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.

UNIVERSITY OF MINNESOTA

SHiC
Swine Health Information Center

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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Spontaneous reporting TOOL

Swine Disease Global Surveillance Report

Monday, April 1, 2019 – Monday, May 6, 2019

Report highlights:

- **First ASF outbreak in Cambodia**
- **USDA - licensing ASF vaccine**
- **Aujeszky's disease outbreak in France**
- **Classical swine fever in Brazil**

AFRICAN SWINE FEVER

ASIA

Cambodia

African swine fever (ASF) has reared its ugly head in Cambodia. A farm located about 320 km from the most recent outbreak in Vietnam (Map 1) reported deaths due to ASF on March 22, which were later confirmed by the Cambodian National Animal Health and Production Research Institute (NAHPRI). The farm is located in Som Kaninh village in Ratanakkiri province's O'Yadav district. The virus was detected in a herd of about 500 pigs being raised by families in the village. Most of the pigs had already died, but about 100 had been culled. **The director of Cambodia's animal health and production department said preliminary results of the monitoring process showed the infection could have come from pork products being sold on motorbikes along the Vietnam border.** Cambodian Ministry of Agriculture, Forestry and Fisheries (MAFF) immediately issued a Ministerial declaration on April 2, instituting control measures nationwide.

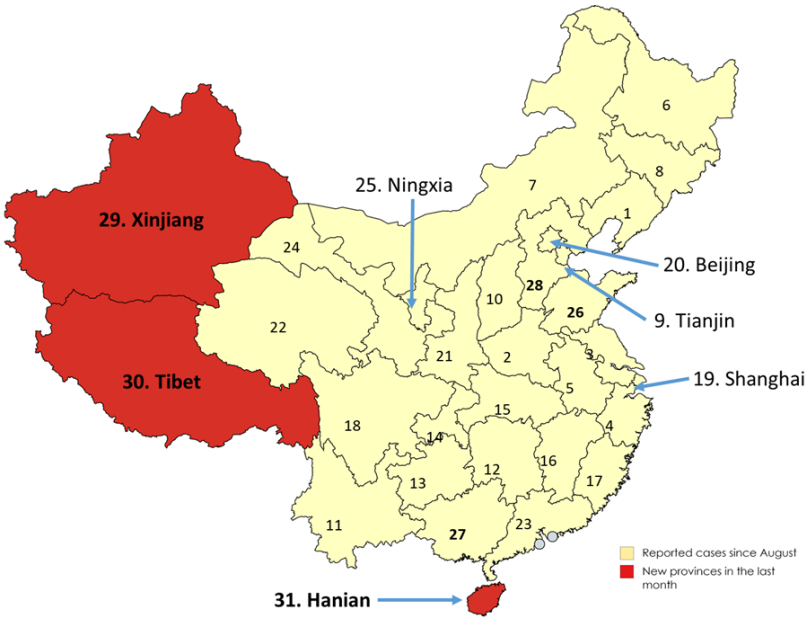
Map. 1: Location of the first outbreak reported in Cambodia

Rumors of outbreaks in Vietnam provinces bordering Cambodia began to spread in mid to late March. There is speculation confirmation of ASF in Cambodia implies there is likely more activity in Vietnam than reported. The director of Cambodia's animal health and production department said the ministry will need to further collaborate with Food and Agriculture Organization (FAO), non-governmental organizations (NGOs), and members of the private sector in order to resolve this issue and prevent further spread of the disease. At a National Consultative Workshop on the Development of ASF Preparedness and Response Plan in Phnom Penh, experts suspect the virus may have already spread to three more villages. FAO released a press statement saying they will strengthen collaboration in response to the ASF outbreak and work to help adjust existing contingency plans, develop operational guidelines and SOPs linked to preparedness and response, and identify the required field task forces to be deployed during ASF outbreaks.

The Cambodian Livestock Raiser Association said it is possible that ASF managed to spread because pigs raised by families are allowed to roam villages freely. Despite this outbreak, according to the Cambodian Livestock Raiser Association, the disease has not hit the pig market in Cambodia. However, the Philippines' agricultural secretary said he will immediately move to ban pork imports from Cambodia after the emergence of confirmed cases of ASF.

