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## ECHO Asia Notes

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A Regional Supplement to  
ECHO Development Notes

***Special Issue: The Spread of African  
Swine Fever Virus into Southeast Asia***



### **AFRICAN SWINE FEVER VIRUS: OVERVIEW**

*The deadly virus has decimated pig populations globally, reaching Asia in 2018. This article gives an overview of the origin, transmission, diagnosis, and prevention and coping strategies. (pages 1-9)*



### **EXAMPLE FARM BIOSECURITY PLAN**

*This is only one example of a biosecurity plan for small-scale pig operations in one region and may be used as a template. Engage in farm-wide discussions with your team. (pages 9-12)*



### **I SUSPECT ASFV: WHAT STEPS SHOULD I TAKE?**

*This article overviews steps to take if you suspect the presence of African swine fever virus on your small farm. At all times, make sure to follow recommendations of local animal health officials. (pages 13-14)*

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Ways to Stay Connected (and Contribute)



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# African Swine Fever Virus: Overview and Prevention on the Small Farm

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[Editor's Note: For questions, comments, or personal experience on this topic visit [ECHOcommunity Conversations: African Swine Fever Virus](#)]

## The African Swine Fever Virus and its Effects on Global Pork Production

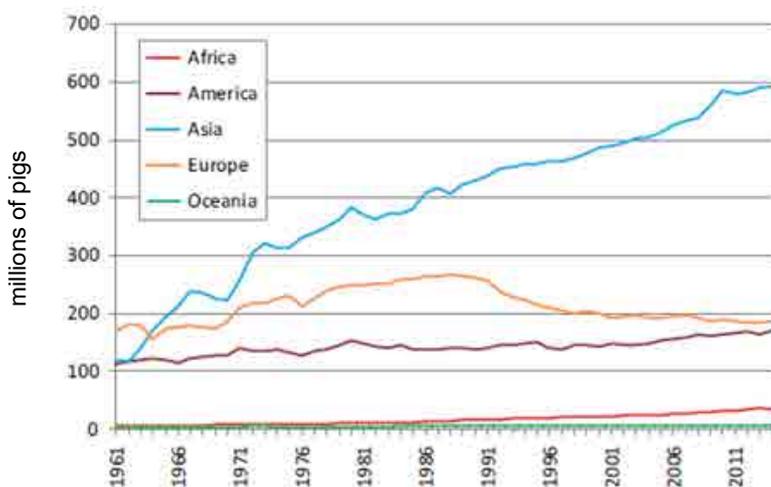
As global prosperity has risen, so too has demand for animal protein. Pork has become the most consumed meat of terrestrial animals at 37% of total global meat consumption (Beltrán-Alcrudo *et al.*, 2017). Pork production most drastically increased in Asia (Figure 1), accounting for as much as 55% of global pork production in 2018 (FAOSTAT, 2018). Global gross pork production value has hovered around 300 billion USD since 2011 (FAOSTAT, 2020). In 2018 this all changed with the onset of the African Swine Fever Virus (ASFV) in Asia. This deadly virus has decimated pig populations and brought significant reductions in global pork production and pork protein consumption. It is estimated that upwards of 25% of the world's pig population has succumbed to ASFV over the past two years (Niederwerder *et al.*, 2020).

### Origin, Description, and Distribution of ASFV

African Swine Fever Virus is the sole member of the *Asfarviridae* family of viruses. As its name suggests, ASFV originated on the African continent where it remains widespread. Soft-bodied ticks (*Ornithodoros* genus) and other members of the swine family (Suidae) host the virus and facilitate its spread. Domestic swine and wild swine (*Sus scrofa*) are highly susceptible to the disease. Many native wild swine are generally asymptomatic but do act as hosts and spreaders for the virus (OIE, 2019).

