Parasitological Aspects of Pollution Levels in Some Equine Digestive Helminthosis

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Abstract
Research conducted on the parasitological pollution in some digestive helminthosis in horses, (parascaridiosis, strongillidosis and oxyuriasis), made in January 2011 in the village of Crasna, Salaj county on a herd of 72 horses from households (40 adults and 32 young horses), using diagnostic methods ovohelmintoscopics with enrichment of faeces taken (method Willis) and the scaling technique of curettage in anal pit area, revealed a different incidence of the main digestive helmintoze studied in correlation with age category and area of origin of the samples. Thus, mean parascaridiosis values are of 12.5% in adults and of 34.0% in young horses and riding in strongillidosis to an average of 82.5% in adult horses and, respectively, to 34.5% in young horses. In exchange for pinworm infection extensivity of parasitism in adult horses is 18.0% and respectively, 15.0% in young horses. Linked to the intensity of parasitism in helmintosis taken in study, the data obtained reveals different levels of pollution coproparasitologic Eggtester, in correlation with the area of origin and age. Thus, adult and youth horse parascaridiosis, dominates the low and medium infestations (100%) and in adult horses strongilidosis dominate the medium infestations (84.0%) and low infestations (75%) in young horses.

Keywords: coproscopy, extent, incidence, helminthosis.

1. Introduction

Currently international study on equine helminthosis is a topical issue, because these diseases can have serious repercussions on the health of animals. The large number of parasitic species, ontogenesis variable and diagnostic issues, make these parasites represent a permanent challenge for both parasitology and for horse owners. In addition, problems related to the phenomenon of the antihelmintic chemical rezistance and rising costs for discovering new antiparasitic drug formula, determine to find new strategies to tackle these diseases on the possibilities of diagnostic and therapeutic-profilactic. In light of these goals, in the present work we proposed a study on pollution in the main digestive coproparasitologic helmintosis (parascaridiosis, strongylidosis, pinworm infection) in horses bred and maintained in household system, in an area of the Salaj county.

2. Materials and methods

Diagnostic study on the possibilities of major gastrointestinal parasites in horses was performed in January 2011, on an effective of 72 horses on households in the village of Crasna, Salaj, namely: Crasna 20 animals (10 horses and 10 young horses), Ratin 17 animals (10 adults and 7 young horses), Huseni 18 animals (10 horses and 8 youth) and Marin 17 animals (10 adults and 7 youth). The effective taken in study is of common breed, bred and maintained in household system. Feeding of animals is done with dried fibrous feeds, sometimes concentrates (corn, wheat, oats). Adult horses are used for hauling, serving various current activities.

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Coprologic samples were taken individually in plastic bags, on which then, coproscopic examinations were performed using the enrichment coprologic flotation methods (method Willis). The number of horses taken in the study was examined also by chemical and inspection pit anal region and tail for highlighting some crusted lesions, respectively depilation areas, specific injuries pinworm infection. From the suspect horses were taken 31 samples in Petri dishes, the scraper with a sterile scalpel, the scaling of microscopic preparations were made fresh with the diagnosis of pinworm infection lactofenol added. The level of intensity of parasitism in parasitoses diagnosed, using the following protocol was established: - reduced infestations - 1-5 eggs in the microscopic field; - average infestations - 5 to 10 eggs in the microscopic field; - massive infestations - over 10 eggs in the microscopic field.

3. Results and discussion

Coproscopic examination results on the incidence in horses strongylidosis parascaridosis on age categories and the collection area , are presented in Table 1 and graph. 1. The data presented in Table and Figure 1, indicates that the incidence in horses parascaridosis percentage varies by category of age and origin.[3, 4, 7]. Thus, in adult horses parascaridosis the highest incidence is in the village of Crasna 30.0% and minimal in the village of Marin, 0%, with an average of 12.5% and in young horses in the area of maximum values obtained are Ratin, 57 , 0% and minimal in the area of Marin, 14.5%, with an average of 34.5%.In strongilidosis maximum values are obtained and young and adult horses in Ratin and Huseni villages (100% for adult horses and 85.5% and respectively 62.5% in young horses). Mean extent of strongilidosis is in adult horses of 82.5% and 59.5% in young horses. The presence of these parasites in horses, especially the youth, has implications for growth and development, the host organism theft of large quantities of nutrients, vitamins and minerals (debility syndrome - hypotrepsy), severe anemia and repeated and frequent occurrence of syndromes of colic, sometimes fatal ending.[5, 6].

