

ВЕТЕРИНАРНІ НАУКИ

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Lishchuk S. G.

*PhD in Agricultural Sciences,
Assistant of the Department of Normal and Pathological Morphology and Physiology,
Higher Educational Institution “Podillia State University”
Kamianets-Podilskyi, Ukraine
E-mail: itomlin@ukr.net
ORCID: 0000-0002-6294-5259*

Dobrovolsky V. A.

*Master of Veterinary Medicine,
Assistant of the Department of Normal and Pathological Morphology and Physiology,
Higher Educational Institution “Podillia State University”
Kamianets-Podilskyi, Ukraine
E-mail: Dobrovolsky.va@gmail.com
ORCID: 0000-0002-2678-5649*

Smoljak V. V.

*PhD in Veterinary Sciences,
Assistant of the Department of Normal and Pathological Morphology and Physiology,
Higher Educational Institution “Podillia State University”
Kamianets-Podilskyi, Ukraine
E-mail: smolyakvet@gmail.com
ORCID: 0000-0002-7317-6889*

ANALYSIS OF THE DYNAMICS AND ESTABLISHMENT OF TRENDS REGARDING THE FREQUENCY OF DISEASE DUE TO PATHOLOGY OF VARIOUS DOGS ORGAN SYSTEMS

Abstract

The article presents the nature of the distribution of various groups of pathologies in domestic animals in the conditions of a specific region. An analysis of diseases was carried out, in particular the results of the age, breed, nosological structure of diseases of various organ systems in the body of dogs. Analysis of statistical data showed that during 2022–1053 sick dogs from the city and surrounding areas were admitted to the “Vita-Vet” veterinary clinic in Kamianets-Podilskyi and region. The age dynamics of the incidence of these animals shows that the largest share falls on dogs under 3 years of age. Out of 1 053 dogs, this age group is 599, which is 56,9%. The morbidity limit of puppies was 23,1–71,9%.

It was established that the share of surgical diseases was 36,4%, parasitic – 20,0%, internal – 31,5%, obstetric and gynecological – 7,7%, infectious – 4,4%.

Among the internal pathologies, damage to the digestive organs was most often diagnosed, their share in the total number of patients was 44,6%. Pathology of respiratory organs (23,5%), and diseases caused by metabolic disorders (12,0%), cardiovascular (8,5%), genitourinary (8,1%) and nervous (3,3%) of systems.

Research results are of theoretical and practical value for scientists and specialists in veterinary medicine. The obtained data will help to correctly determine the main directions of training of veterinary medicine specialists in various disciplines (internal non-communicable diseases, surgery, obstetrics, epizootology, parasitology) and to focus attention when studying these disciplines on the pathology that is most often encountered in the practice of urban veterinary clinics in the respective region.

Key words: dogs, breed, analysis, statistics, morbidity, prevalence.

Introduction. Most domestic animals in cities are dogs. Therefore, veterinary medicine doctors in cities and small settlements primarily deal with diseases of these animals [8]. In the available literature, we found little statistical data on the frequency of diseases of various etiologies in dogs. Most manuals and reference books indicate the frequency of development of a specific disease, not a group of pathologies [7]. Thus, in Ukrainian and foreign publications, the most attention is paid to surgical and infectious pathology, much less to obstetric pathology and internal non-infectious diseases [6]. In English-language editions [1; 2], almost half of the information is devoted to internal non-infectious diseases, and another half is information on infectious, obstetric and surgical pathology; sometimes even surgical pathology is not considered at all [3], or separate specialized editions are devoted to it. The generalization of statistical data both within the region and within the country is partly complicated by a significant number of contradictory indicators presented by scientists. In particular, the experiments are sporadic and of different vectors, too small a sample of animals is used or their number is different, research is carried out using different methods on clinical material or in vitro, regions have peculiarities: breed, age, sex, possible local causative factors are not taken into account [5].

