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 generated through a systematic process that involves screening various official data sources, including government and international organization websites, as well as softer sources such as blogs, newspapers, and unstructured electronic information from around the world. These data are then curated to create a raw repository.

Subsequently, a multi-criteria rubric is applied to evaluate each event. This rubric assesses factors like novelty and the potential direct and indirect financial impacts on the US market. The outcome of this rubric application is a final score assigned to each event.

These final scores, along with an epidemiological interpretation of the event’s context, are published.

The interpretation encompasses details like the credibility of the information, the scale and speed of the outbreak, its connectedness to other factors, and the local capacity to respond.

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.
Swine Disease Global Surveillance Report
Tuesday, November 7 to Monday, December 4, 2023

Report Highlights

- **ASF in Poland**: Concerning surge in ASF cases among wild boars. As of the beginning of 2023, Poland has reported 2347 confirmed cases - surpassing the counts of 2022, raising concerns.

- **ASF in Italy**: The Emilia Romagna region is the latest area affected by ASF, ranking second after Lombardy and accounting for a significant portion of the country’s 8.7 million pig population.

- **ASF in Bangladesh**: The first outbreak of African Swine Fever has been confirmed, marking it the 19th country in the region to report the disease.

- **ASF in Vientam**: Over 530 outbreaks have been confirmed since August across 44 provinces - authorities issued a directive addressing key activities to ensure pork supply.

- **Swine Influenza in the United Kingdom**: The first human case of swine influenza variant virus was detected during routine national flu surveillance. The UK has reported its first human case of swine influenza variant virus, specifically the H1N2v strain. The individual is reported to have fully recovered and is not known to have had any direct contact with pigs.

- **CSF in Brazil**: Authorities confirmed an outbreak of CSF in the state of Piauí in the northern part of the country - Piauí is not part of the CSF-free zone in Brazil.

**Surveillance at Points of Entry**

- In Calabria, authorities seized two tons of cured meats due to a lack of documentation on the origin. The seized products were valued at around $109,115 (€100,000).

- In Malaysia, 55,428 pounds of pork carcasses testing positive for ASF were seized in chillers during a raid prompted by complaints of unauthorized import.
## OUTBREAKS BRIEF

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<tr>
<td>2</td>
<td>Rangamati district, Bangladesh</td>
<td>11-22</td>
<td>ASF</td>
<td>First outbreak reported in the country - 81 pigs dead</td>
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<td>2</td>
<td>Municipality of Ottone, Emilia-Romagna Region, Italy</td>
<td>11-11</td>
<td>ASF</td>
<td>Wild boar found dead</td>
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<td>1</td>
<td>Lau Fau Shan (Hong Kong), China</td>
<td>11-7</td>
<td>ASF</td>
<td>5,600 pigs culled</td>
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<td>1</td>
<td>Poltava region (multiple locations), Ukraine</td>
<td>11-3</td>
<td>ASF</td>
<td>1,300 pigs affected</td>
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<td>1</td>
<td>Piaui State (outside the CSF free zone), Brazil</td>
<td>12-4</td>
<td>CSF</td>
<td>Backyard farm</td>
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<td>United Kingdom</td>
<td>11-27</td>
<td>SI H1N2v</td>
<td>1 human case detected by the national surveillance system</td>
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Outbreaks described in the table above are colored according to an assigned significance score. See note at the end of the report.
African Swine Fever

USDA suggests a reclassification of African swine fever virus strains

The USDA-ARS recently announced groundbreaking research by their scientists suggesting the reclassification of African swine fever virus strains, consolidating the count from 25 to just six distinct genotypes. This advancement promises to reshape how global ASF researchers categorize ASF virus (ASFV) isolates, potentially simplifying vaccine development tailored to diverse strains prevalent in ASF hotspots worldwide. Accurate virus classification holds pivotal importance in epidemiological studies and the cost-effective formulation of countermeasures, particularly in devising vaccines tailored to unique ASFV strains.

The USDA researchers proposed the reclassification of ASF after re-analyzing over 12,000 historical and current virus isolate sequences that were produced from labs worldwide and finding that the majority of p72-based genotypes were initially created without specific methodological criteria or proper comparison with existing ASFV genotypes. They also observed errors in previously classified ASF genotypes, which could be attributed to honest scientific oversight or the evolution of more advanced sequencing technologies.

