2)

- **Circular No: 2006-4772 on Active Clinical Surveillance for AI in Commercial Pens**
- **Circular No: 2006-10 on Implementation Principles of Controls to be Conducted in Broiler and Commercial Layer Hen Pens**
- **Circular No: 2006-1507 on Basic Rules to be Applied in Culling, Disposal, Cleaning and Disinfection**
- **Manual No. 24851-043417 on Outbreak Surveys for AI in Backyard Poultry and Wildbirds**
- **Amending Decision on Livestock Sector Support**



INSTITUTIONAL FRAMEWORK (1)

Competent Authority for Animal Disease Control

Ministry of Agriculture and Rural Affairs (MARA)

General Directorate of Protection and Control (GDPC)

Responsibilities of the GDPC

Inspection and supervision of:

- live poultry
- hatching eggs
- production of poultry meat and meat products.

VETERINARY CONTROL AND RESEARCH INSTITUTES



 CVCRI, Etlik, Ankara	 VCRI, Konya*	 VCRI, Adana
 VCRI, Pendik, Istanbul	 VCRI, Elazig	 VCRI, Erzurum
 VCRI, Bornova-Izmir **	 VCRI, Samsun	
* VCRI, Konya is the reference laboratory for Newcastle Disease. ** VCRI, Bornova-Izmir is the national reference laboratory for Avian Influenza		

AI DIAGNOSTIC TEST CAPABILITIES OF VCRI_s (2008)

Name of VCRI _s	Diagnostic Test Currently Performed for Avian Influenza													
	RT 1	VI 2	TC 3	HA 4	HI 5	NI 6	AGID ⁷	ELISA		IFAT ¹⁰	RT-PCR ¹¹	Real-Time PCR ¹²	DIVA ¹³	SEQ ¹⁴
								Ab 8	Ag ⁹					
Bornova	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Etlik	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Pendik	+	+	+	+	+	+	+	+	+	+	+	+	+	-
Adana	+	+	-	+	+	-	+	+	+	-	+	+	-	-
Erzurum	+	+	-	+	+	-	+	+	+	-	+	+	-	-
Elazig	+	+	-	+	+	-	+	+	+	-	+	+	-	-
Konya	+	+	-	+	+	-	+	+	+	-	+	+	-	-
Samsun	+	+	-	+	+	-	+	+	+	-	+	+	-	-

1-Rapid test (Antigen capture)

