FAOAIDEnews
Avian Influenza Disease Emergency

Situation Update 47
31 July 2007

HPAI outbreaks reported in this publication refer to officially confirmed cases only.
The information is compiled from the following sources: World Organisation for Animal Health (OIE), national governments and their ministries, and the European Commission (EC) – these sources are responsible for any errors or omissions.

Long-term avian flu emergency needs long-term commitment

Rome meeting calls for communication and closer cooperation among stakeholders

Much has been achieved in the global fight to prevent and control highly pathogenic avian influenza (HPAI) but the H5N1 virus is still circulating and some countries are still heavily affected. Investment and commitment must concentrate on these areas, surveillance must be stepped up, biosecurity must be improved, and steps must be taken to mitigate the negative effects of disease on the most vulnerable groups, according to FAO's Chief Veterinary Officer Joseph Domenech.

Addressing the closing session of the June 26-29 International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection in Rome, Domenech said more emphasis must be put on the socio-economic dimensions of the impact of the disease and on the role of communication in advocacy and increasing awareness.

"Even if bird flu has disappeared from our TV screens, it doesn't mean that the risk is over. Avian influenza is not a one time event – the international community will have to live with the disease for several years to come," he had told a press conference on the opening day of the meeting.

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SHIPMENT OF SAMPLES

FAO can assist in the shipment of samples for poultry diagnostic testing – contact empres-shipping-service@fao.org prior to sampling. Please note that sending samples out of a country requires clearance by the Ministry of Agriculture. See pages 13 ff for information on laboratories, including sampling, packaging and shipment requirements.

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The Rome meeting was organised jointly by the Food and Agriculture Organisation of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organisation (WHO), in collaboration with UNSIC and the UN Children's Fund (UNICEF).

There was widespread agreement among participants – many of them representing affected and donor countries and UN agencies – that international agencies supporting national communication plans need tostrengthen coordination and ensure consistent and technically appropriate public communication through timely guidance to communication experts. Furthermore, they agreed that regional and global-level coordination should be encouraged among donors, and regional and international agencies, to address the transboundary nature of highly pathogenic infectious diseases.

The Rome meeting was organised in the run-up to the next Senior Officials Meeting on Highly Pathogenic Avian Influenza (HPAI) to be held in New Delhi in December 2007. Such a meeting had been called for at the previous Senior Officials Meeting in Bamako, Mali, in December 2006. It was designed to prepare the technical ground for the December meeting in New Delhi, by answering key questions facing national and international decision-makers concerned with animal disease prevention and control, the prevention of human infection, and pandemic preparedness.

International experts presented their views on the current status of HPAI infection among poultry and assessed the possibility that the H5N1 virus could make the leap from birds to humans, including the risk of a human pandemic. Among others, they discussed the state of preparedness of countries, and assessed the strategies and practices that have been applied over the last three years to control HPAI in poultry and reduce the associated risk of human infection.

The following boxes highlight some of the main conclusions reached and recommendations agreed at the Rome meeting. Please note that at the time of going to print, the Meeting Proceedings had not been finalised.

(*For more details of the meeting, see* http://www.fao.org/avianflu/en/conferences/june2007/index.html

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Human health and pandemic threat

- While the focus should continue to be on prevention and control of HPAI in poultry, the H5N1 virus is not the only potential source of a human influenza pandemic
- Investment should not be disease-specific but should contribute to increasing the capacity of social and health systems to respond to many different crises
- Pandemic preparedness activities should continue and be expanded in scope and depth from central to local level, and food security issues should be included in non-health aspects of pandemic plans
- A global report should be prepared on levels of national preparedness for a human influenza pandemic

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection. Rome. 26-29 June 2007

Animal health

- Global eradication of HPAI H5N1 is a long-term goal and may not be achievable in countries with entrenched infection unless there is a shift from an emergency to a medium-/long-term approach
- Veterinary services must be strengthened and empowered, and the poultry industry adjusted to be able to cope with high risk production and marketing practices
- Methods of control and prevention must be science-based, technically feasible and sustainable, and incur minimal gender, social, environmental and economic impact
- Appropriate national systems of incentives and disincentives must be in place

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome, 26-29 June 2007

Animal health – emergency response

- The extent of culling should be the minimum required to control the disease and should be accompanied by an appropriate compensation system
- Use of vaccination should be considered when detection is delayed or stamping out alone fails, but transition points should be defined in emergency preparedness plans

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome, 26-29 June 2007

Animal health – enzootic infection

- Backyard poultry and grazing duck husbandry systems are not generally biosecure but are important to livelihoods; measures must be in place to deal with any risk that they represent, other than their elimination
- Sustained progress on enzootic HPAI control depends on improved understanding of the specific epidemiology of the disease, and requires the engagement of the commercial poultry production and marketing sectors
- The relative contribution of trade versus wild birds is not always known but one cannot afford to ignore either source.