To establish a more robust system for creating new genotypes, the scientists established the following criteria:

- The classification of p72 genotypes was based on the predicted protein sequence to account for potential functional changes.
- To mitigate the potential inclusion of sequencing errors, each new genotype had to include either a sequence obtained through next-generation sequencing (NGS) or encompass multiple complete sequences from distinct isolates.
- Compared to a validated sequence, a maximum allowable tolerance level of two amino acid variations was established.

Consequently, adhering to these refined criteria led to the proposal of streamlining the previously identified 25 ASFV types based solely on p72 to a more concise and functionally robust set of six types. This paradigm shift paves the way for a more accurate and practical framework for characterizing ASFV strains, fostering targeted and efficient vaccine development strategies to combat the complex dynamics of ASF in diverse geographic regions.

More details about this announcement and the scientific publication can be found by clicking on these links: USDA new ASF genotype reclassification

Scientific publication in Viruses

EUROPE

In November (11/07/2023 - 11/29/2023), five countries (Bosnia and Herzegovina, Croatia, Romania, Serbia, and Ukraine) reported 358 outbreaks in domestic pigs through the EU Animal Disease Information System (ADIS), almost two times less compared with the previous month (n=603). Russia reported only one outbreak. Meanwhile, Italy and Poland have not reported further outbreaks on the pig farms. Serbia (n=205), together with Bosnia and Herzegovina (n=81), continue reporting most outbreaks among domestic pigs in Europe.

At the same time, there was an almost twofold rise in the number of cases within the wild boar population in Europe compared to the previous month (n=237). Thus, 16 countries (Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Germany, Hungary, Italy, Latvia, Lithuania,
North Macedonia, Poland, Romania, Serbia, Slovakia, and Sweden) reported 469 outbreaks, adding Croatia, Czech Republic, and Serbia to the list. Additionally, Russia reported one outbreak.

Overall, from the start of the year until December 2, EU ADIS reported 4,454 outbreaks in domestic pigs across 16 countries and 7,276 outbreaks in wild boar across 20 countries (excluding Russia). This marks a notable upsurge in the number of outbreaks compared to the corresponding period last year, which recorded 507 outbreaks in domestic pigs across 12 countries and 6,509 in wild boars across 14 countries from January 1, 2022, to November 25, 2022, highlighting the great impact of southeast and central European countries with the predominant backyard farming in the spread of the disease. Hence, Bosnia-Herzegovina has reported the highest number of outbreaks in domestic pigs to the European Commission this year, totaling 1,486. Following closely behind are Croatia, with a year-to-date total of 1,123, Serbia with 977, and Romania with 723. Ukraine follows with the next highest national total, reporting 34 outbreaks for the year so far.

Among wild boar, the EC System recorded a collective total of 7,442 ASF outbreaks in this population across 15 European countries throughout 2022. This year so far, Poland (n=2566), Italy (n=903), and Germany (n=872) reported the most outbreaks in wild boar, followed by Latvia (n=671), Slovakia (n=523), Hungary (n=385), and Lithuania (n=385).

Regional highlights:

- **Ukraine | November 3: ASF hits Poltava - three new outbreaks reported.** On November 2, a case of ASF was confirmed in a wild boar found dead on the territory of hunting grounds located in the Opishynska Community. On November 7, in the Hradizhska community, located approximately 120 miles (200 km) away, 10 domestic pigs were found dead and a criminal proceeding was initiated against a woman who buried the infected animals in the ravine. On November 13, another outbreak occurred in the Khorolska community, nearly 50 miles (80 km) and 75 miles (120 km) away from the Hradizhska and Opishynska communities, respectively, where ASF was detected on the territory of the state enterprise, “Experimental Farm of the Pig Breeding Institute of the National Academy of Agrarian Sciences of Ukraine. This farm housed 1,277 pigs, of which eight sows died, and the rest were...
culled. Quarantine measures include establishing protection and surveillance zones, accounting for domestic pigs, and restrictions on the trade of live pigs and related products.

Local authorities have suggested that the likely source of infection was the use of thermally untreated grain from the recent harvest. Additionally, poor farm management practices, including the absence of a working cleaning and disinfection station, insufficient protective clothing for staff, and unauthorized access, contributed to the spread of the virus.

