International Pig Topics'

Pighealth BYTES

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23 – African swine fever I

Introduction

In 1921 a virus was transmitted from wild African pigs to domestic pigs and a peracute disease with 100% mortality ensued. The disease, now known as African swine fever, stayed in Africa until 1957 when it spread from Angola to Portugal. Again this was the peracute form of the disease and mortality approached 100%.

The disease subsequently spread to Spain, France, Italy, Malta, Belgium and Holland. African swine fever remained in Portugal and Spain until 1995 when a successful eradication programme was concluded.

In the 1970s the disease appeared in Cuba, Brazil, the Dominican Republic and Haiti.

More recently the disease has been encountered in some countries of the former USSR. Currently this disease is endemic in many sub-Saharan African countries.

African swine fever is a highly contagious, haemorrhagic disease of pigs of all ages and breeds that has the potential to spread rapidly.

The disease is OIE notifiable.

The cause

African swine fever is caused by a deoxivirus, which is a large DNA virus.

The complete genome has been determined for a dozen or so African and European isolates of the African swine fever virus and these show significant genetic diversity at this level.

Some 22 genotypes of the virus are known. Genotype I is mainly found in west Africa and the remainder are found in eastern and southern Africa. All isolates from Europe and the Americas have belonged to the West African genotype I, but a genotype II virus similar to those in southeastern Africa was introduced into the Caucasian region of the former USSR in 2007.

African swine fever virus is stable but can be inactivated by pH of <4 or >11. In serum the virus can remain active for at least six years at 5°C. This virus can be inactivated by 60°C for 30 minutes.

Epidemiology

African swine fever is endemic in over 20 sub-Saharan African countries and in Europe in Sardinia. The Sardinian situation arose from a single introduction of the virus on to the island in the 1970s.

In 2007 the virus entered the Caucasian region and subsequently spread to Georgia, Armenia, Azerbaijan and the Russian Federation and has now reached the western borders of these and in 2012 entered Ukraine. These outbreaks were caused by genotype II.

Both domestic and wild pigs, including wild boar, succumb to African swine fever. European species of wild pig/boar present clinical signs when infected, whereas infection is usually inapparent in African wild pigs.

In Africa, African swine fever circulates in a complex transmission cycle including wild pigs, ticks and domestic pigs. The incubation period varies from four to 19 days.