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WILD BOAR HELMINTH FAUNA (SUS SCROFA) IN THE SUBZONE OF OAK AND DARK-CONIFEROUS FORESTS OF BELARUS

The article presents data obtained by studying an epizootic situation of wild boars helminthosis in the subzone of oak and dark-coniferous forests of Belarus. Gelminth fauna of a wild boar is presented by 13 species from 4 classes. The most widespread wild boars gelminthosis is lung threadworm infection which contamination activators reach 98.4%.

Introduction. Environment of our country is favorable for maintaining hunting economy. Among game animals the leading role of income arriving in the budget of the country and hunting farms, as well as quality of meat belongs to a wild boar. Decrease in efficiency of this species animals is caused by agents of parasitic diseases, first of all the helminth invasions that lead to loss of production quality (up to utilization) and quantities (by 2–3 times) [1].

Wild animal gelminthosis progresses hard, their efficiency decreasing considerably; infested animals are dwarfed, the cases of animal mortality are quite often noted. Infected animals resistance to agents of other diseases decreases.

Especially the young animals suffer from gelminth diseases. Though adult wild hoofed animals are infected to a lesser extent, than young, they also can be carriers and a danger source of an invasion spread. When some gelminthosis being widespread, threat of an invasion transmission from wild to farming animals is possible.

Besides, helminths of many hoofed animals, and in particular a wild boar, are capable to cause human diseases when larvae of helminths are found in internals, under conjunctiva of eyes and in brain of the man. Contamination of a wild boar as the main object of hunting by helminths reduces interest to its prey, first of all of foreign hunters, results in decreasing of hunting tourism rate as a whole.

The analysis of literary and own experimental data on prevention of wild boar diseases showed that an essential element of helminths control is the chemoprophylaxis meant for elimination of etiologies, i.e. removal of parasites from organism of a sick animal. The role of chemotherapy in devastation is very great, but it shouldn't be reduced only to liberate a sick animal from parasites, it needs to be combined with prevention measures for invasion distribution.

Despite a widespread wild boars gelminthosis, measures of its control are poor developed. Gelminthosis prevention actions even in well-organized hunting farms, reserves, national parks

are carried out occasionally. In this connection the development and introduction actions of effective prevention medical complex (including general economy) should be considered as a major link of the mass degelminthization.

Parasitic diseases prevention of animals has to be based by epizootic situation data. During gelminthosis prevention the greatest efficiency of preparations is reached by prescribing them in epizootiology reasonable terms taking into account local climatic conditions, as well as economic, biological, environmental and other actions. In accordance with mentioned above, the aim of the carried-out research is studying and an assessment of wild boar gelminth fauna in the subzone of Belarus oak and dark coniferous forests.

Material and research methods. Researches were carried out in the area of the subzone mentioned above in hunting farms of those regions where the greatest density of a wild boar is registered: Gorodok, Mior, Orsha, Rossony, Tolochin regions of Vitebsk area, and also in GLHU «Begomlsky Forestry» territory.

While studying an epizootic gelminthosis situation the raw excrements samples of a wild boar were selected in hunting farms. Some organs and tissues of trapped and shot animals (gastrointestinal tract, a liver, lungs, etc.) were investigated by gelminthologic autopsy method according to K. I. Scriabin [2] aiming to discharge the matured helminths. Identification and studying of wild boar helminthosis disease centres was carried out in GLHU “Begomlsky Forestry” by excrements samples selection in hunting farms of four forestries, in the places of the greatest density of this hoofed species, with their following studying by below-mentioned methods.

In total 96 samples (tests) of excrements and samples of organs and tissues from 31 shot animals (two animal units from Gorodok region, two – from Miory, by one from Orsha, Rossony and Tolochin regions of Vitebsk district, 24 – from the hunting farm of Begomlsky forestry) were investigated by methods accepted in helminthology. Gelminthoovoscopy of wild boar excrements was

conducted by flotation methods by F. Fyullenborn, and also G. A. Kotelnikov and V. M. Hrenov [3–5]. By these methods the eggs of nematodes and cestodes were discharged from excrements. To detect the fragments of cestode helminthes (segments-proglottid) in excrements proglottidoscopic research methods described in the practical laboratory manuals were used. [6–8]. Presence of trematodes eggs was determined by a method of consecutive ablutions [5, 7, 8]. For the purpose to determine nematode species and genus of gastrointestinal tract and airways, cultivation of nematodes larvae to invasion stage and their differentiation were simultaneously carried out by Polyakov's method, described in manuals [5, 7, 8].

