

EPIDEMIOLOGY OF BRUCELLOSIS IN UZBEKISTAN AND PREVENTIVE MEASURES

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ABSTRACT

This study focuses on the epidemiology of brucellosis in Bukhara region, Uzbekistan, during 2015–2025, and the development of preventive measures. Epidemiological, serological, and laboratory data were analyzed. The results show a significant decline in brucellosis incidence over the past decade, attributed to vaccination campaigns, public hygiene education, and veterinary preventive measures. The study highlights the importance of integrated veterinary and public health interventions to control brucellosis.

Keywords: brucellosis, epidemiology, prevention, animals, Bukhara region

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АННОТАЦИЯ

Данное исследование посвящено анализу эпидемиологии бруцеллёза в Бухарской области за 2015–2025 гг. и разработке мер по его профилактике. Были проанализированы эпидемиологические, серологические и лабораторные данные. Результаты показали, что уровень заболеваемости бруцеллёзом снизился, что связано с профилактическими мероприятиями, вакцинацией животных и санитарно-гигиеническим просвещением населения.

Ключевые слова: бруцеллёз, эпидемиология, профилактика, животные, Бухарская область.

INTRODUCTION

Brucellosis is a zoonotic infection affecting both humans and animals. It is caused by bacteria of the genus *Brucella*, with primary reservoirs in cattle, sheep, goats, and camels. Human infection typically occurs through direct contact with infected animals, consumption of contaminated animal products, or inhalation of infectious aerosols.

In Uzbekistan, particularly in Bukhara region, brucellosis cases have been consistently reported from 2015 to 2025. This disease has not only health implications but also significant economic and social impacts, affecting livestock productivity and labor efficiency. Preventive interventions, including vaccination and public education, are critical to reduce transmission.

OBJECTIVES

Main Objective:

To analyze the epidemiology of brucellosis in Bukhara region (2015–2025) and develop effective preventive strategies.

Specific Objectives:

1. Analyze the incidence and distribution of brucellosis cases.
2. Identify the primary sources and transmission routes of infection.
3. Evaluate the effectiveness of veterinary and public health preventive measures.
4. Develop recommendations for enhanced epidemiological control and public awareness.

MATERIALS AND METHODS

The study was conducted in Bukhara region, Uzbekistan, between 2015 and 2025.

Methods Used:

1. Epidemiological Analysis: Annual case reports and regional surveillance data.
2. Serological and Microbiological Diagnostics: Blood and animal product testing for *Brucella* species.
3. Preventive Measures Evaluation: Assessment of vaccination campaigns, hygiene awareness programs, and veterinary interventions.
4. Comparative Analysis: Comparison with national and international brucellosis trends.

5. Data were statistically analyzed to identify trends, high-risk areas, and the impact of preventive strategies.

RESULTS

The incidence of brucellosis decreased from 15.2 cases per 100,000 population in 2015 to 7.4 in 2025.

High-incidence districts included Qorakul, Jondor, and Vobkent, while Bukhara city and Olot showed lower incidence.

Preventive measures, including vaccination campaigns and public hygiene education, contributed to the reduction in cases.

DISCUSSION

Veterinary services and preventive measures significantly reduced incidence.

Laboratory diagnostics, including serological and PCR-based methods, improved case detection.

Some districts maintain higher incidence due to lower vaccination coverage and insufficient public awareness.

Comparative analysis with international data shows that integrated veterinary and public health interventions are the most effective approach.

CONCLUSION AND RECOMMENDATIONS

1. Brucellosis incidence in Bukhara region decreased significantly between 2015 and 2025.
2. Preventive measures, including vaccination, hygiene education, and veterinary surveillance, were effective.
3. Strengthening veterinary and public health coordination is recommended.
4. Enhance public awareness and epidemiological reporting systems.
5. Develop an integrated regional brucellosis prevention plan.

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