Most of the 32 isolates of the virus are spread across Africa. In 1957, one of these isolates was introduced into Portugal from West Africa, where it spread across Europe, parts of the Caribbean, and Brazil. Eradication of the virus in these countries was achieved, but it persisted until the 1990s in Spain and Portugal (Beltrán-Alcrudo *et al.*, 2017). The current

outbreak in Europe and Asia began in 2007 when another isolate of ASFV entered the nation of Georgia from southeastern Africa and gradually spread across Europe (Beltrán-Alcrudo *et al.*, 2017). In 2017, Russia experienced an outbreak of ASFV which then spread to Northern China in 2018. Since 2018, it has spread throughout China and much of Southeast Asia (Schneider, 2020).



**Figure 1.** Number of pigs globally (x 1,000,000) by region from 1961 to 2014. (FAOSTAT, 2016).

### Transmission and Diagnosis

#### Understanding the Transmission of ASFV

In Africa, the virus is spread between ticks and wild boar hosts, from direct contact with infected domestic pigs, and through infected materials accidentally

introduced by humans. In Europe, wild boars play a prominent role in the spread of the disease (Table 1), while in Asia, the virus spreads largely from domestic pig to domestic pig and from humans spreading infected material (Beltrán-Alcrudo *et al.*, 2017). This means that with proper education and community-enforced biosecurity, total prevention, and eradication of the disease in Asia is possible. This was the case for the outbreaks of the late 1950s in Asia.

**Table 1.** Impact of ASFV by region based on the information submitted through the Early Warning System (2016-2020; World Organization for Animal Health, 2020).

Region	Swine				Wild boar			Total Outbreaks	Total Cases
	Outbreaks	Susceptible	Cases	Losses	Outbreaks	Susceptible	Cases		
Africa	128	213795	61459	85539				128	61459
Asia	9928	8107951	115309	6733791	631	NA	1121	10559	116430
Europe	4271	1859480	625269	1383372	17307	NA	29513	21578	654809
<b>Total</b>	<b>14327</b>	<b>10181226</b>	<b>802064</b>	<b>8202702</b>	<b>17938</b>	<b>NA</b>	<b>30634</b>	<b>32265</b>	<b>832698</b>

Animals begin to show signs of infection between 4 and 19 days after transmission. Pigs can spread the virus up to two days prior to showing symptoms. An animal that lives long enough (perhaps due to a less virulent strain) can be infectious for more than 70 days after the initial infection. African Swine Fever Virus is highly lethal and resilient; it spreads through swine bodily fluids such as blood, saliva, tears, nasal secretions, urine, feces, and genital tract excretions. Blood carries a notably large amount of the virus. Infection can spread through direct contact with other infected pigs, or by contacting or ingesting infected material. Infected material could be anything carrying even small amounts of bodily fluids containing the virus. The virus is stable in a wide range of environments (Table 2). Persisting at pH levels between 3.9 and 13.4 and surviving freeze-thaw cycles. The virus can survive months in

**Table 2.** Resilience of ASFV across a variety of environmental conditions (Beltrán-Alcrudo *et al.*, 2017).

Item	ASFV survival time
Meat with and without bone and ground meat	105 days
Salted meat	182 days
Cooked meat (minimum of 30 minutes at 70°C)	0
Dried meat	300 days
Smoked and deboned meat	30 days
Frozen meat	1000 days
Chilled meat	110 days
Offal	105 days
Skin/Fat (even dried)	300 days
Blood stored at 4°C	18 months
Feces at room temperature	11 days
Putrefied blood	15 weeks
Contaminated pig pens	1 month

Source: adapted from Scientific Opinion on African swine fever, *EFSA Journal*, 2010; 8(3):1556. The times given reflect the known or estimated maximum duration and will depend strongly on environmental temperature and humidity.

meat, blood, and on contaminated surfaces. Even curing meats, such as in pork sausage, will not kill the virus and can actually extend the life of the virus (Beltrán-Alcrudo *et al.*, 2017). This resilience has far reaching implications, among them a concern for the movement of people and vehicles in and around farms. It should be noted that there is no evidence to suggest that the ASF virus affects humans and infect meat products are not known to cause harm.

