

ABSTRAK

PENERAPAN HIGIENE PEMERAHAN TERHADAP *TOTAL PLATE COUNT* DAN CEMARAN MIKROBIOLOGIS SUSU DI PRODUKSI PANGAN AKADEMI MILITER MAGELANG

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Higiene pemerahan merupakan salah satu faktor penting yang memengaruhi kualitas mikrobiologis susu sapi segar. Penelitian ini dilakukan untuk mengevaluasi penerapan higiene pemerahan serta hubungannya terhadap kualitas mikrobiologis susu di Produksi Pangan (Propang) Akademi Militer Magelang. Parameter yang diamati meliputi nilai Total Plate Count (TPC), kejadian mastitis, dan keberadaan bakteri *Salmonella* spp. pada susu sapi segar. Sampel penelitian berupa susu sapi PFH yang berasal dari 24 ekor sapi perah di kandang KANSA A dan KANSA B Propang Akademi Militer Magelang. Penelitian dilakukan menggunakan metode uji TPC, uji mastitis dengan reagen IPB-1, isolasi dan identifikasi *Salmonella* spp. secara kultur menggunakan media BPW, RVS, dan XLD, dilanjutkan dengan pewarnaan Gram dan identifikasi molekuler menggunakan metode PCR target gen *invA*. Hasil uji mastitis menunjukkan adanya mastitis subklinis pada dua sampel (8,33%), yaitu sampel S-13 ambung D dengan hasil (+) dan sampel S-19 ambung C dengan hasil (++). Selain itu, ditemukan koloni terduga *Salmonella* spp. pada empat sampel (16,67%), yaitu S-5(1), S-5(2), S-6(1), dan S-8(1). Hasil pewarnaan Gram menunjukkan bakteri Gram negatif berbentuk basil, sedangkan hasil PCR memperlihatkan pita DNA berukuran 389 bp yang mengindikasikan keberadaan *Salmonella* spp. Penelitian ini menunjukkan bahwa higiene pemerahan memiliki hubungan erat dengan kualitas mikrobiologis susu sapi segar. Penerapan sanitasi pemerahan, kebersihan kandang, dan pengendalian mastitis yang lebih baik diperlukan untuk mencegah kontaminasi bakteri patogen serta meningkatkan keamanan pangan di lingkungan Propang Akademi Militer Magelang.

Kata kunci: higiene pemerahan, kualitas mikrobiologis susu, mastitis subklinis, *Salmonella* spp., *Total Plate Count*, PCR.

ABSTRACT

MILKING HYGIENE PRACTICES ON *TOTAL PLATE COUNT* AND MICROBIOLOGICAL CONTAMINATION AT THE FOOD PRODUCTION UNIT OF THE MILITARY ACADEMY MAGELANG

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Milking hygiene is one of the most important factors affecting the microbiological quality of fresh cow's milk. This study was conducted to evaluate the implementation of milking hygiene and its relationship with the microbiological quality of milk at the Food Production Unit (Propang) of the Indonesian Military Academy, Magelang. The parameters observed included *Total Plate Count* (TPC), the incidence of mastitis, and the presence of *Salmonella* spp. in fresh cow's milk. Milk samples were collected from 24 Friesian Holstein Crossbred (PFH) dairy cows housed in KANSA A and KANSA B barns at the Propang Food Production Unit, Indonesian Military Academy, Magelang. The study was carried out using the *Total Plate Count* (TPC) method, mastitis testing with the IPB-1 reagent, and the isolation and identification of *Salmonella* spp. by conventional culture using Buffered Peptone Water (BPW), Rappaport-Vassiliadis Soy Broth (RVS), and Xylose Lysine Deoxycholate (XLD) agar, followed by Gram staining and molecular identification using PCR targeting the *invA* gene. The mastitis test revealed subclinical mastitis in two samples (8.33%), namely sample S-13 (quarter D) with a (+) score and sample S-19 (quarter C) with a (++) score. In addition, suspected *Salmonella* spp. colonies were detected in four samples (16.67%), namely S-5(1), S-5(2), S-6(1), and S-8(1). Gram staining showed Gram-negative bacilli, while PCR analysis produced a 389 bp DNA amplicon, confirming the presence of *Salmonella* spp. These findings indicate that milking hygiene is closely associated with the microbiological quality of fresh cow's milk. Improved milking sanitation, barn hygiene, and mastitis control are therefore essential to prevent contamination by pathogenic bacteria and to enhance food safety at the Propang Food Production Unit of the Indonesian Military Academy, Magelang.

Key words: milking hygiene, microbiological quality of milk, subclinical mastitis, *Salmonella* spp., *Total Plate Count*, PCR.