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.

UNIVERSITY OF MINNESOTA

SHiC
Swine Health Information Center

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

Tuesday, February 3, 2020 – Monday, March 2, 2020

Report Highlights

- **European Food Safety Authority (EFSA) report: The European Commission requested EFSA provide an updated analysis of the epidemiology of ASF. Key findings and identified gaps to inform sustainable control strategies are summarized. A few to note:**
    - ASF has been progressively, but slowly, expanding mainly in a southwesterly direction.
    - There is evidence in all affected countries that is suggestive of human-mediated translocation of the virus. The most obvious examples of this include the introduction of ASFV into Belgium, Czech Republi,c and western Poland.
    - Currently, there is no evidence that large fences have been effective for the containment of wild suids. Some new large-scale fences are under construction, and their effectiveness in separating wild boar populations will need to be evaluated in the future.
- **Greece confirms the first case of African swine fever (ASF):** The disease was found in a backyard farm less than 50 miles from the border with Bulgaria.
- **New ASF outbreak in Myanmar:** After almost five months since its first case Maynmar reported new outbreaks in the north of the country.
- **Expansion in the Philippines:** Government ordered the culling of what remained of the 100,000 hogs in Davao occidental province.
- **Foot-and-mouth disease (FMD) outbreak in Kenya**: An outbreak of FMD was confirmed in the northern part of the country.

ASF in Europe 2018-2019: Lessons Learned

The European Food Safety Authority (EFSA) released epidemiological analyses of ASF in the European Union (Nov 2018-Dec 2019).

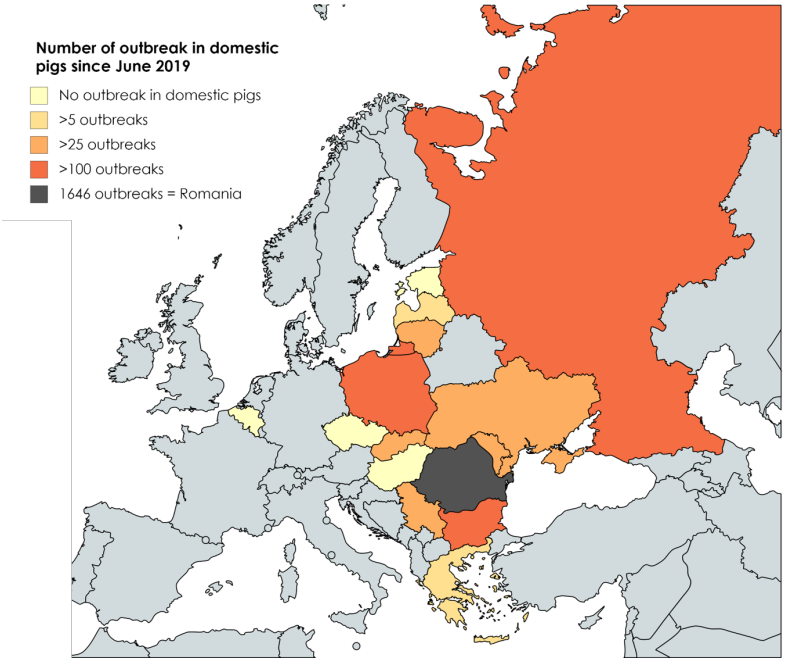
Some of the main findings are:

- ASF has been progressively, but slowly, expanding mainly in a southwesterly direction.
- All ASF-affected areas are essentially contiguous, except for isolated introductions in Czech Republic (now resolved), western Poland and Belgium.
- In countries where the disease has been present in wild boar for more than two years (Baltic countries, Poland and Romania), results confirm the presence of seasonality in ASF detections. The number of notifications of ASF in wild boar were highest in winter and summer and lowest in spring. In domestic pigs, only a summer peak was evident based on notified outbreaks in these countries.

- An analysis was performed to assess the speed of natural propagation of ASF in wild boar populations. The median velocity of infection in Belgium, Czech Republic, Estonia, Hungary, Latvia, Lithuania, and Poland was between 2.9 and 11.7 km/year.

- There is evidence in all affected countries that is suggestive of human-mediated translocation of the virus. The most obvious examples of this include the introduction of ASFV into Belgium, Czech Republic and western Poland. Moreover, the analysis of less obvious occurrences revealed that human-mediated translocation of ASFV remains a very important factor in contributing to the translocations of ASFV both within and between wild boar populations, of particular impact in the south-eastern affected region.