### Diagnosis

Diagnosis of ASFV by visual assessment of symptoms alone can be difficult. The most telling sign is sudden increases in death in both genders. Symptoms vary widely and depend upon the virulence of the virus, swine breed, exposure dosage, route of exposure and the endemic nature of the virus in the area. Less deadly forms of the virus will have mortality rates below 60% with some as low as 10%. However, Asia currently hosts very virulent strains with mortality rates can be as high as 100% (Beltrán-Alcrudo *et al.*, 2017).

Animals showing severe (paracute) symptoms will typically have a high fever of 41-42°C (3-4°C higher than normal; Birmingham & Quesenberry, 2000) and will likely die several days before showing any clinical symptoms. Slightly less severe (acute) symptoms delay death long enough to show symptoms but still result in 90-100% death in herds. Animals will suffer from a fever of 40-42°C, increased respiratory rates, loss of appetite, and sluggish behavior. Death typically occurs as early as 6 to 11 days after symptoms appear.

Pigs infected with ASFV can exhibit any of the following symptoms:

- Bluish-purple areas and internal or external bloodied areas (spot-like or extended) on the ears, abdomen, and/or hind legs
- Ocular (ear) and nasal (snout) discharge
- Reddening of the skin of the chest, abdomen, perineum, tail, and legs
- Constipation or diarrhea, which may progress from mucoid to bloody
- Vomiting
- Abortion by pregnant sows at all stages of pregnancy
- Bloody froth from the nose/mouth and a discharge from the eyes
- The area around the tail may be soiled with bloody feces

The Food & Agriculture Organization "[Manual for ASFV Detection and Diagnosis](#)" (FAO, 2010) offers the following list of ASFV symptoms found in postmortem examinations of infected pigs. Usually several are present simultaneously (Figure 2):

- Hemorrhages under the skin
- Excess of fluids in the heart (hydropericardium with yellowish fluid) and body cavities (hydrothorax, ascites)
- Petechiae (pinpoint bleeding wounds) on the heart's surface (epicardium), urinary bladder, and kidneys (on the cortical and renal pelvis)

- Lungs may present congestion and petechiae, with froth in the trachea and bronchus, and severe alveolar and interstitial pulmonary oedema (dropsy)
- Petechiae, ecchymoses (larger hemorrhages), and excess clotted blood in the stomach and small and large intestines
- Hepatic (liver) congestion and hemorrhages in the gall bladder

\*\*It is not recommended to perform postmortem examinations outside the presence of a trained veterinarian or livestock authority, due to the risk for exposing the farm area to undue fluids containing viral contaminants.

#### Clinical signs of acute African swine fever



**A.** Pigs are visibly weak with fever and huddle to stay warm.  
**B-E.** Bloody diarrhoea and distinct hyperaemic (red) areas on skin of neck, chest and extremities.  
**F.** Cyanosis (bluing) at the tips of ears.  
**G-I.** Necrotic lesions on skin of the abdomen, neck and ears.

**Figure 2.** Clinical symptoms of acute African Swine Fever (Belrán-Alcrudo et al., 2017).

Diagnosis of ASFV is difficult as it is easily confused with several other diseases and therefore cannot be definitively diagnosed until laboratory tests confirm ASFV. Classical swine fever, swine erysipelas, poisoning, salmonella, and other septicemic conditions are easily confused with ASFV. It is recommended that producers not rely on their own prognosis until confirmed by a veterinary professional.

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## Coping with the Disease

### Prevention & Control

At the writing of this article (2021), no vaccine exists for ASFV, though efforts are well underway to synthesize one. If and when a vaccine becomes available, it may become the best course of preventative action. In the absence of an effective vaccine, preventing the spread of ASFV with persistent biosecurity and eradication of the disease upon detection are the keys to mitigating its impacts.

Every farm is different and will address threats of infection differently. The threat of such a deadly virus demands a thorough biosecurity plan that all staff can be made aware of and held accountable to. Plan development will benefit from asking staff and others to help in identifying possible avenues of infection. Prevention and control begin with all those involved in farm operations gaining an awareness of the severity of ASFV and its mechanisms of spread. Humans are assumed to be a primary spreader of ASFV. They easily carry infected material on boots, clothing, or other materials so group awareness is essential.