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome, 26-29 June 2007

Animal health – surveillance

- Surveillance in both animals and humans should be maintained and improved to detect infection and disease, to allow rapid and ongoing assessment of virus modifications with potential public health impact, and to allow evaluation and updating of diagnostic reagents and vaccines

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection. Rome. 26-29 June 2007

Communication and inter-agency coordination

- National authorities should define communication as a two-way process, and ensure that communication activities have clear objectives, are firmly led and are open to innovative bottom-up thinking
- Regional and global-level coordination should be encouraged among donors, and regional and international agencies, to address the transboundary nature of highly pathogenic infectious diseases
- International agencies supporting national communication plans need to strengthen coordination and to ensure consistent and technically appropriate public communication through timely guidance to communication experts
- Greater emphasis needs to be placed on developing appropriate communications support for HPAI prevention and control, relevant to specific target groups
- Develop pandemic preparedness communications which emphasize collateral benefits in sectors not obviously or directly benefiting from plans

Summarised excerpts from the provisional Proceedings of the International Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome, 26-29 June 2007

Duck husbandry one of the keys to H5N1 HPAI appearance in Southeast Asia

Duck production practices can help explain the appearance of H5N1 HPAI in seasonal waves in Southeast Asia; by extension, better understanding of such practices throughout the region could help indicate where and when the H5N1 HPAI virus will next appear – even in other parts of the world such as Egypt and Nigeria. This is the major finding of a recently concluded joint FAO/Université Libre de Bruxelles study in Southeast Asia[1].

The study fell within the framework of ongoing research into the spatial epidemiology of highly pathogenic avian influenza (HPAI) aimed at clarifying the relationship between HPAI distribution and ecological risk factors, and was based on the premise that understanding these factors is essential for earlier warning of disease risk.

The idea for the research grew from recognition that since the first international epizootic wave of 2004, the epidemiology of the H5N1 HPAI has virus evolved differently in individual Southeast Asian countries: while the virus appears to have been successfully controlled in some countries, it has re-appeared more or less regularly despite the investment of significant resources in surveillance and control.

Recent research[2] suggests that the region may constitute a regional "evolutionary sink" for H5N1 HPAI virus, supporting the notion that the region faces periodic re-introductions. Although the role of wild birds in HPAI H5N1 virus spread during the 2004 epizootic remained unclear, the intercontinental spread of the virus in the winter of 2005/2006 indicated that wild birds were implicated in a number of introductions. The spread of H5N1 HPAI to central Europe during the autumn of 2005 was consistent with the hypothesis of virus introduction by migratory birds, in particular *Anatidae* (ducks, geese and swans)[3].

Since then, research has concluded that there is no single rule of virus introduction to a country (new introduction may result from trade as well as from wild birds).

The FAO/Université Libre de Bruxelles research team decided to look further into the question of virus spread in four countries marked by different levels of virus circulation and the application of different control strategies – China, Indonesia, Thailand and Viet Nam – and selected duck production systems as the focus of attention.

The research team identified a number of key interfaces between ducks, wild waterfowl, rice paddy production and virus distribution in time and space (*see diagram on next page*), and set out to answer three basic questions:

- how does the spatio-temporal distribution of rice harvesting and planting relate to domestic duck distribution and movements in space and time ?
- could the rice harvest distribution patterns help predict the seasonal pattern of HPAI outbreaks ?
- how does the distribution of domestic ducks and wild waterfowl assist in predicting the distribution of exposure to H5N1 virus in space and time ?

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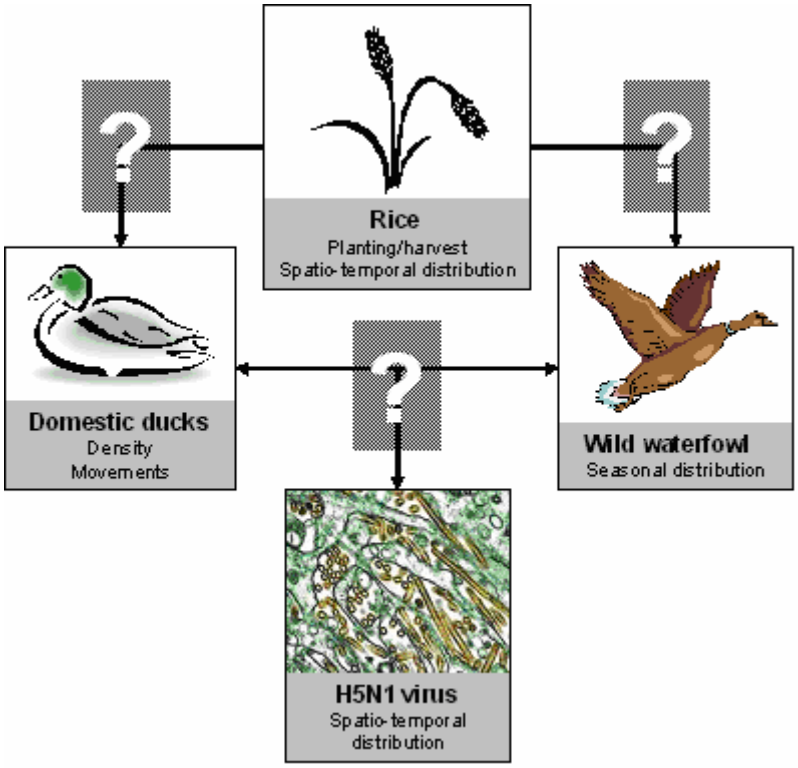
1 Glbert, M., Xia, Xiangming & Slingenbergh, J. (March 2007) *Highly Pathogenic Avian Influenza (HPAI) and acro-ecological risk factors in Southeast Asia*. FAO/ULB

