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Article

Distribution and Prevention of Bacterial Diseases in Poultry Farms of the Bukhara Region

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Abstract: This article discusses the spread of bacterial diseases in poultry farms of the Bukhara region, the types of causative agents, and preventive measures. During the research, Escherichia coli, staphylococci, Proteus, salmonella, and other microorganisms were isolated from poultry. Among the causative agents of salmonellosis, S. Enteritidis and S. Gallinarum were predominantly identified. It was substantiated that hygienic measures, disinfection, proper nutrition, and vaccination are the main factors in preventing bacterial diseases.

Keywords: Poultry, Bacterial Diseases, Salmonellosis, Colibacillosis, Staphylococcosis, Diagnostics, Prevention

1. Introduction

In recent years, poultry farming in the Bukhara Region has been developing rapidly. The population’s demand for poultry meat and eggs is increasing. However, the growth in poultry numbers and their dense housing conditions have led to the spread of various infectious diseases, particularly bacterial infections. Observations conducted in poultry farms such as “Bukhara Parranda,” “Jo‘yli Parranda,” and “Shofirkon Parranda” revealed that bacterial diseases are widely распространен among poultry [1–2].

The purpose of this article is to study the prevalence of bacterial diseases in poultry farms of the Bukhara region, identify the main causative agents, and develop preventive measures against them [3–4].

2. Materials and Methods

The studies were conducted in five poultry farms of the Bukhara region during 2023–2025. In the course of the research, a total of 485 poultry birds of different ages (laying hens, broilers, and turkeys) underwent clinical and bacteriological examination. Samples of pathological materials (liver, spleen, heart, intestines, and lungs) were collected and examined using generally accepted methods [5–6].

3. Results and Discussion

Prevalence of Bacterial Diseases

The results of the examinations showed that bacterial diseases were identified in 156 out of 485 poultry birds (32.2%) [7–8]. The distribution of diseases by type was as follows:

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Table 1. Prevalence of bacterial diseases

Disease Name	Number of Infected Poultry	%
Colibacillosis	71	45.5
Staphylococcosis	34	21.8
Proteosis	22	14.1
Salmonellosis	6	3.8
Streptococcosis	9	5.8
Pseudomonosis	4	2.6
Other infections	10	6.4
Total	**156**	**100**

The most widespread disease was colibacillosis, accounting for nearly half (45.5%) of all bacterial diseases. The second most common disease was staphylococcosis (21.8%), followed by proteosis (14.1%). Salmonellosis accounted for 3.8% [9–10].

Causative Agents of Salmonellosis

The identification of cultures isolated from poultry infected with salmonellosis showed the following results:

Salmonella species	Number identified	Share (%)
S. Enteritidis	4	66.7
S. Gallinarum	1	16.7
S. Typhimurium	1	16.7
Total	**6**	**100**

S. Enteritidis was the most prevalent species (66.7%), which also poses a serious risk to human health because this strain can be transmitted to humans through poultry products [11].

Clinical Signs

The main clinical signs of bacterial diseases were as follows:

In Colibacillosis:

Lethargy and reduced appetite

Difficulty breathing and wheezing

Diarrhea and contamination of feathers

Enlargement of the liver and spleen

In Staphylococcosis:

Swelling and pain in the joints

Lameness and restricted movement

Purulent abscesses under the skin

In Salmonellosis:

Fever (up to 43°C)

Greenish-yellow liquid feces

Ruffled feathers and weakness

Eye and nasal discharge

Preventive Measures

To prevent bacterial diseases, the following комплекс of measures is recommended:

a) Veterinary and Sanitary Measures

Measure	Frequency	Notes
Cleaning and disinfection of poultry houses	Every 10–15 days	Formalin (2%), bleach (3%)
Monitoring feed and water quality	Continuous	Avoid poor-quality feed
Regular clinical examination of poultry	Monthly	Early detection of diseased birds

Disposal of dead poultry	As needed	Burning or deep burial
Quarantine of newly arrived poultry	30 days	Separation of healthy and sick birds

b) Hygienic Requirements:

The temperature in poultry houses should be maintained at 18–22°C, with humidity levels of 50–70%.

Adequate air ventilation must be ensured.

Bedding should be dry and clean.

Sufficient space should be provided for each bird according to stocking density standards.

Hands and equipment should be cleaned during handling procedures.

c) Feeding:

Poultry should be provided with balanced feed rich in vitamins and microelements.

Feed composition should correspond to the age and physiological condition of the birds.

Feed must be stored in a clean and dry place.

d) Specific Prevention (Vaccination):

Effective vaccines against salmonellosis are available. The recommended vaccination schedule is as follows:

Poultry age	**Vaccine preparation**	**Dosage**	**Method of administration**
1–3 days	Salmonellosis vaccine	0.1 ml	Oral administration
30–35 days	Salmonellosis vaccine	0.2 ml	Oral administration
120–150 days	Salmonellosis vaccine	0.5 ml	Subcutaneous injection

4. Conclusion

Bacterial diseases are widely spread in poultry farms of the Bukhara Region, with an overall prevalence rate of 32.2%. The main causative agents were E. coli (45.5%) and staphylococci (21.8%).

Salmonellosis accounted for 3.8% of the detected bacterial diseases. Among the isolated pathogens, 66.7% belonged to S. Enteritidis. Since this strain is also dangerous to humans, caution should be exercised when consuming poultry products [12].

Regular clinical examinations of poultry, particularly monthly inspections of randomly selected birds, enable the early detection of diseases.

Strict compliance with veterinary and sanitary regulations, regular disinfection, maintaining clean bedding, and ensuring adequate ventilation are the main factors in preventing diseases [13–14].

Poor-quality, moldy, or contaminated feed should not be provided, and feed must be stored in clean and dry conditions.

Diseased poultry should be separated from healthy birds and treated individually. Disposal of dead poultry by burning or deep burial is mandatory [15].

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