

## ABSTRAK

### **DIAGNOSIS *LUMPY SKIN DISEASE* PADA SAPI DENGAN *ENZYME LINKED IMMUNOSORBENT ASSAY* DAN *REAL-TIME POLYMERASE CHAIN REACTION***

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*Lumpy Skin Disease* (LSD) merupakan penyakit viral yang menyerang sapi dan kerbau dengan gejala klinis berupa nodul pada kulit. LSD menyebabkan penurunan performa sapi pedaging dan perah, sehingga menyebabkan kerugian ekonomi. Diagnosa infeksi LSD yang cepat dan sesuai menggunakan uji serologis dan molekuler bersifat esensial dalam upaya pemberantasan dan pengendalian infeksi di lapangan. Tujuan penelitian ini untuk mendeteksi LSD pada sapi berdasarkan respon imun dengan uji serologis dan deteksi virus dengan uji molekuler. Penelitian ini melakukan diagnosis LSD pada sapi yang bergejala LSD menggunakan *enzyme-linked immunosorbent assay* (ELISA) dan *real-time* PCR. Sampel darah dan keropeng diambil dari tiga sapi bergejala LSD (n=3), yaitu nodul-nodul pada kulit. Sampel darah diproses menjadi serum dan diujikan menggunakan ELISA. Sampel keropeng kulit diproses menjadi suspensi 10% dan diujikan menggunakan *real-time* PCR. Pemeriksaan ELISA didapatkan hasil *optical density* dan S/P %, sedangkan pemeriksaan *real-time* PCR didapatkan hasil *Ct value*. Hasil penelitian menunjukkan dua sampel seropositif (S/P % > 30%) dan satu sampel seronegatif (S/P % < 30%). Hasil *real-time* PCR menunjukkan ketiga sampel positif (*Ct* < 40). Kesimpulan dari penelitian ini metode ELISA mendeteksi infeksi LSD (2/3) dan metode *real-time* PCR (3/3).

Kata kunci : LSD, ELISA, *real-time* PCR, S/P %, *Ct value*

## ***ABSTRACT***

### **LUMPY SKIN DISEASE DIAGNOSIS IN CATTLE USING ENZYME LINKED IMMUNOSORBENT ASSAY AND REAL-TIME POLYMERASE CHAIN REACTION**

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Lumpy Skin Disease (LSD) is a viral disease affecting cattle and buffalo, characterized by distinct skin nodules and leading to significant economic losses in beef and dairy industries due to performance drops. Rapid and accurate diagnosis of LSD through serological and molecular tests is crucial for effective control and eradication efforts. This study aimed to detect LSD in symptomatic cows using enzyme-linked immunosorbent assay (ELISA) and real-time PCR. Blood and scab samples were collected from three cows exhibiting LSD symptoms, such as skin nodules. Serum from blood samples was tested using ELISA, while 10% suspensions of skin scabs were analyzed using real-time PCR. ELISA results provided optical density and S/P % values, whereas real-time PCR yielded Ct values. The findings revealed that two out of three samples were seropositive (S/P % > 30%), and one was seronegative (S/P % < 30%). All three samples tested positive for LSD via real-time PCR (Ct < 40). Thus, the study concludes that while the ELISA method detected LSD in two out of three cases (2/3), the real-time PCR method was more sensitive, detecting LSD in all three cases (3/3).

Key words: LSD, ELISA, real-time PCR, S/P %, Ct value