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Deteksi Bakteri Shigella sp. pada Sampel Susu Mastitis Subklinis Kambing Sapera
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DETEKSI BAKTERI *Shigella* sp. DALAM SUSU MASTITIS SUBKLINIS PADA KAMBING SAPERA

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INTISARI

Upaya peningkatan kualitas susu masih terhambat oleh kejadian mastitis subklinis. Bakteri *Shigella* sp. telah dilaporkan sebagai penyebab mastitis di luar negeri, namun di Indonesia belum ada laporan kejadian serupa. Studi ini bertujuan untuk mendeteksi bakteri *Shigella* sp. asal susu mastitis subklinis kambing perah. Koleksi sampel diawali dengan skrining mastitis menggunakan reagen *California Mastitis* Test (CMT) pada susu dari setiap puting 32 Kambing Saanen Peranakan Etawa (Sapera) pada masa laktasi. Sampel positif 2 dan 3 dari uji CMT dilakukan rangkaian uji mikrobiologi meliputi identifikasi morfologi koloni pada *Eosin Methylene Blue Agar* (EMB), *Mac Conkey Agar* (MCA), dan *Salmonella Shigella Agar* (SSA), dan identifikasi morfologi sel dengan pewarnaan Gram dilanjutkan pengujian biokimia meliputi uji hemolisa, uji *Triple Sugar Iron Agar* (TSIA), *Simmons Citrate Agar* (SCA), uji deret gula (glukosa, sukrosa, dekstrosa, laktosa, dan maltosa), dan uji oksidase. Sebanyak 10 (31,25%) ekor kambing (12 dari 20 puting positif pada uji CMT) positif mastitis subklinis. Rangkaian pengujian fenotipik (EMB, MCA, SSA, pewarnaan Gram, uji hemolisa, TSIA, SCA, deret gula, dan uji oksidase) memberikan hasil sebanyak dua sampel (W-5R dan SM-2R) menunjukkan morfologi koloni bulat transparan dan non-*mucoid* pada EMB dan MCA, koloni transparan dan tidak menghasilkan H_2S pada SSA, morfologi sel berbentuk batang dan terwarnai merah, *γ*-hemolisis, K/A, positif, memfermentasi gula selain laktosa (glukosa, sukrosa, dekstrosa, dan maltosa), dan negatif. Kedua sampel tersebut merupakan bakteri Gram negatif yang teridentifikasi secara fenotipik mengarah pada bakteri *Shigella* sp.

Kata kunci: identifikasi bakteri, radang ambing, *Shigella* sp., uji fenotipik

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DETECTION OF *Shigella* sp. IN MILK SAMPLES FROM SAPERA GOATS WITH SUBCLINICAL MASTITIS

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ABSTRACT

Efforts to improve milk quality are still hindered by the occurrence of subclinical mastitis. *Shigella* sp. have been reported as causative agents of mastitis in several countries, however no similar cases have been reported in Indonesia. This study aimed to detect *Shigella* sp. from dairy goat's milk with subclinical mastitis. Sample collection began with mastitis screening using the California Mastitis Test (CMT) reagent on milk obtained from each teat of 32 lactating Saanen-Etawa crossbred (Sapera) goats. Samples with CMT scores of 2 and 3 were subjected to a series of microbiological test, including colony morphology identification on Eosin Methylene Blue Agar (EMB), Mac Conkey Agar (MCA), and Salmonella Shigella Agar (SSA), as well as cell morphology identification using Gram staining. Biochemical tests were subsequently performed, including hemolysis assay, Triple Sugar Iron Agar (TSIA), Simmons Citrate Agar (SCA), carbohydrate fermentation test (glucose, sucrose, dextrose, lactose, and maltose), and oxidase testing. A total of 10 (31.25%) goats (12 out of 20 teats positive on the CMT test) were positive for subclinical mastitis. Phenotypic test (EMB, MCA, SSA, Gram staining, hemolysis assay, TSIA, SCA, carbohydrate fermentation, and oxidase test) performed on 2 samples (W-5R and SM-2R) revealed phenotypic characteristics including transparent, round, and non-mucoid colonies on EMB and MCA, transparent colonies without H_2S production on SSA, rod-shaped red-stained cells, γ-hemolysis, K/A, positive, fermentation of sugars other than lactose (glucose, sucrose, dextrose, and maltose), and negative. These two isolates ere presumptively identified as *Shigella* sp. based on phenotypic characterization.

Keywords: bacterial identification, inflammation of the udder, *Shigella* sp., phenotypic test