



Media release

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Bovine viral diarrhoea (BVD)

Good knowledge of the BVD virus is important for its eradication

The eradication of bovine viral diarrhoea (BVD) is progressing, but the virus has not yet completely disappeared in Switzerland. The Institute of Virology and Immunology (IVI), the Federal Food Safety and Veterinary Office (FSVO), the Veterinary Office of Solothurn Canton and the Veterinary Office of the Original Cantons recently [published](#) the current body of knowledge on BVD virus and its control. The last infection chains must now be detected as quickly as possible and BVD-free herds protected against re-infection.

In economic terms, BVD is one of the most important animal diseases worldwide. Farms with infected animals can experience higher rates of weak-born calves and fertility disorders (returns to oestrus, abortions), as well as premature culling, reduced milk yield and delayed growth. The economic damage caused by BVD virus in Switzerland has been estimated at between CHF 9 and 16 million per year. But thanks to the measures adopted since 2008 under the national BVD eradication programme and the great efforts of everyone involved, more than 99.5 percent of Swiss cattle farms are now officially recognised as BVD-free. However, the virus is still present on a small number of farms. The rapid identification and elimination of the last persistently infected (PI) animals remains a major challenge.

Complex biology of the virus

The unusual biology of the virus makes its control especially complex, as infection can occur before birth, while the foetus is still in the uterus (vertical transmission). The result is a PI calf, which carries the virus from birth and excretes it in large quantities throughout its lifetime. As long as these PI animals remain undetected, they can infect other animals at any time, including pregnant cows, which in turn give birth to PI calves. If an animal's first contact with the virus occurs after birth (horizontal transmission), this leads to a long-lasting, persistent immunity after infection.

The fight against BVD is a good example of fruitful collaboration between applied research, development and diagnostics. In addition, new and efficient diagnostic methods have been developed. These made targeted eradication possible in the first place and have continually proven themselves thanks to improvements in serology.

Fast action required

Bulk tank milk samples and blood samples from BVD-free farms are analysed as part of the annual [surveillance programme](#). Since 2012, monitoring has been carried out by detection of BVD virus antibodies (serology). Animals in which antibodies have been detected

are not contagious, but the positive result shows that the animal has had contact with the virus. To prevent a rapid further spread, the source of infection must therefore be identified as fast as possible. Thanks to the measures taken under the eradication programme, most Swiss herds are now BVD-free, but they are also virtually unprotected against reinfection with the virus. It is therefore more important than ever to comply with measures to protect against reinfection, especially in the livestock trade, imports and summer pasturing.

One final effort needed

In the final phase of BVD eradication, all possible ways by which the virus can spread must be eliminated. This is why we now need one final effort: each cattle movement must be quickly and correctly recorded in the animal movement database, biosecurity measures must be taken on farms to protect livestock against infection, and livestock keepers and veterinarians must remain vigilant and act immediately at the slightest suspicion of BVD. In the event of an epidemic, secondary infections must be efficiently prevented and the source of infection quickly traced. The latter can be assisted by molecular epidemiology. This means that each virus-positive sample must be forwarded to the BVD reference laboratory at the IVI for identification of the various infection chains by means of sequencing. This process increases the efficiency of contact tracing, i.e. the tracking of all possible contacts of a PI animal.

[Eradication of Bovine Viral Diarrhoea \(BVD\) in Cattle in Switzerland: Lessons Taught by the Complex Biology of the Virus](#)

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