Main part. While studying epizootic situation on respiratory and gastrointestinalhelminthosis of a wild boar in the subzone of oak and dark-coniferous forests it wasrevealed that wild boar helminthosis is registered overthe all studied territory. Among 31 examined animal units of this species shot in six northern forest subzoneregions of Belarus, animals free of helminthes aren't registered. The disease of wild boars causes that species of helminthes, for which favourable live conditions in animal organism emerge. Therefore toknowhelminthfauna of these animals and their intermediate hosts in habitats of wild boar populations is an important indicator when carrying out epizootic inspection. Without knowing wild boar helminthfauna, in somearea is impossible to predict the development of epizootic process and to project prevention actions.

Gelminthologic researches of raw material revealed contamination of wild boars by 13 species of helminthes (table) belonging to 4 classes (to Trematoda, Cestoda, Nematoda and Acanthocephala). The class of nematodes as the most widespread specific helminthosis is presented by eight species, the class of cestodes contains three species, trematoda and Acanthocephala – by one species.

The most widespread wild boarhelminthosis is lung threadworms infection, which agents contamination of adult animals reaches 98.4%, and of younganimals – 100%. Lung threadworms are presented by three species: *Metastrongyluspudendotectus* (the most abundant, EI – 98.4%, medium AI – 37.1 examples perindividual), *Metastrongyluselongatus* (EI – 85.0%, medium AI – 26.6 examples per individual) and *Metastrongylussalmi* (EI – 66.1%, medium AI – 16.4 examples per individual). A wild boarindividual simultaneously had from 1 to 3 species of lung threadworms. Invasion intensity of these species can be regarded as low: from 1 to 59 examples of *Metastrongyluselongatus* per one individual of the host. The obtained values will be coordinated with the results of other researchers being published earlier.

Thus, according to V. F. Litvinova with coauthors [9], lung threadworms Invasion intensity in the northern zone of Belarus was, on the average, 55.9 examples, whereas in the southern one some particular individuals had up 700 examples, averaging 485.2 examples per an individual.

Indicators of a wild boargelminth invasion extensity and intensity during the autumn and winter periodinthe subzone of oak and dark-coniferous forests (N = 127)

No.	Species of helminth	Quantity of infected animals	Invasion extensity (%)	Invasion intensity, min–max
Class of Trematoda Rudolphi, 1808				
1	<i>Dicrocoelium lanceatum</i>	4	3.1	1–1
Class Cestoda Rudolphi, 1808				
2	<i>Spirometra erinacei-europeaei</i> , larvae	34	26.8	1–27
3	<i>Taenia hydatigena</i> , larvae	6	4.7	1–4
4	<i>Echinococcus granulosus</i> , larvae	8	6.3	1–8
Class of Nematoda Rudolphi, 1808				
5	<i>Trichocephalus suis</i>	39	30.7	3–17
6	<i>Oesophagostomum dentatum</i>	13	10.2	1–44
7	<i>Globocephalus urosubulatus</i>	34	26.8	2–298
8	<i>Metastrongylus elongatus</i>	108	85.0	1–59
9	<i>Metastrongylus pudendotectus</i>	125	98.4	2–47
10	<i>Metastrongylus salmi</i>	84	66.1	1–40
11	<i>Ascaris suum</i>	20	15.7	1–6
12	<i>Physocephalus sexalatus</i>	15	11.8	3–98
Class of Acanthocephala Rudolphi, 1801				
13	<i>Macracanthorhynchus hyrudinaceus</i>	5	3.9	1–4

Authors connect such indicators range, first of all, with various density of wild boar population on studied territories.

From other helminthosis the extensity of trichocephalium and globocephalium invasions is high – 30.7 and 26.8% respectively.

The globocephalium invasion intensity exceeded by a factor of ten the value of other species and reached 298 examples per one individual host. Among cestodes with a low invasion intensity the sparganoseagents – *Spirometraerinacei-europeaei* larvae were abundant (EI is 26.8%, AI is 1–27 examples per an individual).

Such frequency of sparganoseagents is more characteristic for southern regions of Belarus, where optimum conditions for the development of this helminth species are created. The other species of helminthes occurred more seldom.

Conclusion. Thus, the invasion of wild boars by 13 species of helminthes belonging to 4 classes (to Trematoda, Cestoda, Nematoda and Acanthocephala) is revealed.

In gelminthocenosis species relation a class of nematodes is the most abundant – eight species, a class of cestodes contains three species, trematoda and acanthocephala – by one species.

The most widespread wild boars gelminthiasis is *Metastrongylus*, which agents contamination reaches 98.4%.

Among other gelminthiasis extensity of trichocephalium and globocephalium invasions is high – 30.7 and 26.8% respectively.

Intensity of invasion by all species, except for *Globocephalurosulatus*, is low.

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