

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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Swine Disease Global Surveillance Report

Monday, August 5, 2019 – Monday, September 2, 2019

Report Highlights

- **Chinese social media reports on ASF vaccine availability:** Authorities denied it and warned farmers regarding a possibly “fake” vaccine
- **Jump in swine mortality in the Philippines’ not yet attributed to a cause:** Increased mortality of pigs in the Philippines has raised concerns of ASF or some other emerging disease arriving in the country
- **First ASF outbreak reported in Serbia:** Low mortality rates raise questions about an evolving clinical presentation
- **Classical swine fever in Japan:** Vaccination against CSF in domestic pigs is being considered by the Japanese veterinary authority after outbreaks in two new prefectures

African Swine Fever

ASIA

China

WeChat social media in China recorded conversations on the use of an ASF “vaccine” in the country. There appears to be an “experimental” or possibly “fake” vaccine circulating through the country. **The cost of the vaccine is incredibly expensive at \$5000 per 250ml bottle.** There appear to be no labels or public pictures associated with the vaccine. In the past, fake ASF vaccines have circulated in China resulting in prosecution; however, some companies and individuals are using the unknown vaccine. The informal chat seems to suggest low vaccine efficacy; however, some big companies have started to increase their pig numbers in the face of continued outbreaks. Other individuals look at areas with many outbreaks that have occurred yet the mortality rate in those areas remains low, spurring further speculation of possible vaccine use. Despite those reports, it should be noted that there is no approved vaccine for ASF, the Chinese government hasn’t released any official document supporting these claims, and this conversation was recorded on social media only. Furthermore, last Monday, China’s agriculture ministry released a statement ordering local governments to step up checks and crack down on illegal vaccines at the same time, which warns farmers against using illegal experimental vaccines.

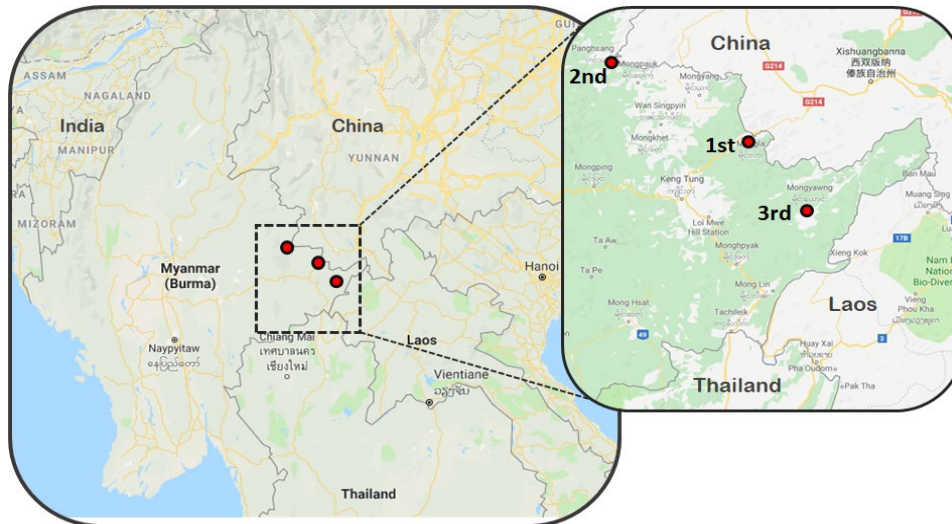
In this regard, last May, Chinese authorities stated the Harbin Veterinary Research Institute had found two vaccine candidates, but they highlighted those were still pilot tests, and that it had not yet approved any clinical trials.

Unfortunately, the urgency for an ASF vaccine has not only created huge controversy in China, the Sofia Globe (East European online newspaper) published information saying Romanian authorities have asked for help from Vietnam, stating that the partner country is developing a vaccine, which has been already tested and is believed to be effective against the infection. However, regional experts are skeptical of the claims.

Myanmar

ASF has been detected for the first time in Myanmar. This is the seventh Asian nation to report an ASF outbreak. On August 14, 2019, the Ministry of Agriculture, Livestock and Fisheries announced to the World Organization of Animal Health (OIE) the detection of a first outbreak, which started on August 1 in a frontier village called KengTung in Shan State, eastern Myanmar (Map. 1). The village is located very close to China. There were 65 pigs in the village; 15 of those were found infected, of which 12 had

already died. The remaining animals were culled. Another two outbreaks were reported later in August, in the villages of Matman and Tachileik.

