

The Prevalence of Hipodermosis in Cattle from South-West Side of the Country

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Abstract

Parasitic disease of domestic and wild herbivores, hypodermosis is caused by the larval forms of warble fly species. This study aimed the emphasizing of hypodermosis prevalence in cattle from the south-western part of the country, in Mehedinți district. Were been clinically examined for grub infestation 363 animals from 10 villages in Mehedinți, 1-6 years aged, from particular breeders. Were been discovered 124 (34.15%) cattle with warbles on the back, flank and hump region, with a maximal average value of warbles on one animal of 21. From infected animals were been taken blood samples for haematological and biochemical examinations. The results of laboratory tests emphasized lower values of haematocrit, haemoglobin, eritocytes number and a reduced level of seric glucose, proteins, albumins and calcium. All these results demonstrate the presence of anaemia and hyporeactivity state of parasitized animals.

Key words: anaemia, grub, haematocrit, haemoglobin, hypodermosis, prevalence, warble

1. Introduction

Hypodermosis is a parasitic disease caused by larval forms of warble fly species. The flies are active in sunny days and do not bite or sting, but their egg laying activity causes cattle to panic [1, 2]. The warble flies develop from the grubs that drop from infected herbivores in spring and manifest a cosmopolitan distribution. This parasitic disease had been studied all over the world because of its high economic significance in domestic cattle, but studies regarding the prevalence of this disease are mainly limited to a certain area which is not sufficient [3]. During the period they act as internal parasites in larval stage they damage the meat, being responsible for reduced milk production in lactating cattle and lower weight gains in calves. In our country, like

in so many countries where warble flies act, cattle breeders are confronting with severe economic losses, in the absence of a warble management program [4].

2. Materials and methods

This study, aimed to emphasize the hipodermosis prevalence and the parasites effect on animals' health was performed in January to May 2011 on 363, 1-6 years aged cattle, from particular breeders in 10 villages from Mehedinți district. Animals were been clinically examined and by palpation in the view of warbles discovering. In table 1 are presented the 10 villages from where studied animals derive with number of studied animals and discovered warbles. From each studied animal discovered to have hipodermosis were been taken blood samples in the view of hematological and biochemical examination.

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3. Results and discussion

In Table 1 are presented the 10 villages from where studied animals derive with number of studied animals and discovered warbles.

From a total number of 363 studied cattle, after clinical examinations were been identified 124 parasited animals (34.15%).

Table 1. The results of clinical examination of studied animals

No.	Village	Number of examined animals	Parasited animals		Mean number of grubs/animal
			No.	%	
1	Gârbovăţul de Sus	73	31	42.46	15
2	Ilov	52	19	36.53	21
3	Suharu	38	11	28.94	9
4	Căzâneşti	46	15	32.60	11
5	Jigniţa	17	6	35.29	7
6	Valea Coşuşti	33	9	27.27	10
7	Severineşti	31	7	22.58	13
8	Valea Alunului	23	6	26.08	8
9	Poiana	21	6	28.57	12
10	Ercea	29	14	48.26	7
TOTAL		363	124	34.15	

The maximal number of discovered grubs on one animal was 21 from Ilov village. The highest percent of parasite animals was 48.26% in Ercea village. These obtained results must be taking into consideration because it is necessary to apply treatments against hipodermosis in this region with hills, where it seems that Hypoderma finds every year optimal conditions of evolution, resulting economic damages for breeders, through reduced milk and meat production, buff's depreciation.

In Table 2 are presented average values of haematological parameters in cattle diagnosed with hipodermosis in ten localities from Mehedinţi district. Average values of haematocrit, haemoglobin and erythrocytes number were been more decreased, demonstrating a clear tendency towards mixed anaemia evolution caused by Hypoderma bovis larvae. These larvae in their migration are feeding with blood, releasing in animal host circulatory system all their metabolism products.

Table 2. Average values of haematological parameters in parasite cattle (n=124)

Parameter	Parasited cattle	Reference values
Haematocrit (%)	22.63±0.62	24-46
Haemoglobin (g/dl)	6.83±0.14	8-15
Erythrocytes (mil/mm ³)	4.64±0.13	5-10
VEM (fl)	40.96±0.81	40-60
CHEM (g/dl)	33.19±0.31	30-36
Leucocytes (thousands/mm ³)	5.31±0.13	4-12

In Table 3 are presented blood biochemical indexes in parasite cattle from ten localities in south western part of the country. All the obtained results were been statistically analyzed through Mann-Whitney unparametric test.

In parasite animals the majority of blood biochemical parameters registered more decreased values, with tendency for physiological inferior limit. The moderate glycemia denotes, generally, a feeding deficit. Also, are observed decreased values of proteins, as a result of reduced food

consumption and weight losses (with a reduced fattening efficiency). Was been observed a reduced level of serum albumins and calcium, being known that the total level of serum calcium depends of total proteins and albumins concentration. This biochemical parameters analysis denotes a morpho-functional alteration of organs implicated in their synthesis and excretion. A general dysfunction condition of studied animals was also registered, facilitating the appearance of intercurrent infections or

conditioned diseases that may complicate the clinical evolution of hypodermosis.

Table 3. Blood biochemical indexes in parasite cattle (n=124)

Parameters	Parasited animals	Reference values
Glycemia (mg/dl)	35.67±10.06	45-75
Total proteins(g/dl)	6.03±0.4	6.2-8.2
Albumins (g/dl)	2.2±0.09	3-3.6
ASAT (U/l)	73.5±5.57	78-132
ALAT (U/l)	22.7±1.41	6.9-35.3
Urea (mg/dl)	24.63±2.3	20-30
Creatinin (mg/dl)	1.34±0.36	1-2
Calcium (mg/dl)	8.70±0.98	9.7-12.4
Phosphorus (mg/dl)	4.33±2.07	5.6-6.5
Magnesium (mg/dl)	2.01±0.03	1.8-2.3

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4. Conclusions

After a clinical examination of 363 cattle from 10 localities of Mehedinţi district were been discovered 124 animals with hipodermosis, a parasitic disease known that evolve in sub-Carpathian regions of our country. The prevalence of disease in studied animals was 34.15%, but

may be higher in the condition of absence of a warble management program in these regions and may have as result severe economic losses. Hematological and biochemical analysis of infected animals emphasized an alteration of health state as a result of parasites presence that produce losses in milk, meat production and buff damages. It is necessary to take all measures to block parasites evolution in endemic regions and to create for animals favorable conditions of expressing of real productive capabilities.

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