Comparison of the performance of five different immunoassays to detect specific antibodies against emerging atypical bovine pestivirus - DTU Orbit (16/12/2018)

Bovine pestiviruses represent a considerably variable group. In addition to the two accepted species BVDV-1 and BVDV-2, a number of atypical bovine pestiviruses have been detected both in foetal calf sera and in field samples. The sera collected during the initial six weeks of experimental infection of calves with atypical pestivirus, BVDV-1 and a combination of both viruses have been examined by routine and new diagnostic tests to validate their robustness and sensitivity. As expected, virus neutralization tests using homologous virus were able to differentiate the two groups infected by BVDV-1 or atypical pestivirus, whereas the animals inoculated with a mixture of these two viruses had a reaction pattern very similar to the homologous virus alone. It was found that immunoassays using whole virus and polyclonal antibodies are the most robust, but all tests examined were able to detect antibodies also from cattle infected with atypical pestivirus a few weeks after infection. The detection, however, was at a lower level and slightly delayed. Statistical validation of the threshold suggested by the manufacturer showed that in some cases the reduction of the cut-off values would improve the test sensitivity.