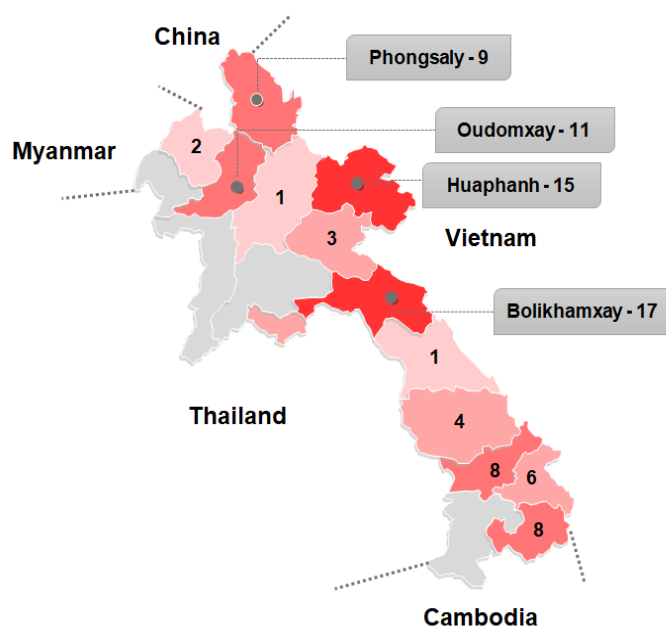


Map 1. Reported ASF outbreaks in Myanmar

According to IrraWaddy, as of last week, the National Democratic Alliance Army (NDA) authorities have culled more than 2,000 pigs in the region. The cause of the outbreak is inconclusive but it has been attributed to the illegal movement of animals and swill feeding, according to a report to the OIE.

Thailand and China announced the ban of pigs, wild boar, and related products imported from Myanmar to avoid the spread of ASF.

Laos



Since the Ministry of Agriculture and Forestry confirmed the first ASF outbreak in the southern province of Salavane last June, a total of 94 ASF outbreaks were reported within two months, in 15 out of 18 provinces/cities including 76 outbreaks that occurred between June 28 and August 13 and that were reported this week (Map. 2). High apparent mortality rates (average = 41%) have been documented through most of the reported outbreaks.

In the last month, almost 25,000 pigs have died or been destroyed due to the ASF.

Lao's Ministry of Agriculture and Forestry is drafting an order to help or compensate affected pig farmers and will submit the draft to the government for consideration.

Map 2. Distribution of Reported ASF outbreaks in Laos by province

EUROPE

The disease continues to spread in Eastern European countries, with the Republic of Serbia officially reporting ASF to the OIE. Additionally, Slovakia confirmed the first occurrence of ASF at the end of July and since then, nine additional outbreaks have occurred in domestic herds and four in wild boar.

Interestingly, Western Europe has remained fairly unscathed other than the detection of ASF in wild boar in Belgium. While Eastern Europe is fighting to control the disease and continues to close trade, Western Europe has remained a top exporter to supply the world's growing pork shortage. The EU's shipments of pork to China have climbed 43% this year through May.

Bosnia and Herzegovina have imposed bans on the import of pigs and pork from Serbia. The Minister of Foreign Trade and Economic Relations started a Joint Center for Control of ASF, which will work to prevent the onset of ASF in the country. The team will be tasked with implementing necessary control and prevention measures due to the disease emerging in Serbia, Hungary, Romania, Slovakia, and Bulgaria.

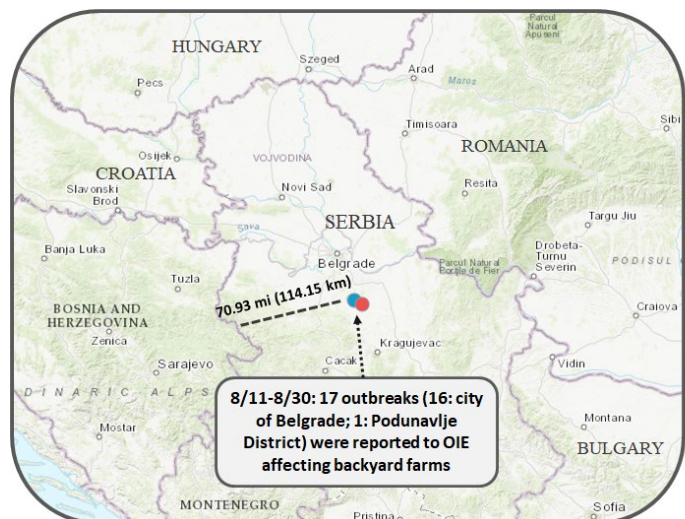
Greece has banned pork imports from Bulgaria and at the Bulgarian-Greek border crossings, checks have been stepped up to prevent pig meat products crossing the border.

