

Are domestic pig hybrids sick more often than other wild boar?

We know from genetic research that about 4% of the wild boars that roam Northwest Europe are hybrids between wild boar and domestic pigs. These hybrids resulted from wild x domestic crosses in recent years. The sources of these hybrids are unknown. However, genetic patterns suggest that hybridization occurred in a captive population followed by introduction to the wild.

If a mammal becomes infected with a disease, the immune system will generate antibodies against the germ that caused the infection. These antibodies play an important role in the defense against infectious diseases. One of the germs that may cause disease in wild boar is the bacterium *Mycoplasma hyopneumoniae* (*Mhyo*). We found that hybrids had antibodies against *Mhyo* more often than other wild boar. This is most likely a sign that hybrids get sick from *Mhyo* more often.

It is difficult to say what caused the hybrids to be more susceptible to *Mhyo*. However, the long history of protection against germs in domestic pigs may have weakened their immune system. Most pigs are relatively protected against germs by hygienic housing and veterinary medicine (including antibiotics). Over generations this protection may have caused the immune system of pigs to be a bit less effective, simply because there was no need to be. The observed hybridization could have introduced these less effective immune genes into the wild.

Another germ that may cause disease in wild boar is porcine circovirus type 2 (pcv2). Antibodies against this germ were equally abundant in hybrids and other wild boar. This shows that the immune genes in hybrids are not less effective against all diseases. Antibiotic medicine protects pigs against bacteria but not against viruses. It is possible that protection by antibiotics has caused the pig immune system to be less effective only for bacteria and not for viruses, such as pcv2.

We conclude that hybrids are more susceptible to *Mhyo* infection than other wild boar, but not more susceptible to pcv2 infection. This difference in susceptibility may be due to the introduction of slightly less effective pig immune genes. More generally, we suggest that introduction of domestic genes to the wild may have undesired effects on wildlife disease dynamics also in other species.

Publication

[Increased *Mycoplasma hyopneumoniae* Disease Prevalence in Domestic Hybrids Among Free-Living Wild Boar.](#)

Goedbloed DJ, van Hooft P, Lutz W, Megens HJ, van Wieren SE, Ydenberg RC, Prins HH
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