2 Wallace, R. G., Hodac, H., Lathrop, R. H. & Fitch, W. M. (2007) *A statistical phylogeography of influenza A H5N1*. Proceedings of the National Academy of Sciences of the United States of America, 104, 4473-4478

3 Gilbert, M., Chaitaweesub P., Parakamawongsa, T., Premashthira, S., Tiensin, T., Kalpravidh, W., Wagner, H. & Slingenbergh, J. (2006) *Free-grazing Ducks and Highly Pathogenic Avian Influenza, Thailand*. Emerging Infectious Diseases 12(2):227-234



The research team found that geospatial analyses carried out in Thailand and Viet Nam confirm that there is a strong and consistent pattern of H5N1 HPAI virus distribution linked primarily to duck husbandry. It called for the collection of comprehensive data on duck production in space and time in all areas where the risk of H5N1 HPAI virus persistence needs to be quantified. These areas include Thailand and Viet Nam, where the team collected sufficiently detailed data to be able to perform follow-up analyses, in particular comparing the Mekong and Red River deltas.

However, the team says the methodology should be extended to other countries such as China, Indonesia, Egypt and Nigeria, where duck production may be an important driver behind the persistence of HPAI (in Egypt, for example, several tens of millions ducks are concentrated in the Nile delta area).

Drawing on its experience in Thailand, the FAO/Université Libre de Bruxelles research team noted that rice cropping determines the spatial and temporal distribution of ducks raised in extensive production systems. It says that remote sensing makes it possible to identify crop patterns in time and space, and that this, coupled with detailed understanding of duck/crop systems, makes it possible to predict the spatio-temporal distribution of ducks. Furthermore, extensive duck farming requires water ponds or rivers which are also easily detectable via remote sensing.

Together with local knowledge of seasonal duck farming practices, the maps of rice crops and water bodies obtained via remote sensing make it possible to formulate much more exact predictions of duck distribution in space and time, and therefore of the risk of H5N1 HPAI virus persistence and spread.

The study concludes with a word of caution: duck distribution is only one of the drivers of HPAI disease risk and must be considered in relation to other factors, such as terrestrial poultry production and poultry trade patterns, the role of wet markets, contact with migratory and resident wildlife, and environmental conditions that may determine persistence of virus in the environment[4].

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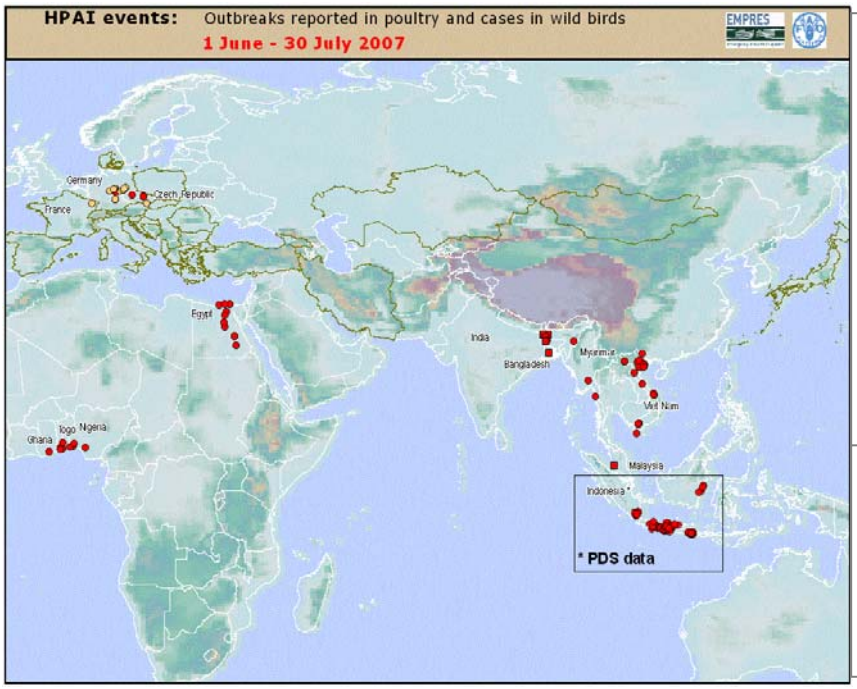
[4] Brown, J. D., Swayne, D. E., Cooper, R. J., Burns, R. E. & Stallknecht, D. E. (2007) *Persistence of H5 and H7 avian influenza viruses in water.* Avian Diseases, 51, 285-289
De Benedictis, P., Beato, M.S. & Capua, I, (2007) *Inactivation of Avian Influenza Viruses by Chemical Agents and Physical Conditions: A Review.* Zoonoses and Public Health, 54, 51-68

Outbreak Map
(1 June – 30 July 2007)



NOTE: This map represents occurrences of H5 and H5N1 reported from 01 June 2007 to 30 July 2007. H5 cases are represented for countries where N-subtype characterization is not being performed for secondary cases or if laboratory results are still pending. Countries with H5 and H5N1 occurrences only in wild birds are not considered infected according to OIE status.