4-Hemagglutination

7-Agar gel immunodiffusion

10-Immunofluorescence Antibody test

13-Differentiation of infected and vaccinated animals

14- Sequencing

2-Virus isolation

5-Hemagglutination inhibition

8-Antibody capture ELISA

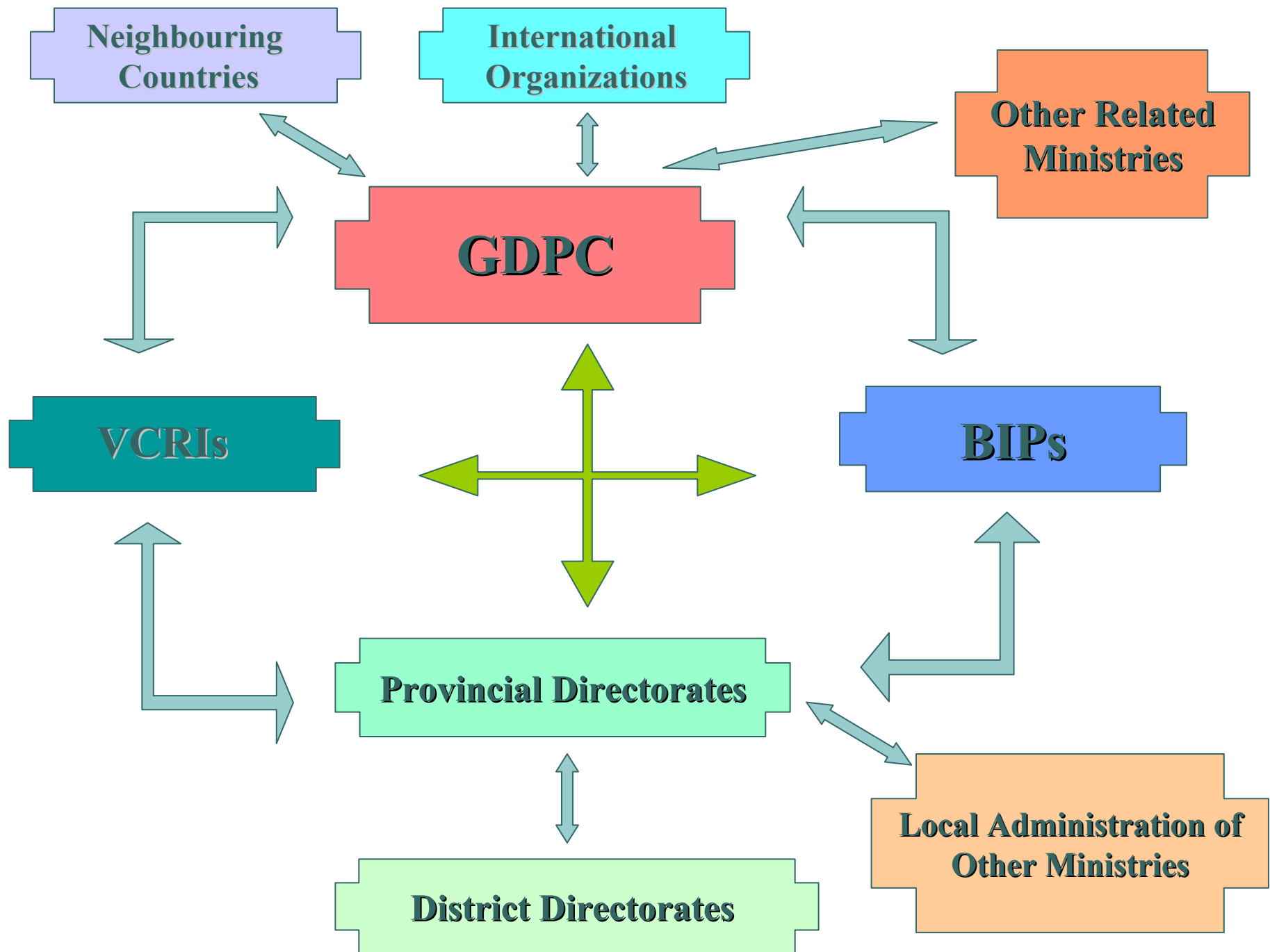
11-Reverse transcriptase PCR

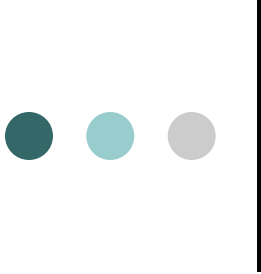
3-Tissue culture

6-Neuroaminidase inhibition

9-Antigen capture ELISA

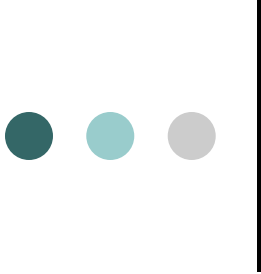
12-Real Time PCR





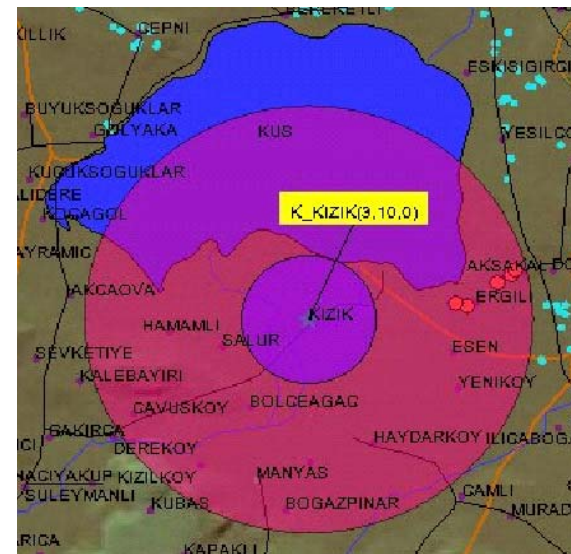
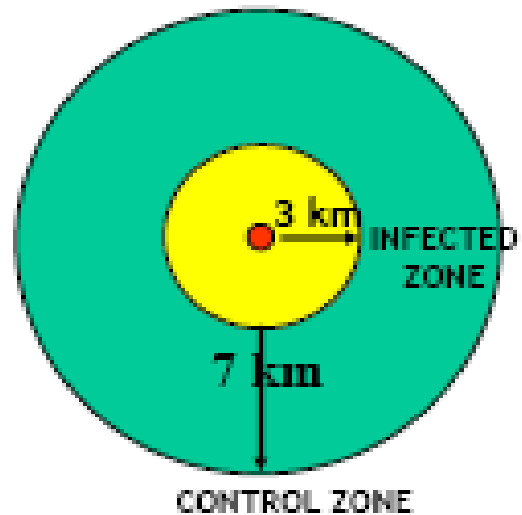
MEASURES IN OUTBREAK AREAS (1)

- **Quick arrival in the outbreak/suspect area, inspection, observation, collection of samples**
 - **Determination of sick and dead animals**
- **Transport of collected samples to the laboratory**
- **Temporary quarantine measures**
 - **Restriction of movements**
 - **Cleaning, disinfection and bio-security measures**
 - **Provision of information**



MEASURES IN OUTBREAK AREAS (2)

- **Re-visits to the outbreak/suspect area until laboratory results are confirmed**
- **Regular reporting on the current situation**
- **Permanent quarantine measures and culling-destruction**
- **Payment of compensation for culled animals**
- **Strict road controls**
- **Permit of the transport of live animals only after the issuing of a veterinary health certificate**



PROTECTION ZONE

- Declaration of an infected zone of 3 km radius from the foci of infection.
- Stamping out of birds within the protection zone according to risk assessment.
- Strict quarantine measures.

SURVEILLANCE ZONE

- Control zone of 7 km radius from the perimeter of the infected zone.
- Restriction of movement of poultry, animals and livestock product in the surveillance zone.
- Conduction of intensive surveys in holdings located within the surveillance zone.

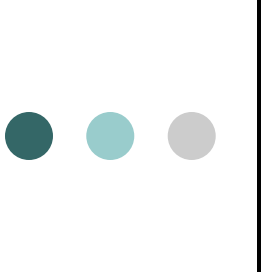


H5N1 HPAI in Turkey in 2005-6

FIRST AI OUTBREAK

- AI not reported until October 2005.
- 2002 sero-survey:
 - 18,669 units of serum from 320 of 7848 establishments examined.
 - All results negative.
- First reported on 07-Oct-2005. Single outbreak in free range turkeys in the west on the Aegean coast in Kiziksa, Manyas, Balikesir Province.
- Successfully controlled without any local or long-distance spread.