China

During April, another three Chinese provinces, Xinjjiang, Tibet, and Hanian (Map 2), reported ASF outbreaks for the first time, making a total of 31 out of 34 administrative units, reaching all the geographical limits of the Asian country. While official estimates count 1 million culled pigs, slaughter data suggest approximately 100 times more will be removed from China's swine herd in 2019, and USDA forecast in April a decline of 134 million head.



Map. 2: Chinese provinces affected by ASF since August 2018.

On April 9, the Beijing International Symposium on ASF was jointly organized by MARA, FAO and OIE, when the first meeting of GF-TADS (Global Framework for the Progressive Control of Transboundary Animal Diseases) Standing Group of Experts (SGE) on ASF for Asia took place.

On April 25, MARA released a communication regarding a **100-day action plan to manage the transition to the ASF self-testing system during slaughter process and the official veterinarian stationing system at pig slaughterhouses**. In this announcement, Chinese authorities highlighted the slaughtering process as the key link connecting the production and marketing phases, which makes it a crucial target for interventions to limit virus transmission. Stationed veterinarians will supervise pig slaughterhouses conducting ASF tests, and if requirements are met, the animal quarantine certificate can be issued. Local authorities have the responsibility of supervising the implementation of planned activities. The central government planned to have, by April 30, the basic information of all slaughter enterprises registered in the national database. By May 1, all pig slaughterhouses that slaughter between 50,000 to 100,000 head per year will be self-testing for ASF, smaller companies will follow, reaching all slaughterhouses by July 1. The government targets to have, by the end of 2019, all the information in the online system to issue animal quarantine certificates.

The announcement also mentioned that the Veterinary Drug Evaluation Center (IVDC) has accelerated its review process for the ASF diagnostic reagents and that the China Animal Disease Control Center (CADC) is actively monitoring quality of the approved test reagents. Still, it hands over to local authorities the responsibility to: 1. supervise the standardization of sample collection and processing protocols at slaughterhouses; 2. strengthen technical training for slaughterhouse personnel to ensure the accuracy of results; 3. have a role in overseeing companies in charge of diagnostic reagents' production.

Shifting in practices

Pig farms have also been urged to perform testing for ASF and a number of on-farm test kits are now available. This has accorded farmers the opportunity to understand the risks of introduction, monitor potential points of entry, and quickly identify incursions of the virus. This is in contrast with the prior edicts of the government that only a restricted number of government labs could test for the virus and that capacity was prioritized for disease detection and traceback. This change in policy has empowered farms to refine biosecurity, discriminate between sources of feed, and more rapidly respond to outbreaks.

Additionally, regionalization plans continue, with efforts to create control plans encompassing a region that balances live production, slaughter capacity and consumer demand. This is intended to replace provincial level controls that often created difficult imbalances in supply and demand resulting in economic difficulties, particularly for producers.

Research on better control methods is also being pursued. Much of this effort is focused on the development of a vaccine against ASF. The development of a vaccine to control ASF has unique challenges. Though many vaccines are designed to protect against disease, the main aim needs to be the prevention of transmission, especially preventing the establishment of ASF in pork products. This will require superb protection confirmed by exacting evaluation. Any less may result in a chronically infected industry.

AFRICA
South Africa

On April 15, South Africa detected two new outbreaks of ASF outside the control zone (LINK to map - Department of Agriculture, RSA) on two farms in a northwest province (Map 3). Authorities say these events may be linked to contact with wild animals. This happened less than three months after the foot-and-mouth disease (FMD) outbreak that affected South Africa and led to several countries, including China, Botswana, Mozambique, Namibia, Eswatini, Zambia and Zimbabwe, suspending imports of cloven-hoofed animals and their products from South Africa, impacting heavily in the revenues of the livestock industry that is also currently recovering from drought and the 2017/2018 listeria outbreak.

Map. 3: Location of ASF outbreaks outside the control zone in South Africa.

Historically, ASF in South Africa has been controlled and confined to the northern area of the country by means of a well-defined boundary line, with strict control measures and movement restrictions north of this line. Still, since 2012, outbreaks of ASF outside have occurred sporadically. A study published two years ago by Magdala et.al. (LINK) evaluated the current relevance of the control line as a demarcation line between endemic ASF (north) areas and ASF-free (south), and if there was a need to realign its trajectory. The results of the study confirmed the presence of warthogs, warthog burrows, and the soft tick reservoir, Ornithodoros moubata, south of the ASF control line. Even though the reservoirs were found south of the ASF boundary line, the study concluded there was no need to realign the trajectory of the ASF disease control line, with the exception of Limpopo Province. However, the authors highlighted the need to keep and intensify provincial surveillance programmes for the reservoir, vector and ASF virus

south of this line, as changing farming practices may favour the spread of ASF virus beyond the control line.