A biosecurity plan can be as simple as making a list of disease threats, their entry points, and subsequently developing approaches to eliminate or minimize those threats. The FAO suggests three steps for biosecurity: (1) segregation, (2) sanitation, and (3) disinfection (FAO, 2010).

### Segregation

Segregation is physically isolating livestock from any possible contaminants. Contamination can enter the farm from many sources such as other pigs and pig products; pig bedding and pig manure; water runoff from nearby operations; pig semen; boots or clothing, feed, vehicles, or other animals. Keeping pigs segregated from outside pig herds is a best practice, as is restricting access to pigs to essential personnel only. Employee interaction with swine outside the farm should be discussed and minimized. A prudent measure is to have separate footwear and clothing for inside and outside the pig area. To minimize chance of infection, have all employees start the day working directly with pigs and then move further away from them to other potentially infected areas or pigs in quarantine. Not in the reverse order.

### Sanitation

Before coming into contact with pigs, any person or object should be properly cleaned. This is different from using a disinfectant. Often a disinfectant will not be able to penetrate something like mud or manure, which could then be the entry point for ASFV. Many pig operations around the world change footwear, clothing, and require staff to shower before entering and exiting the area where pigs are kept. Tire tread can harbor infected materials so washing and scrubbing them to remove loose material is important.

### Disinfection

After physical cleaning, a disinfectant approved for ASFV purposes should be used. The African Swine Fever Virus is densely encapsulated and difficult to kill with disinfectants. All disinfectants require significant contact time to kill the virus. It is therefore important not to rush

the disinfection step and to thoroughly clean before disinfecting to maximize contact time. Chlorine is a viable disinfectant (0.5% for 30 min), as well as iodine, ether, chloroform, formalin (30 min) and caustic soda (NaOH; 8/1000 for 30 min; OIE, 2019). A foot bath of disinfectant can provide sanitation for boots before entering the farm. Stepping in lime has been recommended after a foot bath to raise the pH to greater than the virus can survive. A bath of disinfectant and lime can be set up for vehicles as well but must be long enough that the entire circumference of the tire is covered. Washed tires should be allowed to dry before entering the disinfectant bath (Dr. P. Quesenberry, Personal Communication, Sept 3, 2020).

**Table 3.** Actions steps for preventing ASFV

Potential Sources of Contamination	Action Steps
Other Pigs	Confine pigs and keep new animals quarantined in a separate location for 30 days; cull and bury pigs showing ASFV symptoms.
Food Scrap Feeding	This is discouraged. It should be avoided unless food has been cooked at 70°C for at least 30 minutes.
Other Animals such as Rodents	Exterminate, minimize open food sources, and close entry points as much as possible.
Contaminated Shoes or Clothing	Change clothes before entering and exiting facility, clean and sanitize, and minimize entry and exit from pig areas. Work from clean to potentially dirty areas.
Contaminated Vehicles	Minimize vehicle proximity to animals, scrub tires, and drive through sanitizing dip.
Feed	Only buy feed from reputable sources. Check for signs of rodent damage and destroy contaminated feed.
Water	Avoid open water sources when possible. Divert water outflow away from the farm.

Heat treatment, if done properly, is an effective method of deactivating the virus. One study from 1967 found ASFV could survive 11-22 days at 37°C but at higher temperatures was inactivated more quickly. It survives only 1 hour at 56°C and 15 minutes at 60°C (Mazur-Panasiuk *et al.*, 2019). The FAO recommends that potentially contaminated feed be cooked 30 minutes at 70°C (Beltrán-Alcrudo *et al.*, 2017). This has implications for swill feeding (feeding of food scraps), currently a major spreader of the virus.