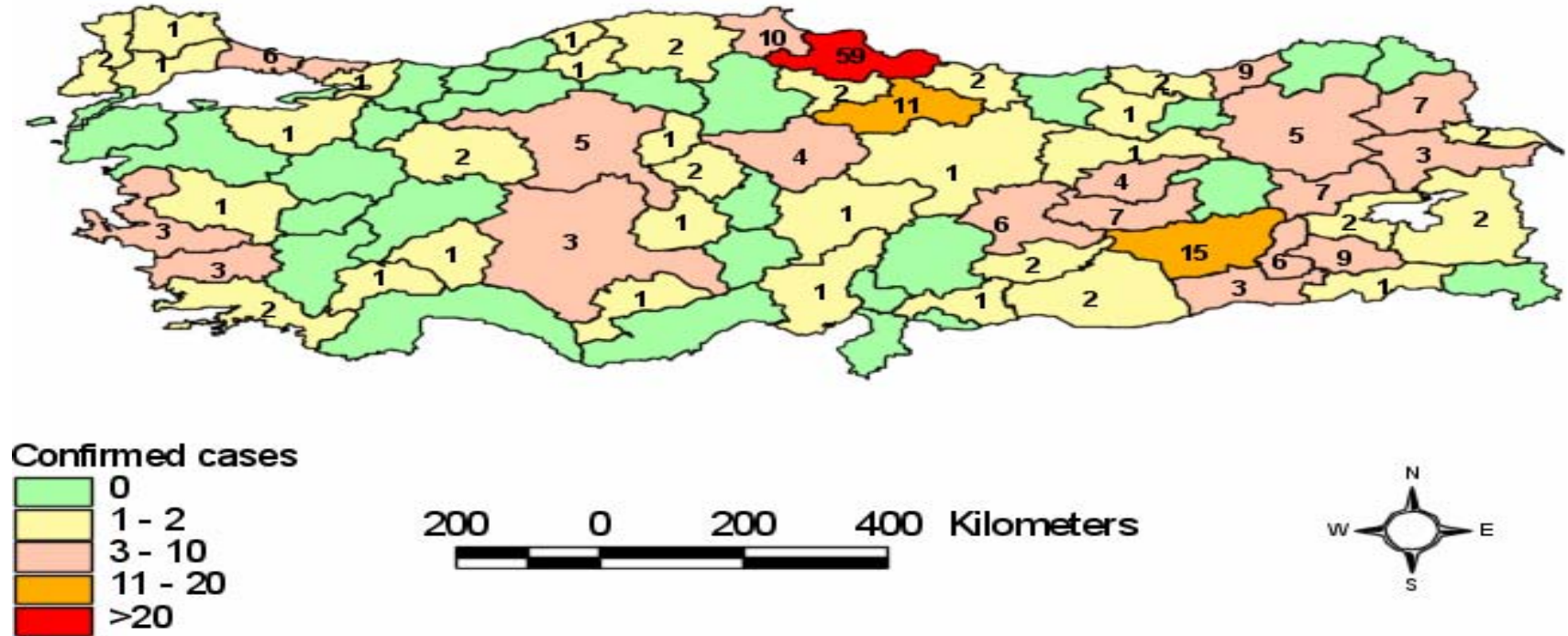


OUTBREAK INFORMATION

- **Second outbreak confirmed in backyard poultry on 25-Dec-05 in the east, Aralik district of Igdir Province.**
- **As from 25-Dec-05, Turkey had 230 confirmed cases of AI.**
 - **229 of them were of HPAI H5N1 virus**
 - **1 of them was of LPAI H7N1 virus**
 - **200 cases in backyard poultry**
 - **30 cases in wild birds**

OUTBREAKS IN 2006

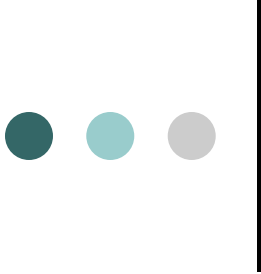
Confirmed cases of HPAI H5N1 in Turkey by province



- Observed in 54 of the 81 provinces.
- One of these, Samsun, had one quarter of the national total of confirmed outbreaks, 59.

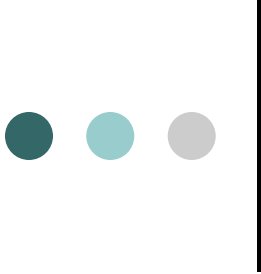


H5N1 HPAI in Turkey in 2007



HISTORY OF THE DISEASE

- **The 2005-06 outbreak ended at the end of March 2006.**
- **Between 01-Apr-06 and 31-Jan-07, around 700 samples were submitted for testing for AI via the passive surveillance system, mostly from backyard poultry but also from wild birds.**
- **All samples negative.**
- **This level of sampling represents 3-4 samples per working day nationally during the non-outbreak period.**

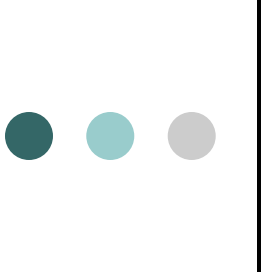


2007 OUTBREAK

- **On 05-Feb-07, report of mortality in village in Batman.**
- **80 dead birds, chickens, geese and turkeys.**
- **Confirmed avian influenza on egg inoculation on 08-Feb-07.**
- **No backyard poultry source available.**
- **First affected houses on edge of village.**
- **History of hunting.**
- **Most probable source wild birds.**

