

ENDOPARASITES PREVALENCE OF WILD BOAR (*SUS SCROFA*) IN CHKO ŠTIAVNICKÉ VRCHY

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Abstract

The aim of this study was to determine the prevalence of endoparasites of wild boar in Protected Landscape Area CHKO Štiavnické Vrchy, which has land area of 80 000 hectare. Nowadays in some areas, the count of wild boar exceeds normed count. This reduce carrying-capacity of shooting ground, the biotope gets worse, wild animals don't find hiding place and water sources too. Increasing of wild animal count in land area causes an increase of viral and bacterial diseases, but mainly parasitic infections. Most frequent transfer way of parasites is oral way – either through consumption of parasites egg or infected host. The most susceptible category are young wild boars, which are after strong invasion of parasites failing in condition and health and are most liable to other disease. This study was realized in year 2016 in CHKO Štiavnické Vrchy. 120 samples were analysed by flotation method and by incomplete helminthological autopsy. Presence of species was evaluated through presence of eggs in samples of faeces and worms in lungs. Prevalence of detected species was as follows: *Eimeria spp.*: 8.33%, *Oesophagostomum dent.*: 5.84%, *Trichuris suis*: 3.33%, *Ascaris suis*: 3.33%, *Metastrongylus spp.* 1.67% and *Capillaria spp.* 1.67%. We can state, that the parasitological situation within analysed wild boars in that area, in mountain Štiavnické vrchy is favourable.

Keywords: Wild boar, flotation, helminthology, endoparasites, prevalence

Wild boar (*Sus scrofa*) belongs to animals living in herd and is important part of forest. Wild boars with their activity negative effects mainly agricultural land. Therefore, wild boar breeding should be in order that don't causes problems for agrarian, veterinarian as well as hunters (Hell et al., 2005). In some areas of Slovakia, the count of wild boars exceeds the ascertain maximum. The high concentration of wild boars increases the risk of diseases transfer and these diseases are the indicator of health status of wild animals living in that area (Farkaš, 1997). The presence and diversity of parasites in intestinal tract of wild animals is affected by many factors such as ambient condition and biotope. Epe et al. (1997) claiming, that wet areas belong to sources of coccidiosis mainly for young animals. In free hunting areas, the metastrongylosis belongs to most common parasitic diseases within animals in first year of life. Hell (1986) published too, that parasitic diseases afflict mainly wild boars in first year of life. Adult animals are more resistant, and the disease process is without symptoms.

For securing of health of wild boar population is necessary maintenance of complex arrangements like strict selection of young animals and worming within whole hunting areas. The direct information about presence and prevalence of parasites in wild boar population in Slovak republic is missing. Therefore, the aim of this study was to determine the prevalence of endoparasites of wild boar in Protected Landscape Area CHKO Štiavnické Vrchy.

Material and Methods

Experiment was realized in year 2016 in mountain Štiavnické vrchy, which are a part of mountain chain Slovenské stredohorie (Slovakia). In experiment 120 samples (10 samples per one month) were analysed. The samples consisted from all age categories of wild boar. Faeces were gained directly from rectum of hunted animals, immediately after shot death. Detection of lung worms were realized through incomplete helminthological autopsy of hunted animals, immediately after shot death. Direct areas where

the wild boars were hunted were set according evidence of hunted animals in previously year. Experiment was realized in cooperation with Regional Veterinary Administration in Zvolen (Slovakia) and Laboratory of Microbiology at Department of Veterinary Sciences (Slovak University of Agriculture in Nitra). Gained samples were until analysing stored at 4°C. Weight of each sample were minimum 5 grams. Presence of eggs of parasites in faeces was detected by flotation coprological method according Faust. Gained eggs were identified using microscope Olympus-Provis AX, (40x10). Presence of parasites in lung of lungs was determined by incomplete helminthological autopsy according Skrjabin. Before identifying using microscope, parasites were brighten up with lactophenol. Calculation were realized in program excel (Microsoft Office 2013).

Results and Discussion

In this experiment a 120 samples were analysed for presence of parasites. Results are shown in Table 1. The highest prevalence of all analysed parasites has coccidia 8.33%, followed by *Oesophagostomum dentatum* 5.83%, *Ascaris suis* and *Trichuris suis*, 3.33%, *Metastrongylus spp.* and *Capillaria spp.* 1.67%. The most dangerous group for presence of coccidia are young wild boars. In our experiment 70% of samples were from young wild boars (age less than a year), 20% of samples were from wild boars with age from 12 to 24 months and 10% of samples were from adult wild boars. In samples from adult wild boars, the presence of coccidia was not detected. Presence of coccidia was detected mostly in young wild boars (age less than a year) during autumn months.