### Community Prevention

It will be impossible to block every possible entry point of ASFV into a community, but if a community can agree upon some basic guidelines, spread of the virus may be prevented or sufficiently reduced. Of first importance is agreeing to confine pigs. A recent study looked at first steps for managing ASFV in Timor-Leste where very little biosecurity had been practiced. This study showed significantly greater loss amongst non-fenced pigs than amongst fenced pigs (Barnes *et al.*, 2020). Such community-level discussions can involve small or large groups and may take many formats. Each community will be different and will be presented with different challenges, but conversation and consensus are key in keeping ASFV out of communities and slowing the spread of disease. ①

### ① Some Community Discussion Topics:

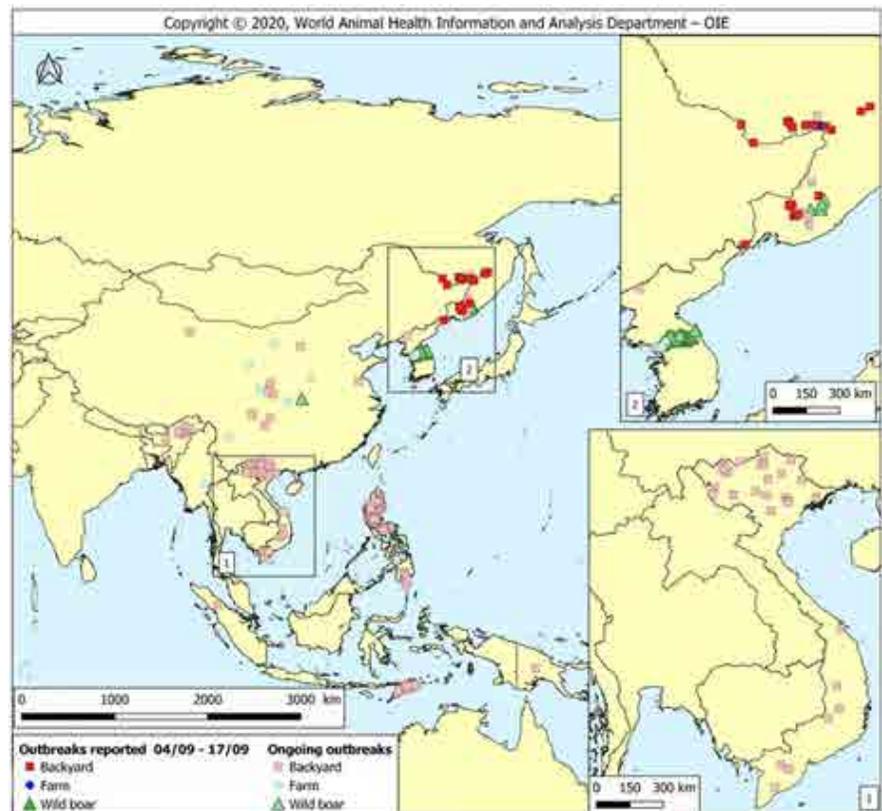
- Pig confinement
- Exclusion of free ranging rodents, dogs, and other animals from pig areas
- Keeping non-essential people out of pig pens
- Keeping shoes clean of manure
- Managing stud boars for biosecurity
- Not moving pigs in or out of local area (especially pigs dead from disease)
- Purchasing, storing, and selling of feed in a biosecure manner

ASFV has easily spread from country to country in Asia. Smuggling of pig products across borders is suspected to be a primary vector for this spread, and many governments have taken this very seriously. To coordinate efforts, be aware of and follow local government regulations regarding reporting and handling of infected pigs.

### Opportunities for Smallholder Operations

Smallholders remain a major contributor to pork production in Asia. "Smallholders" or "small-scale operations" are typically defined as operations keeping anywhere from 1 to 100 pigs (Nga *et al.*, 2015; FAO, 2010). A 2015 study in Vietnam found that smallholders account for approximately 80% of pork consumed domestically (Nga *et al.*, 2015). In China pork prices have spiked because of loss of over half of the country's pig population (Shneider, 2020). This rise in price, as is the case in many other Southeast Asian countries, may provide good opportunity for operations that can remain ASFV free, particularly for producers that sell locally. International restrictions have already been put in place for some countries (Shen & Look, 2020) making local markets a more stable source for pork.