Table 1. Incidence of infestation in the horse strongylidosis and parascaridosis by categories of age

Locality	Number of samples examined											
	parascaridosis						strongilidosis					
	Adult horses			Young horses			Adult horses			Young horses		
	Nr.s.	pos	%	Nr.s.	pos	%	Nr.s.	pos	%	Nr.s	pos	%
Crasna	10	3	30	10	4	40	10	7	70	10	4	40
Ratin	10	1	10	7	4	57	10	10	100	7	6	85.5
Huseni	10	1	10	8	2	25	10	10	100	8	5	62.5
Marin	10	-	-	7	1	14.5	10	6	60	7	4	57
Total	40	5	12.5	32	11	34.5	40	33	82.5	32	19	59.5

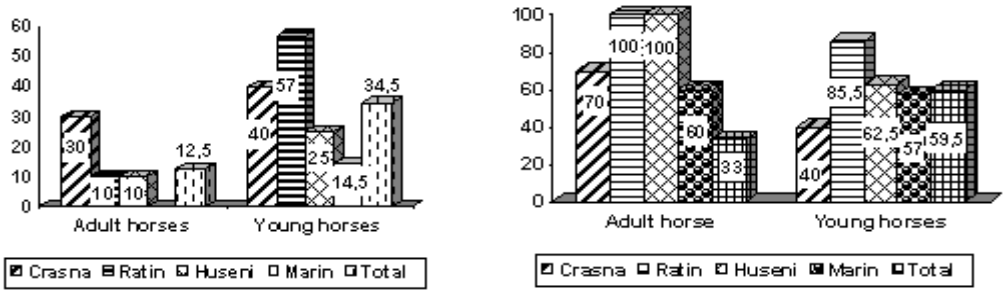

Figure 1. Variation in horses parascaridosis and strongilidosis extent

B. Data obtained on the incidence of pinworm infection in horses are presented in table and Figure 2. The incidence of pinworm infection shows similar values, 15% youth and 18 adult horses In herds of horses in this evolving parasite, although overall condition is not changed, yet appear abnormal behavior (scratching continuously with the hindquarters on iron objects, agitation and discomfort in

eating, etc.), which greatly reduces the ability animal activity.[3, 4].

Table 2. Parasitism extent in horses pinworm infection

Age cathegory	Number of samples	Positive samples	%
Young horses	11	2	18
Adult horses	20	3	15
total	31	5	16.1

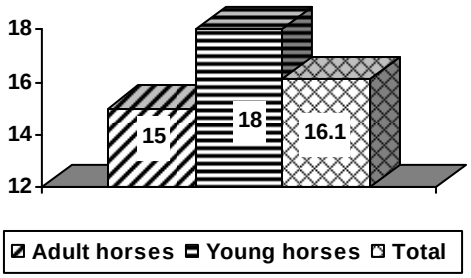

Figure 2. Extent variation in horses pinworm infection

C. Regarding the intensity of parasitism in parascaridosis, the group of horses diagnosed positive, the results are presented in table and figure 3.

Table 3. Parasitary charge level in horses parascaridosis

Locality	Number of positive samples													
	Total samples	Adult horses						Total samples	Young horses					
		Low inf.		Med.inf.		Massive			Low inf.		Med.inf.		Massive	
		Nr.	%	Nr.	%	Nr.	%		Nr.	%	Nr.	%	Nr.	%
Crasna	3	3	100	-	-	-	-	5	4	85	1	20	-	-
Ratin	2	1	50	1	50	-	-	6	4	65	2	35	-	-
Huseni	1	-	-	1	100	-	-	-	-	-	-	-	-	-
Marin	-	-	-	-	-	-	-	1	1	100	-	-	-	-

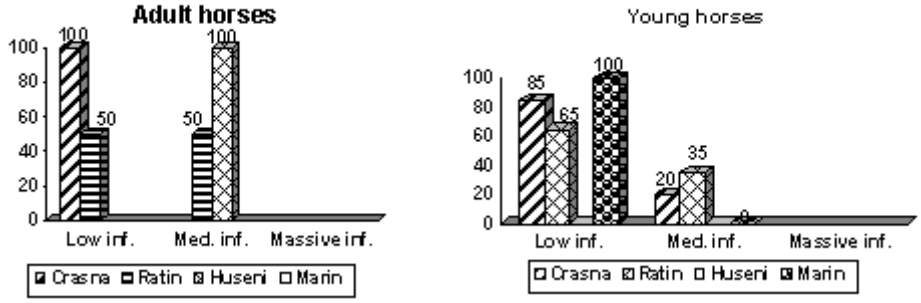

Figure 3. Parasitism intensity variation in horses parascaridosis

In parascaridiosis , there is a variation of parasitism intensity, depending on the rural area and age. Thus, in adult horses dominate weak infestations (100%) in Crasna and average in Huseni (100%), and in young horses are dominant in Crasna low infestations (80%) and average in Ratin (35.0%).[1, 3, 4].

