

Is ASF a human driven disease?

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African swine fever (ASF) is considered internationally as one of the most dangerous animal diseases of pigs. The disease is affecting trade and having serious socio-economic impact on people's livelihood. No drugs or vaccines are available to fight ASF.

The ASF epidemic currently affecting parts of Eastern Europe started in Georgia in 2007 and reached the eastern borders of the European Union in January 2014 when Lithuania reported first cases in wild boar. So far mainly wild boar populations in the Baltic States and east of Poland were affected. However, in June 2017 ASF has been notified also in wild boar in the eastern part of Czech Republic, 400 km away from the endemic regions in Eastern Europe.

Initially two main epidemiological scenarios were forecasted. ASF would fade out spontaneously from the local wild boar population or, alternatively an epidemic wave would start moving westward very rapidly, affecting large areas of Europe. However, both epidemiological hypotheses proved to be wrong. The virus did not fade out nor assumed an epidemic wave behavior. On the contrary the infection survived locally with a steady low prevalence (below 5%). Field data as well as experimental studies on ASF indicate an overall high case-fatality rate and a rather low contagiousity and low mortality during the initial phase of infection. Within that context, a revision of the current understanding and approaches towards ASF control and eradication is needed. In domestic pig populations the low contagiousity is rather an advantageous feature reducing the urgency in the implementation of control measures. For wild boar however, in combination with the environmental stability of the virus and high animal densities, the low contagiousity represents a disadvantage for effective control.

In wild boar populations ASF shows a pattern of habitat bound persistence lacking a tendency of dynamic spatial spread. Therefore ASF in wild boar can be considered a habitat-borne disease where infected carcasses in combination with the tenacity of the virus and the low contagiousity play a key role in capturing the disease within affected areas. Such circumstances are likely to contribute substantially to months or even years of pathogen persistence explaining the current picture of ASF spreading rather slowly and with continuing circulation in affected areas.

Human activities such as transportation of contaminated meat or meat products which then end up either in a domestic pig stable, e.g. via swill feeding, or as illegally disposed waste at places where wild boar have access, e.g. in the forest, are seen as main cause of ASF spread over long distances. However, illegal trade and uncontrolled movements of infected pigs may also occasionally contribute to virus spread.

Biosecurity shortcomings were the overall common finding and the most serious factor responsible for virus introduction in domestic pig holdings. Therefore, farm biosecurity has to be addressed more rigorously, particularly all aspects related to human activities. Information campaigns with all stake holders (farmers, veterinarians and staff) are a vital issue.

For keeping the high risk period as short as possible passive surveillance has to be enhanced in ASF restricted and risk areas. For example in breeding farms all dead gilts, sows and boars have to be compulsory tested for ASF even if farm mortality is below the normal threshold.