Legend

HPAI Occurrences

- *Self Declared Free Country*
- *H5N1 Domestic*
- *H5N1 Wild*
- *H5 Domestic*
- *H5 Wild*

*PDS data: Participatory Disease Surveillance data - Please note that this data is not representative of the overall incidence of HPAI in Indonesia as the PDS system has spatial and temporal biases and not all districts and provinces are completely covered by PDS activities.

AT A GLANCE

The latest HPAI outbreaks for the period 1 June 2007 to 31 July 2007

Note
AIDEnews publishes reports of **confirmed HPAI cases only** to avoid any form of association with rumours or suspicions. AIDEnews uses the following sources, which are clearly identified for all reports: FAO, OIE, European Commission, United Nations and national governments.

AFRICA

Egypt

While HPAI outbreak numbers seem to be decreasing in commercial farms this year, a total of 20 outbreaks have been laboratory confirmed in backyard flocks for the period June – July 2007. The last outbreak was recorded on July 30 in Burg Al Arab, in the western part of the governorate Alexandria, affecting unvaccinated chickens and ducks.

Ghana

Following two outbreaks of H5N1 HPAI in May, a third outbreak started June 13 in the town of Aflao, Volta region, on the border with Togo. Some 1,100 birds were destroyed after the flock began experiencing increased mortality. Volta became the country's third region to be hit by the disease after outbreaks in Tema (Greater Accra region) and Sunyani (Brong Ahafo region).

Nigeria

While no new outbreaks have been reported in the month of June, four outbreaks of H5N1 HPAI were detected in July in Ogun State (Ado- Odo- Ota, July 4 and Obafemi Owode, July 16), Edo State (Ikpoba-Okaha, July 19) and Lagos State (Ikorodu, July 25), all in commercial farms. The situation in backyard poultry is currently unknown.

Togo

A total of 2,505 poultry died on a farm in Sigbehoue, about 40 km east of the capital, Lome, in an outbreak that started on June 6. The remaining 3,069 birds in the flock were slaughtered. As part of preventive action, Togolese officials ordered the slaughtering of poultry (a total of 8,000 birds) within a 3-km radius around Sigbehoue. It was reported that farmers received compensation – 2,000 CFA francs for meat-producing chickens, 500 CFA francs for chicks, 2,000 CFA francs for laying hens, 2,500 CFA francs for ducks and 5,000 CFA francs for turkeys (100 CFA = US 21 cents).

ASIA

Bangladesh

On July 15, the government confirmed the presence of the H5 virus on 52 farms in 17 districts (Dhaka, Savar, Turagh, Demra, Mirpur, Gazipur, Jamalpur, Narayangonj, Tangail, Jessore, Noakhali, Gaibandha, Magura, Rajbari, NilFamari, Dinajpur, Rangpur, Jaipurhat, Lalmonirhat, Thakurgaon and Naogaon). The most recent outbreak was registered in Naogaon.

China (Hong Kong SAR)

In 2007, the H5N1 HPAI virus has been detected in 17 dead wild birds in Hong Kong so far. The last case was in a house crow found dead on Sham Shui Po sports ground on June 12.

India

After having been free of HPAI for over one year, an outbreak of H5N1 HPAI was confirmed in the village of Chingmeirong, East Emphal District of Manipur, starting on July 7. The outbreak was the first since April 2006.

Indonesia

In the period June 28 – July 26 2007, 265 positive cases of HPAI were detected out of 6,344 interviews carried out under FAO's Participatory Disease Surveillance (PDS) programme in the country (51 in Bali, 179 in Java, 7 in Kalimantan, 2 in Sulawesi and 26 in Sumatra). Since the beginning of 2006, PDS teams have completed almost 59,185 interviews, of which 4.8 percent have resulted in detection of positive HPAI cases. FAO cautions, however, that these data do not represent the overall incidence of HPAI in Indonesia because the PDS system has spatial and temporal biases and not all districts and provinces are completely covered by PDS activities.

Malaysia

An outbreak of H5N1 HPAI started on June 2 among semi free-ranging chickens in the village of Paya Jaras Hilir in the central state of Selangor, which surrounds the capital, Kuala Lumpur. The outbreak was the first since March 2006. A total of 67 birds died, 4,127 were culled and 1,430 eggs destroyed within a 1 km radius of the infected area.

Myanmar

A total of 28 out of a flock of 989 battery laying hens died as a result of H5N1 HPAI in an outbreak that started on June 2 in Hanthawaddy, Bago division, 65 km north of Rangoon. The remaining 961 birds were destroyed. A further outbreak was reported in July from a farm keeping layer and broiler chickens in Kyone Kadet, located in the southern part of Mon State. The outbreak started on July 24. A total of 638 birds died and further 312 were destroyed.