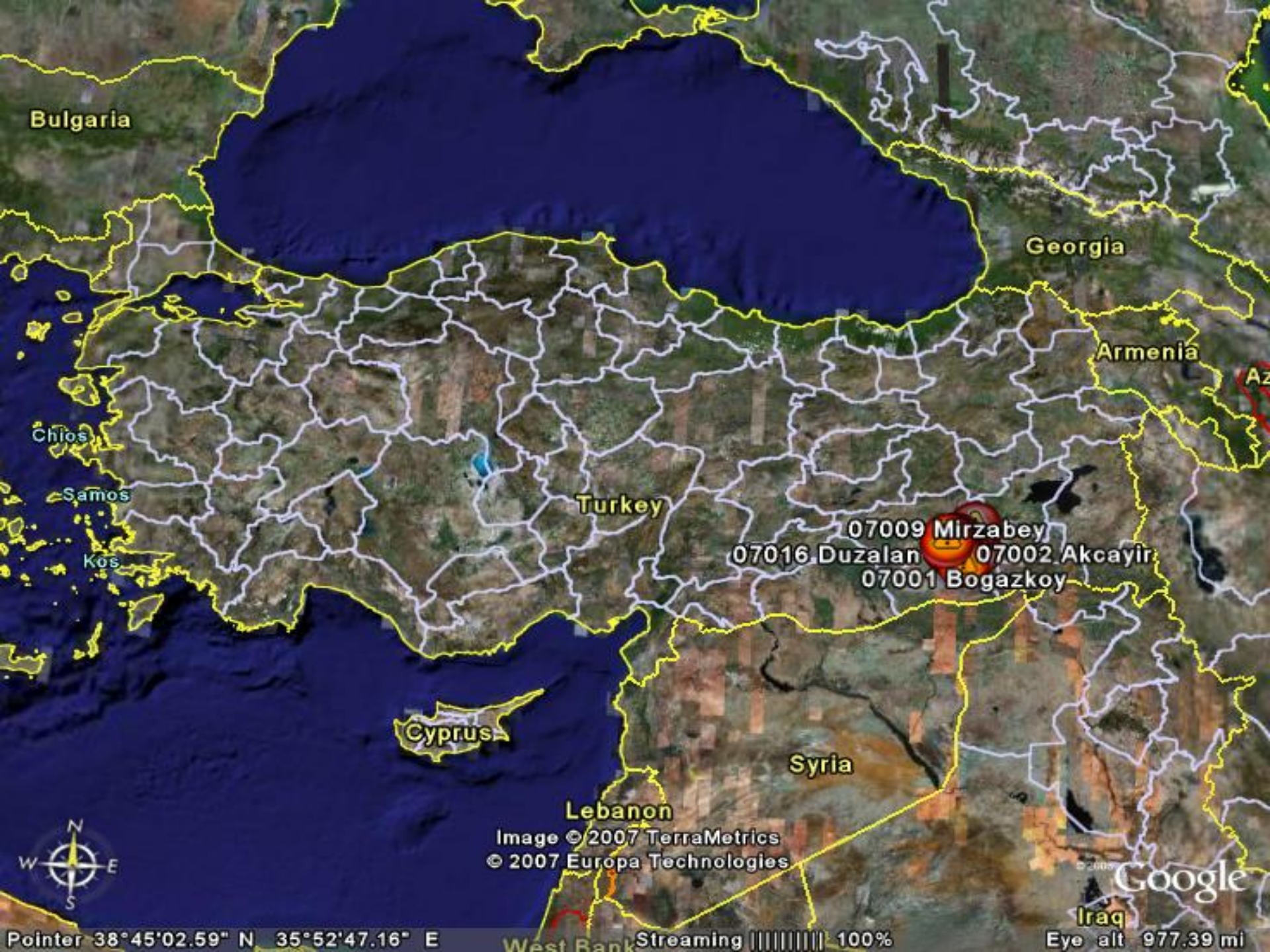
07001 Bogazkoy





SUBSEQUENT OUTBREAKS

- **Further 17 outbreaks.**
- **Limited to two provinces in the south east of the country.**
- **Outbreak area roughly 60 km north-south and 50 km east-west.**
- **Not a wetland area.**
- **Very few wild birds seen and in particular, no water bird concentrations nearby or migration seen.**
- **The disease was ended on 02 March 2007.**



Bulgaria

Georgia

Armenia

Chios

Samos

Kos

Turkey

07009 Mirzabey

07016 Duzalan

07002 Akcayir

07001 Bogazkoy

Cyprus

Syria

Lebanon

Image © 2007 TerraMetrics
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Google

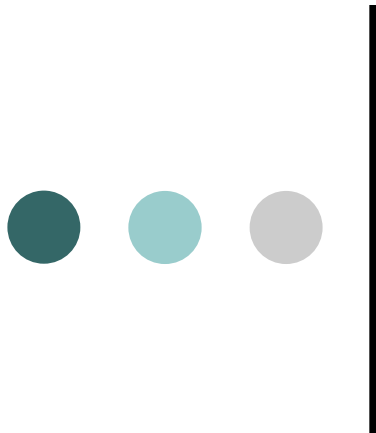
Iraq

Pointer 38°45'02.59" N 35°52'47.16" E

West Bank

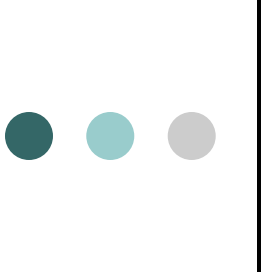
Streaming ||||| 100%

Eye alt 977.39 mi



H5N1 HPAI in Turkey in 2008

Current situation and epidemiology



Ongoing inter-outbreak surveillance in Turkey

- The 2007 outbreak finished at the beginning of March 2007
- In 2006 and 2007, around 2 samples a day submitted from suspect cases for lab testing in the periods between outbreaks
- Mostly backyard poultry, some wildbirds
- All samples negative during spring summer and autumn in each year
- In each year initial positives found during winter
- This pattern indicates a seasonal risk