Multiple instances of ASF in the region highlight the challenges in controlling and preventing the spread of the disease. According to the local veterinary authorities, wild boars are the source of ASF infection, particularly in corn-growing fields. The increased number of wild boars raises concerns as people may inadvertently feed domestic pigs with untreated corn seeds, leading to virus transmission. They emphasize the importance of feeding animals with products that have undergone heat treatment to prevent ASF.

- Italy | November 11: the first case was confirmed in the Emilia-Romagna region. A wild boar found dead in Ottone, Piacenza province, tested positive for ASF. Ottone's case is the first ASF confirmation in Emilia-Romagna, prompting the reinforcement of existing measures for disease surveillance, prevention, and control. Regional authorities had already implemented restrictions on hunting, outdoor activities, and pig movement based on biosafety levels. The upcoming regional crisis unit meeting will assess the situation and consider additional measures. The European Commission may also update the list of municipalities in restricted zones. To enhance biosecurity, farms are urged to implement preventive measures with regional support through allocated resources. The region emphasizes the strategic importance of early identification, urging citizens to report any wild boar carcass to the local veterinary service through a dedicated regional hotline, as collaboration is essential to curb ASF spread.

Meanwhile, a different region in Italy is preparing to relax ASF restrictions. Thus, some Italian pig farmers in the province of Pavia are set to experience a partial easing of ASF restrictions. Following a period since the last reported ASF outbreaks in domestic pigs, more than 170 municipalities in the Lombardy region's Pavia province will witness a lift on restrictions. The European Commission recently authorized the easing of restrictions, which will take effect upon official publication. The changes also permit producers to restock their farms with new animals.

The threshold of 1,000 ASF cases is getting closer between Piedmont and Lombardy. In the latest update, Liguria has reported 13 more positive cases, whereas Piedmont has reported only one case in its latest assessment.

ASF was initially confirmed in Pavia in mid-June, affecting both wild boar and later domestic pigs. Lombardy is one of eight Italian regions detecting ASF in 2022, with Emilia-Romagna being the most recent to report cases.

- Poland | November 14: the number of ASF cases in wild boars is rapidly rising at a concerning pace. As of the beginning of 2023, Poland has reported 2347 confirmed cases of ASF in wild boars. Despite improvements in the overall epidemiological situation compared to previous years (2018-2021), there has been a concerning surge in ASF cases among wild boars, surpassing the reports counts of 2022. Over the past few weeks, more than 70 new cases have been identified, with outbreaks concentrated in the red zones of Lower Silesia, Lublin, and West Pomeranian provinces. The increased number of cases raises alarms about the ongoing challenges in controlling and preventing the spread of ASF in Poland.

By the Numbers | 2023 ASF in Europe

The graphics below provide a summary of the current data available in WAHIS and ADIS. It's important
to note that there may be some variability in the records from different sources of information, which could lead to inaccuracies. This should be considered a snapshot of a dynamic situation.

Figure 2. Cumulative distribution of African swine fever outbreaks in Europe in wild boar: January - December 2023. Source: EU ADIS reports.

ASIA

In November, five countries (China, Vietnam, The Philippines, India, and Bangladesh) reported ASF outbreaks in domestic swine. India and South Korea reported new ASF cases in wild boars.

Regional highlights:

- China | November 7: Hong Kong authorities confirmed a new outbreak of ASF in a pig farm in the rural Yuen Long area near the mainland China border. Among 37 pigs tested, 22 were found to be positive. In accordance with established procedures, all 5,600 pigs on the farm were culled and disposed of in a landfill. Provisional testing on nearby farms has yielded negative results so far. Still, any movement of animals will remain suspended until further notice as a precautionary measure.

  This marks the first reported ASF outbreak on the island since February 2023, when an outbreak occurred on a farm housing approximately 100 pigs.
• **The Philippines | November 3:** In Manila, recent data from the Bureau of Animal Industry (BAI) indicates a reduction in the number of provinces classified under the "dark green" category, signifying those that haven’t reported any cases of ASF. The count has decreased from 20 to 11 provinces. Notably, 371 towns and cities have been upgraded to the "pink" buffer zone from the "red" infected zone, while 88 towns have moved to the "yellow" surveillance zone from the pink buffer zone. The BAI reports that 13 provinces nationwide are still grappling with active ASF cases. Nicanor Briones, chairman of the Pork Producers Federation of The Philippines and AGAP party-list Rep., highlights significant losses of up to P200 billion in the hog industry since the recording of ASF cases in 2019.

