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PREVALENCE, TREATMENT AND PREVENTION OF ASCARIASIS IN TURKEYS

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РАСПРОСТРАНЕННОСТЬ, ЛЕЧЕНИЕ И ПРОФИЛАКТИКА АСКАРИДОЗА У ИНДЕЕК

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Abstract. Ascaridiosis in turkeys is a parasitic disease caused by *Ascaridia galli*, one of the most prevalent helminth infections in poultry. This disease is particularly widespread among turkeys raised in semi-intensive or free-range systems and leads to decreased productivity, stunted growth, weakened immunity, and economic losses. Clinical signs include loss of appetite, weakness, poor feather condition, diarrhea, and growth retardation. In severe cases, it can result in mortality. Diagnosis is mainly based on microscopic examination of feces, where characteristic *Ascaridia galli* eggs can be identified. Necropsy of deceased birds may reveal large, white worms in the intestines, confirming the diagnosis. Treatment involves the use of broad-spectrum anthelmintic drugs such as albendazole, fenbendazole, levamisole, and piperazine, which are administered through feed or drinking water in specific doses. Correct dosing and treatment duration are essential for effective control. Preventive measures include regular disinfection of cages and equipment, maintaining hygienic and dry conditions, ensuring clean feed and water, and conducting periodic veterinary monitoring. Prophylactic deworming every 3–4 months is recommended to reduce infection risk. This study highlights the biology, epidemiology, clinical presentation, diagnosis, treatment, and prevention of ascaridiosis in turkeys, emphasizing the importance of early detection and control to maintain flock health and productivity.

Аннотация. Аскаридиоз индеек — паразитарное заболевание, вызываемое *Ascaridia galli*, одним из наиболее распространенных гельминтозов у домашней птицы. Это заболевание особенно распространено среди индеек, выращиваемых в полунтенсивных или свободно выгульных системах, и приводит к снижению продуктивности, задержке роста, ослаблению иммунитета и экономическим потерям. Клинические признаки включают потерю аппетита, слабость, плохое состояние оперения, диарею и задержку роста. В тяжелых случаях это может привести к смертности. Диагностика в основном основывается на микроскопическом исследовании фекалий, где можно обнаружить характерные яйца *Ascaridia galli*. Вскрытие умерших птиц может выявить крупных белых червей в кишечнике, что подтверждает диагноз. Лечение включает использование антигельминтных препаратов широкого спектра действия, таких как альбендазол, фенбендазол, левамизол и пиперазин, которые вводятся через корм или питьевую воду в определенных дозах. Правильная дозировка и продолжительность лечения имеют решающее значение для эффективного контроля. Профилактические меры включают регулярную дезинфекцию клеток и оборудования, поддержание гигиенических и сухих условий, обеспечение чистого корма и воды, а также проведение периодического ветеринарного контроля. Для снижения риска заражения рекомендуется проводить профилактическую дегельминтизацию каждые 3–4 месяца. В этом исследовании освещаются биология, эпидемиология, клиническая картина,

диагностика, лечение и профилактика аскаридоза у индеек, подчеркивая важность раннего выявления и контроля для поддержания здоровья и продуктивности стада.

Keywords: turkeys, ascariasis, helminths, poultry farming.

Ключевые слова: индейки, аскаридоз, гельминты, птицеводство.

Ensuring high productivity and maintaining the health of poultry flocks is a major priority in modern poultry farming. Among the key challenges are infectious and parasitic diseases, which can severely affect growth rates and production efficiency. In recent years, the trend toward semi-intensive and free-range systems has increased the risk of parasitic infections, particularly helminthiases. Turkeys are considered highly susceptible to such infections, with ascariidiosis, caused by *Ascaridia galli*, being among the most common and economically significant helminth infections [11].

Ascaridia galli primarily inhabits the small intestine of birds, where it interferes with digestion and nutrient absorption, produces toxins, and weakens the immune system. The infection is especially prevalent in young birds, often leading to reduced weight gain, poor feed conversion, decreased egg production, and, in severe cases, death [1, 5].

Research and veterinary experience have shown that timely diagnosis, proper anthelmintic treatment, and regular preventive measures significantly reduce the impact of ascariidiosis on poultry operations. Therefore, studying the biology, transmission, clinical signs, diagnostic methods, treatment, and prevention of ascariidiosis in turkeys remains an urgent and relevant issue in modern veterinary practice. This article aims to provide a comprehensive overview of ascariidiosis in turkeys and highlight effective control strategies to mitigate its negative effects on poultry health and productivity.

