**SPIRURIDAE OF CATTLE AND**

**HELMINTHocenosIS OF DromedarIES**

**INSIDE IRAQ**

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**Relevance of the thesis topic.** Study of the features of helminthocenoses formation in different groups of animals is necessary for the regulation of the number of parasites and hosts. Regulation in the parasite-host community is an important issue of parasitology aimed at preventing overpopulation of a system, giving it stability. The widespread occurrence and damage caused by nematodoses, trematodoses and cestodoses push their study and development of the ways to prevent them to the urgent tasks of parasitology.

With the rapid development of agriculture and increasing role of camels in the animal industry, an urgent problem is the study of patterns of the formation and trends of the dynamics of helminth populations in animals in changing environmental conditions. Helminthoses inhibit improvement in the quantity and quality of obtained animal products. Thelaziosis and other spiruridoses in cattle occupy a special place. However, these diseases have not been specifically studied in Iraq before our research.

Relevance of the thesis topic is also due to the need to clarify the biological bases of helminthosis prevention based on the laws of the formation of species diversity of helminthes in the different provinces in camels and buffaloes, as well as the identification of helminth species with epizootic and epidemiological significance, allowing the optimum time to carry out a set of antiparasitic activities and minimize their costs. In Iraq, cattle breeding is well developed, so the study of these diseases is particularly relevant.

**Connection of the paper with large scientific programs, themes.** Research on the topic of the thesis was conducted in the State Scientific and Practical Association “Scientific and Practical Center of the National Academy of Sciences of Belarus for Bioresources” and the Belarusian State University in accordance with the plan of training foreign experts.

**Purpose of the research.** To determine the current state, species composition and features of the spreading of helminthes of large domestic animals in the Middle Mesopotamia of Iraq. To achieve the purpose, the objectives were as follows.

**Objectives of the research:**

1. To determine species composition and abundance of thelazia in different species of livestock in Iraq;

2. To examine cattle for the presence of other species of spiruridae (Gongylonema, Stephanophilaria, Onchocerca).

3. To determine infection of cattle with thelaziosis and its dynamics in various landscapes of the provinces;

4. To determine fauna of helminthes of the dromedary and to assess dynamics of the occurrence and intensity of helminthes detected in the different provinces of Iraq;

5. To determine species composition of intermediate hosts of thelazia of cattle and trematodes of buffaloes and dromedaries, to establish the dependence of infection on their relative abundance;

**Object and subject of study.** Object of the research was helminthes of domestic ungulates (cattle, buffalo) and camelids (dromedary). Subject of the study was species composition, abundance, features of the spreading of helminthes of large domestic mammals, intermediate hosts from among the number of Diptera and Shellfish.

**Scientific novelty and significance of the results**

* Thelaziosis in domestic ungulates (cows, buffaloes) is determined for the first time in Iraq; the level of infection and dynamics of infestation in the whole Republic and in different provinces is defined. Species composition of thelaziosis pathogens is found in both species of ruminants; the dominant species is established;
* Species composition of intermediate hosts of thelazia from among the composition of pasture flies is studied; seasonal dynamics of their relative abundance and density is defined; a key for adult flies is developed;
* Fauna of helminthes belonging to the classes of Trematoda, Nematoda and Cestoda is established in dromedaries. New species of helminthes are registered in Iraq;
* Dynamics of the occurrence of established species of helminthes in different landscapes of Iraqi provinces is determined;

**Key provisions of the thesis for the defense:**

1. In Iraq, domestic ungulates have different species composition of thelazia, their occurrence and infection intensity varies in the provinces. Infection of cows with thelazia depends on the number of intermediate hosts and correlates with their dynamics with a time shift.

2. The incidence of trematode infection in domestic ungulates is caused by different pathogens. The occurrence of trematodes in dromedaries and buffaloes and dynamics of trematode infestation in Iraq and its provinces is different and depends on hosts’ living environment. In the province of Diwaniyah, average infestation in dromedaries is twice lower than in Najaf (14.71% and 31.91%, respectively). Dynamics of the infestation of animals with trematodes is characterized by an increase from September to December.

3. At high infestation of dromedaries with helminthes (90.7%), their species composition in Iraq is insignificant (8 species) and consists of two species of trematodes, three species of cestodes and three species of nematodes, the occurrence of which depends on a biological group of the species, as well as the age and sex of the definitive host.

**Applicant’s personal contribution.** All presented experimental material on species composition, occurrence, dynamics of the abundance of helminthes in large domestic animals from different provinces of Iraq, as well as collection of the intermediate hosts of helminthes (pasture flies and shellfish) from different habitats is collected by the author alone.

Identification of helminth species, their genetic passports and intermediate hosts was done in consultation with the staff of the Department of Zoology of the BSU: Candidate of Biological Sciences N.V. Voronova (preparation of genetic samples), Doctor of Biological Sciences S.V. Bugi and graduate student M.V. Volosach (definition of Diptera and compilation of keys); Laboratory of Theriology of SSPA “SPC of the NAS of Belarus for Bioresources”, Doctor of Biological Sciences Ye.I. Anisimova (definition of species composition of spiruridae); Laboratory of the Agricultural Research Service of the United States, experts A. Abrams and E.R. Howard (verification of all species of parasitic worms with a collection of the national journal of parasites); employee of the University of Al-Qadisiyah, Doctor of Biological Sciences Gadan A. Mansour (composition of shellfish). Interpretation of the results, analysis and compilation of data is done by the applicant alone. In joint publications, statement of the main idea, collection of the material and interpretation of the results is done by the applicant.

The author is grateful to all the colleagues who helped in the research.

**Evaluation of the results of the thesis.** Results of the research are reported and discussed at the International scientific and practical conference “Environmental culture and environmental protection: I Dorofeyev’s readings”, Vitebsk, 2013; at the VI International scientific and practical conference “Agricultural sciences and agribusiness at the turn of the century”, Novosibirsk, 2014.

**Publication of the results.** 14 publications are published on the topic of the thesis, including 6 articles in scientific journals indicated in the list of the Higher Attestation Commission of the Republic of Belarus and foreign journals, 3 articles and 1 abstract in materials of conferences, 4 articles in scientific journals in Arab, with a total volume of 26.5 copyright sheets.

**Structure and scope of the thesis.** The thesis consists of an introduction, general characteristic of the paper, 5 chapters, a conclusion, list of references and appendices. The thesis is illustrated with 15 figures and contains 34 tables. Bibliography includes 319 works, including 181 – in foreign languages. Appendices include materials on the practical use of research results. The total scope of the thesis is 150 pages.