The rise in pork prices may also open opportunities for chicken, fish, beef, and other livestock sales to fill the protein gap. Many small producers may consider further diversifying animal production to minimize risk and take advantage of high protein demand in the market.



**Figure 3.** OIE report on outbreak source and spread from Sept 2020 (World Animal Health Information & Analysis Department - OIE).

## Conclusion

African Swine Fever Virus poses one of the greatest challenges faced by small-scale Asian farmers in recent memory, bringing with it high potential for loss and altered livelihoods. Study after study identifies smallholder and backyard farmers as primary spreaders of ASFV, and particularly vulnerable to its effects (Nga *et al.*, 2015; FAO, 2020; OIE, 2020; Barnes *et al.*, 2020). Several outbreaks in the region have been classified as “backyard” case by their respective governments (Figure 3), leaving room for the blame and potential for government aid and legislation to remain in favor of large conventional pig operations more capable of implementing adequate biosecurity measures. Regulations have the potential to effectively eliminate the smallholder portion of the pork industry if action is not taken. It is important, now more than ever, for communities that value and rely on small-scale integrated pig operations to make community level decisions to stop the spread of ASFV.

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## [Example] Small Farm Biosecurity Plan for the Prevention of African Swine Fever

*[Editor's Note: This is only one example of a biosecurity plan for small-scale pig operations in one region and may be used as a template. It is unlikely that all measures will be practical or appropriate for your context and should therefore be adapted according to the needs and priorities of your farm. It is recommended that the adoption of any such farm plan be the result of farm-wide discussions with your team for maximum buy-in, understanding, and practicality.]*

Farm Name: The Happy Pig Farm

Date of Plan Preparation: May 24, 2021

Farm Manager: Somchai Noon

Farm Manager Contact Info: 082-345-6758

Annual Farm Biosecurity Plan Review (all staff): May 24, 2022

All farm staff have been made aware of the Farm Biosecurity Plan and have been briefed on its contents:

YES  NO Date:

Objective:

To prevent the spread of the African Swine Fever Virus (ASFV) onto the Happy Pig Farm and maintain an ASFV-free production zone for the benefit of animals and the staff that work with them.

## Identified Avenues of Potential Spread:

- People,
- Pigs,
- Production Practices,
- Feeds & Supplies,
- Waste Material

## Plan of Action:

## PEOPLE

Source	Risk Potential	Plan of Action
Farm Staff	Staff run the risk of spreading ASFV and infected material after visiting their home villages and other partner farms.	<ul style="list-style-type: none"> <li>• All staff should be trained &amp; made aware of Farm Biosecurity Plan, with regular follow-ups scheduled</li> <li>• Identify designated staff for pig production tasks</li> <li>• Pig production staff must change into designated boots and coveralls when working within pig production areas</li> <li>• Staff entering pig production areas must walk through disinfectant foot bath</li> </ul>
Visitors	Visitors can unknowingly spread the ASFV through infected materials and are likely coming from unknown locations and/or farms.	<ul style="list-style-type: none"> <li>• Limit points of entry to the farm</li> <li>• Restrict access to pig pens and production areas</li> <li>• Visitors must change into boots and coveralls provided by the farm IF access is necessary</li> <li>• Any visitor entering pig production areas must walk through disinfectant foot bath</li> </ul>
Outside Vendors	Whenever possible, vendors must be treated as visitors with limited access onto the farm.	<ul style="list-style-type: none"> <li>• Delivery zone should be designated and separate from pig production areas</li> <li>• Clear signage for on-farm deliveries</li> </ul>

## PIGS

Source	Risk Potential	Plan of Action
New Pigs	Pig-to-pig transmission remains one of the highest potential risks of spread and should be mitigated at all costs.	<ul style="list-style-type: none"> <li>• No new pigs allowed on the farm</li> <li>• The only pigs on the farm should come from on-farm breeding and/or through artificial insemination</li> <li>• IF a new pig must be introduced onto the farm it should be isolated and quarantined for 30 days first</li> </ul>
Outside Pigs	In some cases, neighboring pigs and/or wild pigs may access the farm, bringing the ASFV virus with them.	<ul style="list-style-type: none"> <li>• Farm perimeter fence should be maintained and checked regularly</li> <li>• Additional fencing and exclusion should separate pig production areas from the rest of the farm</li> </ul>
Moving Pork Products off the Farm	Trucks and trailers used to transport pigs and products off the farm, to market or slaughterhouses, run the risk of bringing back infected material.	<ul style="list-style-type: none"> <li>• Vehicles and equipment should be cleaned and disinfected upon return to the farm</li> </ul>

