Detection of the bovine viral diarrhoea virus (BVDV) in young beef cattle in eastern and south-eastern regions of Poland

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Abstract

In view of the scarcity of information concerning viral diarrhoea virus (BVDV) infections in beef cattle in Poland, the aim of this study was to evaluate the presence of the BVDV in young beef cattle from selected herds in eastern and south-eastern regions of Poland. The material consisted of 78 sera obtained from beef cattle from 15 farms, aged 6-12 months. The anti-BVDV antibody level in the sera was estimated with an ELISA kit, and detection of the BVDV was carried out by standard PCR and one step Real-Time RT-PCR. The ELISA results showed a high degree (80%) of positivity in 5 of the 78 samples. In 7 samples the degree of positivity was in the very low range: ≤40%. Of the 78 cDNA samples, the presence of genetic material with a length of 288 bp was found by standard PCR in 3 sera. The genetic material of BVDV was also found in the sera of the same three calves by Real-Time HRM PCR. BVDV infection in young beef cattle in south-eastern Poland is not a significant problem. This was confirmed by the positive ELISA results for 6.4% of the animals and the positive PCR results for 3.9%. The percentage of positive beef herds was about 8.6%. However, due to the severe nature of the disease and rapid transmission of the virus, regular monitoring of BVDV should be carried out.

Key words: bovine viral diarrhoea virus, beef cattle, feedlot, RT-PCR

Introduction

Infections with bovine viral diarrhoea virus (BVDV) are widespread in cattle populations all over the world, resulting in economic losses due to decreased performance, loss of milk production, reproductive disturbances, and increased risk of morbidity and mortality (Rypuła et al. 2011). The clinical outcome after infection is complex and depends on a number of factors. Host factors influencing the clinical outcome include pregnancy status, gestational age of the foetus at the time of infection, immune status...