In connection with such an ambiguous attitude of the authors to various types of dog pathology, we set ourselves the task of establishing the nature of the distribution of various groups of pathologies in domestic animals in the conditions of a specific region [4]. This will help to correctly determine the main directions of training of veterinary medicine specialists in various disciplines (internal non-communicable diseases, surgery, obstetrics, epizootology, parasitology) and to focus attention when studying these disciplines on the pathology that is most often encountered in the practice of urban veterinary clinics.

Purpose of work – to investigate the key aspects of the age, breed, and nosological structure of diseases of various body systems of dogs in the city of Kamianets-Podilskyi and nearby areas, to establish the nature of the distribution of various groups of pathologies in domestic animals in the conditions of a specific region.

Methodology and results of research. The research was carried out on the basis of the private hospital of veterinary medicine “Vita-Vet” in the city of Kamianets-Podilskyi, Khmelnytskyi region and at the Department of Normal and Pathological Morphology and Physiology of the Faculty of Veterinary Medicine and Animal Husbandry Technologies of the Higher Education Institution “Podilskyi State University”. The object of the study were dogs of various breeds that were admitted to the hospital in 2022. A total of 1 053 dogs were analyzed. In order to study the spread of dog diseases, an analysis of data from veterinary reports and journal entries for registering sick animals was carried out. For this, age, gender and nosological structure of diseases were taken into account. The materials for the work were the results of a clinical examination of dogs admitted to the hospital and their treatment, data from a morphological examination of the blood of sick animals and histological examinations of materials from dead animals.

The statistical processing of the obtained results was carried out using the standard package “Statistica”, in the program Microsoft Excel 2013 and Statsf [9].

Analysis of statistical data showed that during 2022 – 1 053 dogs from the city and surrounding areas were admitted to the “Vita-Vet” veterinary clinic in Kamianets-Podilskyi, among which the majority are German shepherds (19,2%) and indoor dog breeds (18,5%). Hunting dogs (spaniels, dachshunds, huskies) got sick less often – 9,6%; fighting (bull terriers and pit bull terriers) – 5,3%. Mestizos were sick quite often (12,8%). Among the total number of sick dogs, 368 (34,9%) were puppies under the age of one year. The morbidity limit of puppies is 23,1–71,9%. Purebred puppies were most often (71,9%) sick, which is obviously related to the higher morbidity of dogs of this group and the lower susceptibility to diseases of adult animals. Rottweilers were sick less often (28,6%). The incidence of puppies of hunting (45,5%) and service (47,3%) breeds was quite high.

An analysis of the age dynamics of dog morbidity shows that the largest share falls on animals under 3 years of age. Out of 1 053 dogs, this age group is 599, which is 56,9% (Fig. 1).