Serbia

On August 8, Serbian authorities reported that African swine fever has reached the country with cases identified in late July 2019. To date, 17 outbreaks have been confirmed by Serbia's Institute of Veterinary Medicine. All outbreaks affected backyard farms in villages at the country's central area, 16 near Mladenovac (a municipality of the city of Belgrade), and one in the district of Podunavlje (Map. 3). Bulgaria, situated to the east, and other neighboring countries, Romania and Hungary, have been increasingly affected by ASF outbreaks in the last month.

All the outbreaks clustered in a relatively small area, 18 pigs died from the disease and 264 were culled.

While there is not sufficient evidence to be conclusive, the reported mortality rates seemed to be quite low in most of the outbreaks (average: 2,1-5,8%), indicating, potentially, that the strain circulating locally could have a milder clinical presentation. This highlights the importance of creating awareness between veterinary practitioners regarding the whole spectrum of clinical signs associated with ASF. Ranging from highly pathogenic strains that may kill nearly the entire herd to less virulent isolates that cause a milder, nonspecific illness difficult to recognize as ASF.



Map 3. Location of the first outbreaks of ASF in Serbia, in the central region of the country.

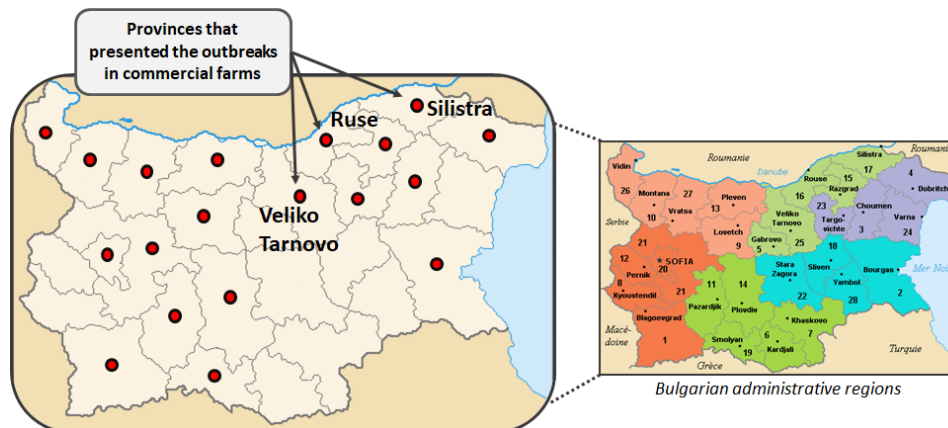
The first diagnosis was confirmed by the EU Reference Laboratory in Spain (Animal Health Research Centre (CISA-INIA)), afterward, the Institute for Veterinary medicine of Serbia (national laboratory) has taken care of diagnostic tests.

As a result of the outbreak in Serbia, neighboring countries Bosnia, Herzegovina, North Macedonia, and Montenegro banned pork imports; however, it has been reported that Bosnia allowed the import of some types of pork products and it is expected that North Macedonia and Montenegro will do the same. Croatia and North Macedonia have adopted precautionary measures to preserve their current ASF-free status. They are to begin farm inspections, to build awareness of farmers of the signs of ASF and to detect any suspected outbreak.

Bulgaria

In August, the rate of outbreaks in commercial farms has shown a clear decline after the explosive introduction of ASF into the country, which affected six large commercial farms leading to the culling of 130,000 pigs last July, forcing authorities to declare the ASF State of Emergency. Only one outbreak in a commercial farm was reported in Ruse province.

Still, 11 new provinces reported ASF cases of wild boar in August, making evident the significant spread of the disease throughout the country. Nineteen of 28 provinces have reported outbreaks in the last two months, affecting the six administrative regions (Map. 4).



Map 4. ASF outbreaks in Bulgaria. Red dots identify the provinces where cases of ASF in wild boar or backyard pigs have been reported.

Authorities, in an attempt to prevent the spread of the disease, have ordered compulsory culling of domestic pigs in 23 out of 28 provinces in the country, and in areas where ASF had been confirmed, a ban was issued on entering forests within a 200km zone to hunt, cut timber, or pick mushrooms. Voluntary culling of domestic pigs has proceeded in places, but elsewhere in Bulgaria there are continuing protests by smallholders resisting the pig culling order.

Bulgaria is to receive 2.8 million euro to fight ASF and has applied for 11 million euro compensation for actions already taken to quell the disease in areas where ASF was confirmed.

