Swine Disease Global Surveillance Report

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

PROJECT

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

Monthly reports are created based on the systematically 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 then it is published including an epidemiological interpretation of the context of the event.

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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Current and previous reports:

www.swinehealth.org/global-disease-surveillance-reports/

Spontaneous reporting TOOL

Swine Disease Global Surveillance Report

Tuesday, February 2, 2021 – Monday, March 1, 2021

Report Highlights

- **First report of African swine fever (ASF) in Malaysia:** 5 outbreaks were identified in the island of Borneo
- **ASF in Hong Kong:** First report of the virus in a farm
- **Rise in smuggling of prohibited meat products into the US**: Seized meat shipments smuggled from China into the U.S. doubled in 2020
- **U.S. Emergency Response preparedness:** Homeland security released new ASF resource
- **Increase of ASF cases in South Africa**: first report of ASF in small-holding farms in Western Cape Province.
- **ASF natural mutations in China:** Chinese scientists reported results of surveillance efforts on the evolution of the virus

FEBRUARY OUTBREAKS BRIEF

R	Location	Date	Disease	Impact
1	Sabah (northern region of Island Borneo)**, Malaysia**	2/8	ASF	5 outbreaks were reported across 3 districts
1	4 towns in Leyte province**, Philippines**	1/14	ASF	At least 1,451 pigs were culled across 12 villages
1	Yuen Long (near the mainland China border)**, Hong Kong**	2/4	ASF	3,989 pigs culled
1	East Flores and Lembata districts, **Indonesia**	2/19	ASF	ASF has been reported in all sub-districts. 5,207 pigs died so far
1	All 41 counties**, Romania**	2/25	ASF	443 ongoing outbreaks
1	Gangneung, Gangwon-do**, South Korea**	2/11	ASF	First case detected on the east coast. Concern about further spreading.
1	Kitgum and Otuke districts (Northern region), **Uganda**	2/1	ASF	Over 2,000 pigs died so far
2	Western Cap (ASF free zone), **South Africa**	1/19	ASF	Two outbreaks affecting 168 animals overall
1	Yamagata and Mie prefecture**, Japan**	1/5	CSF	First outbreaks in 2 farms (1,327 and 6,600 pigs) after a 3-month absence

The outbreaks described in the table are colored according to an assigned significance score. The score is based on the identified hazard and potential it has to the US swine industry. Rank (R) Blue: 1 - no change in status; Red: 2 - needs extra attention as the situation is dynamic; Black: 3 - requires consideration or change in practices to reduce exposure to the US swine industry. Map with the location of the events reported is available at the end of this report.