## PRODUCTION PRACTICES

Source	Risk Potential	Plan of Action
Dedicated Equipment	Shared equipment increases the risk of spread of infection from less secure areas of the farm. To prevent cross-contamination, tools used within pig production areas should be separate from other farm equipment.	<ul style="list-style-type: none"> <li>Buy additional tools, buckets, hoses, etc. to be used only within pig production areas of the farm</li> </ul>
Equipment Hygiene	Tools can harbor contaminated soil, water, or pig fluids on them. To prevent cross-contamination, tools should be cleaned and disinfected regularly.	<ul style="list-style-type: none"> <li>Identify as a team how often tools and equipment should be cleaned/disinfected</li> </ul>
Semen & Artificial Insemination	ASFV spreads readily through animal fluids such as blood, saliva, and semen.	<ul style="list-style-type: none"> <li>Semen should come from a reputable source and administered by a veterinarian or farm staff only</li> </ul>
Vehicles	Infected material may inadvertently travel on the wheels and undercarriages of vehicles coming from areas infected by ASFV.	<ul style="list-style-type: none"> <li>Vehicles must pass through a disinfectant bath when entering the farm (preferably a disinfectant bath, followed by a trough of dry lime)</li> <li>Vehicles must be parked in designated areas on the farm, away from pig production areas Motorcycles and bicycles included</li> </ul>

## FEEDS & SUPPLIES

Source	Risk Potential	Plan of Action
Feed Sources	Feeds can harbor ASFV, either in the feed ingredients or on the bags in which they are transported.	<ul style="list-style-type: none"> <li>Feed materials should come from reputable sources</li> <li>Increase the amount of feed materials grown on the farm to avoid purchasing outside materials</li> </ul>
Feeding Food Scraps	Food scraps can be a source of contaminated material, coming from unknown sources	<ul style="list-style-type: none"> <li>Feeding food scraps ("swill" feeding) should be limited if possible; It should be avoided unless food has been cooked at 70°C for at least 30 minutes</li> <li>Pigs should never be fed pork products, as these can harbor ASFV for up to 100 days</li> </ul>
Bedding Material	Bedding material such as rice hulls can harbor ASFV, through the bedding material itself, or on the bags in which they come in.	<ul style="list-style-type: none"> <li>Feed materials should come from reputable sources</li> <li>Increase the amount of bedding materials produced on the farm to avoid purchasing outside materials</li> </ul>
Storage Areas	Storage areas run the risk of harboring rodents that may spread pathogens from farm to farm.	<ul style="list-style-type: none"> <li>Storage areas should be kept clean, with feed and bedding materials stored properly</li> <li>Traps should be set to keep a rodent-free area</li> </ul>

## WASTE MATERIAL

Source	Risk Potential	Plan of Action
Manure Management	Pig manure can harbor ASFV for 10-14 days.	<ul style="list-style-type: none"> <li>To avoid passing pathogens on to farms downstream, manure waste should be trapped and stored on site, and composted or treated</li> </ul>
Water Management	Pathogens can very quickly spread through water, especially if contaminated by run-off from other farms.	<ul style="list-style-type: none"> <li>Pigs should not have access to water from canals, or other bodies of water where ASFV could have entered</li> <li>Prevent pigs from being able to drink wastewater of any kind</li> <li>Drinking water may be chlorinated if at risk of being contaminated</li> </ul>

**Follow-Up:**

Plan should be revisited periodically (quarterly recommended) and review of plan with all staff should be conducted.