- The identification of key risk factors at the domestic/wildlife interface with a view to strengthening biosecurity and other risk mitigation measures was a key target of these efforts. In this regard, data of ASF occurrence in wild boar in Estonia, incorporating data from 2014 to 2019, was used for this analysis. These results were particularly influenced by the conditions of the domestic pig sector in 2014, presenting an 18-fold increase in the probability of observing an ASF-positive wild boar for each unit increase in the density of pigs in smallholdings per local administrative unit (animals in smallholdings/km^2). Many other variables were identified as non-significant risk factors. (Further details: EFSA report, page 4).



Map 1. Number of ASF outbreaks in European countries since last June

- Regarding potential risk factors for ASF occurrence but with a particular focus on ASF incursion in domestic pig holdings in Romania, the only significant risk factor for ASF occurrence in commercial herds was the distance to the nearest domestic pig outbreak.

- Drastic reduction (up to 80%) of feral pig populations has been reported with control programs in which pig hunting is conducted from a helicopter or through a combination of trapping and intense drive hunting with dogs. Rapid recovery of the population has been reported, up to 77% the year following these interventions. This highlights the fact that urgent interventions for disease control (i.e., locally implemented emergency measures) are different from, and should not be confused with, long-term management at larger scale associated with sustainable population management.

Fences: Yes or No? - The Belgian experience

Belgium uses fences as part of the control strategy deployed in the focal outbreak of ASF in wild boar (summary, EFSA report). So far, the measures have proven effective in keeping ASFV within the affected area and avoiding further spread. This strategy has included a combination of different measures, namely zoning, carcass removal, a complete feeding ban, specific hunting regulations and depopulation actions depending on the zone, a partial ban of circulation and logging, and setting up a network of concentric fences. Fencing (120 cm high, mesh size 15 x 9 x 20 cm, unburied and not fixxed to the ground) contributed to the slowing down of ASF spread and allowed compartments to be created in which depopulation could be carried out without risking long distance wild boar movements.

Still...

Currently, there is no evidence that large fences have been effective for the containment of wild suids. Some new large-scale fences are under construction, and their effectiveness in separating wild boar populations will need to be evaluated in the future.

The ASF situation varies substantially between EU countries, due to multiple influences including the nature of domestic pig production (in particular, the proportion of backyard holdings), geographic considerations (including topography, natural barriers) and the characteristics of the wild boar population.

Remaining knowledge gaps -

There are significant gaps in knowledge on the epidemiology of ASF in Europe, including:

- The contact rate between wild boar and carcasses, the contact rate between groups, and the potential role of vectors in ASF spread (including insects) or mechanical vectors.
- Regulations should be developed for home slaughtering and appropriate controls enacted, to limit the circulation of infected meat.
- To improve wild boar population control strategies, further research is needed:
    - to clarify the pathways that facilitate ASF persistence in affected areas over a number of years
    - to clarify the interpretation of seropositivity in the context of ASF infection, including whether animals that test both PCR negative and Ab positive should be notified as an ASF case or not
    - to clarify the ability of survivor animals to excrete or harbor the virus
    - to clarify the epidemiological significance of a single, PCR-positive wild boar in areas with no current evidence of infection
    - to clarify the duration of colostral antibodies in piglets
    - to validate methods to estimate carcass age (time since death) in found-dead wild boar
    - to define a pathway to ASF freedom following the detection of the last known infected animal/carcass.

African Swine Fever

EUROPE

Greece

Greece detected the first case of ASF at a backyard farm in the northern part of the country, agriculture ministry officials reported to the OIE on February (2020. The infected finishing farm was confirmed positive near the town Serres, in the province Kentriki Makedonia, a region of northern Greece close to the border with Bulgaria (37.3 miles) and North Macedonia (Map 2).

The farm had 32 pigs, of which one pig had d of ASF. The outbreak was confirmed by the Na Reference Laboratory in a dead fattening pig in backyard farm, using three different diagnostic te (real-time PCR, ELISA for antigen detection and indirect immunoperoxidase test (IPT)) on Februar Measures had been adopted in the framework o suspicion since February 3 and,
following the confirmation of the outbreak.

