

Swine Disease Global Surveillance Report

Worldwide pork production is highly interconnected by trades between countries and markets, what could increase the risk of introduction of foreign pathogens into the US.

PROJECT

The aim of these reports is to have a support system for near real-time identification of hazards that will contribute to the mission of assessing risks to the industry and ultimately, early detect, identify, or prevent occurrence of events, in partnership with official agencies, and with our international network of collaborators.

Bi-monthly reports are created based on the systematic screening of multiple official data sources, such as government and international organization websites, and soft data sources like blogs, newspapers and unstructured electronic information from around the world that then are curated to build a raw repository. Afterward, a group of experts uses a multi-criteria rubric to score each event, based on novelty, potential direct and indirect financial impacts on the US market, credibility, scale and speed of the outbreak, connectedness, and local capacity to respond average is calculated. The output of the rubric is a final single score for each event which is then published in the report.

***Disclaimer:** These communications and the information contained therein are for general informational and educational purposes only, and are not to be construed as recommending or advocating a specific course of action.*



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Swine Disease Global Surveillance Report

Monday, May 6, 2019 – Monday, June 3, 2019

Report highlights:

- **First African swine fever (ASF) outbreak in Hong Kong:** the first two outbreaks were detected at slaughterhouses in animals imported from mainland China. These led to the culling of more than 10,500 pigs, impacting heavily in the local supply chain. China has suspended all live pig supplies to Hong Kong for the time being.
- **First ASF outbreak in North Korea:** authorities reported the first outbreak of ASF at a cooperative farm in Usi county, in the westernmost Changang Province. The Province is less than 10 miles from the border with the Chinese province of Liaoning.
- **87th general session World Assembly OIE - highlights on Global Control of ASF:** a global approach to ASF control was presented during the assembly, which will be based on an internationally agreed framework intended to harmonize regional and national strategies. The GF-TADs, with strong support from FAO and OIE, offer the ideal global forums to discuss holistic approach for it.
- **USDA launches ASF surveillance program:** USDA will start testing for ASF samples currently included in the classical swine fever (CSF) surveillance program.
- **Nipah virus outbreak in India:** on June 5, public health authorities in the southern Indian state of Kerala confirmed the virus has resurfaced, nearly a year after the last outbreak that claimed 17 lives.

AFRICAN SWINE FEVER

ASIA

Hong Kong (Special Administrative Region Government, SAR-PRC)

On May 12 and May 31, Hong Kong reported its first two outbreaks of ASF to the OIE. The first outbreak started on May 2 at the Sheung Shui Slaughterhouse, and it was confirmed by Tai Lung Veterinary Laboratory, Agriculture, Fisheries & Conservation Department (National laboratory) on May 10 by PCR. The slaughterhouse has been declared an infected premise and operations have been suspended. Concomitantly, samples were shipped/sent to the Pirbright Institute, OIE Reference Laboratory, for gene sequencing. Results are still pending. The virus was detected in a tissue sample from a condemned carcass of an imported pig tested as part of the laboratory quality management system. Accordingly, another 6516 pigs, which were in the slaughterhouse at the moment of the diagnosis, were all destroyed.



Map. 1: Location of the 1st outbreak reported in Hong Kong

The second outbreak was reported on May 31 in a slaughterhouse in the New Territories, where 4,700 pigs will be culled. Tension between local authorities and traders at both slaughterhouses arose regarding the decision of culling the whole population.

The Secretary for Food and Health, Professor Sophia Chan, explained in communication with the press that surveillance has been enhanced at checkpoints between Hong Kong and Guangdong province and at points when trucks arrive to slaughterhouses, where all animals are inspected for signs of ASF. Still, due to the length of the incubation period, the onset of clinical signs can be delayed and therefore positive cases may not be detected prior to mixing with other animals. She also stated that they are following international practices to protect everyone from the further dispersion of the disease.

