



## **IDENTIFIKASI DAN DIFERENSIASI INFEKSI VIRUS *BOVINE VIRAL DIARRHEA* SECARA SEROLOGIS**

### **INTISARI**

Virus *bovine viral diarrhoea* (BVD) adalah salah satu penyebab penyakit reproduksi utama pada ternak sapi hampir di seluruh dunia. Infeksi virus BVD mempunyai dampak ekonomi yang signifikan akibat dari kerugian dalam produktivitas dan reproduktivitas ternak. Penentuan status infeksi dan identifikasi asal infeksi virus BVD penting dalam program pengendalian virus BVD. Metode yang umum digunakan untuk memperoleh gambaran mengenai status dan asal infeksi adalah deteksi antibodi terhadap virus BVD atau protein spesifik virus BVD, seperti p80 yang bersifat imunogenik dan *highly conserved*. Penelitian ini dilakukan untuk mengidentifikasi asal infeksi virus BVD pada ternak sapi, apakah berasal dari infeksi alami atau akibat vaksinasi, berdasarkan antibodi spesifik terhadap protein p80. Sejumlah 237 sampel darah sapi dari Jawa Timur, Jawa Tengah dan DIY diuji dengan ELISA untuk mendeteksi keberadaan antibodi total dan antibodi spesifik terhadap protein p80. Hasil menunjukkan bahwa sebanyak 170 sampel (71,73%) positif mengandung antibodi terhadap virus BVD yang mengindikasikan bahwa ternak sapi tersebut pernah mengalami infeksi virus BVD. Selanjutnya, 170 sampel tersebut diuji lebih lanjut dengan p80 ELISA untuk mengetahui asal infeksi BVDV tersebut. Berdasarkan uji tersebut, 159 sampel (93,53%) positif mengandung antibodi spesifik terhadap p80 yang menunjukkan bahwa infeksi virus BVD terjadi akibat infeksi alami. Berdasarkan hasil penelitian ini, dapat disimpulkan bahwa infeksi virus BVD pada ternak sapi di Jawa Timur, Jawa Tengah dan DIY terjadi karena infeksi alami dan bukan akibat dari vaksinasi.

Kata kunci: Virus *bovine viral diarrhoea* (BVD), infeksi alami, vaksinasi, protein p80, ELISA



## **IDENTIFICATION AND DIFFERENTIATION OF BOVINE VIRAL DIARRHEA VIRUS (BVDV) INFECTION BY SEROLOGICAL TEST**

### **ABSTRACT**

Bovine viral diarrhoea virus (BVDV) is one of the main cause reproductive disease in cattle almost all over the world. BVDV infection has a significant economic impact as a result of lower in productivity and reproducibility of livestock. Determination of infection status and the identification of the origin of BVDV infection are important in the BVDV control program. Laboratory technique commonly used to determine the status and origin of the BVDV infection is the detection of antibodies against BVDV or BVDV-specific proteins, such as p80 which is immunogenic and highly conserved. This study was conducted to identify the origin of BVDV infection in cattle, whether derived from natural infection or from vaccination, based on specific antibodies against the p80 protein. A total of 237 cattle blood samples collected from dairy cattles in East Java, Central Java and Yogyakarta were analyzed by ELISA to detect the presence of total antibodies and antibodies specific to the p80 protein. Results showed that 170 out of 237 samples (71.73%) were found positive for antibodies against BVDV indicating that cattle had experienced BVDV infection. One hundred seventy positive samples were further tested by p80 ELISA to determine the origin of the BVDV infection. Based on the test, 159 samples (93.53%) were positive for antibodies specific to p80 which indicate that BVDV infection caused by natural infection. Based on these results, it can be concluded that the BVD virus infection in cattle in East Java, Central Java and Yogyakarta occur due to natural infection and not a result of vaccination.

**Keywords:** Bovine viral diarrhoea virus (BVDV), natural infection, vaccination, p80 protein, ELISA