

## Advisories for Veterinarians and Farmers with respect to African Swine Fever (ASF)

African swine fever (ASF) is a highly contagious economically devastating hemorrhagic viral disease of pigs, warthogs and wild boar. A highly resistant DNA virus is characterized by high fever, loss of appetite, haemorrhages in the skin and internal organs, and death in 2-10 days on average. In Asia ASF was reported for the first time on 3 August 2018 in the People's Republic of China. The situation evolved rapidly as ASF continued to spread within East and Southeast Asia, notably Cambodia, Democratic People's Republic of Korea, the Republic of Korea, the Lao People's Democratic Republic, Mongolia, Myanmar, the Philippines, Timor-Leste and Viet Nam. On 7<sup>th</sup> April 2019 an African Swine Fever epidemic in Linzhi City, Tibet near to Arunachal Pradesh border has been recorded. Again on August, 2019 the occurrence of ASF outbreak was recorded in Myanmar, close to the North Eastern States like Nagaland, Arunachal Pradesh, Mizoram and Manipur. The region sharing 4,500 km international border is totally porous. ASF can any moment assault pig population of NE states and spread to main land India.

### Important facts about African Swine Fever (ASF)

- All age groups of pigs are susceptible to ASF
  - The ASF virus persists in distinct cycles – traditionally, the sylvatic cycle, the tick-pig cycle and the domestic (pig-pig) cycle. More recently, a wild boar cycle has been described, which may sometimes be involved in the latter.
  - Affected pig may die within 2-10 days of outbreak while some of them may die without showing any clinical sign, pregnant sow may abort.
  - Disease spreads through direct contact, waste feeding and transmit through vector (Ornithodoros tick)
  - Virus is resistant to pH and temperature.
  - Till date no treatment and effective vaccine is available against this disease.
  - Mortality rate may be as high as 100 %.
  - ASF does not infect humans or other livestock species.
  - The virus may spread through direct contact via the oro-nasal route after contact with excretions from infected pigs, through ingestion of pork or other contaminated products, or indirectly through fomites. The virus is transmitted from one farm to the next almost exclusively due to human intervention, e.g. movement of animals or equipment, the feeding of infected materials, etc. This transmission route requires the existence of large, continuous populations of pigs for the virus to remain in circulation.
  - The incubation period represents the time from infection (i.e. when the virus enters the animal) to disease (i.e. when the animal shows clinical signs). For ASF, it is between four and 19 days, depending on the virus, host and route. Virus excretion can begin up to two days prior to the appearance of clinical signs.
  - The virus is shed in saliva, tears, nasal secretions, urine, faeces, and secretions from the genital tract. Blood, in particular, contains large amounts of virus. Pigs can therefore become infected by contact with many different infected sources, mainly infected pigs, pork, and other pig-derived products (e.g. swill), and fomites (e.g. bedding). These infected animals and contaminated materials can be transported over long distances by vehicles and people.
  - The introduction of new pigs into a herd or piggery often results in individuals fighting and biting each other. In the case of free-ranging or scavenging animals, infection can result from contact with infected roaming pigs, wild boar, their carcasses, or food leftovers.
  - Additionally, using the same needle to vaccinate or treat several pigs can transmit the virus.
- Although not precisely known, the incubation period in natural infections has been reported to vary from 4 to 19 days. Clinical courses of the disease range from less than seven days post-infection in acute forms, to several weeks, or even months, in chronic forms.**

## **Advisory applicable to different stakeholders**

### **a). Veterinary Institute/Department**

- Improved technical capacity and expertise to identify and control ASF
- Capacities to manage and inspect animal movement and trading of meat/meat products
- Systems for rapid reporting of suspect cases
- Well-prepared field investigation teams
- Appropriate enforcement of legislation for adequate biosecurity in pig production sectors and pig movement control
- Proper outbreak containment, including humane culling of infected pigs and disposal of carcasses and their contaminated products
- Cleaning and disinfection of affected farms and contaminated objects
- Awareness programmes for all relevant stakeholders

