

PARASITEMIA AND LEUKOCYTE DIFFERENTIAL IN CATTLE INFECTED BY PIROPLASMOSIS IN TANAH DATAR, WEST SUMATRA

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ABSTRACT

LIM SHU HUI. Parasitemia and leukocyte differential in cattle infected by Piroplasmosis in Tanah Datar, West Sumatra. Supervised by UMI CAHYANINGSIH and ARIFIN BUDIMAN NUGRAHA.

Cattle are used as livestock for meat and milk production, but tick-borne disease in cattle, such as piroplasmosis which leads to poor cattle health performance and economic losses. The study aimed to determine the prevalence of bovine piroplasmosis and to analyze the association between parasitemia and leukocyte differentials in Tanah Datar. A total of 56 blood samples were collected from Tanah Datar and prepared as blood smears with ten percent Giemsa stain. Blood smears were examined microscopically to record parasitemia and leukocyte differential data. The results showed that the samples were positive for *Theileria* spp. and *Babesia* spp. at 100% (56/56) and 23.21% (13/56), respectively. According to the morphology measurement of *Theileria* spp. and *Babesia* spp. found in the blood smears, they are highly similar to *T. annulata* and *B. bigemina*. The leukocyte differentials show that most leukocytes remain within normal ranges except for elevated eosinophils. In conclusion, there is no significant association between parasitemia and leukocyte differentials in bovine piroplasmosis. Bovine piroplasmosis in Tanah Datar shows high prevalence, with mostly low parasitemia levels. Future studies are suggested to include analysis of additional immunological parameters to further clarify the association between parasitemia and leukocyte differentials in cattle infected with piroplasma.

Keywords: Cattle, Leukocyte differential, Parasitemia, Piroplasmosis, Tanah Datar

ABSTRAK

LIM SHU HUI. Parasitemia dan Diferensiasi Leukosit pada Sapi yang Terinfeksi Piroplasmosis di Tanah Datar, Sumatra Barat. Dibimbing oleh UMI CAHYANINGSIH dan ARIFIN BUDIMAN NUGRAHA.

Sapi digunakan sebagai ternak untuk produksi daging dan susu, namun penyakit yang ditularkan oleh caplak pada sapi seperti piroplasmosis dapat menyebabkan penurunan kesehatan sapi dan kerugian ekonomi. Penelitian ini bertujuan untuk menentukan prevalensi pada piroplasmosis sapi dan menganalisa hubungan antara parasitemia dan diferensial leukosit di Tanah Datar. Sebanyak 56 sampel darah sapi dikoleksi dari kabupaten Tanah Datar, kemudian di buat sediaan ulas darah dan dilanjutkan pewarnaan Giemsa 10%. Sediaan ulas darah diperiksa secara mikroskopis, untuk menghitung persentase parasitemia dan gambaran diferensiasi leukosit. Hasil pemeriksaan menunjukkan sampel positif terhadap *Theileria* spp. dan *Babesia* spp., masing-masing sebanyak 100% (56/56) dan 23,21% (13/56). Berdasarkan hasil pengukuran, morfologi *Theileria* spp. dan *Babesia* spp. yang ditemukan pada apusan darah mengarah ke *T. annulata* dan *B. bigemina*. Diferensial leukosit menunjukkan kebanyakan leukosit masih dalam kisaran normal, kecuali eosinofil yang meningkat. Kesimpulannya, tidak ada hubungan yang signifikan antara parasitemia dan diferensial leukosit pada piroplasmosis sapi. Piroplasmosis sapi di Tanah Datar memiliki prevalensi tinggi dengan tingkat parasitemia yang rendah. Penelitian selanjutnya disarankan perlu dilakukan analisis parameter imunologis lainnya guna memperjelas hubungan antara parasitemia dan diferensial leukosit pada sapi yang terinfeksi piroplasma.

Kata kunci: Diferensial leukosit, Parasitemia, Piroplasmosis, Sapi, Tanah Datar



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as one of the requirements to obtain a degree of
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I hope this paper be beneficial to those who need it and contributes to the advancement of knowledge on this topic.

Bogor, June 2025

Lim Shu Hui



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