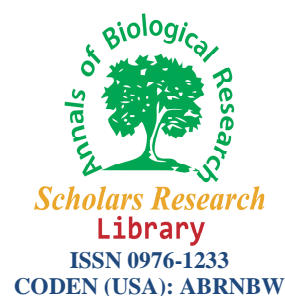




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Prevalence rate of Endoparasites in Wild Rabbits of East-Azerbaijan Province, Iran

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ABSTRACT

The aim was to study the Endoparasites of wild rabbits in East-Azerbaijan Province, north-west Iran, and its impacts on human health and animal production. From May 2010 to Sep 2010 the visceral samples of 60 wild rabbits at necropsy, selected from districts of East Azerbaijan Province, were removed, and examined for Endoparasites infestation. To identify the species of helminths, the nematodes were cleared in lactophenol (Wet-mount) and protozoans were stained using Giemsa and Trichrome staining. According to Results of present study 46.67% of rabbits infected to endoparasites were distinguished and these endoparasites consist of *Nematodirus leporis*, *Trichostrongylus retortaeformis*, *Passalurus ambiguus*, *Cysticercus pisiformis*, *Eimeria magna* and *Eimeria steidae* were distinguished. Of course in infected rabbits maximum and minimum infestation rate was belonging to *Nematodirus leporis* (13.33%), *Eimeria magna* and *Eimeria steidae* (3.33%) respectively.

Key Word: Wild Rabbits, Endoparasites, East-Azerbaijan province, Iran.

INTRODUCTION

Rabbits and rodents are common features of the anatomy, but due to some unique characteristics that make up a separate category called *lagomorpha*.

There are two pair of teeth is characterized by a high in the rabbits that will distinguish them from other rodents, and other rodents are a pair of teeth is high(4).

All domesticated rabbits in the same century BC was conducted. The wild rabbits in that special place called leporaria, were recorded. Real rabbit was probably domesticated in the sixteenth century until 1700, and the hair coat of paint, seven types (mutants) were identified from the rabbit (4).

Now, 28 races and 77 species have been identified. The most common of these races, race is a New Zealand white rabbits. Other popular breeds include albino rabbit, New Zealand Red Rabbit, Californian race, and ethnicity Rks Dutch Rabbit (Rex) is. Rabbit in the past research has been widely used. The rabbits are now widely in research related to immunology, infectious diseases and are used in the field of ophthalmology and pharmacology studies (4, 5). The skin of some breeds of rabbits in decorative items and clothing are used. various species of *Eimeria* cause intestinal coccidiosis in rabbits. *Eimeria magna* and *E.iresidua* are very pathogen in rabbits. Clinical symptoms include weight loss, anorexia, and diarrhea is stolid. After the death of intestinal inflammation and cell loss is unknown (17, 14,6). *Eimeria steidae*, Hungarian, and the bile of rabbits infected with highly pathogenic and can cause many deaths in young rabbits. Oocyst *Eimeria magna* 20 * 35 microns in size, oval in shape and has a micropil valve. Oocyst wall smooth and yellow and the residual body and no polar granule. *Eimeria steidae* light pollution does not appear to be clinical. Hungarian biliary obstruction and liver dysfunction in severe contamination of the abdomen, jaundice, hepatomegaly is. May be diarrhea or constipation, anorexia. *Eimeria steidae* transfer to swallow Oocyst is sporulated. prepatent period takes 15-18 days. *Eimeria* like other species is not transferred to animals and human (17,14,6).

Passalorus ambiguus is non-pathogenic pine worms of rabbits and present in cecum and colon of rabbits are domesticated and wild. The adult worm, female worm is about 10 mm long and male 4-5 mm. *Passalorus ambiguus* rabbit-specific species is not important for zoonoses (17,14,6).

Recognition of rabbits as a source of infection with this parasite and prevent from infected rabbit hunting dogs by veterinarians is very important(6,17).

Some viral diseases, bacterial, fungal and parasitic diseases common among rabbits and humans (Zoonoses) and can cause various injuries to humans (18,7).

Due to the fact that the control of human and animal diseases, their diagnosis is correct and timely, therefore, in this study we decided to diagnosis of the endoparasites of wild- rabbits in East-Azerbaijan province of Iran.

