EVALUATION OF SENSITIVITY AND SPECIFICITY OF VIRUS NEUTRALISATION TEST AND COMPETITION ELISA FOR ANTIBODIES TO BVDV DETECTION IN CATTLE

Violeta Mockeliūnienė[1], Algirdas Šalomskas[1,2], Raimundas Mockeliūnas[2], Vida Liutkevičienė[2], Ilona Aleksėjūnienė[1], Loreta Šernienė[3]

[1]*Department of Virology, Veterinary Institute of Lithuanian Veterinary Academy, Instituto st. 2, LT-56115, Kaišiadorys, Lithuania; phone +370 615 15 233, e-mail: violetamoc@one.lt*

[2]*Department of Infectious Diseases, Lithuanian Veterinary Academy, Tilžės st. 18, LT-47181 Kaunas, Lithuania*

[3]*Department of Food Safety and Animal Hygiene, Lithuanian Veterinary Academy, Tilžės st. 18, LT-47181 Kaunas, Lithuania*

Summary. An effective use of diagnostic technique is the main tool for successful control and prevention of the spread of BVDV infection. In order to estimate the reliability of serological investigation data a comparative assessment of standard virus neutralisation (VN) test (50 µl of a stock of cytopathogenic NADL strain of BVDV containing 100 $TCID_{50}$ tissue culture infective dose), modified VN test (50 µl of a stock of cytopathogenic NADL strain of BVDV containing 1000 $TCID_{50}$ tissue culture infective dose) and a competition antibody enzyme-linked immunosorbent assay (Ab ELISA) were performed. For the present study one hundred twenty different age cattle were randomly selected. The results from this study indicate that a standard VN reaction revealed 52.5%, a modified VN reaction 45% and Ab ELISA 49.2% of cattle positive to BVDV. The differences were not statistically significant (3.3–7.5%, $p>0.05$). Differences were determined in different age groups, for example, in 8-12 month-old calves (20.0-30.0 % of positive) and cows(68.4-78.9 % of positive), respectively. In order to determine the differences in the data of blood serum analysis obtained by standard VN and Ab ELISA, sensitivity and specificity of competition Ab ELISA was assessed according to OIE standards. It was determined that the competition Ab ELISA is a sensitive (91.2%) and specific (95.1%) method.

Keywords: BVDV, antibodies, cattle, ELISA, sensitivity, specificity.