A highly infectious virus with a complex structure, but sensitive to disinfectants.

It is a double-stranded DNA virus belonging to the unique species African Swine Fever Virus (ASFv), the genus Asfivirus and the family Asfaviridae. Several genotypes (23) of the species have, however, been identified. The extracellular enveloped virions have a diameter that varies between 175-215 nm. They are relatively large compared to other viruses, some of which only measure 10 to 30 nm. Their capsid is an icosahedral structure of 1892-2172 capsomeres surrounded by an outer layer mainly made up of lipids, qualifying them as large enveloped viruses. This outer envelope is essential for infection. In the fight against this disease, it is an advantage that these virions belong to groups of large enveloped viruses, as they are much more sensitive to disinfectants that inactivate them more easily than viruses without an envelope (known as naked) especially if they are small.

African swine fever (ASF) is a severe viral disease that can be fatal to pigs and wild boars. This disease is endemic (persistent) in Africa where it also affects warthogs and bush pigs, often with no symptoms. These species therefore make up the population of the virus reservoir. Arthropods such as ticks of the genus Ornithodoros can carry the virus, thus becoming an active disease vector. Other arthropods, such as biting flies, may also be included. The virus does not pose a danger to human health, even though it is deadly for pigs. The disease and its consequences are the cause of serious socio-economic problems in livestock breeding. It is therefore a disease that must be reported. The OIE (World Organisation for Animal Health) responsible for fighting animal diseases, keeps track of the development of the disease across the world.

This is why the virucidal activity of disinfectants on the market is tested on a reference virus: ECBO (Cytopathic Bovine Orphan virus). It is a small naked virus 27 nm in diameter, both easy to grow in the laboratory but relatively resistant to biocides. Therefore the disinfectants whose virucidal activity has been demonstrated on this reference virus, according to European standardised methods, are capable of demonstrating virucidal activity on ASFv, whatever the genotypes.
Multiple ways the disease can be transmitted to pigs:
Contact – Ingestion – Insect bite

According to different sources, the routes of transmission of the infectious agent are as follows:
- Oro-nasal route by contact with an infected animal carrying the virus and by exchange of secretions. The virus is present in all bodily fluids and tissues of infected animals.
- Oro-nasal route by direct contact with the virus present in the environment where it can survive (excrement, fodder, liquid manure, manure, litter, equipment, vehicles, clothing...).
- Through the air over very short distances in case of a high density of pigs
- Ingestion of water or contaminated food (contaminated food waste, contaminated fresh pork or meat that has not been sufficiently heat treated ...)
- Bites from ticks of the genus Ornithodoros carrying the virus or also biting flies.

Dissemination of the virus in the environment
Fast - Large - Durable

The virus is relatively resistant in the environment and therefore its can spread very quickly.
Some strains can remain infectious across a wide range of pHs between 4 and 13 pH units. Studies also show still virulent activity in strains stored for 5 and 7 years at 5°C, 18 months at room temperature and between 10 and 30 days at 37°C.
The virus can also survive in protective media such as soil or animal faeces for 5 to 6 months and up to 30 months in chilled meat.
However, it is inactivated at a temperature of 60°C applied for 30 minutes.

How to prevent it
Protection of animals from possible sources of the virus

General biosecurity measures
Preventive cleaning and disinfection measures

There is no vaccine against the disease and no treatments available.
The fight against the disease lies in prevention; avoiding the spread of the virus from infected or endemic areas (strict imports, monitored transportation of animals...)

On farms, ensure the protection of the animals with regards to all the external sources and entrants:
- Control of access to buildings (visitors, staff...): use of personal protective equipment to access livestock buildings - Cleaning and Disinfection procedures.
- Limiting the arrival of external vehicles on site including those used for the transport of animals. Apply Cleaning and Disinfection procedures for vehicles in any case.
- Improvement of building maintenance, pest control, rodent control, liquid manure removal...
- Improvement of Cleaning and Disinfection procedures on all surfaces of buildings and equipment and the environment in general.
- Monitoring of entrants (food, water...),
- Monitoring animal health (abnormal signs or symptoms...)

If the disease is reported
Confinement - Isolation - Crisis Management

If a case is proven, establishment of a management procedure for hazardous areas including
- Elimination of animals: slaughter of all animals in the premises concerned.
- Isolation and securing of the site: rigorous and controlled confinement and isolation procedures.
- Cleaning and disinfection of premises in collaboration with the competent authorities and selected service providers.

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