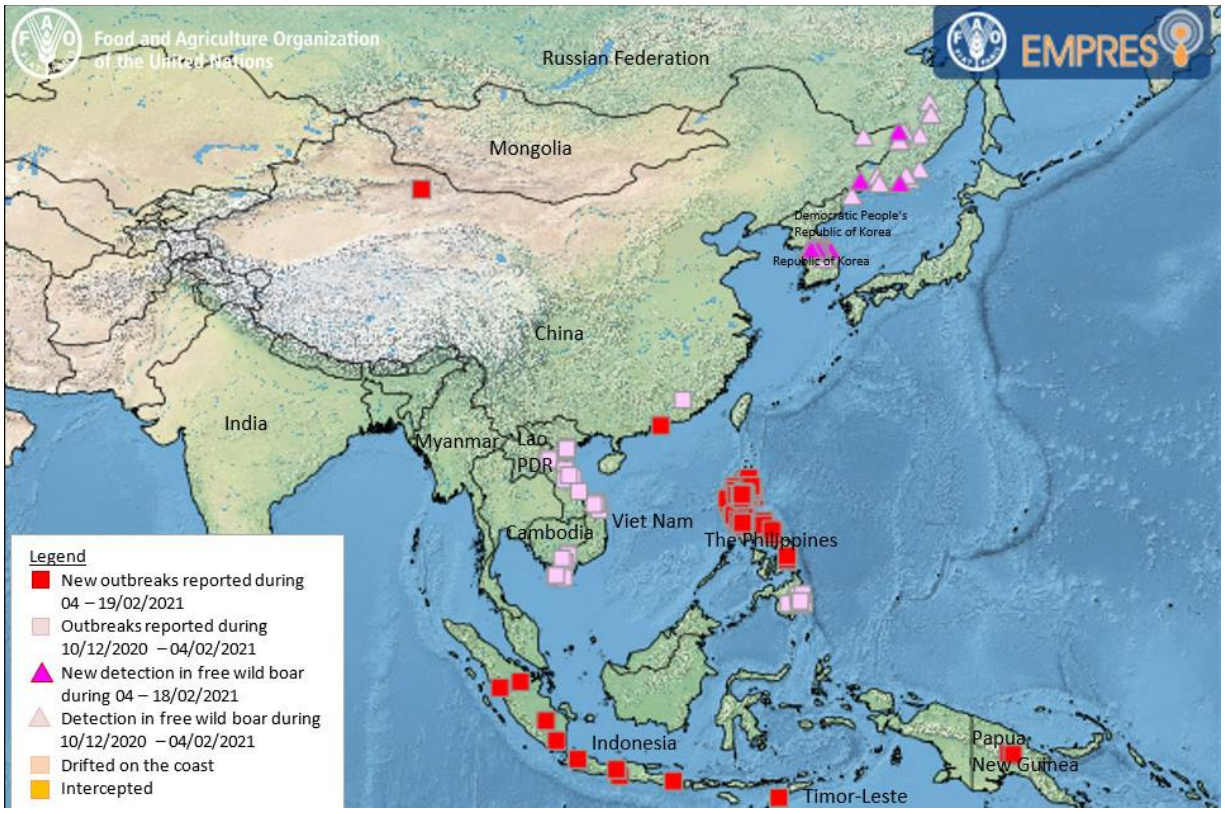
African Swine Fever

ASIA

In February, six countries - **Hong Kong (SAR-PRC), Indonesia, South Korea, Philippines, Russia, and Malaysia** - reported new ASF outbreaks with total losses of over 240,000 pigs.

Since 2018, the region has registered over 12,000 outbreaks with 7 million pig losses. The losses reported by the OIE are calculated based on the sum of dead and culled animals in the infected farm or backyard premises notified within the outbreaks. It doesn't include the impact of additional control measures applied in response to the outbreaks, such as preventative culling in a zone around an outbreak.

Currently, there are 1,336 ongoing official outbreaks across 13 countries.



Map 1. Notified outbreaks in Asia until February 19th (Source: FAO)

Malaysia

The sixteenth Asian country that reports ASF

On February 24, Malaysian authorities reported the confirmation of the first case of ASF in the country. This first outbreak involving backyard pigs in Pitas district was reported after the disease investigation was extended from the neighboring district following the suspicious death of a wild boar (which tested negative with conventional PCR by Sabah Department of Veterinary Services Laboratory).

After laboratory confirmation of the samples taken in the farm, surveillance was intensified and extended to other districts encompassing a 50 km radius from the index case. Later, the Sabah Wildlife Department confirmed a case in another wild boar in the Beluran district.

So far, five outbreaks on backyard farms were recorded in three districts - Pitas, Kota Marudu, and Beluran - affecting 212, 85, and 6 domestic pigs, respectively. Five positive wild boars were also recorded in a village of Beluran district.

Surveillance has been expanded outside the containment zone to cover the whole Sabah State. Authorities stated that 3,000 would be culled in the state in response to the outbreaks. These include an estimated 2,000 pigs and about 1,000 wild bearded pigs within a radius of 50 km (31 miles) in the Pitas district.

Map 2. Location of ASF outbreak in Malaysia

Regional response

On February 24, Taiwanese officials announced that fines on people bringing pork will rise from US$ 1,075 to US $7,000 following the official report of Malaysian authorities of the first ASF outbreak in the country. Malaysia had already been listed as a high-risk country for the disease, and luggage from passengers arriving from Malaysia has been X-rayed since 2019.