According to the latest updates of the European Outbreak Assessment report (DEFRA, UK), there have been 187 cases of ASF in wild boar in Bulgaria from November 2019 to January 31, 2020. The January count showed a peak of 105 compared to the previous month (November = 44; December = 38), which could suggest an increase in ASF circulation. Some cases were close to the borders of currently ASF-free North Macedonia and Greece, both of which were already on high alert; they had been identified last December, as two of the nine Balkan countries to have a very high chance (66-100%) of disease spread inside their borders within a year of introduction. Accordingly, Greece was expecting an ASF outbreak and had stepped up surveillance, ahead of confirmation of the virus in the country.

Greece produces about a third of its domestic pork consumption and imports the rest. In 2017, the country had about 744,000 pigs (FAO).

Measures taken

All farmed pigs in an area of 3km around the farm were culled. Pigs were not allowed to enter or exit areas within a 10km radius, while tests were being conducted to trace the origin of the disease. Exports of all swine products including meat, food, sperm and eggs, utensils and other related waste from the Serres prefecture was banned. In addition, Serres prefecture veterinarian centers, police, port and government authorities have been placed on alert.

In 2019, Greece submitted to the Commission a program for control eradication of ASF to be implemented in 2020. After its evaluation, the Commission approved the program through a Grant Decision on January 2020 and allocated €203,000 of financial support for the program.

Bulgaria

New ASF outbreak on a large commercial farm

The Bulgarian Food Safety Authority (BFSA) has reported an outbreak of ASF in a commercial farm in the village of Nikola Kozlevo, Shoumen District (northeast of the country).

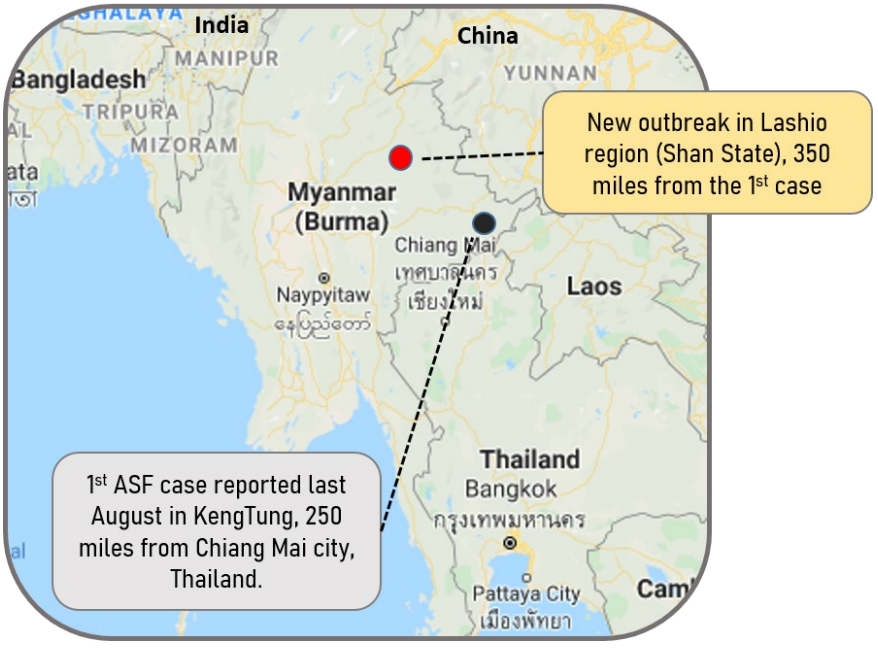
After six months without any new ASF outbreaks on large commercial farms, the National Reference Laboratory in Sofia confirmed the presence of the disease on a pig farm with 24,000 susceptible animals.

ASIA

Myanmar

On February 14, 2020, the Myanmar Ministry of Information and Ministry of Agriculture Livestock and Irrigation confirmed the new outbreak of ASF in Shan State, the northern part of the state. The outbreak started in NaungMon village, Lashio area of Shan State on February 6, 350 miles north from the previous outbreak (Map 3).

In August 2019, the country reported the first case of ASF in a frontier village called KengTung in Shan State in eastern Myanmar. Since the Ministry confirmed the first ASF outbreak on August 1, 2019, a total of four ASF outbreaks were reported in Shan State, according to FAO.