Viet Nam

Viet Nam's Department of Animal Health (DAH) reported on June 21 that since the beginning of May 2007, HPAI had reoccurred in 18 provinces, including Nghệ An, Nam Định, Sơn La, Hải Phòng, Quảng Ninh, Bắc Giang, Đồng Tháp, Cần Thơ, Ninh Bình, Bắc Ninh, Vĩnh Phúc, Hà Nam, Quảng Nam, Hưng Yên, Thái Bình, Phú Thọ, Ha Tinh and Cao Bang.

Between June 23 and 27, a total of 29 out of 50 unvaccinated 55-day-old ducks died from HPAI in the village of Man Xa, An Lap commune in the district of Son Dong. The government reported that 105 out of 138 unvaccinated ducks died from HPAI on a farm in the village of Duc Lien, Hong Thai commune, Viet Yen district in the province of Bac Giang on June 27.

On June 28, the government reported the deaths of 800 ducks in Hung Trung commune, Hung Nguyen district in Nghe An Province. Samples tested positive for the H5N1 virus. All remaining birds were destroyed. On June 29, the government reported the deaths of 330 muscovy ducks in Thong Nhat village, Dong Tho commune, Dong Hung district in Thai Binh Province. Samples tested positive with H5N1 virus.

On July 2, nine unvaccinated ducks fell sick and five died in the village of Trung Giang, Tan Trung commune, Dam Doi district in Ca Mau Province. Tests confirmed the presence of the H5N1 HPAI virus. DAH reported the presence of HPAI on July 2 in Nghe An (Hung Nguyen district) and Thai Binh (Dong Hung district) provinces. In the first case, 800 ducks died on June 28, in the second 330 out of a flock of 603 ducks died on June 29.

Outbreaks of H5N1 HPAI were reported between July 9 and 22 in one commune of Cao Lanh district and three different communes of Lai Vung district in Dong Thap Province.

A total of 143 out of a flock of 960 ducks that died July 8 in a village in the commune of Phu Son and 40 out of a flock of 700 40 ducks that died July 1 in a village in the commune of Duc Long, both in Nho Quan district in the province of Ninh Binh province, were affected by H5N1 HPAI.

DAH reported the presence of HPAI on July 28 in 3 communes of Dien Bien district, namely Thanh Chan, Thanh Hung and Noong Het. 1,037 ducks, 232 chickens and 611 muscovy ducks were culled as well as 960 eggs destroyed.

From July 5 to 10, HPAI was detected in six unvaccinated poultry breeders in three communes of Dien Bien district, Dien Bien Province where about 500 ducks died out of 2,400. All were 25-day-old unvaccinated ducklings. Laboratory analysis confirmed the H5N1 virus. Five days later, the government reported that suspected cases of HPAI had been found in ducks in Noọng Hẹt commune, Dien Bien district, Dien Bien Province. Between July 18 and 26, culling operations were also conducted in six different communes of Dien Bien district and two wards in Dien Bien Phu city, Dien Bien Province.

On July 21, HPAI was detected in a farm in the commune of Cam Thuy, Le Thuy district, Quang Binh Province, in Quang Binh Province. 220 out of 3,000 four-month-old ducks died. Laboratory analysis confirmed the H5N1 virus.

As of July 31, the virus was still active in three provinces – Đien Bien, Dong Thap and Quang Binh.

EUROPE

Czech Republic

The country's first case of H5N1 HPAI occurred on June 19 on a commercial turkey farm in Tisova, 100 km east of the capital, Prague. Out of a total of 6,000 birds, 1,800 died and the remaining 4,200 were destroyed. Phylogenetic analysis revealed close genetic similarity to the recent virus in Kuwait and less similarity to viruses identified in outbreaks in EU member states, suggesting independent introduction of HPAI compared to previous virus introduction detected in Europe.
Following suspicion and subsequent confirmation of a second case of H5N1 HPAI on a commercial broiler farm in Norin, 4km from Tisova, over 27,000 birds were destroyed. While applying control measures, two holdings of breeding flocks that were sampled in Pardubicky, within the protection zone, tested positive for the virus on 11 July 2007 and a total of 87,947 chickens were destroyed. The chickens on these two premises did not show clinical signs.

France

Three swans found dead on June 28 in Assenoncourt, Moselle, in eastern France tested positive to H5N1 HPAI on July 5 by PCR performed at the national reference laboratory. On July 29, a further two swans were found dead in Diane Capelle, Moselle, close to the previous finds, and likewise tested positive to H5N1 HPAI.

Germany

In the country's first case of H5N1 HPAI this year, seven dead wild birds were found around two Bavarian lakes on June 23. H5N1 HPAI was confirmed June 26 in six dead wild birds (1 Canada goose and 5 mute swans) found in Bavaria, southern Germany, and also confirmed June 27 in three dead swans found near Leipzig in Saxony. The birds were identified as resident birds with none or only small-scale movement.

A black-necked grebe found dead at a large water reservoir near the town of Sondershausen, Thuringen, was affected by H5N1 HPAI. Three other wild birds found earlier in and around the Bavarian city of Nuremberg also tested positive for H5N1 HPAI.