USDA - licensing ASF vaccine

On April 22, USDA's Agricultural Research Service (ARS) released a notice of intent (LINK) to grant an exclusive license to Huvepharma EOOD of Sofia, Bulgaria, for an experimental ASF vaccine. The vaccine claim was made in U.S. Patent No. 9,463,234, *"Attenuated African swine fever virus strain induces protection against challenge with homologous virulent parental virus Georgia 2007 isolate,"* issued on October 11, 2016. The prospective exclusive license may be granted unless, within 30 days from the date of this published Notice, the ARS receives written evidence and argument which establishes that the grant of the license would not be consistent with the requirements of US authorities.

First Oral Vaccination of Eurasian Wild Boar Against African Swine Fever Virus Genotype II

A scientific manuscript published last week by Spanish researchers reports findings from experimental work with a new ASF vaccine in wild boar. According to the study, oral immunization of wild boar with an attenuated ASF virus of genotype II isolated in Latvia in 2017 (Lv17/WB/Rie1) conferred 92% protection against challenge with a virulent ASF virus isolate (Arm07). Authors argue that this is the first report of a promising vaccine against ASF virus in wild boar by oral administration. Further studies should assess the safety of repeated administration and overdose, characterize long-term shedding and verify the genetic stability of the vaccine virus to confirm if Lv17/WB/Rie1 could be used for free-range wild boar in ASF control programs (LINK to full article).

New feature available: *"ASF Watch" is a monthly e-newsletter provided by OIE Documentation Cell. It gathers useful scientific literature specifically on ASF epidemiology, surveillance, and control worldwide. (LINK)*

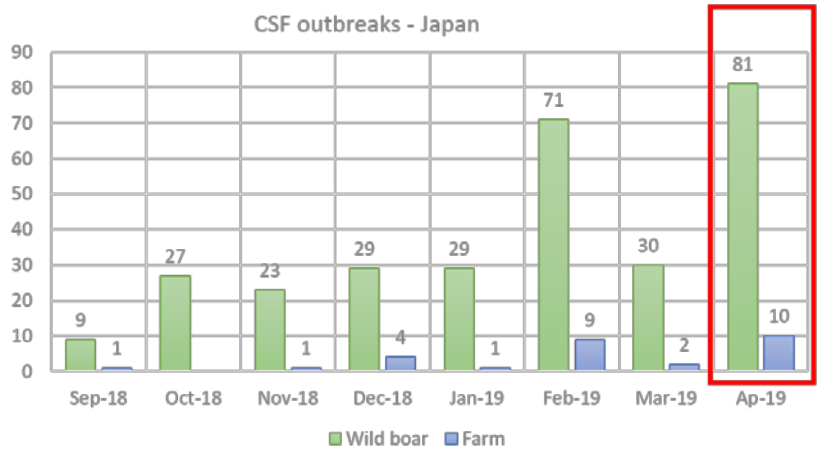
CLASSICAL SWINE FEVER

ASIA

Japan

Japan has been fighting classical swine fever (CSF) since September 2018, when the virus was first discovered in wild boar in central Gifu prefecture. CSF has continued to spread through Japan's domestic pig herd causing the depopulation of many farms. The total number of pigs culled for preventative reasons has reached 72,554 at 27 farms, according to the OIE.

In March, Japanese authorities in Gifu prefecture announced strategies to orally vaccinate wild boar to prevent the spread of CSF. The vaccine strategy places vaccine-containing feed in the ground at 900 different locations monitored by cameras to see whether or not the feed is being eaten and by periodic capture of wild boar to assess vaccine status. Multiple rounds of this vaccine disbursement will occur with two more rounds in the summer and winter.



