

Swine viral diseases: generalities

Welcome to this first class on viral diseases of pigs. Pigs are animals that can adapt to the majority of ecosystems, and today they are raised almost all over the world. In Spanish there's a saying that says: "you can use everything of the pig including the gait". And it is true. From few species we obtain as many benefits as from this. Pigs give us meat, fat, bone, bristle, and skin. Byproducts range from brushes and paint brushes, glue, gelatin, medicines, and much more.

Pigs can be raised in intensive farms, which are where the animals are in boxes and with limited mobility, or in extensive farms, in which they can come out to the field. In addition, occasionally they are used as pets. The pig industries move a lot of money every year, since it is one of the meats that is most consumed, in addition to the other applications that we have just mentioned. Some of the viral diseases, such as Aujeszky's disease and the rest that you see here, induce enormous economic losses, primarily by the need to sacrifice all animals on the farm, but also by the mortality or by the drop in production they induce.

The pig was domesticated about 13000 years ago. But in addition to domestic pigs, there are also wild pigs, such as wild boars in Europe, warthogs or potamochoeros in Africa. Wild suidae play a very important role as reservoirs of many diseases. Other animals that have great significance in the epidemiology of many viral diseases are the arthropods, since various diseases are Arbovirosis. This is the case of African swine fever, in which, as we will see, ticks can transmit the infection.

Some of the diseases that affect pigs are notifiable to the World Organization for Animal health. This is because they spread very easily, or because they produce important socio-economic losses. We will discuss two of them in the following video. Nipah disease, is also transmissible to humans, as well as influenza A and hepatitis E.

Some porcine viruses, as those which produce both swine fevers, cause systemic disease, i.e., many organs are affected. These diseases are very severe and they are notifiable. Other viruses have tropism to the respiratory system, producing cough, sneezing, respiratory distress, growth retardation and high mortality. Good ventilation of the farms and reducing overcrowding is essential to limit the spread of these infections.

One of the main problems in pig farms is the development of diarrhea, that can take place at any age, but which is more severe in younger animals. These processes delay growth and can also lead to death. In the U.S. the infection by the porcine epidemic diarrhea virus has shaken the stock market. Good farm hygiene is essential to control these processes, as well as to make sure that animals which are incorporated into the farm are free of infection.

Another great concern are infections that reduce the fertility of sows or that affect their offspring. Several viral infections produce abortions or the birth of dead piglets at various times throughout the pregnancy, even mummified, or which are weak and die within days of being born. Many of these viruses can survive in the environment for many months, and the disease may become endemic in the farm.

And even if it seems trivial, other very serious diseases are those that affect the most superficial tissues, i.e., the skin of different locations. Among these, the most severe is foot-and-mouth disease, which spreads very easily, but there are also other infections that produce lameness and cause huge economic losses as they affect swine productivity.

As we have been saying throughout the course, it is better to prevent than to cure. That means improving the ventilation and reducing stress, as well as following the immunization schedules of each region. We must also implement good biosecurity measures throughout every stage of the pig production cycle.

Meet me in the following video about three very important pig diseases.