Increased Mortality – Unidentified agent

Philippines

Increased mortality of backyard raised pigs has been reported in The Philippines - 20% compared to the normal 3-5%. The increased mortality was identified on Luzon Island near the capital city of Manila. In precaution, the Department of Agriculture culled all pigs in a radius of 1km around the infected premises. When the mortality was first noted, Agriculture Secretary William Dar neither confirmed nor denied ASF as the cause. To date, no reports have been made to OIE. Samples have been taken and shipped to laboratories in Europe for testing.

However, in response to the event, preventive and biosecurity measures have been put in place. In addition, there is a temporary ban on the importation and distribution of pork products from countries

suspected to have ASF. There is also a ban on the transport of live animals, meat products, and by-products without the certification of a licensed veterinarian and a relevant shipping permit from the Bureau of Animal Industry (BAI).

Interestingly, it has been stated that laboratory results would take two to three weeks. Recently, Dr. William Dar, who has recently been appointed as **Secretary of Agriculture**, reported that the **disease that has caused the recent pig deaths is not ASF**. Despite these claims, the Department of Agriculture refused to publicly reveal the cause of pig deaths because they “do not want to create panic” among people. He emphasized though that they are currently managing, containing, and controlling it.

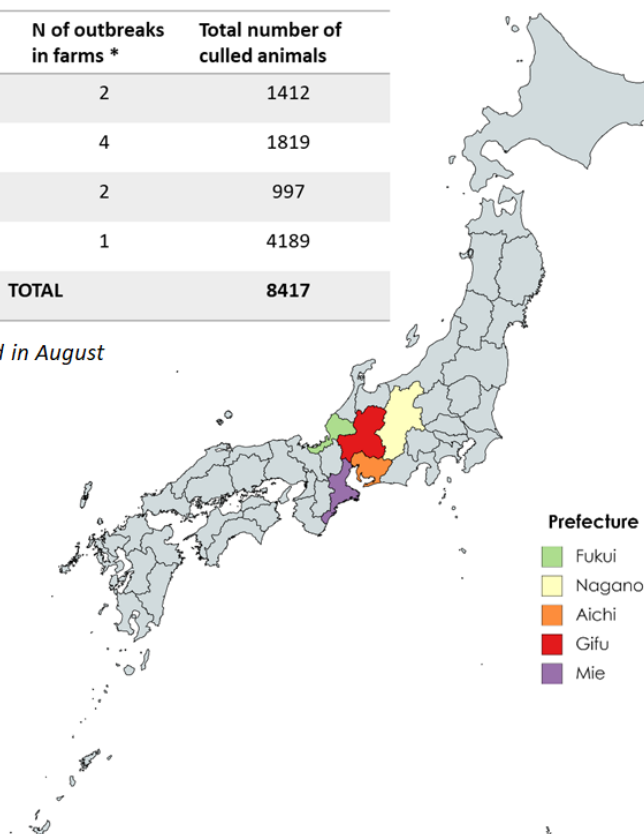
The Philippines in the last year has placed a number of safeguards to protect its \$5 billion dollar pig industry including banning products from dozens of countries where outbreaks of ASF have occurred.

Classical Swine Fever

Japan

Affected prefecture	N of outbreaks in farms *	Total number of culled animals
Gifu	2	1412
Aichi	4	1819
Fukui	2	997
Mie	1	4189
TOTAL		8417

**reported in August*



On August 13, the 37th classical swine fever (CSF) affected farm in Japan was reported by the Fukui prefecture authorities (Livestock Hygiene Service Centre, LHSC), making a total of 22,248 culled animals in the last two months.

This is despite, since the beginning of the epidemic (September 2018), authorities imposing shipment and movement restrictions (Shipment Restriction Zone - SRZ). An SRZ is established within three to 10 km radius of the affected farm, and Movement Restriction Zone (MRZ), within 3 km radius of the affected farm) and simultaneously, oral vaccination (bait vaccine) has been applied since last March to wild boars in selected area in Gifu and Aichi, the expansion of the disease has not shown signs of waning.

Map 5. Japanese prefectures affected by CFS epidemic.

Wild boar surveillance

Until August 18 (since September last year), the active surveillance of wild boar population has detected 980 positive cases in Japan (323 recovered carcasses; 657 captured lived animals). Most of them (85%) came from Gifu prefecture, followed by Aichi (6%) and Nagano (6%). Interestingly, Gifu and Nagano,

show a significantly higher prevalence of positive samples, 43.9% (841/1914) and 27.8% (59/212), compared to much lower values detected in Aichi (8.2%; 796/65) and Mie (3.1%; 131/4).