Hong Kong

First reported case in locally raised pigs

On February 4, the Hong Kong government confirmed the first ASF outbreak on a pig farm and the ensuing culling of 240 pigs that shared the same shed. Two days later, two pigs in another shed of the same farm tested positive, which led to the further culling of 590 pigs. Later, authorities ordered all 3,000 animals at that farm to be culled.

Authorities assured farmers and the public that they have stepped up surveillance of all farms on the island and encouraged farmers to report any sign that could be suspicious of the disease.

Previously, ASF had been detected in pigs on three occasions (May 10, 2019, May 31, 2019, and September 3, 2019) in the Sheung Shui slaughterhouse.

Most of the live pigs provided to Hong Kong's market are supplied by imports from mainland China on a daily basis. Local supplies - 43 licensed pig farms rearing about 60,000 pigs at present - account only for 15% of the total supply.

Philippines

Early February, the Department of Agriculture (DA) announced that at least 12 villages in Dulag, Leyte province (current stock = 127,725 pigs), have been placed under strict surveillance due to new cases of ASF. These villages are within the 7 to 10 km (4.3 to 6.2 mi) radius of a confirmed ASF case in Combis village.

Dulag is the fourth town in Leyte Province with confirmed ASF cases. The first case was in Abuyog town recorded on January 14, 2021. Dulag is about 44 kilometers (27 mi) from Abuyog. Other areas with ASF are Javier and MacArthur.

DA is working with local government units in adjoining areas to take immediate action and reactivate ASF task forces and step up efforts to regulate the movement of live pigs, pork, and processed pork products that go inside and outside their respective towns.

Initial investigation showed the ASF virus could have been transmitted to local farms in Leyte through infected boar being used for natural mating and by hog traders who may have fed their stocks with contaminated food products.

Leyte's island has become the third main island of the Philippines affected by ASF, following Luzon and Mindanao. Since the ASF outbreak hit the province early in January, at least 1600 pigs have been culled to contain the disease's spread.

AMERICA
US

US Customs and Border Protection authorities released a report stating that throughout 2020, federal agents in Los Angeles issued 1,049 Emergency Action Notifications compared with 527 in 2019.

CBP agriculture specialists found most of the smuggled animal products commingled in boxes of headphones, door locks, kitchenware, LCD tablets, trash bags, swim fins, cell phone covers, plastic cases, and household goods in a clear attempt to smuggle the prohibited meats.

In the calendar year 2020:

- CBP agriculture specialists at the LA/Long Beach seaport intercepted 183 shipments of prohibited meat products, compared with 29 the previous year → **an increase of 531%.**
- At Los Angeles International Airport (LAX) prohibited meat interceptions reached 866 compared with 498 the year before → **an increase of 73%**

Chinese animal products are in high demand in certain communities of the United States. Smugglers attempted to bring those products which are later sold in Asian grocery markets. Many consumers are not aware of the importation restrictions.

US emergency response preparedness

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) has published a new resource containing information about ASF and the country's emergency response preparedness. LINK to full document.

The purpose of this document is to enhance scientific collaboration on ASF research by creating a central, regularly updated clearinghouse to communicate the current state of ASF research, allow information sharing and input from ASF researchers and generally promote domestic and worldwide cooperation on this global threat

AFRICA

South Africa

The southernmost state of South Africa confirmed last week the first outbreak of ASF. This comes after two farms in Mfuleni, north of Khayelitsha, tested samples from dead pigs, which later came back positive for ASF.

In 2021 thus far, other provinces (North West, Gauteng, and Free State) outside the ASF free zone, have also reported outbreaks of ASF (Map 3).

South Africa's Department of Agriculture, Land Reform, and Rural Development (DALRRD), on February 26, communicated there has been an increase in ASF cases. The outbreak's origin is still unknown, but further analysis of the specific virus detected may provide some clues, officials said.