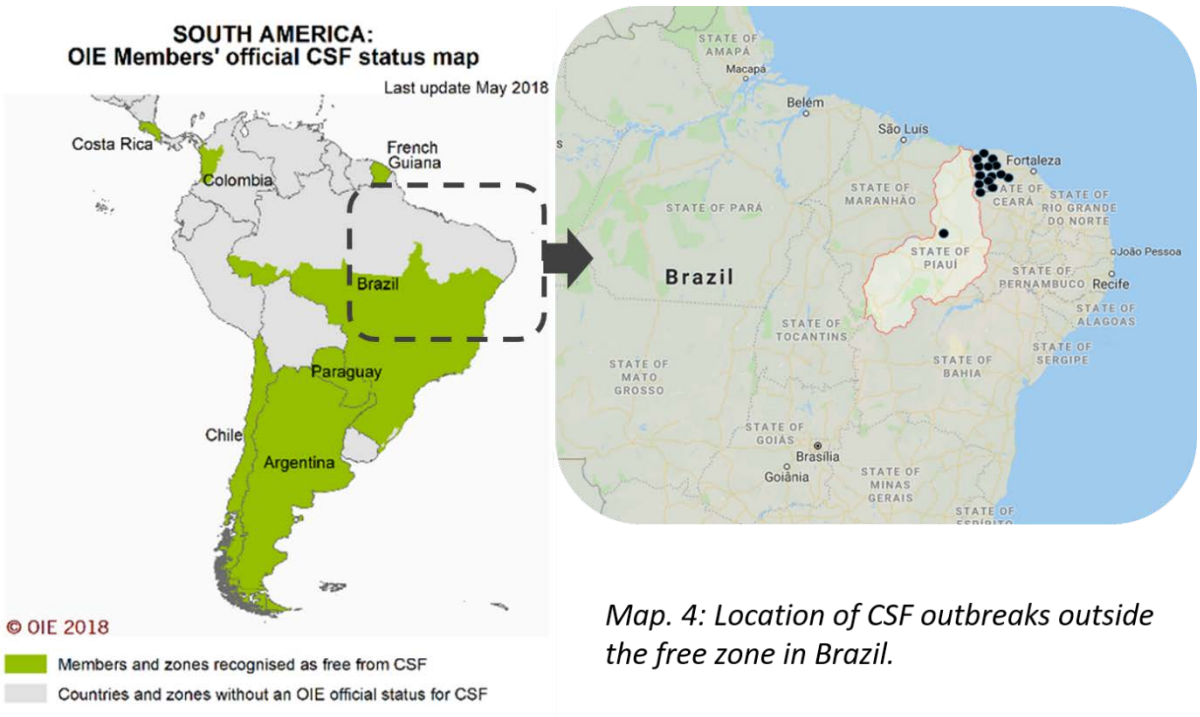
Graphic 1: Number of outbreaks (per month count) of CSF in Japan, Gifu and Aichi prefectures.

Similar vaccine strategy plans have also started in Aichi prefecture, including forests in Komaki. Aichi prefecture will disburse vaccine-containing feed to 60 locations in the cities of Komachi, Kasugai, and Inuyama.

LATIN AMERICA

Brazil

Since the confirmation of outbreaks in the province of Ceará (8/5/2018) in the northeast part of the country, the intensification of surveillance in the non-recognized CSF-free zone in Brazil has led to the detection of new suspected cases and the confirmation of new clinical cases of CSF, now also detected in the province of Piauí, bordering the province of Ceará. The monitoring system for pig haemorrhagic diseases in this zone is being revised in order to better adapt to the organizational conditions of pig production in the provinces located in this region for the purposes of establishing a more effective control/eradication program.



Map. 4: Location of CSF outbreaks outside the free zone in Brazil.

Brazil has two zones regarding the sanitary status of CSF, the free zone that is compounded by 16 Brazilian states and includes more than 95% of the commercial pig production, and a non-free zone in the north of the country (Map 4). The province of Piauí is not part of the CSF-free zone and the outbreak is more than 300 kilometers away from the boundaries of this zone. Still, it seems outbreaks are spreading southwestward what has increased industry concerns. Restrictive measures are already in place for the movement of animals and animal products between the CSF-free zone and the non-CSF-free zone. In the last follow-up report sent in December 2018, it was indicated that information on this disease would be included in the twice yearly reports. However, in order to share more detailed and timely data, in addition to the new outbreaks in Piauí and other confirmed new outbreaks in Ceará since the last report, all new outbreaks in any of the provinces of the non-CSF-free zone will also be included in the follow-up reports of this event.