Data obtained on the degree of intensity in the horse strongilidiosis reported in age category and area of harvest, are presented in table and figure 4.

E. Microscopic examination of preparations made from crusty curettage in perianal area, highlights in positive samples detected, the presence of equi Oxyuris eggs.

It is noted that the presence of crusted lesions in the anal cavity can sometimes have a polyfactorial etiology (scabies, lice, ringworm, eczema, etc.), which is why the diagnosis is made by microscopic examination of preparations made of crusts, scraped from anal cavity.[1,2,6,7].

Table 4. Parasitary charge level in horse strongylidiosis

Locality	Number of positive samples													
	Total samples	Adult horses						Total samples	Young horses					
		Low inf.		Med.inf.		Massive			Low inf.		Med.inf.		Massive	
		Nr.	%	Nr.	%	Nr.	%		Nr.	%	Nr.	%	Nr.	%
Crasna	7	2	28,5	3	43	2	28,5	4	3	75	1	25	-	-
Ratin	10	5	50	5	50	-	-	6	4	67	2	33	-	-
Huseni	10	5	50	4	40	1	10	5	3	60	2	40	-	-
Marin	6	1	16	5	84	-	-	4	3	75	1	25	-	-

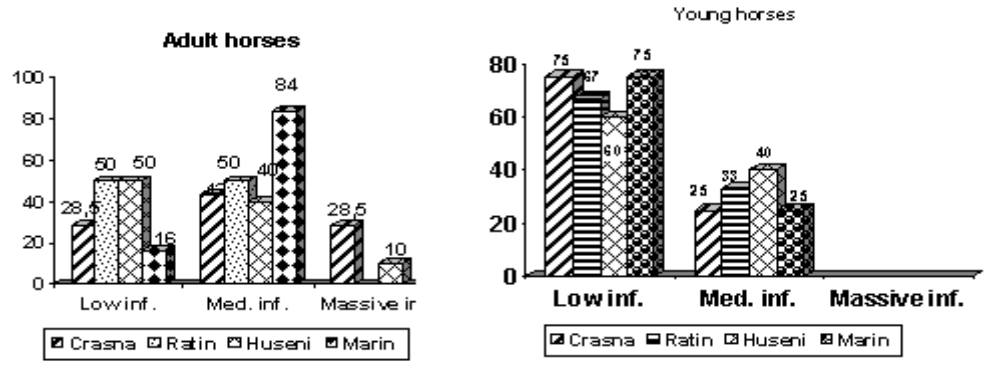

Figure 4. Parasitary intensity variation with Strongylus spp.in horses

4. Conclusions

Investigations regarding the parasitological pollution levels in some equine digestive helmintosis performed on a group of 72 horses (40 horses and 32 young adult horses) in the village of Krasna, Salaj, revealed the following aspects:

1. Strongylidosis and parascaridiosis incidence presents variations by age categories and origin. Thus, in adult horses parascaridosis the highest incidence is in the village of Crasna, 30.0% and minimal in Ratiu and Huseni villages, 10.0%, with an average of 12.5%. In young horses maximum values are obtained in Ratin, 57.0% and minimal in Marin, 14.5%, with an average of 34.5%. Strongylidozis incidence in adult horses and young horses has a maximum value in Ratin and Huseni, 100.0% and 85.5% respectively, and the minimal is 82.5% and 59.5% in adult horses in young horses.
2. Extensivity pinworm infection shows similar values, 15.0% and 18.0% in adult horses and in young horses with an average of 16.1%.
3. Intensity of parasitism in parascaridosis values are different, dominating the weak adult horses infestations in the area of Crasna, 100% and average infestations in the village Huseni (100%) and in young horses are dominant in the area of Crasna, low infestations (80%) and average in Ratin (35.0%).
4. The level of intensity of parasitism in strongilidosis shows different values, dominating the media infestations in adult horses in Marin area, 84.0% and reduced in area of Ratin and Huseni, 50%. In young horses dominate small infestations 75% in the area of Crasna and Marin environments and average infestations in Ratin and Huseni, 33% and 40% respectively.

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