❑ LABORATORY TESTS

- Virus isolation in pig kidney cell culture followed by detection of viral antigen by Fluorescent antibody technique (FAT) or immunoperoxidase technique.
- Confirmation by molecular detection methods like Reverse Transcription Polymerase Chain Reaction (RT-PCR) and gene sequencing.
- Direct detection of virus or viral nucleic acid in blood or tissues for early detection of disease.
- Serologic detection methods like ELISA can detect virus specific antibodies in suspected flocks after a minimum of 21 days of infection.

How to differentiate from other diseases?

Clinical signs similar to classical swine fever may be produced in other diseases also. The classical swine fever should be differentiated following important disease conditions.

- **Septicaemic signs:** Bacterial diseases like Erysipelosis, Pasteurellosis, septicemic Salmonellosis, Actinobacillosis and Haemophilus parasuis infection
- **Haemorrhages:** Coumarin poisoning
- **Runting in piglets:** Post weaning multisystemic wasting syndrome, enterotoxicosis, swine dysentery, campylobacteriosis
- **Reproductive problems:** Porcine reproductive and respiratory syndrome, Porcine parvovirus infection, Porcine Circo Virus-2 infection
- **Nervous signs:** Viral encephalomyelitis, salt poisoning

How to prevent the occurrence of CSF?

❑ **Vaccination.** Live attenuated (freeze dried) vaccine is available in our country and vaccination is being done by State Animal Husbandry Department free of cost. The vaccination has to be done annually and can be done in pregnant sows.

Name of the Vaccine	Age at first vaccination	Dose & Route and frequency of vaccination	Duration of immunity
CSF live attenuated vaccine	1 month	1ml, Intra-muscular, Annually	1 year

❑ Adopting good management practices will reduce the spread of virus and likelihood of disease outbreak in swine herds. Biosecurity measures are essential to prevent the entry of virus into the farm.

- Procurement of pigs from disease free herds
- Following hygienic practices. Use of foot baths with disinfectant solutions at the entrance of the farm
- Proper disinfection of vehicles and farm equipments before entering into the farm.
- Isolation and observation of newly brought animals for any clinical signs.
- Prompt and correct disposal of infected carcasses
- Cooking food waste containing pork products and meat offal before feeding to animals.

What has to be done during outbreak?

If the animals are showing clinical signs of the disease or there is mortality it should be immediately informed to the Animal Husbandary Department or nearby Veterinary Dispensary and the disease has to be diagnosed by laboratory tests. As no treatment is available to cure the disease, entire herd in the affected farm must be slaughtered and carcasses and bedding has to be disposed by burial or incineration. Thorough disinfection of the pens and premises has to be done.

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Classical Swine Fever an Important Disease of Pigs and its Prevention

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What is Classical Swine Fever..?

Classical swine fever (CSF) is a highly contagious viral disease affecting pigs. It is one of the most devastating epizootic diseases causing severe economic loss in swine production throughout the world. The disease is caused by the Classical swine fever virus (CSFV), a member of the genus Pestivirus of the family Flaviviridae. CSF is listed as a notifiable disease by the World Organisation for Animal Health (OIE) Terrestrial Animal Health Code.

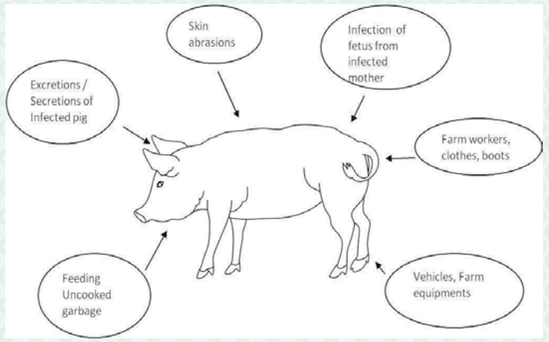
The disease is prevalent among pig population in Asia, Central and South America, and parts of Europe and Africa. In India the disease was first reported in 1962 in suburban area of Mumbai and there after the disease prevalence has been reported in most of the states where swine farming is being practiced. Outbreak of CSF can significantly affect the pork productivity and international market access and can contribute to gross income loss.