Due to a significant reduction in local swine production caused by ASF, **Iloilo** is now importing pork to meet consumer demand, as swine sufficiency dropped to 33.12%. The province's swine inventory decreased by 73%, resulting in higher pork prices (Figure 5), prompting the importation of pork to stabilize supply. Interestingly, pig prices in The Philippines have remained the highest in the region since early this year. Additionally, efforts are underway to convert areas with ASF cases to buffer zones, paving the way for a repopulation program once successful sentineling is achieved.

• **Vietnam | November 16:** Deputy Prime Minister Tran Luu Quang has issued an official telegram emphasizing the urgent need to prevent and combat ASF in Vietnam. The directive addresses the rise of ASF outbreaks since August, with over 530 reported cases across 44 provinces leading to the destruction of 20,000 pigs nationwide, negatively impacting the pig farming industry and food supply. To ensure pork supply in the coming time, especially on the occasion of the Lunar New Year Giap Thin 2024, the government calls for coordinated efforts at the local and national levels to handle outbreaks, implement preventive measures, conduct vaccination campaigns for endemic diseases (FMD, PRRSV, ASF), and enhance public awareness about ASF prevention. Ministries, agencies, and local authorities are instructed to strictly adhere to the directive to control the ASF epidemic effectively.

• **India | December 3:** In Manipur, India, a total of 1,781 pigs have been culled due to ASF, affecting 1,462 pig farms across 430 villages. The State Veterinary and Animal Husbandry Department has initiated control and containment measures, including forming 33 Rapid Response Teams, destroying contaminated feeds, and ongoing sanitization efforts. The overall infection rate has declined, and compensation processes for affected farmers are underway, with requests made to the Central Ministry for financial support and laboratory upgrades to test ASF in Manipur.
Bangladesh | November 22: Bangladesh faces its first encounter with the ASF, with the only state pig farm in the country reporting 81 pig deaths out of 280 due to the virus. Rangamati District Livestock Officer Dr. Tushar Kanti Chakma confirms the presence of the virus after laboratory analysis. Concerns are rising among authorities and local farmers. Precautions are urged when buying and transporting pigs to protect the commercial pig farming industry in the hills region from the ASF virus. Livestock officials emphasize the importance of farm development for maintaining a healthy environment for pigs.
FAO Asia Regional Office | Recommendation

ASF virus can be transmitted through pork and pork products (raw/frozen/dried/undercooked) in which the virus can survive for a long time.

As the festivity season approaches:

- Import inspections of cargo shipments (including online orders) containing fresh, semi-cooked, or dried pork products need to be strengthened.
- Intensive border/customs control of passengers’ luggage is recommended. Warning signs should be placed clearly at the border/customs entry, including airports and seaports, stating the consequences of bringing pork and pork products from ASF-infected countries/regions and instructing passengers to discard pork products in designated disposal places or to hand them over to the customs personnel.

Foot-and-Mouth Disease

AFRICA

Uganda | November 21: Foot-and-mouth disease is escalating in the “Uganda cattle corridor.”

An initial outbreak of FMD in Kaliro Sub-county, Lyantonde, Uganda, on October 26 has subsequently spread to the neighboring Kinuuka Sub-county, where 15 new clinical cases have been identified, causing concern among local livestock farmers. The Lyantonde district’s veterinary office has taken concerted measures to mitigate the spread of the disease. Despite proactive measures, including controlled animal movement, farm fencing, disinfection points, and vaccination initiatives, the outbreak’s containment remains a challenge. Specifically, the insufficient availability of vaccine doses poses a hurdle to safeguarding the at-risk animal population.

The situation in the Lyantonde district underscores the recurring challenge faced within Uganda’s cattle corridor, an area densely populated with livestock. FMD is endemic in Uganda, with four known serotypes circulating (O, A, SAT1, SAT2), leading to sporadic outbreaks annually with limited success in controlling its spread. The recent escalation to Kinuuka Sub-county, where 15 new clinical cases have been identified, emphasizes the urgency for enhanced disease control strategies and increased access to sufficient vaccine doses to mitigate the disease’s impact on the region’s livestock.

