

**Academic Year: 2024-2025**

**Author: Amir Abbasi Bahonar**

**Thesis Title:** Detection of *Bordetella bronchiseptica* in dogs in West Azarbaijan Province Using the PCR Method

**Abstract:**

*Bordetella bronchiseptica* is a gram-negative, aerobic coccobacillus recognized as a pathogen of the respiratory system in dogs, cats, horses, rabbits, pigs, laboratory animals, and humans. This bacterium can cause inflammatory disease in the respiratory tract after colonizing the ciliated epithelial cells. Given the increasing trend of pet ownership in Iran and the zoonotic nature of the disease between humans and dogs, assessing the infection rate in domestic and shelter dogs in direct contact with humans is of significant importance. The objective of this study was to determine the prevalence of *Bordetella bronchiseptica* infection in dogs in Urmia city using molecular methods. In this study, 100 blood samples from dogs in Urmia were examined using PCR molecular diagnostic techniques. The results indicated that 17 blood samples were infected with *Bordetella bronchiseptica*. The highest infection rate of *Bordetella bronchiseptica* was recorded in dogs with respiratory symptoms (30%), while the lowest rate was observed in dogs without respiratory symptoms (4%). Data analysis results suggested that age, breed, housing conditions, and sex were not associated with *Bordetella bronchiseptica* infection. However, the presence or absence of respiratory symptoms showed a significant correlation with *Bordetella bronchiseptica* infection (p-value=0/01). The present study demonstrates a considerable level of *Bordetella bronchiseptica* infection in dogs. Both shelter dogs and domestic dogs may pose a risk factor for human population infection with *Bordetella bronchiseptica*.

**Keywords:** *Bordetella bronchiseptica*, Dog, PCR.