What are the species and age groups susceptible..?

The disease affects domesticated and wild pigs of all age groups.

How the disease is transmitted..?

- Highly contagious in nature and an important source of infection to the farm is through importation of pigs from affected flocks or endemic area
- Direct transmission occurs between sick and healthy animals through secretions and excretions including saliva, nasal and lachrymal secretions, semen, urine and feces even before the onset of clinical signs.
- Infected pigs shed virus throughout the course of the disease.
- Infection occurs through oral or nasal route and rarely by sexual transmission, artificial insemination and skin abrasions.
- Transplacental transmission occurs in pregnant sows and results in birth of persistently infected pigs.
- An important source of infection is by feeding uncooked garbage containing infected meat.
- The virus gets carried through inanimate objects like boots, clothes, farm equipments and vehicles and movement of workers or objects between the farms is an important source of transmission from one farm to another.



How the virus can be inactivated?

- The virus is comparatively fragile and susceptible to desiccation and UV irradiation. It does not persist in the environment for long time and hence does not get transmitted by airborne route to a far distance.
- Virus can survive well in moist and protein rich environment like infected tissues and body secretions. The virus can survive for months in contaminated pens.
- The virus can survive for years in frozen pork.
- The virus is resistant to mild heat but gets killed by cooking.
- It is inactivated at acidic pH of less than 3.0 or alkaline pH of more than 11.
- Virus is inactivated by disinfectants like 2% Sodium hydroxide, chlorine-based disinfectants, cresol (5%), formalin (1%), ionic and non-ionic detergents, and strong iodophors (1%) in phosphoric acid.

What are symptoms of classical swine fever?

- The clinical signs vary depending on the strain of virus and the age and susceptibility of pigs. Highly virulent strains cause acute disease. The morbidity and mortality rates are high during acute infections.
- High fever of 106-108ºFH, depression, huddling, inappetance, dullness, weakness, conjunctivitis and constipation followed by diarrhoea are the important signs of the disease in all age groups.
- Animals may also show convulsions, incoordination, staggering gait and posterior paralysis.
- Haemorrhages and purple discolouration of skin on the ears, abdomen and thigh may appear few days after the onset of disease.

- In acute cases animals may die within 1-3 weeks.
- Subacute form of disease is characterized by less severe signs with mortality and animals may survive after the course of the disease. Chronic swine fever occurs due to infection with less virulent strains or in infection in a partially immune swine herd and affected pigs may show recurrence of symptoms after recovery. Animals with chronic disease will die within 1-3 months and infected animals shed virus till death.
- In breeding sows infection with less virulent strains can lead to poor reproductive performance resulting in stillbirth, mummification, or birth of dead or abnormal piglets.
- Infection during fetal stage results in the birth of persistently infected which shows the disease in later stages with signs like inappetence and depression, stunted growth, dermatitis, diarrhoea, conjunctivitis, ataxia or posterior paresis and these animals continuously shed the virus till death at 6-12 months of age.

How the disease is diagnosed?

A tentative diagnosis can be made based on history, clinical signs and post mortem lesions. Classical swine fever may be suspected in a herd where animals are showing signs like high fever, severe depression, constipation followed by diarrhoea and haemorrhages and discolouration of skin. The disease may also be suspected in breeding herds with poor reproductive performance.

❑ COMMON POST MORTEM LESIONS:

- Cyanosis of the skin mainly at ears, limbs, tail and snout.
- Swollen hemorrhagic lymph nodes, necrosis and haemorrhage in tonsils, hemorrhages in kidney, larynx, epiglottis, heart, intestinal mucosa, urinary bladder and skin, infarcts in the spleen, necrotic gastroenteritis with button ulcers in the caecum and colon.