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**THE FALLOW DEER (DAMA DAMA) PROTECTION AGAINST PARASITES IN THE ECOLOGICAL MEAT BREEDING**

*The aim of this study was to define the efficiency of Valbazen 10% against the parasites at the fallow deers bred on the ecological farm. The efficiency of Valbazen 10% for Eimeria spp, Bunostomum spp, Cooperia spp, Oesophagostomum spp, Toxocara vitulorum were found. The risk of Protostrongylus spp. decreased. The Valbazen 10% did not protect fallow deers from Trichostrongylus spp.*

**Key words:** Fallow deer (*Dama dama*), parasites, ecological breeding

**Introduction.** The valuable health assets and the high sensory attractiveness of meat among wild ruminants were the cause for paying more attention to their farming. According to the Polish law both deers and Fallow deers have the status of farm animals. Breeding these animals for meat requires to maintain a very high level of welfare. The most frequent health problems that appear among wild animals bred on the farms are mainly the invasions of parasites. [Ramisz et al. 2001, Cisek et al. 2003, Kowal et al. 2012].

Parasites destroy the body in physical and chemical way. They damage tissues and organs in the body.

Parasites cause very dangerous obstruction, intestine damage and bile problems.

By destroying enterocytes or canals of bile, parasites cause some problems with digestion and it results flatulence, diarrhea, poisoning and the body destruction. Also, the effect of parasites being in the body could be anemia [Gundlach and Sadzikowski 2004, Okulewicz 2009, Hoberg 2010, Okulewicz et al. 2008]. Parasites disease do not very often cause the death of the body.

Because they cause that immunity system is weaker and the body condition is lower, it results in worse meat production that is essential from the economic point of view. In Poland, the deer and fallow deer protection against parasites in the ecological meat breeding is really serious issue. According to some regulations regarding ecological farming there can be only certain preparations used in the preventive proceeding [Council Regulation (EC) nr 834/2007, Commission Regulation (EC) nr 889/2008].

We can choose the certain preparation just as its effectiveness is proved.

**Task, the aim of the article.** The aim of this study was to define the efficiency of Valbazen 10% against the parasites at the fallow deers bred on the ecological farm.

**Material and methods.** The researches were carried in Podkarpackie voivodeship in 2013, on the certified organic farm, which is specialized in the fallow deer breeding. This farm has total area of 1,30 ha, where the Świerzówka river has its end. The location of this farm is at an elevation of 450 m. It has a big range of plant

communities as: miscellaneous forest, meadow and a piece of peat bog. On the feeding ground there is about 29% of plants with fitoncyd quality. In the spring in 2013, the herd was composed of 2 grown bucks, 7 does and 5 fawns. The animals are dewormed every year, usually in the spring. The stool analysis usually take place in the period between March and October. At the beginning of May when the serious invasion of parasites took place, the animals were given *Valbazen 10%*. It is the oral suspension containing an active substance which is used among cattle and sheep.

In the morning, after twenty-four-hour starvation diet, each animal separately was given 3,5ml/50kg m.c. of *Valbazen 10%* mixed with the fodder. There were some pooled samples of faeces taken (5 animals for one sample). Also there were individual sample of faeces taken from each animal between May and July. Each test was taken every 30 days. The result contained the quality composition of parasites, seasonal changes, extensiveness and intensiveness of infection.

Very detailed analysis were done among parasites according to methods explained in Kochanowski's book.

**Results of researches.** From the researches which have been carried it is shown that in March and April, the animals were free from parasites. The researches showed that May was the time when many *Eimeria spp* protozoa and gastrointestinal nematodes: *Bunostomum spp*, *Cooperia spp*, *Oesophagostomum spp*, *Toxocara vitulorum* and pulmonary nematodes *Protostrongylus spp* (table 1) suddenly appeared.