These heterogeneous values may suggest a differential stage in the infection dynamic in each of these subpopulations of wild boars across the country. In this regard, the Ministry of Agriculture, Forestry and Fisheries (MAFF) is working to strengthen sanitation management, including the plan to mandated nationwide pig farms the installation of protective fences to prevent wild boar invasion.

Farm vaccination

Last month, MAFF has begun to examine the cost-benefits of implementing vaccination against CFS at the farm level in the affected prefectures. Authorities have communicated the initiation of an exchange/conversation with OIE regarding the potentiality of implementing a protocol following OIE standards on zoning. Simultaneously, a survey targeting 13 related prefectures, including six prefectures in which CSF was confirmed, and seven surrounding prefectures, is being implemented to gather the producers' opinion regarding the feasibility of implementing a vaccination plan.

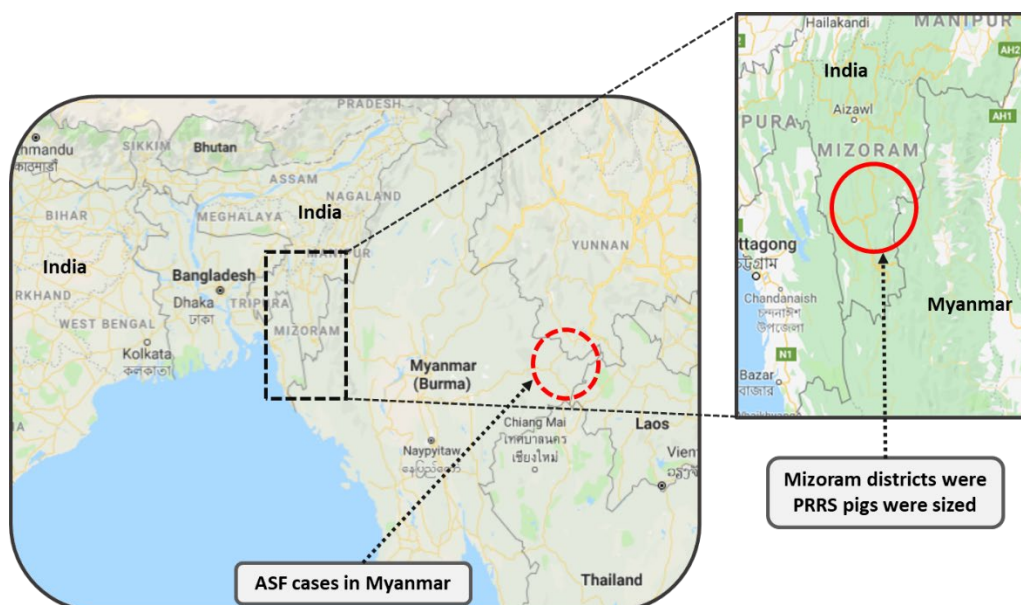
The goal would be to establish a system that guarantees that no pig from the vaccine-targeted areas would be moved or sold outside the region, including a strict vaccine distribution management system and solid traceability system will be in place at prefecture level, these components would be a priority to minimize the impact of this strategy on Japanese pork exports. Still, the restrictions on sales channels within the country could create a significant burden on farmers.

The current official guidelines do not allow prophylactic vaccination of animals that would not be sent to the abattoir. The ministry will consider carefully whether to revise these guidelines, in correspondence of the results of the surveys in each prefecture.

PRRS – an emerging threat for the region?

India

Six pigs seized in Mizoram, a state in northeastern India, which were smuggled from Myanmar, tested positive for porcine reproductive and respiratory syndrome (PRRS). No new additional cases of PRRS have been identified. A total of 262 pigs and 102 piglets were seized on several occasions in several districts, and 15 people were arrested.



Map 6. Mizoram state, India. PRRS cases smuggled from Myanmar.

PRRS has affected the state in 2013, 2016, and 2018, killing over 11,000 pigs. Massive governmental efforts to prevent swine disease outbreaks have been in place. Pig imports have been banned from Mizoram's neighboring states and Myanmar since last March. Additionally, two committees have been developed to help prevent swine disease outbreaks. One committee was designed to specifically respond to the illegal entry of pigs within the Aizawl Municipal area and another, the "Preparedness for African Swine Fever," Committee is comprised of animal husbandry and veterinary officials along with experts from the college of veterinary sciences. Two surveillance squads were also created by the state department. These squads raid and inspect areas searching for smuggled pigs every Thursday in the Aizawl Municipal area.

This could be a clear example of the spillover effects of the current critical situation of ASF in the region. Potential collateral effects, such as the weakening of control strategies and diagnostics of other infectious diseases, just by draining resources or increasing the dispersion of other infectious agents by the increase in the illegal movement of animals through borders following the market dynamics.

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