Location of HPAI outbreaks in Turkey

Jan-Feb 2008

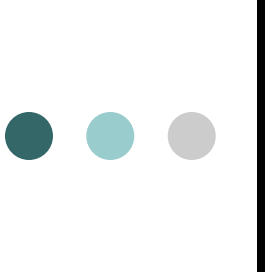


Seven outbreaks in five provinces



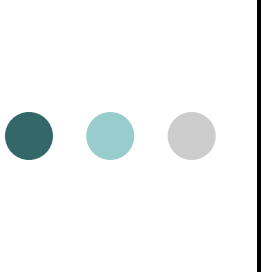
Recent H5N1 Outbreaks in The Region





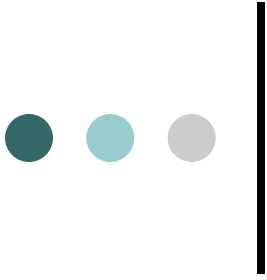
VIRUS TYPING

- **The 2008 strain is 98% similar to the strain isolated more recently in Romania and in the UK.**
- **This strain has been present in several parts of the globe for several years.**

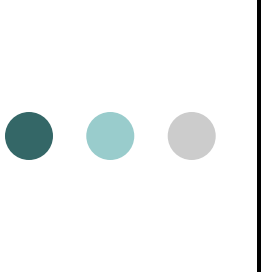


Infection status of Turkey

- There is no evidence that the 2008 outbreak has a domestic poultry source in backyard poultry, commercial broilers or commercial egg layers
- There is no evidence to date of local spread. Control has been rapid and effective
- There is strong evidence that the 2008 outbreak has a **wildbird source, mostly via hunting.**
- The 2008 outbreak in Turkey is one of the clearest examples of a wild birds source of H5N1 HPAI in domestic poultry

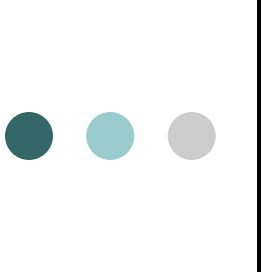


SURVEILLANCE IN TURKEY



SURVEILLANCE

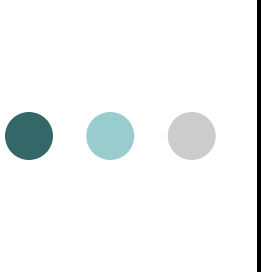
- **Passive Surveillance**
- **Active Clinical Surveillance in Backyard Poultry**
- **Active Clinical Surveillance in Commercial Poultry**
- **Serological Surveillance in Backyard Poultry**
- **Surveillance in Wildbirds**



PASSIVE SURVEILLANCE (1)

Field surveillance (06/10/2005-31/03/2006)

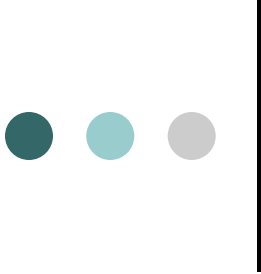
	Domestic	Wild	Total
Received	10,284	4339	14,623
Unsuitable	748	728	1476
Tested	10,284	4339	14,623
Negative	9205	3553	12,758
Positive	331	58	389



PASSIVE SURVEILLANCE (2)

Field surveillance (01/04/2006-05/02/2007)

	Domestic	Wild	Total
Received	462	273	735
Unsuitable	13	32	45
Tested	462	273	735
Negative	449	241	690
Positive	0	0	0



Active Clinical Surveillance in Backyard Poultry

(March 2006)

Conducted in chickens and turkeys in backyard flocks.

Objective

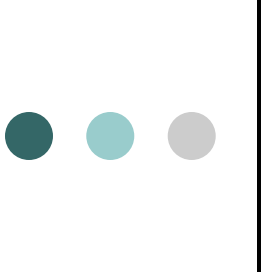
Collection of clinical information to determine the existence of active outbreaks of HPAI or probable outbreaks.

Scope

- **13,886 villages in 63 of the 81 provinces**
- * **Villages considered as epidemiologic units and selected with random sampling method and risk assessment**
- **Approximately 140,000 flocks**

Results

No case of H5N1 was detected in the survey.



Active Clinical Surveillance in Commercial Poultry

(M a r c h - D e c e m b e r 2 0 0 6)

Clinical Surveillance in Commercial Holdings

Broiler Pens

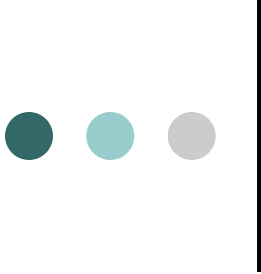
- **Provincial Directorates:** **4569**
- **Integrations:** **3758**

Layer Pens

- **Provincial Directorates:** **2692**
- **Integrations:** **607**

Breeder Pens

- **Provincial Directorates:** **393**
- **Integrations:** **212**



Active Serological Surveillance in Commercial Poultry

(M a r c h - D e c e m b e r 2 0 0 6)

