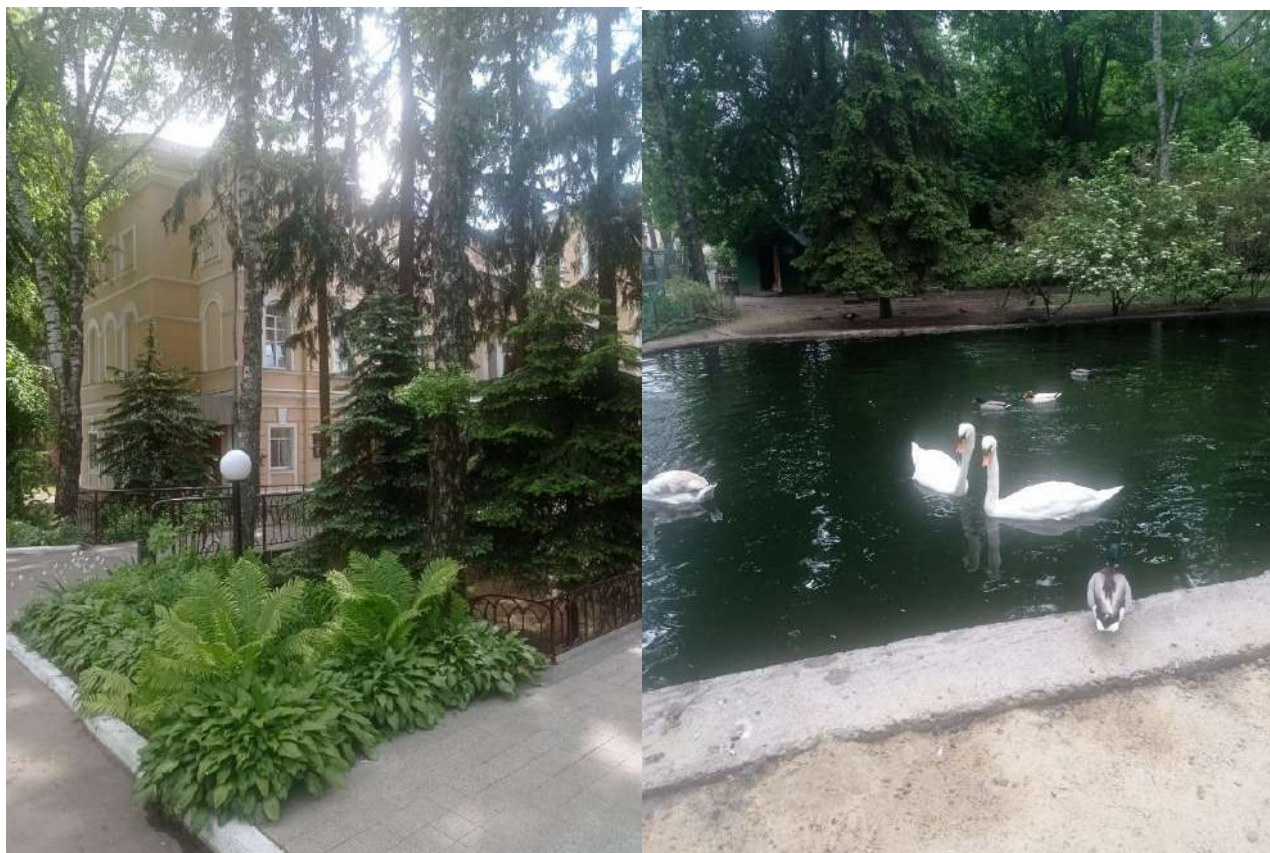


МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ПОЛТАВСЬКИЙ ДЕРЖАВНИЙ АГРАРНИЙ УНІВЕРСИТЕТ
ФАКУЛЬТЕТ ВЕТЕРИНАРНОЇ МЕДИЦИНИ
КАФЕДРА ІНФЕКЦІЙНОЇ ПАТОЛОГІЇ, ГІГІЄНИ, САНІТАРІЇ ТА БІОБЕЗПЕКИ



**МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
ІНТЕРНЕТ-КОНФЕРЕНЦІЇ
«ЄДИНЕ ЗДОРОВ'Я: ВИКЛИКИ ТА ПЕРСПЕКТИВИ»
21–22 травня 2026 року, м. Полтава, Україна**



Е-видання ПДАУ

ПОЛТАВА – 2026

УДК 614:636.09:502/504(082)
Є32
ISBN 978-617-8797-36-2
2026-29



Конференцію зареєстровано в базі даних науково-технічних заходів УкрІНТІ.

Посвідчення №350 від 5 березня 2026 р.