Table 1. Prevalence of parasites in Wild boar (*Sus scrofa*) from mountain Štiavnické vrchy

Month of year 2016	n	<i>Metastrongylus spp.</i>	<i>Capillaria spp.</i>	<i>Ascaris suis</i>	<i>Oesophagostomum dentatum</i>	<i>Trichuris suis</i>	<i>Eimeria spp.</i>
1	10	0	0	0	10 %	0	10 %
2	10	0	0	0	0	10 %	10 %
3	10	0	20 %	0	20 %	0	30 %
4	10	10 %	0	0	0	0	0
5	10	10 %	0	10 %	0	0	0
6	10	0	0	0	0	0	0
7	10	0	0	10 %	0	0	0
8	10	0	0	0	0	10 %	20 %
9	10	0	0	0	0	0	0
10	10	0	0	0	30 %	0	0
11	10	0	0	20 %	0	0	20 %
12	10	0	0	0	10 %	20 %	10 %
Positive samples from all 120 samples		2	2	4	7	4	10
Prevalence from all 120 samples		1.67	1.67	3.33	5.83	3.33	8.33

Similar results published Páv et al. (1981) and Jurášek et al. (1993), who claim, that young wild boar with age less than a year are in presence of coccidia the most dangerous category of wild boar. Adult wild boars are against coccidia more resistant. Chroust (2001) published, the most frequent places of contamination with parasites are feeding places, mainly in winter. From nematode worms *Oesophagostomum dentatum* has with 5.83% the highest prevalence. Again, the category with highest presence were young wild boars. Whereby the high helminthism ends with death. Chroust and Forejtek (2010a) find out, that death of young wild boars is in consequence of intestine inflammation. Older categories of wild boar have worse condition and gilts have reproduction problem.

Prevalence of *Trichuris suis* was 3.33%. Presence of this parasite was mainly in category of young wild boars. Eggs of *Trichuris suis* are resistant to external influence and are infectious up-to 11 years. Strong invasion with *Trichuris suis* cause loss of live weight and inflammation of mucous in colon and can end with death (Ciberej et al., 2001). Prevalence of *Ascaris suis* was 3.33%. This parasite is common in wild boars farms (Chroust, 2001). Wild boar up to 24 months of age are the most risk category. Manifestation of infection with *Ascaris suis* is connected with cough, pneumonia, vomiting and paralysis of legs. Infected animals failing in health, have diarrhoea and are dehydrated and perish (Kotrlá, 1984). *Metastrongylus salmi* as well as all its forms are strong infectious. This infection is not so common and afflict mainly young wild boars with age from 4 to 6 months. Sometime is the presence of this infection in 80% of samples (Chroust and Forejtek, 2010b). After infection animals are failing in growth. In analysed samples the prevalence of *Megastrongylus salmi* was 1.67%. Barutzki and Richter (1990) claim, that presence of *Megastrongylus salmi* in samples from adult wild boars is common, however without manifestation. Kiš et al. (2009) find out that presence of *Megastrongylus salmi* during summer months is double (adult wild boars) and triple (young wild boar) in comparison to winter months. The prevalence of parasites is also affected by climatic condition during year. Mainly ambient temperature, humidity and rainfall totals, which are connected to presence of hosts animals like earthworms (Dragičević and Vinkovič, 2002).

Conclusion

In this experiment the prevalence of some parasites in gastrointestinal tract and in lungs of wild boars were analysed. We detected presence of six species of parasites. The highest presence in intestinal tract has coccidia *Eimeria*, which were detected mainly in young wild boar category. Wild boars older than one year are resistant against coccidian, but they are transferring agent. To marked invasion helps warm weather mainly in spring and autumn months. We detected similar results even by *Oesophagostomum dentatum*, with higher prevalence during autumn and winter months. The lowest prevalence were detected by nematodes *Capillaria spp.*, which is common in wild boars, but without health concerns. Roundworm *Ascaris suis* were detected in intestine tract of young as well as adult wild boars. *Metastrongylus salmi* was detected in young wild boars during spring months. Wild boars with *Metastrongylosis* are weak in condition status and with symptoms of respiratory problems. Among veterinary measure belongs mainly prevention. Prevention should be aimed on hygiene within feeding areas (lime treatment and sanitation). Primary factor is the consistently selection by shot in consideration of correct age structure and health status. Shot of young wild boars should be 70% of all shot wild boars. Full area worming will be desirable mainly during winter months, when are wild boars near the feeding areas. Disadvantage of worming is high cost and low effectiveness in look to good eating ability of feeds with antiparasitic agent and to migration of wild boars. To reach a maximal action of used antiparasitic agent it is necessary the administration at least for 3 weeks. The most effective therapy is with a broad spectrum antiparasitic realized in wild boars farms. According to all that, we can state, that the parasitological situation within wild boars in that area, in mountain Štiavnické vrchy is favourable.

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