FOOT-AND-MOUTH DISEASE

SOUTH AMERICA

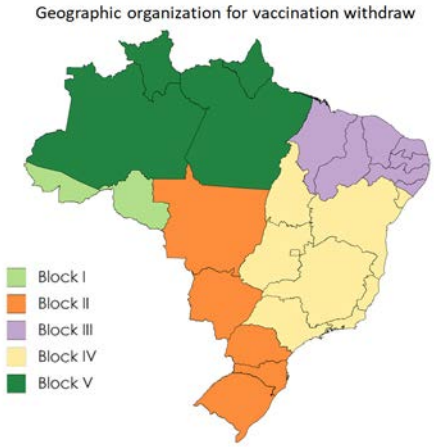
On May 2-3, the 46th Ordinary Meeting of the South American Commission for the Fight Against Foot-and-Mouth Disease (COSALFA), was held in Cartagena de Indias, Colombia. In 2018, it was shown most clearly, the facts that shape the current situation FMD that characterizes South America, facing the end of the Hemispheric Program for the Eradication of Foot-and-Mouth Disease (PHEFA) Action Plan 2011-2020. On the one hand, the countries of the Southern Cone and Amazonian Subregions have preserved their official status of FMD without the appearance of new cases and taken steps toward a transition to free status without vaccination. The appearance of new outbreaks in Colombia shows the persistence of the risk of cross-border transmission of FMD virus affecting bovine populations in the north of the Andean Subregion, which demands urgent attention and mobilization of resources. In this context, COSALFA 46, in accordance with its mandate, the regional countries analyzed the current situation in accordance with the PHEFA Action Plan 2011-2020, and worked toward the adoption of resolutions to enhance regional technical cooperation to make progress in those territories which are not free from disease in order to mitigate the remaining risks of FMD virus infection, considering that multiple countries are transitioning to a status of free without vaccination.

Brazil

Once blighted by outbreaks of FMD, Brazil has not reported a case of FMD for more than 11 years, having the last outbreak being reported in 2006 in Mato Grosso do Sul. The country got the official recognitions of free of FMD with vaccination status in 2018. Still, with the exception of Santa Catarina, however, all Brazilian states still use vaccination to maintain FMD-free status.

Brazil's National Foot-and-Mouth Disease Eradication and Prevention Program (PNEFA) ultimately aims to make the entire country FMD-free without the need for vaccination. For this, starting in 2017, Brazil is implementing the last phase of the FMD strategic plan of eradication, that includes vaccination withdrawal. The Brazilian state of Paraná has been given the green light to stop vaccinating cattle against FMD beginning next November. The Department of Animal Health at the Brazilian Agriculture Ministry said it made the decision after audits showed the state had a strong system of controls on the movement of livestock and other farm goods. Beginning in October, the Ministry will determine restrictions on the entry of animals from neighboring states, with the exception of Santa Catarina, which has long been recognized as free of FMD, without the need for vaccination.

The rest of the states will withdraw vaccination following a gradual plan, which has divided Brazil in blocks of states with the goal to withdraw vaccination from the whole country by 2026. The map in the right (Map 5) shows the division of States by blocks. *Source: Ministry of Agriculture of Brazil, 2017.*



AUJESZKY'S DISEASE

EUROPE

France

On April 23, an outbreak of Aujeszky's disease (AD) was confirmed in two free-range pig farms in the south of France, Saint-Martin-les-Eaux, in Alpes-de-Haute-Provence and Monteux in Vaucluse. The animals didn't show any clinical signs, but antibodies for the virus were detected by regular serological surveillance carried out in slaughterhouses. While the source of infection of the first outbreak seems to be contact with wild boars, the second farm is epidemiologically linked to the first outbreak (purchase of fattening pork). The investigation has shown that the infected pigs came from the breeding farm of Alpes-de-Haute-Provence. State services are coordinating activities between two departments to manage this incident. Authorities have said the whole herds will be slaughtered.

France is considered free of this disease in pig farming, but the virus circulates among wild boars. The last report of AD in France prior to this was in March 2018 in southwest France, in a free-range small commercial pig farm (OIE, 2018). France has AD-free status under Council Directive 64/432/EEC and these occasional cases do not affect their disease free status. Vaccination is prohibited, as serology is the tool used in the surveillance plan to detect infected animals, that act as reservoirs of the disease.

Once again, wild boar are an important reservoir for other disease besides ASF, with the potential to heavily impact the local swine industry. Compliance with biosecurity measures required is essential to avoid any contamination of breeding pigs from wildlife.

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