North Korea

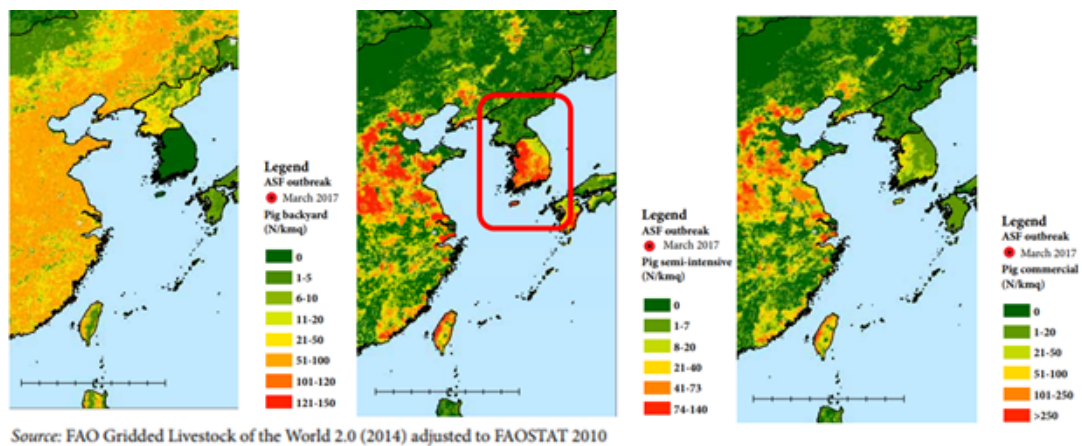
On May 30, North Korean authorities reported its first outbreak of ASF at a cooperative farm in Usi county (Map 2), in the westernmost Changang Province. The province is less than 10 miles from the border with the Chinese province of Liaoning, which hasn't officially reported any new outbreaks in the last two months. The outbreak affected 99 animals in a village, and the PCR results were run and confirmed by two national laboratories.

As a result, South Korea is on high alert. Similar to China, South Korea has one of the world's highest densities of domestic pigs (Map 3), meaning that an ASF outbreak would result in disastrous consequences for the swine sector. Resources have been mobilized to put in place preventive measures along the Imjin River (Demilitarized Zone) to prevent ASF transmission by wild boar across the border.

Back in February, two outbreaks in China were reported very close to the border with North Korea raising concerns in the Korean peninsula. In response, experts supported by the UN FAO traveled to North Korea to provide advice and support the countries preparedness plan. In addition, a one-day training and practical group exercises were given to 45 field veterinarians.

Key lessons taken from the training included: preventing the entry of the virus through smuggling and in passengers' personal luggage, increasing the level of awareness of the disease of field veterinarians, issues such as swill feeding and management of free-range pigs should be prioritized in national action plans, countries with wild boar population, surveillance strategies to find dead wild boar needs to be prioritized, among others (FAO).

Map 2. Location of the first outbreak reported by North Korea



Map 3: Swine density by production system in South Korea.

Vietnam

Since the Ministry of Agriculture and Rural Development (MARD) confirmed its first ASF outbreaks on February 19, Vietnam as confirmed outbreaks in 3,204 communes, in 294 districts of 48 provinces with total 1,950,139 pigs culled (Figure 1). Two key components of the National plan to control the diseases have been: no movement from infected provinces is allowed, and the compensation system, which offered 80% for piglets and finishing pigs, and 1.5 to two times the normal compensation rate for sows or boars.

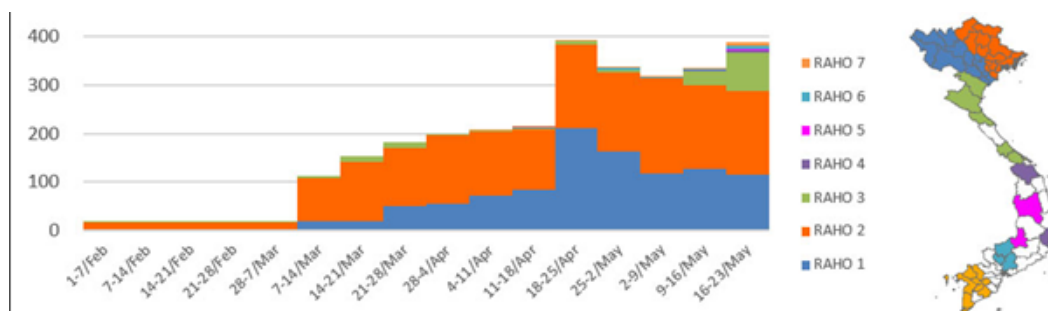


Figure 1. Weekly incidence of outbreaks per RAHO (Regional Animal Health Office), source: ASF situation in Asia update, FAO.