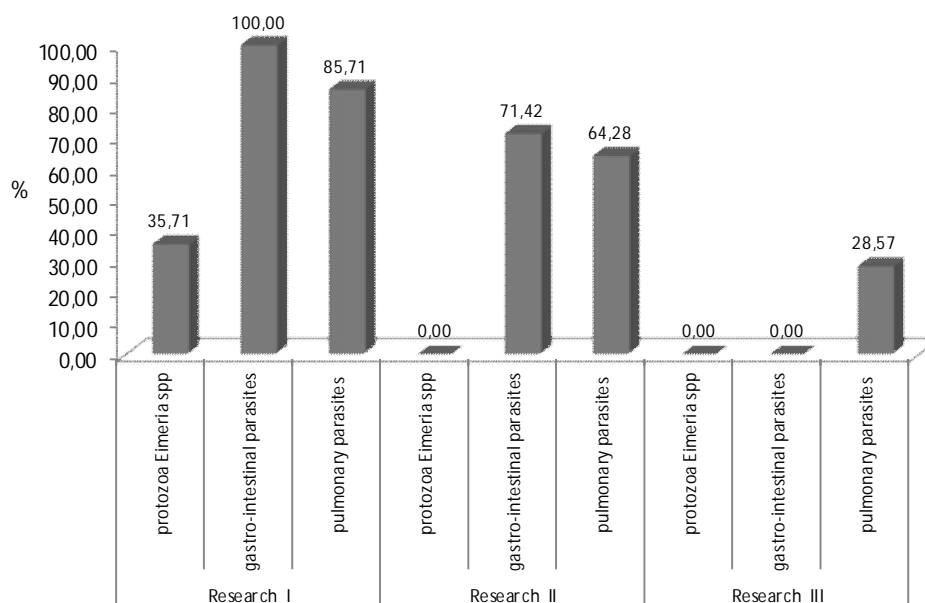
Table 1. Seasonal changes of parasites among fallow deers in 2013.

Month	Parasites	
	gastro-intestinal	pulmonary
March	Did not find	Did not find
April	Did not find	Did not find
May	<i>Eimeria spp</i> <i>Bunostomum spp</i> <i>Cooperia spp</i> <i>Oesophagostomum spp</i> <i>Toxocara vitulorum</i>	<i>Protostrongylus spp</i>
June	<i>Trichostrongylus spp</i>	<i>Protostrongylus spp</i>
July	Did not find	<i>Protostrongylus spp</i>
August	Did not find	<i>Protostrongylus spp</i>
September	<i>Trichostrongylus spp</i>	Did not find
October	<i>Trichostrongylus spp</i>	Did not find

The condition of infection among animals was very serious.

The prevalence of the protozoa invasion had 35,71%, pulmonary nematodes 85,71% and gastrointestinal nematodes up to 100% (table 1).

Intensiveness of *Eimeria spp* infection was from 1 to 2 oocysts in 1 gram of faeces. Intensiveness of gastrointestinal nematodes infection was from 2 to 16 eggs in 1 gram of faeces and intensiveness of pulmonary nematodes was from 1 to 11 larvae in 1 gram of faeces. The researches that were carried in June showed the presence of *Protostrongylus spp* pulmonary nematodes and the new *Trichostrongylus spp*. gastrointestinal nematodes (table 1).



**Chart 1. The extensiveness of infection among fallow deers from May to July 2013.**

The state of emergency have become lower. In the researches there were 71,42% of gastrointestinal nematodes diagnosed, and 64,28% of pulmonary nematodes (chart 1). There were from 1 to 4 eggs of gastrointestinal nematodes in 1 gram of faeces and from 1 to 2 larvae of gastrointestinal nematodes. After 60 days of *Valbazen 10%* was given to fallow deers, there was not found any protozoa and any gastrointestinal nematodes.