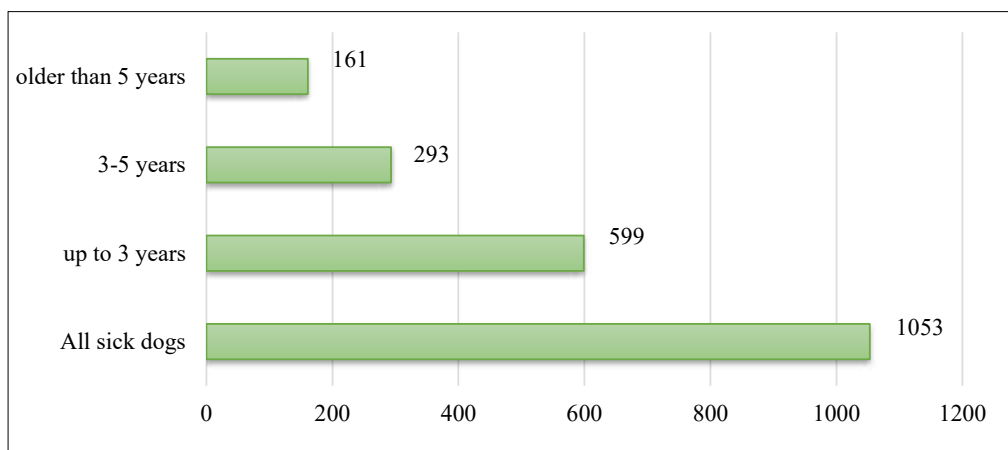


Fig. 1. Age dynamics of the incidence of dogs

The largest share of animals in this age group was purebred dogs and hunting dogs (75,0 and 72,3 % of the total number of patients, respectively), German shepherds (61,0 %), slightly less – mixed breeds (46,3 %) and dogs of fighting breeds (46,4 %). In older age groups, the incidence decreases significantly and amounts to 27,8 % in dogs 3–5 years of age and 15,3 % in dogs over 5 years of age.

Taking into account the morbidity of dogs registered in the veterinary medicine hospitals of Kamianets-Podilskyi and the surrounding areas, it was established that the share of surgical diseases is 36,4 %, parasitic diseases – 20,0 %, internal – 31,5 %, obstetric and gynecological diseases – 7,7 %, infectious diseases – 4,4 % (Fig. 2).

Among the parasitic diseases, babesiosis and toxocarosis were most often diagnosed, and infectious diseases – plague and parvovirus enteritis. Internal diseases were registered in 332 dogs admitted to the hospital (31,5 % of all patients). Dogs of indoor breeds most often suffered from pathology of internal organs: there were 113 of them out of 332 treated in the hospital. Rottweiler dogs – 16,3 % and German shepherds – 16,5 % were quite often sick.

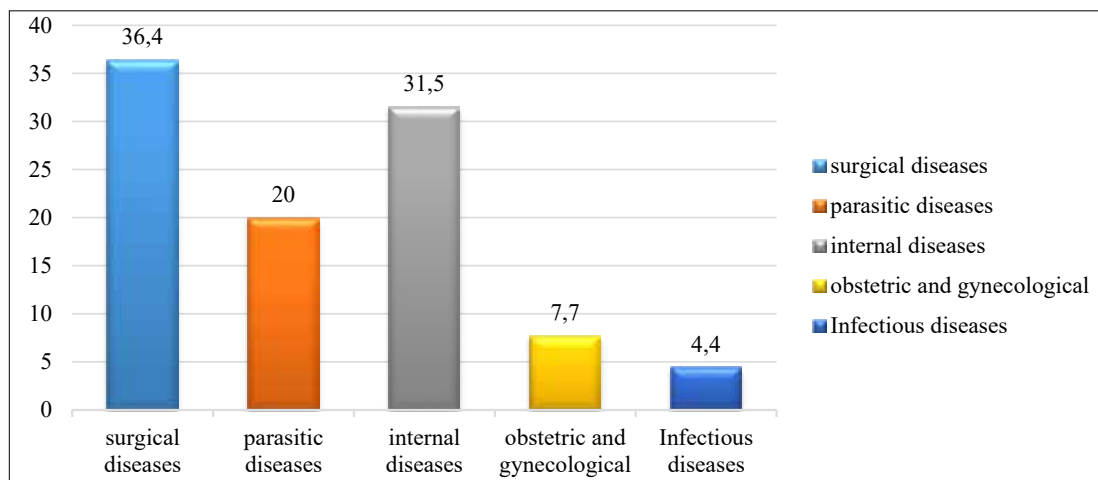


Fig. 2. The structure of dog diseases, depending on the etiology

Among internal pathologies, damage to the digestive organs was most often diagnosed, their share in the total number of patients is 44,6 % (Fig. 3). Pathology of respiratory organs (23,5 %), and diseases caused by metabolic disorders (12,0 %), cardiovascular (8,5 %), urinary (8,1 %) and nervous (3,3 %) of systems. Diseases of the digestive and respiratory organs are most often registered in dogs of 3 years of age; cardiovascular system, on the contrary, in dogs older than 5 years of age. Pathology caused by metabolic disorders is diagnosed mainly in young dogs under 3 years of age. Among diseases caused by metabolic disorders, hypovitaminosis A and D were most often diagnosed.