China

Last April, during the Beijing International Symposium on ASF jointly organized by MARA, FAO and OIE, the first meeting of the Standing Group of Experts on African swine fever in Asia took place (Link). This effort follows a similar approach to the standing group of experts formed in 2014 in Europe under the umbrella of GF-TADS (Global Framework for the Progressive Control of Transboundary Animal Diseases) to share information and develop best practices for prevention and control of ASF outbreaks. Presentations from experts were given on the background of the disease in Europe and China (access to the PPT), and discussions were centered around the coordination of data sharing and regional support for national actions to prevent and mitigate ASF.

During this meeting, Dr. Wang Youming, from the China Animal Health and Epidemiology Center (CAHEC) gave a presentation regarding the epidemiology investigation of ASF outbreaks in China (Link), sharing interesting insights regarding the epidemic dynamic on the country:

- Incidence 5.4%; mortality 69.4% (based in data by April 2019)
- About 300 people have participated in the field epidemiological investigation of outbreaks
- **Transmission routes of outbreaks** (based on 111 outbreaks in domestic pigs)
 - Live pig and pig product movements → 14.4%
 - Swill feeding → 44.1%
 - Fomites: vehicles and personnel → 41.5%

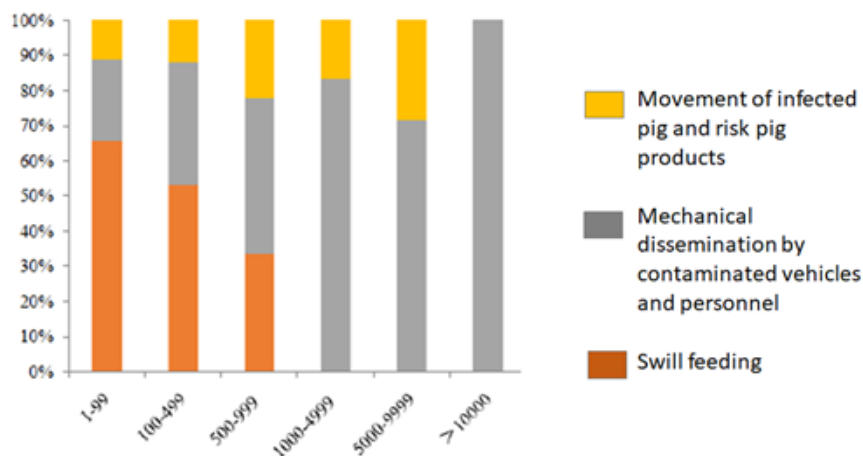


Figure 2. The proportions of different transmission routes for different scale farms. By 2016, there were more than 41 million farms in China with herds smaller than 99 pigs (showing a reduction of more than 30% compared with 2010), in the meanwhile the number of farms with more than 1,000 animals (total n= 89,388 by 2016) showed an increase of 19% compared to 2010.

- Main updates in the Chinese national control plan through the evolution of the epidemic

August 2018: ban on swill feeding in provinces with ASF cases

- October 2018: ban on swill feeding nationwide
- February 2019: implementation of detection of ASF by PCR at slaughterhouses (every batch of live pigs should be tested, no information regarding the sampling method was described)
- Movement restrictions: registration of vehicles, update of cleaning, and disinfection protocols
- Close of live pig markets in provinces with active ASF outbreaks

As next steps, strengthening implementation of current policies and verifying compliance, while implementing regionalized management, were highlighted as priorities of the national authorities by the expert.