On July 5, German authorities reported 38 new cases of H5N1 in wild birds found dead on the shores of an artificial lake near the town of Kelbra, on the border between Sachsen-Anhalt and Thuringen. A dead goose found dead on July 6 among other pet animals (5 geese and 5 ducks) at a home for the mentally disabled in Wickersdorf, Thuringen, was affected by H5N1 HPAI. The other nine birds were destroyed.

The first outbreak of H5N1 HPAI in domestic poultry this year was confirmed on July 7 in domestic geese and ducks from a holding in Wickersdorf, Thuringen. Following virus confirmation, a total of 1,200 animals within a 3 km radius from the affected premises were culled immediately.

On July 12, German authorities reported a further 207 cases of H5N1 in wild birds found dead in Bavaria (3 mute swans), Sachsen (2 mute swans, 1 great crested grebe and 1 mallard), Sachsen-Anhalt (1 wild duck, 1 rail, 2 great crested grebes and 163 black-necked grebes) and Thuringen (31 black-necked grebe and 2 mute swans).

MOST RECENT OUTBREAKS 2006-07

***Green**: wild birds only*

Bangladesh, Czech Republic, Egypt, France, Germany, India, Indonesia, Myanmar, Nigeria, Viet Nam (July 2007)
China (Hong Kong SAR), Ghana, Malaysia, Togo (June 2007)
Pakistan (May 2007)
Afghanistan, Cambodia, Kuwait (April 2007)
China, Korea (Republic of), Russian Federation, Saudi Arabia, Thailand, Turkey (March 2007)
Lao PDR (February 2007)
Hungary, Japan, United Kingdom (January 2007)
Cote d'Ivoire (November 2006)
Sudan (August 2006)
Spain (July 2006)
Mongolia, Niger, Romania, Ukraine (June 2006)
Burkina Faso, Denmark (H5), Poland (May 2006)
Djibouti, Sweden (H5), West Bank & Gaza Strip (April 2006)
Albania, Austria, Azerbaijan (H5), Cameroon, Croatia, Greece, Israel, Jordan, Kazakhstan, Serbia, Slovenia, Switzerland (H5) (March 2006)
Bosnia-Herzegovina, Bulgaria, Georgia, Iran, Iraq (H5), Italy, Slovakia (February 2006)

Sources: FAO, World Organisation for Animal Health (OIE), European Commission (EC), United Nations and national governments

SUMMARY OF CONFIRMED HPAI OUTBREAKS

(as of 31 July 2007)

Sources: FAO, World Organisation for Animal Health (OIE), European Commission (EC), United Nations and national governments – World Health Organisation (WHO) for human cases/deaths

Note: Highlighted countries indicate those in which there has been only one officially confirmed outbreak or occurrence

EUROPE Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Albania	16 February 2006	9 March 2006	Domestic poultry	-
Austria	10 February 2006	22 March 2006	Wild birds – cats	-
Azerbaijan	2 February 2006	18 March 2006 (H5)	Wild birds – domestic poultry – dogs	**8 / 5**
Bosnia-Herzegovina	16 February 2006	16 February 2006	Wild birds	-
Bulgaria	31 January 2006	9 February 2006	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	27 March 2006	11 July 2007	Wild birds – domestic poultry	-
Denmark	12 March 2006	26 May 2006	Wild birds – domestic poultry	-
France	17 February 2006	29 July 2007	Wild birds – domestic poultry	-
Georgia	23 February 2006	23 February 2006	Wild birds	-
Germany	8 February 2006	18 July 2007	Wild birds – domestic poultry – cats – stone marten	-
Greece	30 January 2006	27 March 2006	Wild birds	-
Hungary	4 February 2006	23 January 2007	Wild birds – domestic poultry	-
Italy	1 February 2006	19 February 2006	Wild birds	-
Poland	2 March 2006	7 May 2006	Wild birds	-
Romania	7 October 2005	6 June 2006	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	20 March 2007	Domestic poultry – wild birds	-
Serbia	28 February 2006	16 March 2006	Wild birds – domestic poultry	-
Slovakia	17 February 2006	18 February 2006	Wild birds	-
Slovenia	9 February 2006	25 March 2006	Wild birds	-
Spain	7 July 2006	7 July 2006	Wild birds	-
Sweden	28 February 2006	26 April 2006 (H5)	Wild birds – domestic poultry - game birds - mink	-
Switzerland	26 February 2006	30 March 2006 (H5)	Wild birds	-
Turkey	1 October 2005	1 March 2007	Domestic poultry – wild birds	**12 / 4**
United Kingdom	30 March 2006	27 January 2007	Wild birds – domestic poultry	-
Ukraine	2 December 2005	11 June 2006	Wild birds – domestic poultry – zoo birds	-

AFRICA Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Burkina Faso	1 March 2006	20 May 2006	Domestic poultry - wild birds	-
Cameroon	21 February 2006	28 March 2006	Domestic poultry – wild birds	-
Côte d'Ivoire	31 March 2006	9 November 2006	Domestic poultry – wild birds	-
Djibouti	6 April 2006	6 April 2006	Domestic poultry	**1 / 0**
Egypt	17 February 2006	30 July 2007	Domestic poultry – wild birds	**38 / 15**
Ghana	14 April 2007	13 June 2007	Domestic poultry	-
Niger	6 February 2006	1 June 2006	Domestic poultry	-
Nigeria	16 January 2006	25 July 2007	Domestic poultry – wild birds	**1 / 1**
Sudan	25 March 2006	4 August 2006	Domestic poultry	-
Togo	6 June 2007	6 June 2007	Domestic poultry	-