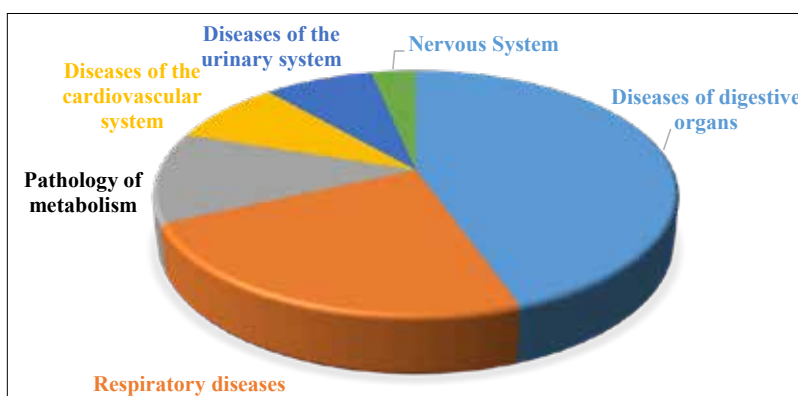


Fig. 3. Nosological structure of internal diseases of dogs

The main cause of diseases of the digestive organs is a feeding disorder. Animal owners are not able to provide animals with a complete high-calorie diet, therefore, the violation of this type of nutrition, which is natural for animals, is accompanied, first of all, by gastritis and gastroenterocolitis, which are later complicated by pathology of the pancreas and liver.

However, according to the literature, the diseases in dogs often take the form of polymorbid pathology, which is combined into several syndromes: hepatorenal, hepatoostodystrophic, osteorenal, hepatoosteorenal, hepatoanemic, and hepatonephronemic [10].

Among diseases of the digestive organs, in addition to gastroenteritis, stomatitis was diagnosed quite often – in 26,6 % of patients, less often – esophageal obstruction – 6,8 %, stomach enlargement – 3,4 %; intestinal obstruction – 7,4 % and flatulence – 3,4 % (Fig. 4).

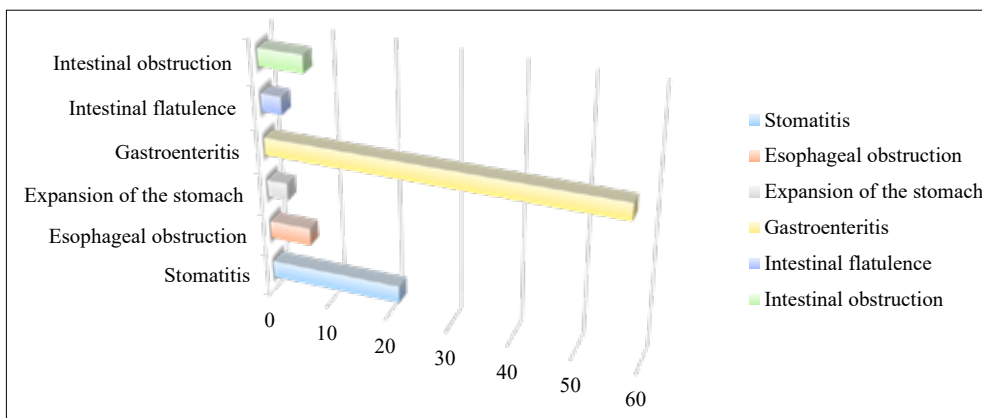


Fig. 4. The structure of diseases of the digestive organs in dogs

The analysis of entries in the journal for registration of sick animals showed that among dogs – patients of the hospital of veterinary medicine “Vita-Vet” in the city of Kamianets-Podilskyi, among the diseases of the digestive system, gastroenteritis was diagnosed most often (57,4 %) (Fig. 5). Most cases of the disease (60 %) were registered in puppies under one year of age. With age, the number of patients with gastroenteritis decreases. In particular, in dogs aged 1–3 years, gastroenteritis was diagnosed in 28,2 %; 3–5 years old – in 10,6 % of animals.

