

African swine fever experience in a large commercial system in the Russian Federation Gustavo Lopez, DVM, PhD student University of Minnesota

Keypoints:

- Infected pigs can be asymptomatic carriers of African swine fever virus (ASFv)
- Timely detection with diagnostic testing, strict biosecurity measures and rapid removal of the source of infection are key to limit the transmission of the virus within and between sites.

African swine fever virus (ASFv) is a reportable disease to the World Organization for Animal Health (OIE) that affects trade. ASFv was first reported in the Russian Federation in 2007 and since then, there have been multiple reports of outbreaks across the country. In December 2014, ASFv was detected in a finishing site of a multiplier herd from a large commercial pig company located in the Russian Federation. The region where the multiplier module was located had multiple reports of ASFv in backyard pigs before the outbreak.

The affected company consisted of 80,000 sows in 15 farms organized as a three-site production system with each sow farm having a dedicated nursery and two finishers. The multiplier herd supplied gilts from the finisher to the gilt development unit (GDUs) for each farm. Each sow farm had a quarantine within the farm to receive the gilts from the GDU (Figure 1).

Figure 1. Company description, gilt flow management and distances between farms. The ASF outbreak occurred in the multiplier finisher (red star).



A 3% mortality increase was reported in a room of the finishing site. A few pens in one of the rooms had affected pigs with fever, purple ear and mild scouring. The site was being monitored for ASFv on a weekly basis before gilt shipment, following local regulations. Samples collected from the room with the affected pigs were negative to ASFv, classical swine fever, PRRSv Salmonella and the decision was made to resume shipment of gilts from a room with no clinical signs to the GDU. As the days progressed, the clinical signs in the affected room worsened and affected more pens.

The GDU that had just received gilts reported similar clinical signs and diagnostics on samples collected then from the multiplier finisher and the GDU confirmed the presence of ASFv at the sites.

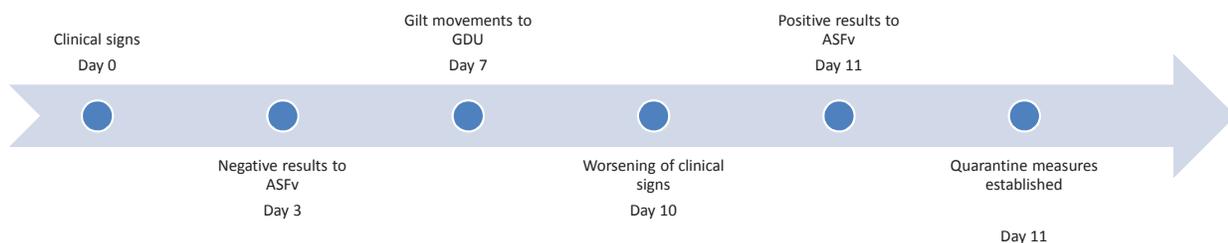
At that time, all movements of pigs were halted and a 5km quarantine area was imposed around the two affected sites. Gilts that had been sent from the GDU to five commercial sow farms, and were in quarantine tested negative to ASFv. Nevertheless as a precaution, the decision was taken to sacrifice all the gilts in the quarantines.

Protocols mandated by the government were implemented in the ASFv positive multiplier finisher and GDU which consisted of euthanasia of all pigs within a 5km radius, destruction with burial and burning of all carcasses, strict movement restrictions for vehicles and people and exhaustive disinfection protocols inside the farm and its territory.

Transportation of infected non-symptomatic animals from the multiplier finisher was the most likely route of infection to the GDU. The source of infection to the multiplier finisher is unknown, although people are thought to have played a role given the presence of ASFv in backyard farms in the area. Events such as introduction of infected pork meat, lack of proper disinfection of 3rd party trucks or non-compliance with the shower-in policy of the farm could not be ruled out. The outbreak occurred in December when temperatures were below zero Celsius and wild pig-tick-domestic pig interaction was unlikely.

It is important to point out that 12 of the 16 rooms in the multiplier finisher remained negative to ASFv until the moment of euthanasia. The sow farm and nursery multiplier were monitored for ASFv during the quarantine period and until the moment of euthanasia 6 months later. During this time, they remained negative to ASFv, even though they were within close proximity to the affected farm. Our experience indicates that a timely detection of ASFv with testing, strict biosecurity measures and removal of the source of infection as soon as possible can limit the transmission of the virus between sites.

Figure 2. Timeline of the events since the clinical signs were detected to the establishment of quarantine measures.



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