NEAR EAST Territory	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Iran	2 February 2006	2 February 2006	Wild birds	-
Iraq (H5)	18 January 2006	1 February 2006	Domestic poultry – wild birds	**3 / 2**
Israel	16 March 2006	30 March 2006	Domestic poultry	-
Jordan	23 March 2006	23 March 2006	Domestic poultry	-
Kuwait	23 February 2007	20 April 2007	Domestic poultry – wild birds	-
Saudi Arabia	12 March 2007	12 March 2007	Domestic poultry	-
West Bank & Gaza Strip	21 March 2006	2 April 2006	Domestic poultry	-

ASIA Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Afghanistan	2 March 2006	17 April 2007	Domestic poultry – wild birds	-
Bangladesh	5 February 2007	12 July 2007	Domestic poultry	-
Cambodia	12 January 2004	6 April 2007	Domestic poultry – wild birds	**7 / 7**
China	20 January 2004	14 March 2007	Domestic poultry	**25 / 16**
China (Hong Kong SAR)	19 January 2004	12 June 2007	Wild birds	-
India	27 February 2006	7 July 2007	Domestic poultry	-
Indonesia	2 February 2004	July 2007	Domestic poultry – pigs (with no clinical signs)	**102 / 81**
Japan	28 December 2003	30 January 2007	Domestic poultry – wild birds	-
Kazakhstan	22 July 2005	10 March 2006	Domestic poultry – wild birds	-
Korea, Rep. of	10 December 2003	8 March 2007	Domestic poultry – wild birds	-
Lao, PDR	15 January 2004	28 February 2007	Domestic poultry	**2 / 2**
Malaysia	19 August 2004	2 June 2007 (H5)	Domestic poultry – wild birds	-
Mongolia	10 August 2005	June 2006	Wild birds	-
Myanmar	8 March 2006	24 July 2007	Domestic poultry	-
Pakistan	23 February 2006	19 May 2007	Domestic poultry – wild birds	-
Thailand	23 January 2004	20 March 2007	Domestic poultry – wild birds – tiger	**25 / 17**
Viet Nam	9 January 2004	28 July 2007	Domestic poultry	**95 / 42**

ANNEX 1 CONTACT POINTS

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SHIPMENT OF SAMPLES

FAO can assist in the shipment of samples for poultry diagnostic testing – contact empres-shipping-service@fao.org prior to sampling. Please note that sending samples out of a country requires clearance by the Ministry of Agriculture. See pages 13 for information on destination laboratories, including sampling, packaging and shipment requirements.

ANNEX 2 LABORATORIES AND SAMPLE SHIPPING INFORMATION

ITALY

OIE/FAO and National Reference Laboratory, Istituto Zooprofilattico Sperimentale (IZS) delle Venezie, Padova

Types of specimen
Specimens for analysis may be virus isolates prepared in a submitting country or clinical specimens, such as tissues or swabs, collected from diseased birds.

Note:
Venice Marcopolo Airport only accepts material classified as "diagnostic samples" (code UN3373).

Packaging requirements
All materials should be in leak-proof containers. Packaging should be made up of three layers: (1) primary container, (2) secondary packaging and (3) rigid outer packaging.

Packaging of "diagnostic samples" (code UN3373) should comply with IATA PI650 standard. Packaging of "virus isolates" (code UN2814 for avian influenza virus and UN2900 for Newcastle virus) should comply with IATA PI602 standard.

Contact couriers to confirm the provision of boxes complying with these requirements.

Accompanying documents for clearance
Import permissions of the Italian Ministry of Health (formerly provided by the IZS).
A signed pro forma invoice (original with signature, no photocopy accepted) should be attached firmly to the box.

Shipping
Air freight or couriers via Milan Malpensa Airport (recommended, airport code: MXP), Rome Fiumicino Airport (couriers only, airport code: FCO) or Venice Marcopolo Airport (airport code: VCE, for diagnostic samples only, no isolates – code UN3373).

Arrange for shipments to arrive in Italian airports from Monday to Thursday only.

Shipping address
Istituto Zooprofilattico Sperimentale delle Venezie
Virology Department
Viale dell'Universita' 10
35020 Legnaro, Padova
Italy

Notification of shipment
Before shipping, please supply the IZS contact person with the following information:

- Date of embarkation
- Airline name and flight number
- Date of arrival in Italy
- Name of destination airport
- Airway bill number (fax as soon as possible to: [+39] 049 808 4360)
- Person to contact with the results of analysis (supply name, fax number and e-mail address)

Contact people at IZS

For diagnostic samples and viral isolates
Micaela Mandelli (mmandelli@izsvenezie.it)
Maria Serena Beato (msbeato@izsvenezie.it)
Phone: [+39] 049 8084371
Fax: [+39] 049 8084360

For reagents
Micaela Mandelli (mmandelli@izsvenezie.it)
William Dundon (wdundon@izsvenezie.it)

Other contact persons
Giovanni Cattoli (gcattoli@izsvenezie.it)
Alessandro Cristalli (acristalli@izsvenezie.it)

Important: Contact the IZS to discuss testing and testing materials before shipping. Provide details of the contact person with whom IZS should keep in touch.