Map 3. ASF outbreaks in Myanmar

Supplying more than 85% of Myanmar's animal protein consumption, the pork and poultry industry represents a substantial portion of the economy. The government and relevant stakeholders have crafted out a Myanmar Pork Industry Emergency Plan with an aim to reduce losses and quickly rebuild the industry.

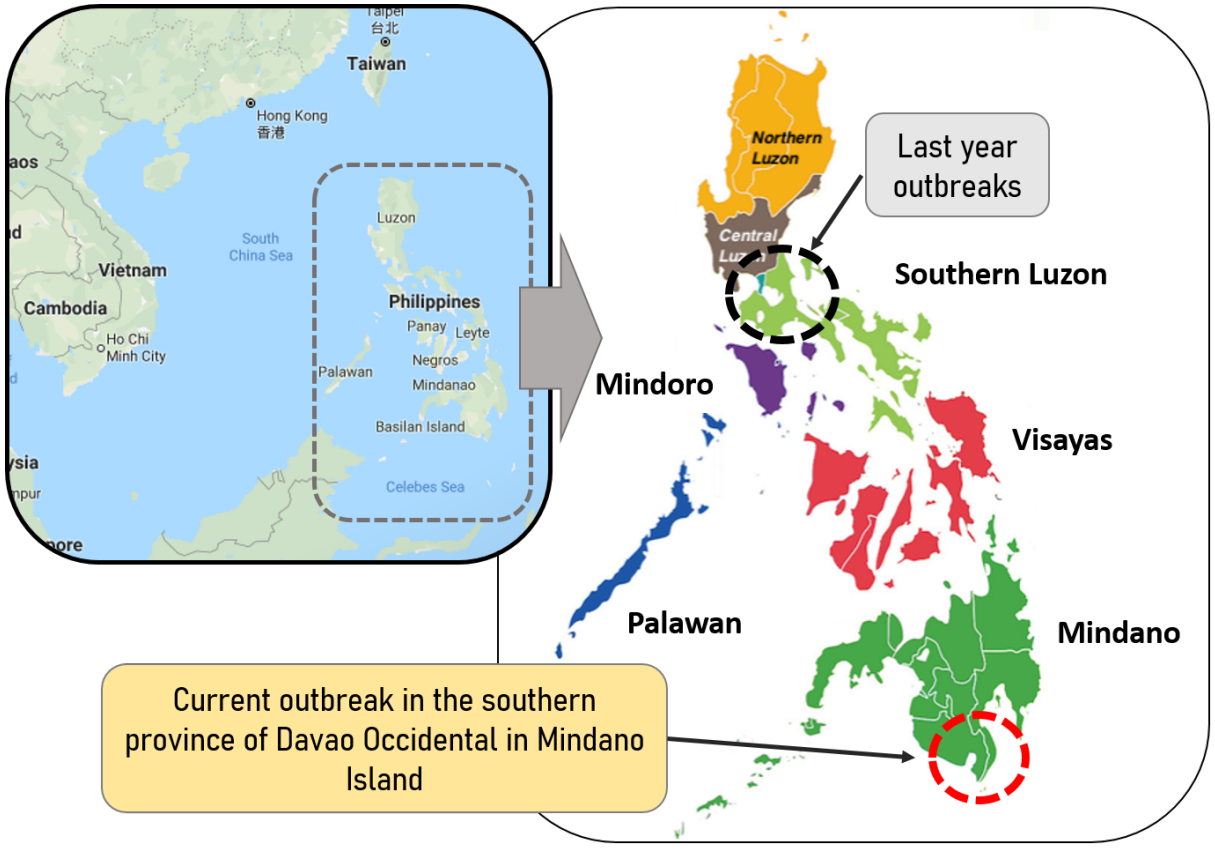
Opportunity to move forward -

ASF also opens up a US$800 million opportunity to modernize farms and upgrade the pork supply chain infrastructure. "*While ASF poses a serious and acute threat to Myanmar's pork sector, it also presents the country with an opportunity to establish a modern pork supply chain and industry*," said Dr. Ye Tun Win, Director General of Livestock Breeding and Veterinary Department, Ministry of Agriculture Livestock and Irrigation in a statement.