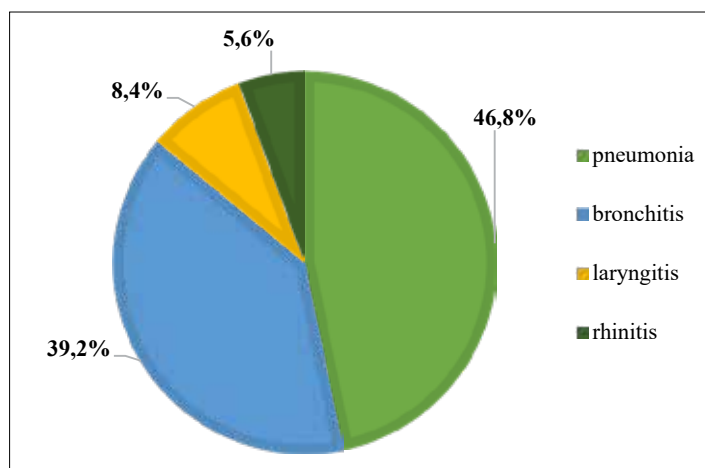


Fig. 5. Structure of respiratory diseases in dogs

The statistics of morbidity depending on the breed show that the disease was diagnosed more often in indoor dogs (29,4 %), Rottweilers (16,5 %) and German shepherds (5,3 %).

In second place after diseases of the digestive organs were diseases of the respiratory organs, and among them the following were more frequent: pneumonia of various etiology (46,8 %), bronchitis was diagnosed quite often – in 39,2 % of patients, less often laryngitis – 8,4 %, rhinitis – 5,6 % (Fig. 5). Most cases of the disease (52 %) were registered in puppies under one year of age.

Discussion. Analysis of statistical data showed that during 2022, 1 053 sick dogs from the city and surrounding areas were admitted to the “Vita-Vet” veterinary clinic in Kamianets-Podilskyi. The age dynamics of the incidence of these animals shows that the largest share falls on dogs under 3 years of age. Out of 1 053 dogs, this age group is 599, which is 56,9 %. The morbidity limit of puppies was 23,1–71,9 %. It was established that the share of surgical diseases was 36,4 %, parasitic – 20,0 %, internal – 31,5 %, obstetric and gynecological – 7,7 %, infectious – 4,4 %.

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References

1. Borysevych, B.V. (2021). Klinichni oznaky i patomorfologichni zminy pry khronichnomu (atypovomu) perebihu nyrkovoï formy parvovirusnoi infektsii sobak. [Clinical signs and pathomorphological changes in the chronic (atypical) course of the renal form of canine parvovirus infection]. *Nauk. visnyk Nats. ah-rar. un-tu*. 131–133.