The researches showed that still there was some *Protostrongylus spp* gastrointestinal nematodes found in 28,75% of cases (table 1) with just a little of intensiveness; only from 1 to 2 larvae in 1 gram of of faeces. The researches carried from August to October proved that in August there were only *Protostrongylus spp* gastrointestinal nematodes found in the faeces, and in September and November there were only *Trichostrongylus spp* gastrointestinal nematode found (table 1)

**Conclusions.** The researches proved that the *Valbazen 10%* given to fallow deers had a big impact on the gastrointestinal parasites destruction, that were diagnosed in May (*Bunostomum spp*, *Cooperia spp*, *Oesophagostomum spp*, *Toxocara vitulorum*). *Valbazen 10%* did not protect the animals from the invasion of different kinds of gastrointestinal nematodes, - the presence of *Trichostrongylus spp*. in June, September and October proved that case. The researches proved that after the *Valbazen 10%* was given to animals, gastrointestinal nematodes infection has decreased among fallow deers. Even though the decrease was noticed, the gastrointestinal nematodes were still found in the faeces until the end of August. The results of researches suggest that the evaluation of *Valbazen 10%* effectiveness

during the fight with parasites among fallow deers bred on the ecological farm for meat, still required more researches and studies.

#### Reference

1. Cisek A., Balicka-Ramisz A., Ramisz A., Pilarczyk B. 2003. Course and treatment of lungworm infection game animals (Red deer, Roe deer, and Fallow deer) in North-West Poland. *Electronic Journal of Polish Agricultural Universities (EJPAU), Series Veterinary Medicine*, vol. 6(1).
2. Gundlach J.L., Sadzikowski A.B. 2004. *Parazytologia i parazytozy zwierząt*. Wyd. PWRiL, Warszawa.
3. Hoberg E.P. 2010. Invasive Processes, Mosaics and the Structure of Helminth Parasite Faunas. *Revue Scientifique et Technique-Office International des Epizooties* 29: 255-272.
4. Kochanowski M., Karamon J., Dąbrowska J., Cencek T. 2013. Koproskopowe metody ilościowe w weterynaryjnej diagnostyce parazytologicznej – zastosowanie i problemy w szacowaniu ich skuteczności. *Post. Mikrobiol.* 52(1): 111-118.
5. Kowal J., Nosal P., Bonczar Z., Wajdzik M. 2012. Parasites of captive fallow deer (*Dama dama L.*) from Southern Poland with special emphasis on *Ashworthius sidemi*. *Annals of Parasitology*, 58(1): 23-26.
6. Okulewicz A. 2009. Zawleczone i niespecyficzne nicienie pasożytnicze – przyczyny i skutki. *Wiadomości Parazytologiczne* 55(4): 325-328.
7. Okulewicz A., Perec-Matysiak A., Hildebrand J., Zaleśny G. 2008. Specyficzność żywicielska krajowych żywicieli. *Wiadomości Parazytologiczne* 54(1): 11-16.
8. Ramisz A., Cisek A., Balicka-Ramisz A. 2001. Pasożyty sarny, daniela i jelenia, Szczecin.
9. Rozporządzenie Rady (WE) nr 834/2007
10. Rozporządzenie Komisji (WE) nr 889/2008
11. Ruda M., Kilar J., Kusz D., Pokrywka K., Kilar M., Tereskiewicz K., Welz M., Kumek R., Różański H. 2012. Określenie dobrych praktyk, standardów i zasad utrzymywania przy ekologicznym chowie zwierząt jeleniowatych z przeznaczeniem na produkcję mięsa. [w:] *Wyniki badań z zakresu rolnictwa ekologicznego w 2011 roku*. Wyd. MRiRW, Warszawa – Falenty 2012, s.187-202.

#### Summary

*The aim of this study was to define the efficiency of Valbazen 10% against the parasites at the fallow deers bred on the ecological farm. The researches were carried among 14 fallow deers, which were given 3,5ml/50kg m.c. of Valbazen 10% mixed with the fodder. The researches proved that Valbazen 10% was efficient with *Eimeria spp*, *Bunostomum spp*, *Cooperia spp*, *Oesophagostomum spp*, *Toxocara vitulorum*. It caused the decrease of the risk of *Protostrongylus spp*, but it did not protect the animals from *Trichostrongylus spp*. The evaluation of Valbazen 10% effectiveness during the fight with parasites among fallow deers bred on the ecological farm for meat, still required more researches and studies.*

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