**Notes:**

- Remember that sunlight and dry conditions kill the virus, while shaded and moist conditions allow it to thrive.
- All disinfectants require time to kill ASFV because it is so densely encapsulated (like an onion). The virus is inactivated by high pH and low pH (<4 and >11). Several of the disinfectants are good—they require contact time.
  - Various disinfectants are effective: chlorine, iodine, formalin, and caustic soda (lye; NaOH) are all effective. See [Disinfectants for Use Against ASFV](#) resource for more information.
- Foot baths are difficult to keep clean and need to be changed daily to remain effective.
  - It is recommended (because of cost) that footbaths be filled with a concentrated bleach solution (8 oz per gallon of water) and then have a dry pan of lime to step into with wet boots; both are relatively cheap and will work if kept clean and fresh.
- Vehicle and bicycle tires do not stay in the tire baths long enough to do the trick—and easily become contaminated. If possible, wash tires and then have vehicles drive through dry lime. The lime area needs to be long enough for the whole circumference of the tire to be exposed to the lime.



1. Isolate any pigs showing symptoms. Prevent cross-contamination to remaining pigs through tools, boots, feed, and other sources by disinfecting necessary items. It is important that your farm does not become the center of a wider outbreak.
2. Immediately alert local animal health officials. Though this may bring potential scrutiny to the farm, it is better to report suspected ASFV than to be caught covering it up. Local animal health officials will also have up-to-date information for effective control and decontamination.
3. Follow recommendations of local animal health officials after testing and confirming infection of ASFV - this will likely include the mandatory culling of all pigs on site and a moratorium period (up to one year) before new pigs can be reintroduced to the premises.
4. Following recommendations of local animal health officials, carcasses of pigs should either be burned or buried with lime to prevent spread of infected materials.
5. The entire premises, in and around pig production areas of the farm, need to be properly disinfected with appropriate disinfectant material. As a "DNA enveloped" virus, ASFV can survive long periods of time on site (up to one year). See [Disinfectants for Use Against ASFV](#) resource for more information.
6. Any materials that cannot be adequately cleaned or disinfected should be burned or buried with lime, such as bedding material and manure waste.

## I Suspect ASFV On My Farm What Steps Should I Take?



7. Only after following all recommendations of local animal health officials, and subsequent approval, should attempts be made to repopulate the farm with new pigs.
8. Once pigs have been reintroduced, a [Farm Biosecurity Plan](#) should be strictly adhered to so that a repeat outbreak is prevented.



## ECHOcommunity Conversations: Find Practical Answers from a Global Network of Agriculturalists

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Conversations going on right now:

**Pig feed options in the tropics**

■ Animal Options

B Billy\_Arthur Feb '19

My name is Billy Arthur and I am the new Tropical lowlands intern here at ECHO Florida and I'm looking to see what kinds of sustainable pig feed options being used in the tropics. Here on the farm I'm looking to start a small trial of the viability of different silage options for pig feed, so if any of y'all have any experience with that I would love to hear what is working out on the field.

I'm also interested to see if anybody is using pigs in different or unique ways that we might be able to try out here on the farm.

2 Reply

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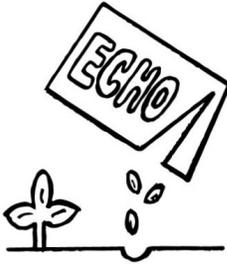
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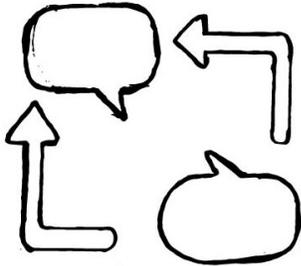


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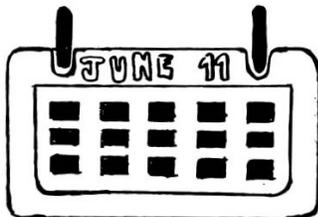
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Additionally, if you have any ideas or would like to write an article for an upcoming *ECHO Asia Note*, we invite you to do so! Thank you for reading, and please do stay in touch!

Email us at [echoasia@echocommunity.org](mailto:echoasia@echocommunity.org)!