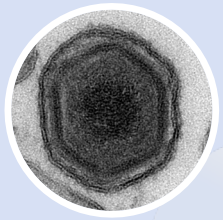
ANITOX®

SECURITY THROUGH SCIENCE®

ASF: Impact and Mitigation

Could Controlling ASF Start with Animal Feed?



To date, African Swine Fever (ASF) has not been detected in the United States. However, international travel and trade pose a substantial risk for viral incursion into the country. ASF can be spread by live or dead pigs, domestic or wild, and pork products as well as contaminated fomites such as feed and feed ingredients.

There are three primary modes of transmission for ASF[1]:

1 Direct contact

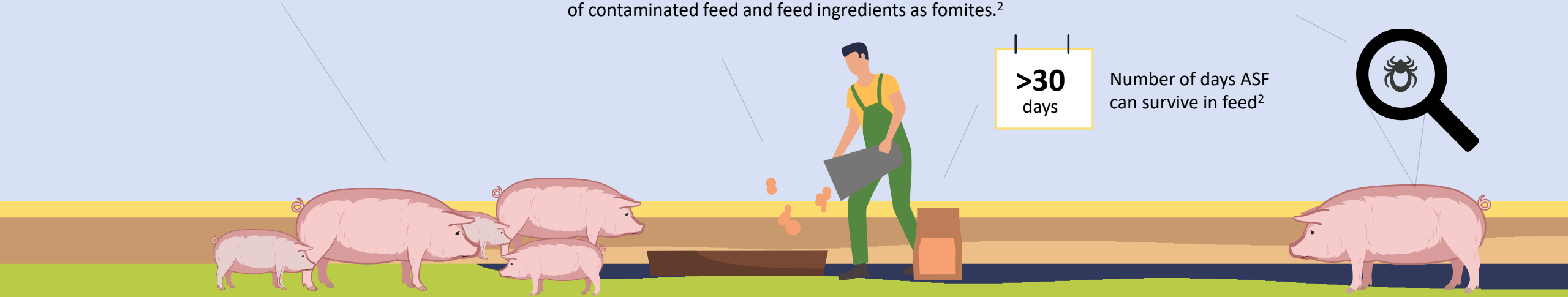
When infected animals come into contact with healthy animals.

2 Indirect contact (fomites)

The emergence of PEDv in North America has led to growing concerns of introduction of ASF from China, the European Union, or other affected regions, particularly the possible role of contaminated feed and feed ingredients as fomites.[2]

3 Vector-borne

Vector-mediated transmission occurs through the bites of some members of the soft tick genus Ornithodoros.[3]

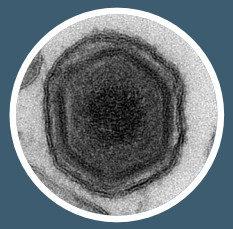


>30 days

Number of days ASF can survive in feed[2]

1 https://www.aphis.usda.gov/animal_health/emergency_management/downloads/asf-responseplan.pdf
2 https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/swine/non-animal-origin-feed-ingredients-transmission-of-viral-pathogens.pdf
3 http://www.cfsph.iastate.edu/Factsheets/pdfs/african_swine_fever.pdf

What is ASF's Impact on Food Producers?



ASF does not pose a risk to human health, but it does represent a significant threat to the US swine industry, with potentially serious economic consequences, from the loss of herds and restrictions on sales of pigs and pig products.

The morbidity rate for ASF can approach 100%

in naïve herds of domesticated pigs. Cumulative mortality depends on the virulence of the isolate and can range from < 5% to 100%. Morbidity and mortality rates tend to be higher when the virus is introduced into new regions, with an increased incidence of subacute and subclinical cases once it becomes endemic.

Losses up to $50 billion and 140,000 jobs over a 10-year period

In July 2021, ASF in the Dominican Republic was confirmed. A study from Iowa State University estimated the economic impact of a hypothetical ASF outbreak in the US.[1] Due to the closure of export markets and excess supply on the domestic market, live hog prices would drop by 40-50% leading to revenue losses of up to $50 billion and 140,000 jobs over a 10-year period.

1 https://thepigsite.com/articles/new-economic-study-african-swine-fever-outbreak-in-the-us-could-cost-50-billion

How Can ASF be Mitigated?

Reducing the risk of ASF in feed requires a multifaceted approach, including sourcing ingredients from countries unaffected by the virus when possible, applying holding times to high-risk ingredients, and implementing consistent biosecurity protocols at the feed mill.

Feed ingredients sourcing

Sourcing feed ingredients from an area that has low or no risk for foreign animal diseases, including ASF.[1]

Effectiveness:

The ingredient industry does not have the ability to trace raw materials back to the source given the large amounts of products that are imported and redirected to storage units where they can be intermingled with ingredients from other sources.

Holding times

Holding times on imported feed and feed ingredients is a recommended practice because of evidence indicating the ability for pathogenic swine viruses to survive transport to the United States.

Based on the lengths of both the trans-Atlantic (30 days) and trans-Pacific (37 days) journey, to mitigate risks of survival, holding time would need to be longer than 37 days.[2]

Chemical preservatives

Termin-8 is known to decrease the level of microorganisms and may have a beneficial effect in animal performance and antibiotic effectiveness.

In addition, Termin-8 provides residual pathogen control, which is important in mitigating the risks of ASF transmission given the ability of the virus to survive for long periods of time.

In a recent study from Kansas State University[3], a formaldehyde-based feed additive demonstrated evidence of reducing the virus infectivity, dependent on dosage.

1 https://www.nationalhogfarmer.com/business/don-t-trip-feed-safety-hurdles
2 https://www.swinehealth.org/wp-content/uploads/2020/02/Holding-Time-Calculations-for-Feed-Ingredients-to-Mitigate-Virus-Transmission-Print-02.04.20.pdf
3 Niederwerder et al, 2020