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The Thesis Submitted for the Degree of DVM

**Evaluation of the prevalence of *Bacillus cereus* bacteria in Raw milk
available in dairy product shops of Zabol and Zahedan in 2020-2021**

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Abstract

Bacillus cereus is particularly important for safety and public health due to its ability to spoil and disease food through the production of various toxins. The aim of this study was to determine the prevalence of *Bacillus cereus* in raw milk from dairy retailers in Zabol and Zahedan. The resistance of this bacterium to different antibiotics was also evaluated. It was observed that out of 100 samples of raw milk collected from Zabol and Zahedan, 18 samples were infected with *Bacillus cereus*, of which 10 samples (out of fifty samples) belonged to Zabol and 8 samples (out of fifty samples) belonged to Zahedan. The prevalence was 20% in Zabol and 16% in Zahedan. In terms of antibiotic resistance, *Bacillus cereus* isolates of Zabol and Zahedan were 100% resistant to beta-lactam and sulfamethoxazole antibiotics. Also, compared to other antibiotics, including tetracycline, erythromycin, colistin, norfloxacin, gentamicin, and chloramphenicol, Zabol isolates were 90%, 50%, 80%, 10%, 0%, 10% respectively, and Zahedan isolates were 87/5%, 75%, 100%, 0%, 0%, 12/5% resistance. There was no statistically significant difference in the prevalence or antibiotic resistance of *Bacillus cereus* in Zabol and Zahedan. In terms of multi-antibiotic resistance, *Bacillus cereus* isolates were also shown, which showed that all isolates (100%) have multi-antibiotic resistance (MDR). A questionnaire was also prepared to determine the relationship between milk contamination and the health of the centers. It was observed that without significant difference, in the centers where food workers used disposable gloves and appropriate tools, both in Zabol and Zahedan, milk contamination with *Bacillus cereus* was less. It is recommended that more hygiene be monitored, and that proper ventilation in dairy retail outlets can reduce milk contamination. Educate veterinarians not to over-prescribe antibiotics, and conduct further studies on resistance. *Bacillus cereus* can also help control the resistance of this bacterium to various antibiotics.

Keywords: Prevalence, Antibigram, *Bacillus cereus*, Dairy retail