Serological Tests Conducted in Commercial Holdings by the Sector

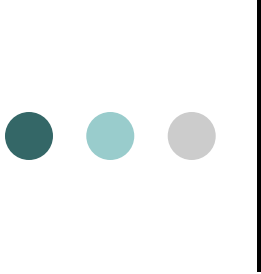
Rapid Test

- **Broiler Pens: 4633**
- **Layer Pens: 14**
- **Breeder Pens: 18**

ELISA-AGID

- **Broiler Pens: 42**
- **Layer Pens: 3**
- **Breeder Pens: 25**

*** ALL RESULTS HAVE BEEN REPORTED TO BE NEGATIVE ***



Serological Surveillance in Backyard Poultry

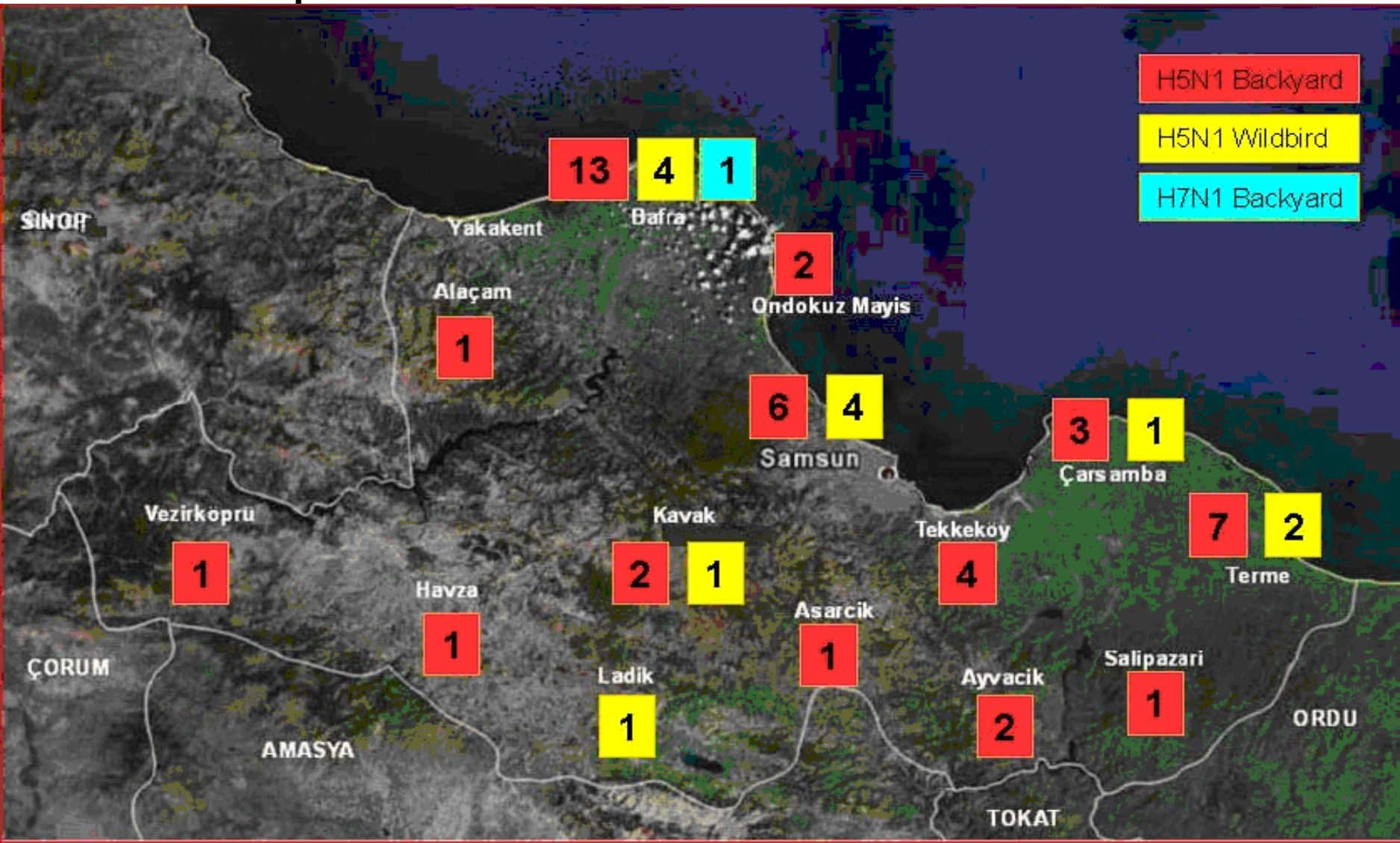
○ Stage 1

- Sero-survey for AI Antibodies in Samsun Province

○ Stage 2

- Surveillance
 - Sero-survey
 - Virological Survey

Samsun Sero-Survey Results



Samsun Sero-Survey Results



Serological Surveillance in Backyard Poultry

Stage 2. Surveillance

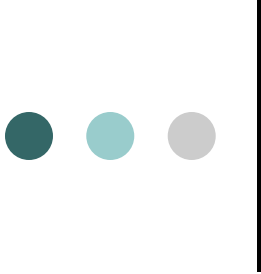
A- Sero-survey

4340 sera samples - ELISA and HI test results by provinces

Province	Total Sera	ELISA Positivity Rate %	Positivity by Serotypes in HI tests		
			H5N3	H7N3	Other
Samsun	716	32	4	12	-
Tokat	1162	3	1	-	-
Sinop	1010	8	-	-	-
Kütahya	1200	3	-	3	*6
Elazig	252	32	6	-	-

Kütahya Sero-Survey Results





Serological Surveillance in Backyard Poultry

Stage 2. Surveillance

B-Virological Survey

Objective

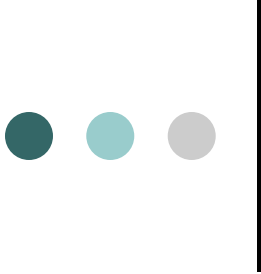
Isolation of LPAI viruses in backyard chickens and identification of the H9 virus

Scope

278 cloacal swabs from sero-positive chickens in Samsun province

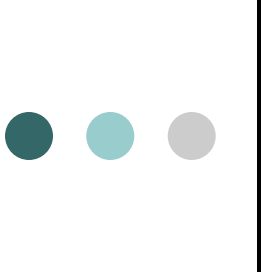
Results

- **All swabs tested by AI (Ag) Type A ELISA Antigen Test Kit with negative results**
- **All passages have produced negative results.**



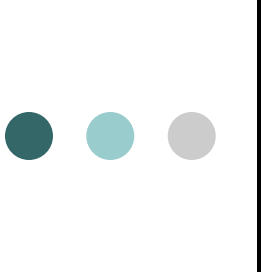
Surveillance in Wild Birds

- o Pilot study between October 2006-January 2007**
- o FAO mission between 19 February-12 March 2008**
- o EU mission between March-April 2008**
- o Routine sampling by VCRIIs**