Map 3. South African administrative regions

Previous outbreaks in the free zone

A recent report, published in the Journal of the South African Veterinary Association, describes that South Africa has historically experienced sporadic ASF outbreaks in domestic pigs in the northern parts of the country. These were due to spillover from the disease's sylvatic cycle between warthog and tampans (soft ticks) in the area.

In 1935, South Africa declared this area an ASF-controlled area (Map 4). Since then, two main epidemics of ASF in domestic pigs were identified **outside of the South African ASF-controlled area**:

- In 2012 with outbreaks in Gauteng and Mpumalanga provinces → **1,621 animals died/were culled**
- In 2016–2017 with outbreaks in the North West, Free State, and Northern Cape provinces → **2,807 animals died/were culled**

Map 4. ASF control zone (Source: Department of Agriculture, Forestry and Fisheries // www.daff.gov.za)

These were the first ASF epidemics in South Africa associated with the transmission of the disease via a domestic cycle. People were found to play the main part in the spread of ASF by moving pigs, pig products, and other objects (including the people themselves) contaminated with the infectious virus.

Key findings:

- With an increased emphasis on food security, combined with the fact that with a free-roaming pig keeping system investment is minimal, small-scale piggeries are on the increase in South Africa.
    - Statistics in South Africa (2016) found in its Community Survey on Agricultural Households, that the number of households keeping pigs in South Africa increased from **112,678 in 2011 to 210,504 in 2016**. Of these households, 91% owned between one and 10 pigs.
- Another risk that needs to be addressed is that a significant proportion of pig slaughter was performed informally for local consumption, which means that ante- and post-mortem inspections are unlikely to have been achieved. The latter can be an essential step in identifying ASF, especially where farmers would want to salvage some monetary value when pigs start dying.

Source: LINK

Since 2019, the provinces outside the ASF-controlled area affected by ASF have been Mpumalanga, Gauteng, Free State, North West, Northern Cape, and the Eastern Cape.

EUROPE

Since the beginning of 2021, ASF continues to be reported in wild boar across Europe, including in the east of Germany. Over 1,500 cases have been reported by five countries (Germany, Hungary, Latvia, Romania, and Russia). According to OIE, frequent outbreaks in domestic pigs continue to be reported in Romania, with small numbers of outbreaks also reported in Ukraine and Russia.

Russia

Russian authorities have reported 10 outbreaks in domestic pigs, including five backyard premises and five commercial premises. All commercial premises affected were of moderate size, with between 10,000 and 35,000 pigs.

Romania

Romania is facing 443 active outbreaks of ASF in all 41 counties. Seven of these outbreaks are in commercial holdings, six of them in commercial type A farms affecting a number of 91,584 pigs, according to data reported by the National Sanitary Veterinary and Food Safety Authority (ANSVSA).

Since the first report in the country in July 2017, ASF has killed 740,000 pigs, and over US$148 million have been applied in compensation. The epidemic has created a deficit of the trade balance on pork, forcing the country to import pork for a value of over US$740 million each year.

Romania's swine sector has the capacity to house more than 3.6 million fattening pigs. Currently, only 27% is occupied (982,701 places). Most of the remaining farms filed bankruptcy.

RESEARCH HIGHLIGHTS

Emergence and prevalence of naturally occurring lower virulent ASF viruses in domestic pigs in China in 2020 - LINK to full article

In early February an article was published summarizing the findings of Chinese scientists regarding natural variants in the ASF viruses circulating in the country.

