



## African Swine Fever in India

**For Prelims:** African Swine Fever, Classical Swine Fever, ICAR, IVRI, WOA, Vaccination

**For Mains:** Effects of Swine Fever on Economics of Animal Rearing, Role of World Organisation for Animal Health

### Why in News?

Recently, **African Swine Fever** has been confirmed for the first time, at a private pig farm in **in Kerala**, after **more than 15 pigs** on the farm had died due to the **disease in the last ten days**.

### What is African Swine Fever?

## // African swine fever (ASF)

**The virus is highly resistant to low temperatures** and can survive for extended periods of time in the blood, feces and tissue of infected animals.

ASF is a **highly contagious**, transboundary viral disease (*Asfarviridae* family; *Asfivirus* genus).

It can affect both domestic and wild pigs (wild boars and peccaries). **It is harmless to humans.**

According to the OIE, **24%** of its member countries (48 out of 200) **have reported the disease** as present since 2016.

Typical clinical signs of ASF are similar to those of classical swine fever (which is endemic in several countries of the Americas); therefore, a **laboratory test** is required to distinguish them.

The **peracute** form of the virus causes sudden death with few signs.

African swine fever can be transmitted through **direct contact** between sick and healthy animals. It can also be transmitted **indirectly** through feed containing meat from infected animals (the virus can remain infectious for 3 to 6 months in uncooked pork products); **biological vectors** such as ticks of the genus *Ornithodoros*; and contaminated **inanimate objects** (fomites) that can transmit the virus.

Global alarms went off in August 2018, when an ASF outbreak was first reported in **China**. The disease swept through the entire Asian country and spread to **Mongolia, Vietnam, Cambodia and Hong Kong**.

According to official data for this period, more than **2.5 million domestic pigs** have died or been killed—67.6% of them in Asia over the past 10 months.

Between 2016 and May 2019, there were a total of **10,211 outbreaks in Africa, Europe and Asia**.

Symptoms include **fever, loss of appetite**, low energy, abortion, internal hemorrhages, visible hemorrhages, and even death.

### ▪ About:

- It is a **highly contagious and fatal animal disease** that infects and leads to an acute

form of **hemorrhagic fever in domestic and wild pigs**.

- **Other manifestations of the disease include:**
  - High fever
  - Depression
  - Anorexia
  - Loss of appetite
  - Hemorrhages in the skin
  - Vomiting and diarrhoea among others.
- It was **first detected in Africa** in the 1920s.
  - Historically, outbreaks have been reported in **Africa and parts of Europe, South America**, and the **Caribbean**.
    - However, since 2007, the disease has been reported in multiple countries across **Africa, Asia and Europe**, in both **domestic and wild pigs**.
- The mortality is close to 95% - 100% and since the fever has no cure, **the only way to stop its spread is by culling the animals**.
- ASF is **not a threat to human beings** since it **only spreads from animals to other animals**.
- ASF is a disease listed in the [World Organisation for Animal Health \(OIE\)'s Terrestrial Animal Health Code](#).
- **Clinical Signs:**
  - The clinical signs of ASF may occur in **chronic, sub-acute or acute form**.
    - In the acute form pigs develop a **high temperature** (40.5 degrees C or 105 degrees F), then **become dull and go off their food**.
    - **Other symptoms can vary but will include some or all of the following:**
      - Vomiting
      - Diarrhoea (sometimes bloody)
      - Reddening or darkening of the skin, particularly ears and snout
      - Gummed up eyes
      - Laboured breathing and coughing
      - Abortion, still births and weak litters
      - Weakness and unwillingness to stand
- **Transmission:**
  - **Direct contact** with infected pigs, faeces or body fluids.
  - **Indirect contact** via fomites such as equipment, vehicles or people who work with pigs between pig farms with ineffective biosecurity.
  - **Pigs eating** infected pig meat or meat products.
  - **Biological vectors** - ticks of the species **Ornithodoros**.

## What is Classical Swine Fever?

- **CSE**, also known as **Hog Cholera**, is an important disease of pigs.
- It is one of the most **economically-damaging pandemic viral diseases** of pigs in the world.
- It is caused by a virus of the genus **Pestivirus of the family Flaviviridae**, which is closely related to the viruses that cause **bovine viral diarrhoea in cattle** and **border disease in sheep**.
- Mortality rate of Classical Swine Fever is 100%.
- Recently, the [Indian Council of Agricultural Research ICAR-Indian Veterinary Research Institute IVRI](#) developed a Cell Culture **CSE Vaccine** (live attenuated) using the **Lapinized Vaccine Virus** from foreign strain.
  - The new vaccine has been found to **induce protective immunity** from day 14 of the Vaccination till 18 Months.

## What is the World Organisation for Animal Health?

- WOAHA was formerly called the **"Office International des Epizooties"**.
- OIE is an **intergovernmental organisation** responsible for **improving animal health worldwide**.
- It has **182 Member Countries**.
  - **India** is one of the member countries.

- OIE develops **normative documents relating to rules that Member Countries can use** to protect themselves from the introduction of diseases and pathogens.
  - One of them is the **Terrestrial Animal Health Code**.
- OIE standards are recognised by the [World Trade Organization](#) as reference **international sanitary rules**.
- It is headquartered in **Paris, France**.

### UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q. H1N1 virus is sometimes mentioned in the news with reference to which one of the following diseases? (2015)**

- (a)** AIDS
- (b)** Bird flu
- (c)** Dengue
- (d)** Swine flu

**Ans: (d)**

**Explanation:**

- H1N1 virus is related to Swine Flu.
- The World Health Organization declared the flu caused by H1N1 to be a global pandemic in 2009.
- Symptoms of Swine Flu include fever, cough, sore throat, chills, weakness and body aches.
- The swine influenza genome has 8 different regions which are segmented and encode 11 different proteins:
  - Envelope proteins Hemagglutinin (HA) and Neuraminidase (NA).
  - Viral RNA polymerases which include PB2, PB1, PB1-F2, PA, and PB.
  - Matrix proteins M1 and M2.
  - Nonstructural proteins NS1 and NS2, which are crucial for efficient pathogenesis and viral replication.
- **Therefore, option (d) is the correct answer.**

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