Swine Influenza (H1N2)

EUROPE

United Kingdom | November 27: The first human case of swine influenza variant virus was detected during routine national flu surveillance.

The UK has reported its first human case of swine influenza variant virus, specifically the H1N2v strain. The individual is reported to have fully recovered and is not known to have had any direct contact with pigs. The case was identified through routine national flu surveillance conducted by the UK Health Security Agency and the Royal College of General Practitioners, a system in place before the COVID-19 pandemic. The patient, located in North Yorkshire, was tested by their GP after presenting respiratory symptoms. The H1N2v strain was confirmed through PCR testing and genome sequencing. The UKHSA is actively engaged in contact tracing and investigations to determine the source of the infection, emphasizing the importance of existing surveillance systems. The H1N2v strain is typically transmitted from pigs to humans, with rare
cases of human-to-human transmission. Unlike H1N1, which caused the 2009 pandemic, H1N2 is not commonly transmitted between humans. Symptoms in humans are similar to seasonal flu, with most cases being mild, but certain groups are at higher risk of complications. Authorities are closely monitoring the situation and increasing surveillance efforts in affected areas. Infected pigs may exhibit symptoms such as fever, coughing, and breathing issues. The UK Health Security Agency is conducting investigations to understand the origin of the infection and assess the potential for further cases.

**Swine influenza strains: H1N1 vs. H1N2**

- The H1N2v strain recently detected in the UK differs from the H1N1 strain that caused the 2009 swine flu pandemic, resulting in 457 deaths in the UK.
- There have been about 50 reported human cases of the H1N2v virus worldwide since 2005; none of them are genetically related to the recently detected strain, similar to the viruses circulating among pigs in the UK.
- The 2009 pandemic originated with the H1N1v strain, with the first known case recorded in La Gloria, Veracruz, Mexico. Globally, there were 18,449 lab-confirmed deaths, but the estimated excess death toll is much higher at 284,000.

### Fact box: Influenza A viruses of swine

Swine influenza is a respiratory disease of pigs caused by type A influenza viruses that regularly cause outbreaks of influenza in pigs. Influenza viruses that commonly circulate in swine are called “swine influenza viruses” or “swine flu viruses.” Like human influenza viruses, there are different subtypes and strains of swine influenza viruses.

Influenza A viruses of swine do not normally infect humans. However, sporadic human infections with influenza viruses that normally circulate in swine and not people have occurred. When this happens, these viruses are called “variant viruses.” They also can be denoted by adding the letter “v” to the end of the virus subtype designation.

In recent years, the main Influenza A viruses of swine circulating in US pigs are: swine triple reassortant (tr) H1N1, trH3N2, and trH1N2. With the exception of the 2009 H1N1 virus, influenza viruses that circulate in swine are very different from influenza viruses that commonly circulate in people.

For more information regarding human infections with variant viruses -- [LINK](#)

### Classical Swine Fever

**Brazil | December 4: an outbreak reported beyond the area designated as free from CSF.** The country officially confirmed an outbreak of CSF in the state of Piauí in the northern part of the country. The suspicions were validated through tests conducted at the Federal Agricultural Laboratory of Minas Gerais, following the initial report on November 23 on a backyard husbandry property in the municipality of Cocal de Telha. Brazilian health authorities promptly notified the WOAH and implemented immediate measures, including the culling of all animals on the affected property. Investigations are underway to identify epidemiological links. Despite the confirmed case, there are currently no grounds for imposing restrictions on international trade in pigs and their products, as Piauí is not part of the CSF-free zone in Brazil. The CSF-free zone encompasses specific states in the North and Northeast regions, protecting over 95% of the Brazilian pig industry. CSF, also known as hog
cholera, is a highly contagious viral disease affecting pigs and wild boars, with no human health risks. The disease has significant economic and social impacts due to direct and indirect losses.

Classical Swine Fever (CSF)

Classical swine fever, also known as hog cholera, is a highly contagious viral disease affecting pigs and wild boars, with no human health risks. The disease has significant economic and social impact due to direct and indirect losses and is notifiable to the WOAH. The severity of clinical signs varies based on the virus strain, pig age, and herd immunity. Acute infections from highly virulent strains, especially in naïve herds, result in rapid diagnosis and high mortality rates. However, less virulent isolates can be challenging to recognize, particularly in older pigs, due to a range of clinical signs and similarities to other diseases. While classical CSF was once prevalent, many countries, including the U.S., where it was eradicated in 1978, have successfully eliminated this disease from domesticated swine.