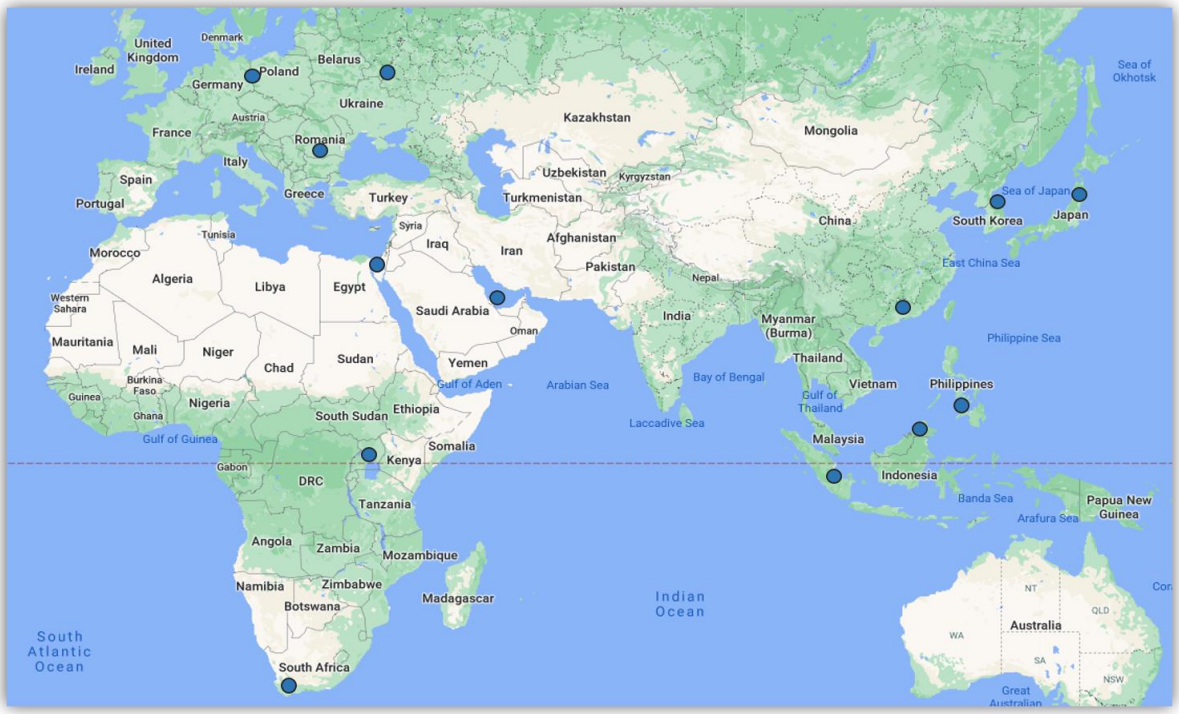
ASF has been circulating in China for more than two years. Considering the huge population of pigs in China and an endemic period, it is not surprising to find complex genetic diversity among the field strains. Still, it was not clear whether the biological properties of the virus have changed. The authors' report on the outputs of surveillance efforts across seven provinces of China, from June to December 2020. A total of 22 viruses were isolated and characterized as genotype II ASFVs, with mutations, deletions, insertions, or short-fragment replacement occurring in all isolates compared with Pig/HLJ/2018 (HLJ/18), the earliest isolate in China.

Key findings:

- Eleven isolates had four different types of natural mutations or deletion in the EP402R gene (*related to binding to red blood cells, deletions don't affect virus replication, but significantly attenuates its pathogenicity*) and displayed a non-hemadsorption (non-HAD) phenotype (*This phenotype has been frequently linked to attenuated isolates*).

- Four isolates were tested for virulence in pigs; two were found to be as highly lethal as HLJ/18. However, two non-HAD isolates showed lower virulence but were highly transmissible.

The emergence of lower virulent natural mutants brings greater difficulty to the early diagnosis of ASF and creates new challenges for ASFV control since they cause a much more delayed course, and mild, chronic disease signs, while being continuously shed via the oral and rectal routes.



Map 5. Location of the outbreaks reported throughout December. Blue: 1 - no change in status; Red: 2 - needs extra attention as the situation is dynamic; Black: 3 - requires consideration or change in practices to reduce exposure to the US swine industry

References:

Recurrent reports reviewed and included
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OIE - **OIE Asia Regional office**
DEFRA - **Animal diseases international monitoring reports**
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Research highlight -

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