Єдине здоров'я: виклики та перспективи: матеріали Всеукраїнської науково-практичної інтернет-конференції, 21–22 травня, 2026 р. Полтава, 2026. 267 с. [електронне видання].

Збірник містить матеріали наукових доповідей, у яких представлено результати сучасних досліджень у контексті концепції «Єдине здоров'я», що ґрунтується на взаємозв'язку здоров'я людей, тварин і довкілля. У виданні висвітлено питання профілактики, діагностики та лікування хвороб тварин за такими напрямками: діагностика і терапія тварин; ветеринарне акушерство та гінекологія; ветеринарна хірургія; ветеринарна фармакологія і токсикологія; фізіологія людини і тварин; паразитологія та інвазійні хвороби; гігієна тварин і ветеринарна санітарія; ветеринарно-санітарна експертиза; ветеринарна мікробіологія, епізоотологія, інфекційні хвороби та імунологія; патологія, онкологія і морфологія тварин.

Матеріали подано у вигляді тез доповідей проблемно-постановчого, оглядово-аналітичного, узагальнюючого, експериментального та методичного характеру. Авторами публікацій є викладачі закладів вищої освіти, студенти, аспіранти, науковці науково-дослідних установ та інших організацій.

Редакційна колегія: Кручиненко О. В., д. вет. н., професор; Замазій А. А., д. вет. н., професор; Петренко М. О. к. с.-г.н., доктор філософії, доцент; Конє М. С., к. вет. н., доцент; Лаврінєнко І. В. к. вет. н., доцент; Передєра О. О. к. вет. н., доцент.

Відповідальний за випуск: О.О. Передєра

Рекомендується до електронного видання вченою радою факультету ветеринарної медицини Полтавського державного аграрного університету (протокол засідання від 25 травня 2026 року № 10).

Відповідальність за зміст і достовірність публікацій несуть автори наукових доповідей і повідомлень.

© Полтавський державний аграрний університет, 2026

TREATMENT OF LABORATORY MICE WITH SYPHATIOSIS

Soloviova L. M., Candidate of Agricultural Sciences, Associate Professor

Ligomina I. P., Candidate of Agricultural Sciences, Associate Professor

Bila Tserkva National Agrarian University, Bila Tserkva, Ukraine

Polish National University, Zhytomyr, Ukraine

e-mail: soloviovalyuda@ukr.net

Relevance of the problem. The study of the fauna of urban systems has always aroused great interest not only theoretically, but also practically. The interest of scientists in the study of diseases of mouse-like rodents is determined by two main points. First, parasites of mouse-like rodents are carriers of dangerous diseases of animals and humans, and secondly, micromammals are a convenient model object for studying the relationship between parasites and the host. In addition, the helminth fauna of rodents is insufficiently studied.

The lack of comprehensive monitoring studies examining the totality of endoparasites of mouse-like rodents was the main motive for conducting this work. In the literature sources, scientific researchers found that 6 species of rodents of anthropogenic landscapes participate in the spread of zoonoses dangerous to humans: syphaciasis, toxocariasis, hymenolepidosis, hydatidiform mole (strobilocerciasis), and alariasis [1–6].

Many helminthic invasions of humans have characteristic general symptoms, the so-called "helminthic masks", since they are disguised as various diseases. Sick people complain of headaches against the background of increased fatigue and decreased general tone, the occurrence of allergic dermatoses of varying severity, metabolic disorders with an increase and decrease in the patient's body weight, neurological disorders, increased body temperature of unknown origin, disorders of mineral metabolism (damage to bones, teeth, hair), disorders of the digestive system of various nature (accompanied by pain and bloating, indigestion, intolerance to any food), sometimes patients show changes in blood tests - anemia or an increase in the number of eosinophils in the blood [2]. In addition, there are symptoms typical of helminthiasis, such as bruxism (grinding teeth at night), anal itching, unusual taste preferences (chewing chalk, clay or earth). It has been scientifically proven that parasitization of helminths in the body reduces human immunity, and, in particular, post-vaccination immunity. The detection of eggs is aimed at establishing which type of helminth produces them and requires preventive measures [2, 4].

Syphacia species are distributed worldwide and infect rodents of various species and regions. The prevalence of *S. obvelata* infestation in rodents in Iran has been reported to be 9% [2]. Syphacia species are usually asymptomatic due to their adaptation to host physiology and low pathogenicity [3]. Human infestation by Syphacia is rare, with the first case of *S. obvelata* infection being reported in 1918 in an American child living in the Philippines [4]. Rodents may serve as reservoir hosts or vectors of the parasite due to their high prevalence and proximity to human habitation [5].