Prevention is the most effective approach as there is no specific treatment for CSF, and only supportive care can be provided. Recovered pigs may continue to shed the virus for different durations, posing a risk of infection to other unaffected pigs in contact. Vaccines for CSF are available, necessitate approval from the USDA for usage, and can aid in responding to outbreak situations.

Surveillance at Points of Entry

EUROPE

Italy | November 13: two tons of cured meats and 400 kg of meat of unknown origin were seized in Calabria. During an inspection at a sausage factory, soldiers, assisted by the Veterinary Service staff of the Provincial Health Authority of Calabria, discovered over 4,000 pounds (2,000 kg) of cured meats, namely salami, capocollo, pancetta, lacking documentation certifying the origin of the pork. This discovery posed a potential health risk to consumers, as the breeding details and slaughter location were unknown, as well as a significant contribution to the potential spread of ASF. Additionally, in a butcher's shop 330 pounds (150 kg) of pork and veal meat lacking traceability information was found. The seized cured meats, valued at around $109,115 (100,000€) and intended for Christmas holiday sales, were promptly destroyed by a specialized company. Owners of the company with the suspects products faced administrative fines totaling $7,640 (7,000€).

Malaysia | December 1: pork carcasses testing positive for ASF were discovered in Menglembu chillers during a raid by the Perak veterinary department on November 22. The raid was prompted by complaints that the carcasses were smuggled from a country not authorized for pork meat import by Malaysia's capital, Putrajaya. These carcasses, totaling 55,428 pounds (25,142 kg) and $107,909 value, were seized, as they were not slaughtered at an approved facility and exhibited clinical signs of ASF, as well as tested positive by the Ipoh Veterinary Research Institute. The operator of the storage premises is charged with an offense under the Animal Act 1953. Disposal and disinfection were carried out on November 28 and 29, addressing concerns about disease spread. As of October 2023, Perak state has reported nine ASF cases in wild boars and 18 in commercial pig farms, with the latest positive ASF case on October 27 in Tronoh, Perak. To date, about 19,285 ASF-infected pigs have been culled, emphasizing the threat to the local pig industry.
References:
Recurrent reports reviewed
WOAH - WAHIS interface - Immediate notifications
WOAH - WOAH Asia Regional office
FAO - ASF situation update in Asia & Pacific
DEFRA - Animal conditions international monitoring reports
CAHSS - CEZD Weekly Intelligence Report
European commission - ADIS disease overview
EUROPE
Italy
African swine fever, a case confirmed in a wild boar found dead in the municipality of Ottone (Pc)
Unknown origin, 2 tons of meat and cured meats seized
ASF restrictions eased for some Italian pig farmers
Ukraine
DUE TO THE CONFIRMATION OF A CASE OF AFRICAN SWINE FEVER IN THE TERRITORY OF THE OPISHNYANSKA COMMUNITY, A QUARANTINE IS ESTABLISHED
A WOMAN BURIED PIGS THAT DIED OF ASF IN THE HRADIZHSKA COMMUNITY. THE POLICE STARTED A CRIMINAL PROCEEDING
African swine fever virus detected in Hradizhska Community in Poltava Oblast: what measures will be implemented
ASF in Khorolska Community: how many pigs were killed in Poltava Oblast and what was the cause of infection
Poland
Poland: ASF cases in wild boars increasing at an alarming rate
UK
UK’s first human case of never-before-seen swine flu detected
How is swine flu spread as first human case of strain found?
First UK case of swine flu in humans detected sparking race to discover contacts
AFRICA
FMD in Uganda
ASIA
Malaysia
Pork carcasses with swine fever found in Menglembu chillers
Two African Swine Fever cases involving 25,143 kilogrammes of pork carcasses reported in Ipoh
China
New ASF outbreak in Hong Kong
New ASF outbreak in Hong Kong 2
The Philippines
Zoning Updates
Dropped in green zones
Live pig prices
India
Update Manipur
SOUTH AMERICA
Brazil
Brazil confirms outbreak outside CSF-free area
Classical Swine Fever

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