



KEY WORDS

- ✓ *Staphylococcus* spp.
- ✓ MRSA
- ✓ Beta Lactamase Resistance
- ✓ MALDI-TOFF-MS
- ✓ PCR

CONTACT

seldakrkmz0@gmail.com

THESIS SUPERVISOR

TELEPHONE:
+90 224 2940854

E-MAIL:
serpillkahya@uludag.edu.tr



DETERMINATION OF ANTIBIOTIC RESISTANCE PROFILES OF STAPHYLOCOCCUS SPECIES IN CATTLE WITH SUBCLINICAL AND CLINICAL MASTITIS IN BURSA REGION BY PHENOTYPIC AND SOME MOLECULAR METHODS

SELDA BEKER

0000-0002-3591-1643
BURSA ULUDAĞ UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
MICROBIOLOGY DEPARTMENT
PhD PROGRAM
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SUPERVISOR

PROF.DR. SERPİL KAHYA DEMİRBİLEK
0000-0001-6138-7163
BURSA ULUDAĞ UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
MICROBIOLOGY DEPARTMENT
BURSA – TÜRKİYE



THESIS ABSTRACT

This study aimed to isolate and identify *Staphylococcus* species that cause significant losses due to subclinical and clinical mastitis in dairy cattle. It also sought to determine the presence and prevalence of Methicillin-Resistant *Staphylococcus aureus* (MRSA). Furthermore, the research focused on evaluating the antibiotic susceptibility of the isolated *Staphylococcus* species and identifying certain virulence genes using both phenotypic and genotypic methods.

As a result, MRSA was detected in the identified isolates. The highest rates of antimicrobial resistance were observed against ampicillin and penicillin, and multidrug-resistant (MDR) strains were also reported.

APPLICATION AREAS OF THE THESIS RESULTS

Given that staphylococci are primary pathogens associated with mastitis and frequently lead to the development of MRSA, accurate diagnosis of mastitis is critically important. The emergence of MRSA in mastitis cases poses significant risks to both animal and public health. It is believed that improving the accuracy of MRSA detection in mastitis cases will lead to better management practices and improved health outcomes for both animals and the community.

ACADEMIC ACTIVITIES

1. Beker, S., & Demirbilek, S. K. (2025). Optimizing detection methods for MRSA isolated from mastitis cases and assessing virulence genes. *Research in Veterinary Science*, 187, 105609.
2. Ünlü, E., Gül Satar, N. Y., Kahya Demirbilek, S., Beker, S. (2025). Culture-guided management of recurrent otitis externa in a cat: A case report. 1st International Cyprus Congress of Scientific Research, 21–23 Mart 2025, Near East University, Lefkoşa, KKTC. ss. 41–42.