Ascariidiosis in turkeys is caused by the nematode *Ascaridia galli*, which parasitizes mainly in the small intestine. Female worms can lay over 100,000 eggs daily. The eggs are excreted in feces and become infective in 10–14 days under warm and moist environmental conditions. Birds get infected by ingesting contaminated feed, water, or soil [2, 10]. Adult worms are white, round-shaped, and 5–12 cm in length. They attach to the intestinal wall, disrupting digestion and nutrient absorption, releasing toxins, and weakening the immune system [2].

Epidemiology. Ascariidiosis is a widespread parasitic disease among turkeys, primarily caused by the nematode *Ascaridia galli*. This parasite resides in the small intestine and is transmitted mainly via the oral-fecal route. Turkeys become infected through the ingestion of contaminated feed, water, or soil containing infective eggs [4, 6, 8].

Epidemiological chain: source – infected or carrier birds; mode of transmission – oral ingestion (fecal-oral route); environmental development – eggs mature in the soil; new infections – healthy birds come into contact with contaminated environments.

Epidemiological characteristics: infection is more prevalent in farms with poor sanitary and hygienic conditions; the parasite's eggs can survive for long periods in moist soil; under optimal environmental conditions (25–30°C and high humidity), the eggs become infective within 2–3 weeks; the eggs are highly resistant to external conditions and many disinfectants; young turkeys are more susceptible to the disease, and mortality rates are higher in this age group [9].

1. *Based on clinical signs.* Weight loss, loss of appetite, weakness, decreased egg production, ruffled appearance of feathers, sometimes sudden death in young birds

2. *Laboratory Diagnosis.* a) Coprological (fecal) examination: detection of *Ascaridia galli* eggs in fecal samples under a microscope; flotation techniques are commonly used to concentrate

and identify the eggs; b) Post-mortem (necropsy) examination: observation of adult worms in the small intestine of dead or slaughtered birds; worms are long, white, and may be present in large numbers, sometimes blocking the intestinal lumen [3].

3. *Differential Diagnosis*. Should be differentiated from other helminth infections such as heterakidiasis or capillariasis. Identification relies on clinical signs and the morphology of the eggs [10].

Coprological analysis is the most reliable method for confirming the diagnosis, since clinical signs alone can resemble other intestinal diseases.

Accurate Diagnosis. Identification of the specific helminth species involved (e.g., *Ascaridia*, *Heterakis*, *Capillaria*, etc.).

Administration of Anthelmintic Drugs. Effective medications include: Albendazole – 10–15 mg/kg body weight (for 3–5 days), Fenbendazole – 20 mg/kg (for 1–5 days), Levamisole – 30 mg/kg, Piperazine citrate – 100–200 mg/kg. These drugs are usually administered via drinking water or mixed with feed [7].

Supportive Care Post-Treatment. Vitamin and mineral supplementation, especially vitamins A and B complex, probiotics to restore gut flora.

Environmental Sanitation. Thorough cleaning and disinfection of poultry houses. Replacement of litter. Daily removal of feces. Regular washing of feeders and waterers [9].

Re-treatment. The treatment should be repeated after 10–14 days to eliminate any newly developed larvae from eggs that survived the first round. For best results, the entire flock should be treated simultaneously, and preventive biosecurity measures must be maintained consistently.

Conclusion

Ascaridiosis in turkeys remains a significant biological and economic concern for modern poultry farms. The disease not only reduces productivity but also compromises overall health, weakens immunity, and increases vulnerability to secondary infections. The damage caused by *Ascaridia galli* is particularly severe in young and immunocompromised birds.

Research and field observations confirm that effective control of ascaridiosis requires an integrated approach. Early diagnosis, the application of reliable laboratory methods, and the correct use of anthelmintic drugs—such as albendazole, fenbendazole, and levamisole—are essential components of successful treatment. Proper dosing and repeated administration help to eliminate both mature and developing parasite stages.

However, lasting success is only possible through regular and strategic preventive measures. These include maintaining hygiene, providing clean feed and water, regular disinfection of living areas, quarantining new birds, and performing deworming at intervals of 3–4 months. Such measures also reduce the risk of other parasitic and infectious diseases.

In conclusion, professional veterinary oversight and continuous education of poultry keepers play a critical role in minimizing the negative impact of ascaridiosis. The application of science-based treatment and prevention protocols ensures healthier flocks and improved productivity in turkey farming.

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