### **b). Advisory for the Field Veterinary Officers**

- Infected and suspected farms must be placed under immediate quarantine, i.e. no people, vehicles, animals or pig products should enter or exit the farm until the diagnosis is confirmed.
- Establish disinfection points for people and vehicles at entrances and exits of the building housing pigs. Personnel and visitors leaving the farm should ensure that shoes, clothing and equipment are disinfected.
- Undertake clinical inspection of each farm subunit, clinical examination of selected animals and necropsy of dead (or euthanized) animals. When conducting a clinical examination of suspect animals, it is important to be systematic.
- Appropriate samples should be collected and sent as soon as possible to the laboratory for diagnosis
- Organization of awareness programme among the pig farmers and producers at regular intervals to make them aware about the alarming situation of the ASF, common signs and preventive measures of the disease.
- Keep a strict vigil on the entry of any live pigs and their product from the neighbouring states most particularly the states that share borders with Myanmar and China.
- At entry points of pigs there must have inspection and quarantine facilities.
- Quick reporting system to Veterinary doctors to the District Veterinary Officer and then to Regional disease diagnostic laboratory (RDDL).
- Biological samples (blood, serum, tissues) of suspected animals should be sent to RDDL and as well as to NIHSAD, Bhopal for confirmatory diagnosis.
- Discourage rearing of pigs in fringe areas to sanctuaries so as to prevent mixing domestic pigs to wild one.
- Monitor proper disposal of dead carcass.
- Constructing a timeline is a useful way of representing the times during which infection and transmission of disease might have taken place, and therefore guiding an outbreak investigation. Timelines are used to determine time windows for introduction of the virus (based on the incubation period) and for spread to other premises (using the period of virus excretion).
- Once a timeline has been established, the next step is to use it for source and spread tracing in order to establish contacts that could have led to virus transmission during the calculated timeframe. Risk factors for disease spread include:
  - Movements of animals or animal products (e.g. pork);
  - Personnel visiting the premises that were in direct contact with livestock on other farms, e.g. the veterinary surgeon or other pig farmers;
  - Farm workers visiting other livestock holdings;
  - Movements of vehicles or equipment between livestock holdings;
  - Direct contact with livestock at the farm boundaries;

*c). Advisory for pig farmers and producers*

- Discourage entry of new pigs from unknown sources, purchase from known sources.
- Newly purchased pigs/ piglets should be housed separately in quarantine shed for about 4 weeks to observe any signs of disease.
- Swill feeding should be restricted to the extent possible and if practiced, it should be boiled properly before feeding.
- Regular deworming and supplemented feed with minerals and vitamins.
- Stop unauthorized vehicle to enter into the pig farms.
- Foot dip with disinfectant should be made mandatory at the entry point of each pig shed.
- Pig shed should be disinfected daily with 1% formaldehyde or 2% NaOH or paraphenylphenolic disinfectants.
- Stringent environment friendly measures should be adopted for proper disposal of farm waste.
- Wearing of specific dresses by the farm workers/personnel before entry to the farm till the completion of work should be made compulsory.
- No diseased pigs should be sold to traders/ butchers.
- If any pig suffers from disease, it should immediately be separated from the healthy stock and should be reared in quarantine shed till it is fully recovered.
- Farm utensils used for feeding of diseased pigs should not be used for feeding of healthy pigs.
- Movement of animals from one household to another/ animal fairs should be strictly prohibited.
- No visitor should be allowed to go inside the farms.
- Pigs should be kept indoors all the time, not allowing them to comingle with other pigs, wild boar and other animals.
- ❖ Any suspected cases of ASF should immediately be reported to the local veterinary doctor.

Africa swine fever is considered as emerging disease. The disease has potential socio-economic impact. Controlling the disease is a shared interest and must be considered a shared responsibility. Political commitment and support is crucial to ensure the whole-society-approach with sufficient resources for all concerned sectors. Veterinary services, which include public and private sectors in both affected and unaffected countries, have the mandate to safeguard animal health and welfare and should lead the implementation of effective coordinated countermeasures to minimize the economic loss due to the disease.