The Philippines

Expansion of ASF in the southern part of the Philippines

On February 1, 2020, the first outbreaks on southern Mindanao Island were reported in Davao Occidental Province, south island. ASF infections spread in the southern part of the Philippines which accounts for nearly a third of the nation's 12.8 million pig herd. Samples drawn from around 1,000 dead pigs in Don Marcelino town, Davao Occidental tested positive for ASF, the first confirmed cases of the hog disease in Mindanao.



Map 4. Location of ASF outbreaks in the Philippines

Authorities stated that pigs had been imported to the town from barangays from multiple towns in the province (Lindasan, North Lamidan, South Lamidan, Calian, Mabuhay, Lawa, Nueva Villa, and Baluntayan). Preliminary investigations suggest that the outbreak might have been triggered by food waste from pork products from Indonesia, or food brought home by residents from disease-hit areas in Luzon, the agricultural department said.

The local government of Don Marcelino has ordered the activation of a Regional Animal Disease Task Force to focus on ASF cases in the province. Transporting hogs in and out of the municipality, as well as selling pig meat was prohibited. Authorities also established animal quarantine checkpoints in entry points around the municipality. Malita, Davao Occidental Government has also ordered the culling of what remained of the 100,000 hogs in the province, following the ASF outbreak that killed thousands of pigs in Don Marcelino. The culling started on February 5 with the 7,000 remaining live hogs in Don Marcelino, the ground zero of the outbreak, where some 6,000 pigs were reported to have died due to ASF. The government recommended village officials to collect the remaining hogs to be culled and pay the owners $97.94 (P5,000) as compensation.

- On February 9, 407 pigs had been culled in two villages, with a swine population of 2,398, in Davao City on the southern island of Mindanao, according to the ministry of agriculture. The island had a swineherd of around 3.7 million as of January 1, 2020, government data shows, or 29% of the country's total. More cases were also reported in some Luzon provinces, including Pangasinan, which was among the areas hit last year, and in Kalinga and Benguet provinces (Northern Luzon).

- On February 13, the Department of Agriculture revealed that the disease continued spreading in two villages of south Davao. Blood samples collected from pigs in Sulop town were found positive of the ASF virus. Subsequently, the provincial veterinary office implemented a lockdown in strategic locations to limit infection among the hogs there.

President Rodrigo R. Duterte issued Memorandum Order No. 22, ordering all government agencies and local government units (LGUs) to ensure the implementation of the Department of Agriculture's (DA) nationwide zoning plan for ASF to control and contain the spread of the disease.

South Korea

South Korean authorities reported that more wild boars have been discovered dead and tested positive for ASF. As of February 24, 257 wild boars have been found dead in the country, near its border with North Korea. The most recent dead hogs were found in the eastern county of Hwacheon and the Western city of Paju, according to the National Institute of Environmental Research.

The Minister of Agriculture, Food and Rural Affairs requested the Ministry of Environment to install the third stage wide fences after detecting wild boar cases outside of the wide fence area. The Minister also requested to take additional measures for the first and the second wide fence area, especially those areas using geographical barriers.

Pig farms within 10km (6.2 miles) radius from a location where a positive wild boar case was detected would be tested for environmental samples for ASF every week.

So far, local authorities have culled about 400,000 domestic pigs as part of preventive measures

Foot-and-Mouth Disease

AFRICA

Kenya

An outbreak of FMD was confirmed in mid-February 2020 in a county in the northern part of the country (Marsabit county). Cyclic droughts and locusts are believed to be contributing to the increase in FMD cases in the region. Since December 2019, active quarantine has been in place in the same region due to an outbreak and vaccine shortage. The acute shortage is due to poor quality and possibly contaminated FMD vaccines. The normally pink-colored vaccine would change to yellow and orange in color, raising suspicion of a potentially ineffective vaccine. In response, the government plans to implement an FMD vaccination exercise. Additionally, laboratory capacity will be set up at the Laisamis Technical Training Institute for the research of endemic livestock diseases.

Moving to the southern part of the country, another county (Makueni county) has issued a quarantine notice on livestock (and products) after experiencing an FMD and lumpy skin disease outbreak. Movement restrictions in addition to cattle include sheep and goats (and products). Additional instructions included in the quarantine include herding livestock as far as possible from public roads and burying dying animals not less than four feet deep.

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