Wildlife partners in AI surveillance

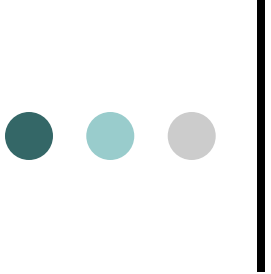
- **Ministry of Environment and Forestry**
- **National Hunters' Association**
- **Ondokuz Mayıs University Ornithological Research Centre**
- **KAD (Turkish Bird Research Society)**
- **DD (Turkish Nature Society)**
- **FAO**
- **Wetlands International (WI)**
- **CIRAD (French Agricultural Research Centre for International Development)**



Locations of catching/sampling wild birds

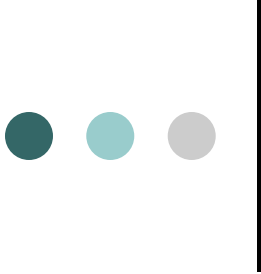
WILD BIRD SURVEILLANCE

- **Pilot study between October 2006-January 2007**
 - **Yumurtalık Lagoons (Adana)**
 - **Kızılırmak Delta (Samsun)**
 - **Nallıhan Bird Paradise (Ankara)**
- **FAO mission between 19 February-12 March 2008
(five of seven outbreak sites that occurred in 2008)**
 - **Yörükler and Aybeder (Samsun)**
 - **Yenicam and Konacık (Sakarya)**
 - **Tasmanlı (Sinop)**
- **EU mission between March-April 2008
(seventh and last outbreak site in 2008)**
 - **Edirne and Kırklareli**
- **Routine sampling by VCRIIs throughout the country**



Type of samples

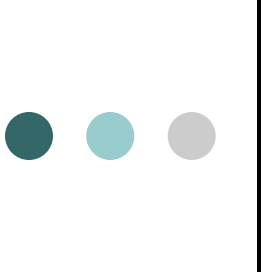
- Cloacal swabs
- Tracheal swabs
- Oropharyngeal swabs
- Fecal samples
- Blood/serum samples



Species sampled (1)

Pilot study between October 2006-January 2007

○	Dunlin	140
○	Little Stint	49
○	Common Redshank	38
○	Kentish Plover	33
○	Mallard	25
○	Eurasian Golden Plover	11
○	Water Rail	5
○	Common Teal	4
○	Black-tailed Godwit	4
○	Common Snipe	4
○	Greenshank	3
○	Grey Plover	2
○	Spotted Redshank	2
○	Marsh Sandpiper	1
○	Ruff	1
○	Northern Shoveler	1
○	Pied Avocet	1
○	Northern Lapwing	1
○	Lesser Yellowlegs	1
○	Jack Snipe	1
○	Eurasian Coot	1
○	Crested Lark	1

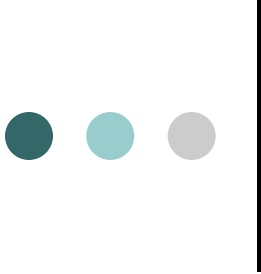


Species sampled (2)

FAO mission between 19 February-12 March 2008

Dead Birds

○ Coot	18
○ Great Crested Grebe	7
○ Buzzard	4
○ Pochard	3
○ Robin	3
○ Chaffinch	1
○ Blackbird	1
○ Mute Swan	1
○ Gadwall	1
○ Teal	1
○ Barn Owl	1
○ Whooper Swan	1
○ Yellow-legged Gull	1

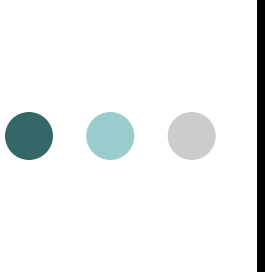


Species sampled (3)

FAO mission between 19 February-12 March 2008

Live Birds

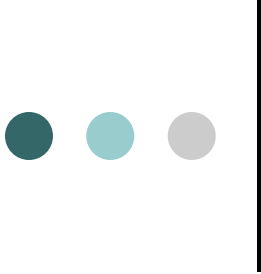
○ House Sparrow	88
○ Coot	24
○ Blackbird	23
○ Song Thrush	9
○ Long-tailed Tit	6
○ Red Wing	4
○ Dunnock	4
○ Fieldfare	4
○ Great Tit	3
○ Robin	3
○ Yellowhammer	3
○ Starling	2
○ Blue Tit	1
○ Goldfinch	1
○ Hawfinch	1
○ Mute Swan	1



Species sampled (4)

EU mission between March-April 2008

○ Wild Duck	30
○ Sakarca Goose	31
○ Lesser White-fronted Goose	20
○ Mallard	4
○ Hybrid Mallard	41



Results of testing samples from wild birds (1)

Pilot study between October 2006-January 2007

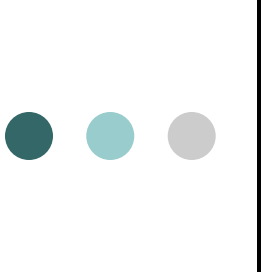
Swab samples tested for +A by Real Time-PCR

- **Ankara Nallihan Bird Paradise**
 - **1 positive and 1 suspect out of 16 samples**
- **Adana Yumurtalik Lagoon**
 - **24 positive and 18 suspect out of 308 samples**
- **Samsun Kizilirmak Delta**
 - **71 positive and 38 suspect out of 372 samples**

Positive and suspect samples tested after egg inoculation for +H +N by HA, HI and NI

- **One positive sample determined to be H12N2 (LPAI).**

Published in the Final Report of the Pilot Study for the Investigation of the Role of Wild Birds in the Spread of AI Virus in Turkey.