Summary of the whole meeting conclusions:

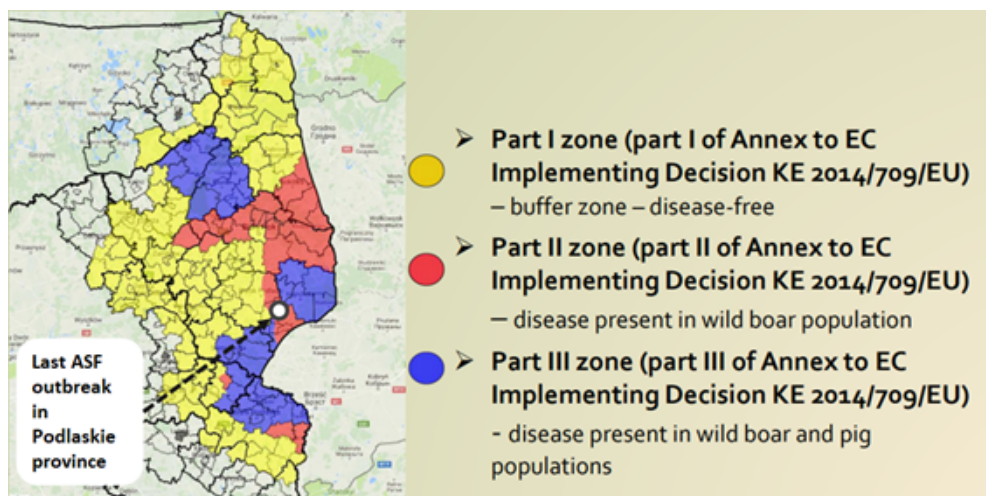
- This first meeting focused on ASF epidemiology with particularly focused on the background of ASF in Asia and surveillance for early detection and outbreak management. Other priority topics with the current situation in Asia which may be the focus for the following SGE-ASF meeting included: Biosecurity for ASF prevention; advocacy and communication, particularly human behavior change; and management strategies.
- Regarding the current disease situation and countries' capacities, to strengthen the ASF prevention, control and eradication in Asia, the meeting agreed that:
 - All activities to be carried out by FAO and OIE will be labeled under Global Framework for Transboundary Animal Diseases (GF-TADs); and communication and collaboration among FAO, OIE, relevant organizations and member countries are to be strengthened to **minimize duplication and ensure synergies**;
 - A regional approach for Asia is required and need to be adaptable **considering heterogeneity of pig production systems in Asia**.
 - **Strengthening surveillance for early detection for three purposes:**
 - Early detection of the first introduction of ASFV
 - Additional case finding for outbreak containment
 - Early detection for ASF control once established

Tentatively, the main theme of the next meeting, to take place in Japan in July 2019, will be biosecurity for ASF prevention.

EUROPE

Poland

On May 28, a new outbreak in Poland was reported in a breeding farm with more than 8,000 pigs (750 sows) in the village Wolka Wygonowska, in Podlaskie province, in the east of the country, close to the border with Belarus. This outbreak doesn't modify the current exports from negative zones ([Link](#)), given that it was detected in the area under proper restrictions established in accordance with the European Union legislation (Map 4). Last October, USDA Animal and Plant Health Inspection Service (APHIS) lifted restrictions on imports of pork from Poland establishments located in the contiguous free zones.



Map 4: Location of last ASF outbreak in Podlaskie province, regarding current regionalization (source: General Veterinary Inspectorate in Warsaw, Poland, presentation at the Animal Disease International Seminar on Control of Animal Diseases Bangkok, June 2018 ([Link](#)))

ÁFRICA

South Africa

Since April 15, when an outbreak of ASF was reported in South Africa in Mpumalanga province (Map 4), another three ASF outbreaks in another two provinces outside the control zone, Gauteng and the Free State, have been detected. Authorities have declared all areas under quarantine, and in order to prevent the spread of the disease, insist owners ask for the veterinary health certificates to potential owners when buying pigs. Also, they highlight the importance in preventing the contact of farm pigs with wild pigs and warthogs.



Map 5: Location of ASF outbreaks in South Africa.

87th General Session World Assembly OIE

Highlights on Global Control of ASF

During the 87th OIE General Session, held last week, a report on the global ASF situation was presented to the Assembly ([Link](#)), in which it is stated that based on the very complex epidemiological situation, global control of ASF needs to be understood and managed at local, regional, and global levels, including by preventing further spread through movement of animal products, with particular attention to anthropogenic transmission routes. In this regard, as global approach to ASF control should be based on an internationally agreed framework intended to harmonize regional and national strategies, the GF-TADs (launched in 2004 by the OIE and FAO) with strong support from FAO, OIE and other partners, offers the ideal global forum to discuss holistic approach for it. This initiative rests in two main facts, the importance of common or equivalent mitigation measures based on sound scientific and technical grounds and the urgent need of approaches that have in account specific regional characteristics.