Adult *Syphacia* spp. worms live in the large intestine of rodents, and in the literature there are reports of infection of laboratory animals with these parasites [5]. *Syphacia* parasites can be transmitted from rodents to humans, in whom this can cause the development of appendicitis. Therefore, the relevance of the research topic is beyond doubt.

Research objective. To study the epizootic situation regarding helminthiasis in laboratory mice and the anthelmintic properties of vermicil paste for syphaciosis.

Materials and methods of research. The study of fecal samples of laboratory mice belonging to the BALB/c line was carried out by a combined method standardized by G. O. Kotelnikov and V. M. Khrenov using a saturated solution of granulated ammonium nitrate. The average live weight of one laboratory animal was 34 g.

For treatment, the drug "Pasta vermicil" was used orally at a dose of 0.1 g per 0.1 kg of live weight of mice. The drug is released in polypropylene syringe tubes. The composition of 1 g of paste contains active ingredients: fenbendazole - 0.05 g and praziquantel – 0.005 g. In terms of pharmacological properties, fenbendazole is effective against nematodes. It inhibits the polymerization of tubulin proteins into microtubules, reduces the activity of energy enzymes, slows down the metabolism in helminths, as a result of which the absorption of nutrients (adenosine triphosphate and glucose) is disrupted, mitochondrial reactions are reduced, complete exhaustion and paralysis of parasites occur. Praziquantel is active against cestodes. It increases the permeability of membranes for calcium ions, causes increased muscle activity, which leads to muscle contraction and spastic paralysis, causes destruction of the outer cuticle in adult forms of cestodes. Therefore, this anthelmintic has a wide spectrum of action on flat and round helminths.

The drug was administered individually to each animal using an insulin syringe twice with an interval of 8 days. The effectiveness of deworming was assessed 12 days after the second administration of vermicil.

Research results. To clarify the epizootic state, 110 samples of feces from laboratory mice were selected and examined in the laboratory of the Department of Parasitology and Pharmacology, Faculty of Veterinary Medicine, Bila Tserkva National Agrarian University.

As a result of the research, in 38 samples out of 110, sifaction eggs were found, which had an asymmetrical shape, one side of which was flat and the other convex, that is, in other words, the shape of an asymmetrical ellipse, light gray color, thin smooth two-layer shell, granular content.

The extensiveness of invasion (EI) was 34.5%, and the intensity of invasion (II) was 3.2 eggs (Fig. 1).

The intensity of invasion ranged from 1.3 to 5.7 eggs on average in three drops of flotation fluid.



Figure 1. Eggs of *Syphacia* spp. (collection 10 × 10)

The drug used, namely paste vermicol, had a 100 % helminth elimination effect, since 12 days after treatment of laboratory mice from syphaciosis invasion, the extent and intensity efficiency were 100 %. No eggs of pathogens were found in the field of view of the microscope.

Conclusions. 1. The infection of laboratory mice (extensiveness of invasion) with syphaciosis was 34.5 % with an invasion intensity of 3.2 eggs.

2. The used anthelmintic "Pasta vermicol" showed 100 % efficiency with a double dose, therefore it can be recommended for the treatment of syphaciosis in laboratory mice.

References

1. Handbook on the differentiation of pathogens of invasive animal diseases / Ponomar S. I., Goncharenko V. P., Soloviova L. M.; edited by S. I. Ponomar. K.: Agrarna osvita, 2010. 327 p.
2. A systematic review and meta-analysis on prevalence of gastrointestinal helminthic infections in rodents of Iran: An emphasis on zoonotic aspects / Y. Hamzavi, M. T. Khodayari, A. Davari et al. *Heliyon*. 2024. Vol. 10(11). 31955 p. [DOI]
3. Occurrence of zoonotic gastrointestinal parasites of rodents and the risk of human infection in different biomes of Brazil / VFS Lima, RAN Ramos, A. Giannelli et al. *Braz. J. Vet. Med.* 2021. Vol. 43. 113820 p. [DOI]
4. Riley W. A. A mouse oxyurid, *Syphacia obvelata*, as a parasite of man. *J. Parasitol.* 1919. Vol. 6. P. 89–93.
5. Rodents as hosts of pathogens and related zoonotic disease risk / H. Dahmana, L. Granjon, C. Diagne et al. *Pathogens*. 2020. Vol. 9(3). 202 p. [DOI]
6. Soloviova L. M., Holovakha V. I., Utechenko M. V. Clinical, biochemical and histological changes in the liver in dogs with toxic hepatodystrophy / *Bulletin of the Bila Tserkva State Agrarian University*. Bila Tserkva, 2001. Issue 18. P. 141–147.