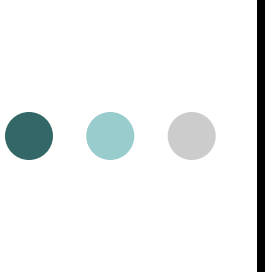


Results of testing samples from wild birds (2)

FAO mission between 19 February-12 March 2008

- A buzzard (*Buteo buteo*) found moribund and euthanized, near the Yorukler site on 5 March 2008 was positive for H5N1 HPAI based on diagnostics at the Padova FAO-OIE Reference Laboratory.
- (Out of 222 samples / swabs from 177 live birds + 45 dead birds + 75 fresh fecal samples)

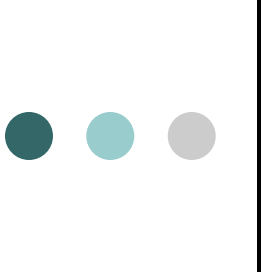
Published in the Mission Report of the mission carried out between 19 February- 12 March 2008 on the Investigation of the Role of Wild Birds in HPAI Outbreaks in Turkey Between January and February 2008.



Results of testing samples from wild birds (3)

EU mission between March-April 2008

All 126 samples (123 swab samples and 3 blood samples) determined to be negative for H5N1 by RT-PCR, egg inoculation, HA and ELISA.



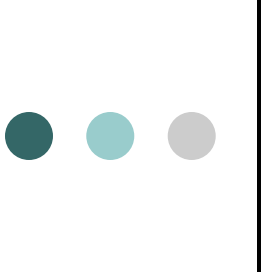
Results of testing samples from wild birds (4)

Routine sampling by VCRIIs throughout the country

Results of suspect samples sent to laboratories

- 184 samples sent from 27 Feb 2007 (last outbreak of 2007) to 18 Jan 2008 (first outbreak in 2008)
- 167 samples sent in the outbreak period (from 19 Jan to 17 Mar 2008)
- 73 samples sent after the outbreak period (from 18 Mar to 26 Sep 2008)

were all determined to be negative for AI.



Hunting, AI and biosecurity (1)

- Hunters are involved in surveillance, for they have been requested to submit swab samples from the birds they hunt. However, to date no sample has been received.
- Permits for hunting are issued by the MoEF.
- Hunters have been trained under the WB-financed project for AI Preparedness and Human Pandemic Project.
- Hunters use personal protective equipment, bury wastes of wild birds, do not bring hunted birds to their households as measures.

Hunting, AI and biosecurity

(2)



To be protected against AI



Wear gloves to handle wild birds



Don't bring dead birds back to your house, burn or bury feathers and other waste



Change your clothes and shoes after hunting.



Canlı m hrenin yasak oldu unu unutmayın.



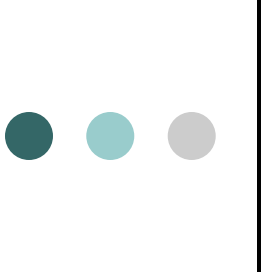
Don't hunt in zones infected with AI



Wash hands thoroughly

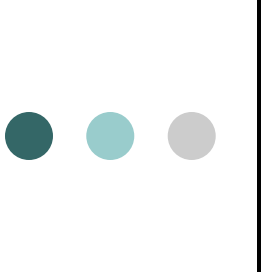


For detailed information Contact Agricultural Directorates



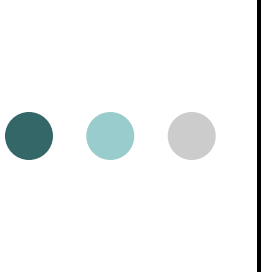
FREEDOM FROM AI

- **The last outbreak was ended on 12.04.2008 and Turkey was declared to be free from AI on 14.07.2008 to the OIE. This self-declaration was made, based on the results of the surveys conducted in the past three months, following the end of the last outbreak.**
- **Since the first outbreak in 2005, AI has never been reported in the commercial poultry sector in Turkey, but has been encountered only in backyard poultry.**



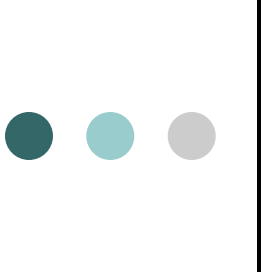
VACCINATION

- **At present, vaccination is not implemented against AI in Turkey.**
- **A decision has been taken at Ministerial level for the stocking of a certain amount of vaccine to be used in emergency cases.**



COMPARTMENTALISATION

- **Informative studies launched in June 2006.**
- **Discussions with the broiler industry in August 2006 regarding the benefits to resume international trade.**
- **Presentations given and literature provided, explaining compartmentalisation and the measures required.**
- **Industry assessing the requirements, benefits and costs.**



FUTURE ACTIVITIES

- **2006 Avian Influenza Preparedness and Response Project (EU)**
- **Avian Influenza And Human Pandemic Preparedness And Response Project (WB)**

AVIAN INFLUENZA

Don't think it is light,
take precautions right.

Don't keep your poultry at ease

if you don't want to spread the disease

AI is a pandemic disease.
It can spread from wild birds
to your animals
and then to humans.
It is lethal. Protect your poultry
from contacting with wild birds.
Protect your family's
and animals' lives

To be protected against AI;



Keep your
fence and
farmyard
clean



Change your
clothes when
leaving the
farmyard.



Yabani kanatlıların
yaklaşmaması için
korkululuk
kullanın.



Don't your share
your farm
equipment with
your neighbours



Wash your
hands often.



Report sick or
dead poultry
to the authorities
immediately.



For detailed information Contact Agricultural Directorates

THANK YOU FOR YOUR ATTENTION