MATERIALS AND METHODS

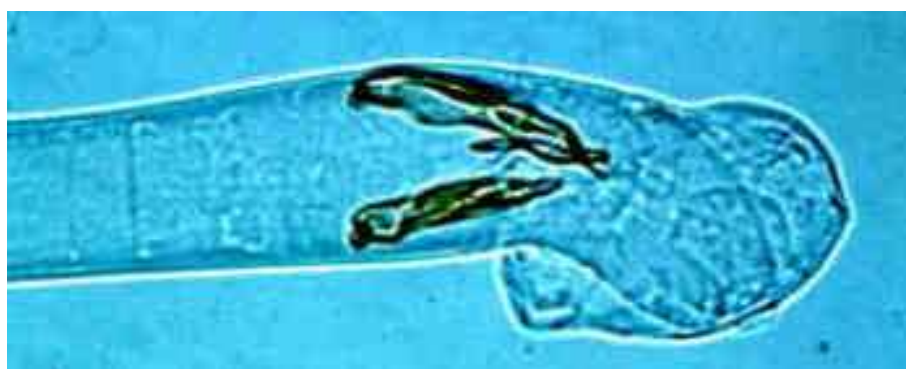
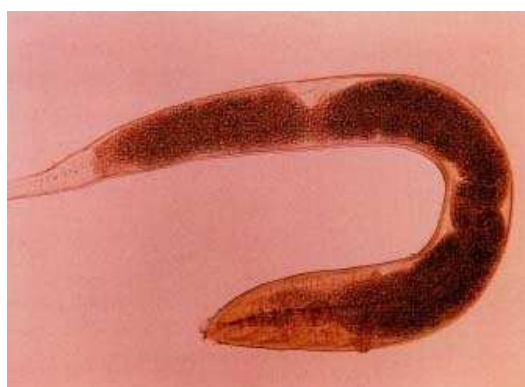
This survey is one cross-sectional study and from May 2010 to Sep 2010 on 60 wild rabbits in East Azerbaijan province of Iran was done. In this study after necropsy visceral samples (liver, lungs, kidney, heart and digestive system) of these 60 wild rabbits were taken and these samples transferred to parasitology laboratory of Tabriz Branch Islamic Azad University. In present study by wet-mount (with use of Lactophenol) and in some time from eshnaider-acetocarmine method for worms staining and from Giemsa and Trichrome staining for protozoan were used (4, 5, 6).

RESULTS

From 60 wild rabbits in this study 28 (46.66) rabbit's infected to endoparasites were distinguished. In infected samples 3 type nematods, 1 type cestode and 2 type protozoan were isolated. All results of present study in table 1 have been shown.

Table 1: Infestation rate to endoparasites in wild rabbits of East-Azerbaijan province.

Parasite	Nich	Number	%	True%	Commulative%
Without parasites	-	32	53.33	53.33	53.33
<i>Nematodirus leporis</i>	Small intestine	8	13.33	13.33	66.66
<i>Trichostrongylus retortaeformis</i>	Small intestine	7	11.66	11.66	78.32
<i>Passalurus ambigus</i>	Cecum and Colon	6	10	10	88.32
<i>Cysticercus pisiformis</i>	Abdominal cavity	2	3.33	3.33	91.65
<i>Eimeria magna</i>	Small intestine	3	5	5	96.65
<i>Eimeria steidae</i>	Bile Ducts	2	3.33	3.33	100
Total	-	60	100	100	-

**Figure 1- *Trichostrongylus retortaeformis* posterior portion of male.****Figure 2-*Passalurus ambigus* female.****Figure 3-*Nematodirus leporis* posterior portion of male.**

CONCLUSION

In present study total infestation rate of wild rabbits to endoparasites 46.66% has been calculated. Maximum infestation rate was belong to *Nematodirus leporis* (13.33%) and minimum infestation rate was belong to *Cysticercus pisiformis* and *Eimeria steidae* with 3.33% respectively. In this survey *Dicrocoelium* from these rabbits were not isolated which is disagree with one study by Gibson *et al* (12). Also in present study *Trichuris* from these were not isolated that is agree with study by Moraldo *et al* and Gibson *et al.*(12,16).

In the 66 / 6% of wild rabbits infected *cysticercus pisiformis* were tested with the results obtained by Kerazo 2004 matches in England (27). In this study contamination rate of wild rabbits that were infected to *passalorus ambigus* was 10 percent and 11/66 percent of wild rabbits

Trichostrongylus roterteformis that with the results obtained by shrayn in 2006 in India is a significant difference(21).

In the our study of wild rabbits, 5 percent infected *Eimeria magna* and 3 /33 % of them were infected with *E.steidae* results are relatively consistent in 2005 by Watson and et al. (30).

The complex patterns of seasonal changes in infection between parasite species in possums presumably reflect the wide range of factors, including parasite life history, climate (particularly temperature effects on egg and larval development and survival), host immune status, and seasonal variations in host status that have been shown to be important in other species (1,3,6,15). Infection of possums with species for which they are not the primary host (such as *Trichostrongylus* spp.) must also be influenced by how such factors affect infection in the primary host and hence the risk of cross-species infection (e.g., *T. retortaeformis* in rabbits; Hobbs et al. 1999).

Unfortunately, the life histories of the various possum parasites and the effects of various extrinsic and intrinsic factors on their population dynamics are not well documented, with the partial exceptions of *Parastrongyloides trichosuri* and *Paraastrostrongylus trichosuri* (17,18,28). Wild possums appear to become infected with *Parastrongyloides trichosuri* either by ingestion of infective larvae or by contact with larvae that then burrow through the skin (22). Experimental infection of captive animals is cleared by immune responses but with widely varying intervals in different possums (22,28). In the wild, re-infection occurs rapidly, even if animals are dosed regularly with anthelmintics (M. Ralston; P. Cowan; D. Health unpubl. data; Viggers et al.1985).

It seems that the use of raw and undercooked food in nature, lack of antiparasitic treatment, lack of proper nutrition and a lack of spraying in wild rabbits in comparison with domestic rabbits increased parasitic infections in wild rabbits in the wild (11) .

Because of endo parasites such as wild rabbits *Trichostrongylus spp.* possible transfer to humans, there is a need for prevention and control of wild rabbits to live or food storage to prevent domestic rabbits (11,20).

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