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Issue	AFRICAN SWINE FEVER
<b>Background</b>	<p>In August 3, 2018, the first African Swine Fever (ASF) case in Asia was reported in China, causing worries to the local hog raisers of the country. Swill feeding was identified to be related to the 62% of first 21 ASF cases in China [1]. In order to protect the local industry, the Bureau of Animal Industry (BAI) has released a Technical Advisory regarding the temporary ban of importing domestic and wild pigs, their products and semen from 24 countries infected with ASF including Belgium, Bulgaria, Cambodia, China, Czech Republic, Hong Kong, Hungary, Laos, Latvia, North Korea, Moldova, Mongolia, Myanmar, Poland, Romania, Russia, Serbia, South Africa, South Korea, Ukraine, Vietnam and Zambia. Belgium [2]. The use of catering food wastes from airports and seaports as swill feed was also prohibited by BAI. Several local ordinances were issued as well by local government units to ensure control of ASF virus spread.</p> <p>Swine is either domestic or wild and considered source of pork meat. There were about 769.06 million pigs observed worldwide with global per capita consumption of 12.3 kilograms in 2018. People's Republic of China was identified as the highest pork eater having a per capita consumption of 30.4 kilograms [3].</p> <p>Locally, swine is considered one of the important protein source of Filipinos. In 2009, the pork consumption per capita in the Philippines was 14.25 kilograms and become 15.61 kilograms in 2018. For 2020, it is forecasted to be 15.96 kilogram per person annually [4].</p>
<b>General Description</b>	<p><u>Swine</u> English name: domestic pig, hog; Scientific name: <i>Sus scrofa domesticus</i>. Raised and produced globally. Its meat and by-products are often consumed and considered source of dietary protein.</p> <p><u>African Swine Fever</u> African swine fever is a viral disease affecting porcine species such as pigs and wild boars. Clinical signs include fever and functional disorders of the digestive and respiratory system. This is caused by ASF virus, a large double-stranded DNA virus under the Asfarviridae family. [5] This virus replicates mainly in the cell cytoplasm and has ASFV CD2-like protein which causes the red blood cells to bind to extracellular virions and infected cells causing virus dissemination and persistence [6]. There are no known treatment and vaccine developed as to date.</p> <p><u>ASF Virus persistence and stability [7]</u> Temperature: 60 °C and below (resistant to very low temperature) pH level: 4 to 11 Remains viable for long periods in blood, feces and tissues including infected uncooked or undercooked pork products.</p> <p><u>Transmission [8]</u> Known route of transmission are through: a) direct contact with infected animals;</p>



- b) indirect contact through:
- vector such as soft tick (*Ornithodoros spp*); and
  - slurry;
  - swill feeding (with infected tissues including meat);
  - vehicles and other fomites, clothing, footwear, surgical equipment; and
  - genetic material.

**African Swine  
Fever in  
Food**

The disease is not infectious to human. However, the virus can persist in blood, meat (both raw, cooked and processed) and other unhygienic farm implements that could lead to possible spread of disease to porcine species [7].

Animal Product/Meat Product	Process	ASF virus infectivity
Blood	Stored at 4°C	1.5 years
Boned meat	Stored at 4°C	150 days
Frozen meat	Kept at -18°C	1000 days
Parma ham	24 months of curing, drying, fermentation and ripening	400 days
Meat in hermetically sealed container (meat loaf, luncheon meat, canned sausage, corned meat if canned) [9]	Meat placed in containers designed and intended to secure the products from entry of microorganisms including spores. Meat products should be subjected to sterilization conditions i.e 121°C for 3 minutes.	Virus is inactivated if strictly followed.
Dry cured salami [10]	Minced meat blended with ingredients (salt, aromas, lactose, spices, sucrose, milk powder, antioxidants, preservatives)	30 days
Corned meat [10]	Pre-cooking in continuous cooking lines then mixed with spices and curing salt. Stored at 4-6 °C	60 days
Dry cured pork belly and loin [10]	Spread with salt, black pepper, antioxidant and preservatives	83 days
Pepperoni sausage [11]	Ground meat thoroughly mixed with recommended amounts of spices and pepperoni pepper kept for 48 hours at 4°C. Mixture was placed in to casing and kept at 20°C with relative humidity of 60% for 2 days. Then subject to smoking chamber (32 to 34°C).	30 days

There are no formal studies conducted for other local meat products such as hotdogs, tocino and longanisa, although recent findings by Bureau of Animal Industry showed positive results of ASF virus in confiscated products [12].

**Adverse  
Health Effect**

No known adverse effect to human.

**Risk  
Mitigation**

- How to inactivate the ASF virus?
1. Disinfection [7]
    - a. Non-porous surfaces: Sodium hypochlorite, citric acid (1%) and quaternary ammonium compounds



- b. Wood: 2% citric acid and sodium hypochlorite at higher concentrations
  - c. Other chemicals: 0.8% Sodium hydroxide (30 minutes); 2.3% chlorine (30 minutes); 0.3% formalin (30 minutes)
2. Heating/Cooking [9]
    - a. Unprocessed meat: at least 70°C for 30 minutes throughout the meat
    - b. Serum and body fluids: at least 60°C for 30 minutes
    - c. Swill feeds: at least 90 °C for at least 60 minutes with continuous stirring
  3. Curing and Drying [9]
    - a. Meat should be cured with salt and dried for a minimum of six (6) months
  4. pH level of serum-free medium: <3.9 or >11.5 [13]

#### What should raisers do?

1. Implement good animal husbandry practices (GAHP)
2. Report any unusual mortalities of swine in the farm
3. Ensure that people, vehicle and/or equipment have undergone proper cleaning and disinfection

#### What can consumers do?

1. Disinfect kitchen utensils and other domestic implements to avoid spread of virus.
2. Cook pork thoroughly as the recommended temperature has been found to help inactivate the virus.

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