UNITED STATES OF AMERICA

National Veterinary Services Laboratories (NVSL), Ames, Iowa

Import permit
Packages containing diagnostic specimens or organisms (infectious materials) imported from foreign locations into the United States of America must be accompanied by a permit issued by the U.S. Department of Agriculture. This permit, together with proper packaging and labelling, will expedite clearance of the package through U.S. Customs. One copy of the permit should be attached to the outside of the shipping container and a second copy placed just inside the lid of the outer shipping container. The permit can be obtained from NVSL.

Packaging requirements
All materials should be in leak-proof containers and packaged to withstand breakage.
All materials should be properly labelled.

Shipping address
National Veterinary Services Laboratories
Diagnostic Virology Laboratory
1800 Dayton Avenue, Ames, Iowa 50010
United States of America

Notification of shipment
Please provide the Diagnostic Virology Laboratory with shipping information (date of arrival, airline/courier, weigh bill number, etc.) as soon as it is available. Fax information to (+1) 515 663-7348 or telephone (+1) 515 663-7551.

Contact
Dr. Beverly J Schmitt
Tel (+1) 515 663 7532
Fax (+1) 515 663-7348
Beverly.J.Schmitt@usda.gov

AUSTRALIA

Australian Animal Health Laboratory (AAHL), Geelong

Type of specimen
Specimens submitted to AAHL for disease diagnosis may be either virus isolates prepared in the submitting country or clinical specimens, such as tissues or swabs, collected from diseased birds.

Import permit and packing
Copies of Australian import permits, suitable transport containers and packing instructions are available from AAHL by contacting aahl-accessions@csiro.au.
All specimens must be packed in leak-proof containers in accordance with appropriate IATA regulations and appropriately labelled. Copies of the import permit and other consignment details should be attached to the outside of the package to expedite clearance through Australian customs.

Notification of shipment
When submitting specimens, please contact the accessions clerk at accessions@csiro.au, the Duty Veterinarian at dutyvet@csiro.au or Dr. Peter Daniels on (+61) 3 5227 5000 and provide consignment details (including consignment note/air weigh bill number, courier/airline and expected arrival date) so that the specimens can be collected upon arrival in Australia. Alternatively send the information by fax to
(+61) 3 5227 5555.

Shipping address
The Director
Australian Animal Health Laboratory
5 Portarlington Road, Geelong, 3220
Australia

Telephone (+61) 3 5227 5000
Fax (+61) 3 5227 5555
http://www.csiro.au/aahl

Contact
You may also wish to discuss the testing required with Peter Daniels (peter.daniels@csiro.au) or Paul Selleck (paul.selleck@csiro.au) on (+61) 3 5227 5000 prior to submitting the specimens.

UNITED KINGDOM *(from outside the European Union)*

Avian Virology Laboratory, Veterinary Laboratories Agency, Weybridge

Packaging requirements
All materials should be in leak-proof containers, packed to IATA regulations by a registered IATA packer. At least two layers of packaging should be used and the inner layer treated lightly with disinfectant.

The outer packaging must be marked as follows:
ANIMAL PATHOGEN - PACKAGE ONLY TO BE OPENED AT THE AVIAN VIROLOGY SECTION, VETERINARY LABORATORIES AGENCY, WEYBRIDGE, SURREY

The packaging must also be marked with one of the following IMPORT LICENCE NUMBERS:
For Newcastle disease: AHZ/2232/2002/5
For avian influenza, other viruses, avian tissue, serum, faeces and eggs: AHZ/2074C/2004/3

Shipping address
Ruth Manvell
Avian Virology Laboratory
Veterinary Laboratories Agency (VLA)
Weybridge, New Haw, Addlestone, Surrey KT15 3NB
United Kingdom

Shipment instructions
A letter should accompany parcels with as much history about the isolates as possible (including species and age, area/country of isolation, clinical history if any, etc.).

If sending by air freight, it is essential that the airway bill number is given to the Avian Virology Laboratory, VLA-Weybridge by fax, telephone or e-mail before the arrival of the materials in order to facilitate early delivery.

Notification of shipment
Before dispatch, notify the Avian Virology Laboratory, VLA-Weybridge of the shipment details and the person to contact with information on results (name, fax number, e-mail address).

Tel : (+44) 01932 357736
Fax: (+44) 01932 357856
e-mail: r.manvell@vla.defra.gsi.gov.uk

Contact
If you wish to discuss a submission and options for support from the International Reference Laboratory for Avian Influenza and Newcastle Disease, please contact:
Dr. I. H. Brown
Tel: (+44) 01932 357 339
Fax: (+44) 01932 357 239
e-mail: i.h.brown@vla.defra.gsi.gov.uk