In the upcoming months, the OIE will establish a work program in collaboration with FAO, taking into consideration the regional initiatives that already exist.

USDA Launches ASF Surveillance Program

On May 16, USDA communicated that preparedness efforts will be enhanced with the implementation of a surveillance plan for ASF. Greg Ibach, Undersecretary for Marketing and Regulatory Program, explained that *"...it will serve as an early warning system, helping us find any potential disease much more quickly. It will also minimize virus spread and support efforts to restore trade markets and animal movements as quickly as possible should the disease be detected."* USDA will start testing for ASF samples currently included in the CSF surveillance program. In FY 2017, under the CSF surveillance program, 12 approved NAHLN laboratories and the NVSL Foreign Animal Disease Diagnostic Laboratory tested 11,688 specimens for CSF. These include: *samples from high risk animals, including sick pig submissions to veterinary diagnostic laboratories, sick or dead pigs at slaughter, and pigs from herds that are at greater risk for disease through such factors as exposure to feral swine or garbage feeding* ([Link](#)).

Table 1. Number of animals tested under the national CSF surveillance plan for FY 2017

Surveillance Stream	Number of Tested Animals
Sick pig specimens submitted to veterinary diagnostic laboratories	2,374
Slaughter swine with high probability of CSF exposure	1,843
Feral swine	3,005
Swine with high probability of CSF exposure ¹	4,441
Swine with low probability of CSF exposure ²	...
FAD submissions tested for CSF	5

¹Waste feeders and populations from States with high probability of CSF exposure

²Populations from States with low probability of CSF exposure

Table 1. Number and type of samples included in the CSF surveillance program on FY 2017. Source: United States National Animal Health Surveillance System: 2017 Surveillance Activity Report.

In the communication released by USDA, other key elements of the prevention efforts currently being undertaken were highlighted, such as:

- Working with officials in Canada and Mexico on a North American coordinated approach to ASF defense, response, and trade maintenance. In this regard, Canada (CFIA) and US (USDA) agreed to update their import certificates for free areas of ASF in case of outbreaks in either countries. Both countries will work with the same reasoning of zoning that was applied in past outbreaks of High Pathogenic Avian Influenza. So, in the case of an outbreak in Canada or in the US, trade would be allowed between free areas.
- Working with US Customs and Border Protection at ports of entry, paying particular attention to cargo, passengers, and products arriving from China and other ASF affected countries;
- Increasing detector dog teams with US Customs and Border Protection to sniff out illegal products at key US commercial seaports and airports;
- Collaborating with states, industry and producers to ensure everyone follows strict on-farm biosecurity protocols and best practices (including garbage feeding in states where that is allowed);
- Expanding the testing capabilities and testing capacity of the National Animal Health Laboratory Network.

NIPAH VIRUS

INDIA

Nipah virus is an emerging infectious disease which first appeared in domestic pigs in Malaysia and Singapore in 1998 and 1999, where over 1 million pigs were destroyed to control the disease, causing devastating economic and social consequences. The disease causes respiratory and occasionally nervous signs in pigs, and it has devastating zoonotic potential. Fruit bats, also known as “flying foxes,” of the genus *Pteropus* are its natural reservoir hosts. The virus is present in bat urine and potentially, bat feces, saliva, and birthing fluids. However, since the initial outbreak it has primarily affected humans in different parts of the world, like in Bangladesh and India in 2003.

On June 5, public health authorities in the southern Indian state of Kerala, have confirmed it has resurfaced, nearly a year after the last outbreak that claimed 17 lives. Preliminary epidemiological investigation has associated the case of the 23 year old student in Ernakulam district, with the consumption of a fruit partially eaten by a bat. The state government has put 311 people, whom he had been in contact with the student, under observation. As far as now, no animal cases have been associated with the outbreak.

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