2. Decaro, N., Desario, C., Addie, D.D., Martella, V., Vieira, M.J., Elia, G., Zicola, A., Davis, C., Thompson, G., Thiry, E., Truyen, U. & Buonavoglia, C. (2020). Molecular epidemiology of canine, Europe. *Emerg. Infect. Dis.* 13:1222–1224.
3. Didukh, A.V. (2018). Hostryi gastroenterokolit ta suchasne tлумachennia yoho patohenezu u sobak na osnovi eksperymentalnykh danykh. [Acute gastroenterocolitis and modern interpretation of its pathogenesis in dogs based on experimental data]. *Problemy veterynarnoho obsluhovuvannya dribnykh domashnikh tvaryn*, (79–81). Kyev. [in Ukrainian].
4. Holovakha, V.I. (2000). Deiakі aspekty spetsyfnnoi profilaktyky khvorob u sobak. [Some aspects of specific prevention of dogs]. *Problemy vet. obsluhovuvannya dribnykh domashnikh tvaryn*, (26–27). Kyev. [in Ukrainian].
5. Hong C., Decaro N., Desario C., Tanner P., Pardo M.C., Sanchez S., Buonavoglia C. & Saliki J.T. (2007). Occurrence of canine in the United States. *J. Vet. Diagn. Invest.* 19:535–539.
6. Horalskyi, L.P., Khomych, V.T., & Kononskyi, O.I. (2015). *Osnovy histolohichnoi tekhniky i morfofunktsionalni metody doslidzhennia u normi ta pry patolohii*. [Basics of histological technique and morphofunctional research methods in normal and pathological conditions]. Zhytomyr: Polissia. [in Ukrainian].
7. Lapach S.N., Chubenko A.V., Babych P.N. ta in. (2021). *Statystychni metody v medykobiolohichnykh doslidzhenniam iz vykorystanniam Excel*. [Statistical methods in biomedical research using Excel]. 2001: Kyiv, Morion. [in Ukrainian].
8. Streck A.F., de Souza C.K., Gonçalves K.R., Zang L., Pinto L.D. & Canal C.W. (2019). First detection of canine in Brazil. *Braz. J. Microbiol.* 40:465–469.
9. Tetiana M. Prylipko, Volodymyr B. Kostash, Victor M. Fedoriv, Svitlana H. Lishchuk, Volodymyr P. Tkachuk. (2021). Control and Identification of Food Products Under EC Regulations and Standards. *International Journal of Agricultural Extension*, 83–91. DOI: 10.33687/ijae.009.00.3964
10. Umanska K.S., Samorai M.M.. (2020). *Hastryenteryt sobak – poshyrennia, symptomy ta likuvannia*. [Gastroenteritis in dogs – distribution, symptoms and treatment]. *Materialy Mizhnar. nauk.-prakt. konf. studentiv “Aktualni problemy veterynarnoi medytsyny”*. (63–65). Bila Tserkva. [in Ukrainian]. (<http://rep.btsau.edu.ua/handle/BNAU/5192>)

Лішук С. Г.

*кандидатка сільськогосподарських наук,
асистентка кафедри нормальної та патологічної морфології і фізіології,
Заклад вищої освіти «Подільський державний університет»
Кам'янець-Подільський, Україна
E-mail: itomlin@ukr.net
ORCID: 0000-0002-6294-5259*

Добровольський В. А.

*магістр ветеринарної медицини,
асистент кафедри нормальної та патологічної морфології і фізіології,
Заклад вищої освіти «Подільський державний університет»
Кам'янець-Подільський, Україна
E-mail: Dobrovolsky.va@gmail.com
ORCID: 0000-0002-2678-5649*

Смоляк В. В.

*кандидат ветеринарних наук,
асистент кафедри нормальної та патологічної морфології і фізіології,
Заклад вищої освіти «Подільський державний університет»
Кам'янець-Подільський, Україна
E-mail: smolyakvet@gmail.com
ORCID: 0000-0002-7317-6889*

АНАЛІЗ ДИНАМІКИ ТА ВСТАНОВЛЕННЯ ТЕНДЕНЦІЙ ЩОДО ЧАСТОТИ ЗАХВОРЮВАНЬ ЗА ПАТОЛОГІЇ РІЗНИХ СИСТЕМ ОРГАНІВ У СОБАК

Анотація

У статті представлено характер поширення різних груп патологій у домашніх тварин в умовах конкретного регіону. Проведено аналіз захворювань, зокрема результати вікової, породної, нозологічної структури хвороб різних систем органів в організмі собак. Аналіз статистичних даних показав, що протягом 2022 року, у ветеринарну клініку “Vita-Vet” м. Кам'янець-Подільського надійшло 1053 хворих собак з міста та прилеглих районів. Вікова динаміка захворюваності цих тварин показує, що найбільша частка припадає на собак до 3-річного віку. З 1053 собак ця вікова група складає 599, що становить 56,9%. Ліміт захворюваності цуценят становив 23,1–71,9%.

