

ABSTRAK

Profil Resistensi Antibiotik *Staphylococcus aureus* pada Isolat Asal Hewan Kesayangan dan Susu Sapi Perah

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Infeksi yang disebabkan oleh *Staphylococcus aureus* (*S. aureus*) serta kemunculan galur *Methicillin-Resistant Staphylococcus aureus* (MRSA) pada hewan kesayangan dan sapi perah menjadi masalah penting dalam kesehatan hewan dan kesehatan masyarakat karena potensi resistensi antibiotik dan transmisi zoonosis. Penelitian ini bertujuan untuk menganalisis profil resistensi antibiotik isolat *S. aureus* asal hewan kesayangan dan susu sapi perah terhadap tujuh antibiotik, yaitu tetrasiklin, gentamisin, eritromisin, penisilin G, cefoxitin, siprofloksasin, dan klindamisin. Pengujian dilakukan menggunakan metode *disk diffusion* Kirby-Bauer terhadap 20 isolat *S. aureus* yang berasal dari swab klinis hewan kesayangan (2 anjing, 7 kucing, dan 2 kelinci) serta 9 sampel susu sapi perah. Interpretasi diameter zona hambat diklasifikasikan menjadi kategori sensitif, intermediat, dan resisten berdasarkan standar *Clinical and Laboratory Standards Institute* (CLSI) 2024. Hasil penelitian menunjukkan tingkat resistensi tertinggi terhadap penisilin G sebesar 75% (15/20), diikuti tetrasiklin sebesar 30% (6/20), gentamisin, eritromisin, dan klindamisin masing-masing sebesar 25% (5/20), cefoxitin sebesar 20% (4/20), dan tingkat resistensi terendah pada siprofloksasin sebesar 10% (2/20). Isolat asal kucing menunjukkan tingkat resistensi paling tinggi terhadap cefoxitin sebesar 43% yang mengindikasikan adanya MRSA secara fenotipik. Sebaliknya, seluruh isolat anjing dan kelinci teridentifikasi sensitif terhadap cefoxitin (100%) sehingga diklasifikasikan sebagai *Methicillin-Susceptible Staphylococcus aureus* (MSSA). Adanya kecenderungan *Multidrug Resistance* (MDR) pada isolat asal kucing dan susu sapi perah menegaskan pentingnya penggunaan antibiotik secara rasional untuk menekan risiko resistensi antimikroba. Berdasarkan temuan tersebut, diperlukan pemantauan pola resistensi secara berkelanjutan pada hewan kesayangan dan produk pangan asal hewan sebagai langkah pendekatan *One Health* dalam pengendalian resistensi antimikroba.

Kata kunci: hewan kesayangan, MRSA, resistensi antibiotik, *Staphylococcus aureus*, susu sapi

ABSTRACT

Antibiotic Resistance Profile of *Staphylococcus aureus* in Isolates from Companion Animals and Dairy Cow Milk

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Infections caused by *Staphylococcus aureus* (*S. aureus*), including the emergence of *Methicillin-Resistant Staphylococcus aureus* (MRSA) strains in companion animals and dairy cows, have become a critical issue in animal and public health due to the potential for antibiotic resistance and zoonotic transmission. This study aimed to analyze the antibiotic resistance profiles of *S. aureus* isolates from companion animals and dairy milk against seven antibiotics: tetracycline, gentamicin, erythromycin, penicillin G, ceftiofur, ciprofloxacin, and clindamycin. Testing was conducted using the Kirby-Bauer disk diffusion method on 20 *S. aureus* isolates derived from clinical swabs of companion animals (2 dogs, 7 cats, and 2 rabbits) and 9 dairy milk samples. The inhibition zone diameters were classified into sensitive, intermediate, and resistant categories based on the Clinical and Laboratory Standards Institute (CLSI) 2024 standards. The results showed that the highest resistance rate occurred against penicillin G at 75% (15/20), followed by tetracycline at 30% (6/20), while gentamicin, erythromycin, and clindamycin each showed a resistance rate of 25% (5/20). Ceftiofur resistance was recorded at 20% (4/20), and the lowest resistance rate was found in ciprofloxacin at 10% (2/20). Cat-derived isolates exhibited the highest resistance to ceftiofur at 43%, indicating the phenotypic presence of MRSA. Conversely, all isolates from dogs and rabbits were identified as sensitive to ceftiofur (100%) and thus classified as *Methicillin-Susceptible Staphylococcus aureus* (MSSA). The tendency toward Multidrug Resistance (MDR) in isolates from cats and dairy milk underscores the importance of rational antibiotic use to mitigate the risk of antimicrobial resistance. Continuous monitoring of resistance patterns in companion animals and food products of animal origin is essential as part of a One Health approach to controlling antimicrobial resistance.

Keywords: antibiotic resistance, companion animals, dairy milk, MRSA, *Staphylococcus aureus*