Встановлено, що частка хірургічних хвороб становила 36,4%, паразитарних – 20,0%, внутрішніх – 31,5%, акушерсько-гінекологічних – 7,7%, інфекційних – 4,4%.

Серед внутрішньої патології найчастіше діагностували ураження органів травлення, їх частка у загальній кількості хворих становила 44,6%. Значно рідше діагностували патологію органів дихання (23,5%), та хвороби, спричинені порушенням обміну речовин (12,0%), ураження серцево-судинної (8,5%) сечово-статевої (8,1%) та нервової (3,3%) систем.

Результати досліджень представляють теоретичну і практичну цінність для науковців і фахівців ветеринарної медицини. Отримані дані допоможуть правильно визначити основні напрями підготовки спеціалістів ветеринарної медицини

зі різних дисциплін (внутрішні незаразні хвороби, хірургія, акушерство, епізоотологія, паразитологія) і зосередити увагу при вивченні цих дисциплін на патології, яка найчастіше зустрічається в практиці міських ветеринарних клінік відповідного регіону.

Ключові слова: собаки, порода, аналіз, статистика, захворюваність, поширеність.

Список використаних джерел

1. Decaro N., Desario C., Addie D. D., Martella V., Vieira M. J., Elia G., Zicola A., Davis C., Thompson G., Thiry E., Truyen U. & Buonavoglia C. (2020). Molecular epidemiology of canine, Europe. *Emerg. Infect. Dis.* 13:1222–1224.
2. Hong C., Decaro N., Desario C., Tanner P., Pardo M.C., Sanchez S., Buonavoglia C. & Saliki J.T. (2007). Occurrence of canine in the United States. *J. Vet. Diagn. Invest.* 19: 535–539.
3. Streck, A.F., de Souza, C.K., Gonçalves, K.R., Zang, L., Pinto, L.D. & Canal, C.W. (2019). First detection of canine in Brazil. *Braz. J. Microbiol.* 40: 465–469.
4. Prylipko, T.M., Kostash, V.B., Fedoriv, V.M., Lishchuk, S.H., Tkachuk, V.P. (2021). Control and Identification of Food Products Under EC Regulations and Standards. *International Journal of Agricultural Extension*, 83–91. DOI: 10.33687/ijae.009.00.3964.
5. Борисевич Б.В. Клінічні ознаки і патоморфологічні зміни при хронічному (атиповому) перебігу ниркової форми парвовірусної інфекції собак. *Науковий вісник Національного аграрного університету*. 2021. С. 131–133.
6. Головаха В.І. Деякі аспекти специфічної профілактики хвороб у собак. *Проблеми ветеринарного обслуговування дрібних домашніх тварин* : матеріали V Міжнародної науково-практичної конференції. Київ, 2000. С. 26–28.
7. Основи гістологічної техніки і морфофункціональні методи дослідження у нормі та при патології / Л.П. Горальський та ін. Житомир : Полісся, 2015. 388 с.
8. Дідух А.В. Гострий гастроентероколіт та сучасне тлумачення його патогенезу у собак на основі експериментальних даних. *Проблеми ветеринарного обслуговування дрібних домашніх тварин*. Київ, 2018. С. 79–81.
9. Статистичні методи в медикобіологічних дослідженнях із використанням Excel / С.Н. Лапач та ін. Київ : Моріон, 2021. 405 с.
10. Уманська К.С., Саморай М.М. Гастроентерит собак – поширення, симптоми та лікування. *Актуальні проблеми ветеринарної медицини* : матеріали Міжнародної науково-практичної конференції студентів. Біла Церква, 2020. С. 63–65. URL: <http://rep.btsau.edu.ua/handle/BNAU/5192>.