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HELMINTH PARASITES OF SHEEP IN DAKAHLIA PROVINCE- EGYPT

(With 3 Tables)

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الديدان الطفيلية في الأغنام في محافظة الدقهلية - مصر

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أجريت الدراسة الحالية على الديدان الطفيلية التي تصيب الأغنام في محافظة الدقهلية وقد اشتملت الدراسة على فحص ٢٥٠ عينة من براز الأغنام من مختلف الأعمار وكانت نسبة الإصابة العامة بهذه الديدان ٥٦,٨% وقد سجلت الديدان الكبدية ٦,٤% بينما الديدان المعدية كانت نسبة الإصابة بها أعلى (١١,٢%). كانت نسبة الإصابة بالديدان الأسطوانية من نوع الأسترونجلورين تمثل ٤٦,٤% بالإضافة إلى الأنواع الأخرى التي تمثل إصابة قليلة مثل تريكيويرس ٤,٨%، نيماتوديرس ٠,٨% سترونجيلويدس ٨%. أوضحت الدراسة أن اليرقات المعدية من نوع هيموتكس تمثل أعلى نسبة إصابة ٣٠,١٧%، تريكوستروجيليس ٢٢,٤١%، كوبيريا ١٠,٣٤%، اسفوجوستوم ٤,٣١%. أشتمل البحث أيضا على العلاقة بين هذه الديدان ونوعية الإصابة فردية أو مزدوجة. سجلت الديدان الشريطية نسبة إصابة قليلة (٢,٤%) وكانت كلها من نوع مونيزيا.

SUMMARY

The present study included identification of helminth parasites of sheep in Dakahlia province through faecal examination. Infection rate of helminth parasites was (56.8%). *Fasciola* and *Paramphistomum* recorded 6.4% and 11.2% respectively. Strongylorine eggs showed high rate of infection (46.4%) while the others *Strongyloides* spp., *Trichuris* spp. and *Nematodirus* spp. were represented by 8%, 4.8% and 0.8% respectively. Faecal culture of strongylorine eggs revealed that *Haemonchus* spp. was the highest in prevalence (30.14%). This was followed by *Trichostrongylus* (22.14%), *Cooperia* (10.34%) and *Oesphgostomum* (4.31%). *Moniezia* spp. was found in a percentage (2.4%). Single infection with strongylorine parasites recorded high rate of infection (24.8%) while mixed infection by *Paramphistomum* and strongylorine was represented by (7.2%).

Key words: Sheep - Parasites - Dakahlia

INTRODUCTION

Among livestock, sheep are considered as multipurpose animals producing mutton, wool, and milk. Their breeding will share in covering the human requirements. Improvement of sheep health can be done through elimination of destructive factors. Parasitic diseases are one of the main destructive factors.

In Egypt, the annual losses due to parasitic infection was estimated with 2.5 million pounds by Ezzat (1960) . Many authors studied the helminth parasites in sheep and goats in different provinces in Egypt, Nagaty (1949) was the first, Mounib (1977) in Assuit, Tawfik & Hassan (1979) in North West Coast of Egypt, Abdel-Gawad and Gad El-Mawla (1981) in New Valley province, El-Akabawy (1987) in Kalyubia, Kedees (1990) in Sinai and Abd-Rabo (1991) in Kafr-El-Sheikh, but no one did this in Dakahlia province

Therefore, this study was planned to investigate the incidence of the different species of helminth parasites infecting sheep and the relationship between them.

MATERIAL and METHODS

A) Animals:

This study was done during a period extending from January till June (1997). A total of 250 sheep of various ages, sex and breed distributed in different localities in Dakahlia province were investigated through the examination of rectal faecal sample.

B) Parasitological examination :

The faecal samples were examined in the same day of collection using sedimentation-flotation technique according to (Kruse and Prichord 1982). Faecal culture was carried out to all samples according to Burger & Stoye (1968) and Abdel-Gawad (1972). Identification of the ineffective third stage larvae was carried out using keys mentioned by Abdel-Gawad (1972) and Soulsby (1982).

RESULTS

The results data are displayed in (Tables 1, 2 and 3).

Table 1: Prevalence of different species of helminth parasites among sheep in Dakahlia province through faecal examination

Helminth parasite	Positive animals	
	No	%
<i>Fasciola</i> spp.	16	6.4
<i>Paramphistomum</i> spp.	28	11.2
Strongylorine.	116	46.4
<i>Strongyloides</i> spp.	20	8
<i>Trichuris</i> spp.	12	4.8
<i>Nematodirus</i> spp.	2	0.8
<i>Moniezia</i> spp.	6	2.4

Table 2: Prevalence of different species of strongylorine parasite through faecal culture (n = 116)

Species	No. of positive animals	%
<i>Haemonchus</i> spp.	35	30.17
<i>Trichostrongylus</i> spp.	26	22.41
<i>Cooperia</i> spp.	12	10.34
<i>Oesphgostomum</i> spp.	5	4.31

Table 3

Relationship between different helminth parasites in sheep in Dakahlia province

Helminth Parasite	% of infestation
<i>Fasciola</i> only	3.2
<i>Paramphistomum</i> only	3.2
Strongylorine	24.8
<i>Fasciola</i> + <i>Paramphistomum</i>	
<i>Fasciola</i> + Strongylorine	1.6
<i>Paramphistomum</i> + Strongylorine	7.2
<i>Fasciola</i> + <i>Paramphistomum</i> + Strongylorine	0.8

DISCUSSION

It was clear that; examination of 250 sheep of various ages, were infected with different helminth parasites in a percentage of 56.8%.

Regarding nematode infection (Table 1) strongylorine type-eggs showed high rate of infection (46.4%). The result of faecal culture (Table 2) revealed that *Haemonchus* spp. larvae were the most predominant one (30.17%), followed by *Trichostrongylus*, *Cooperia* and *Oesphagostomum* which were represented by 22.41%, 10.34% and 4.31% respectively.

The infection rate with strongylorine in Dakahlia province was higher than that mentioned by Tawfik and Hassan (1979) in the North West Coast of Egypt (12.25%), Maiorov and Goncharov (1982) in Belorussia (29.62%), Nicolas et al. (1985) (42.64%), in Haute Vienna and Kedees in Sinai (1990) (13%). On the other hand, it was lower than that reported by Dabalís et al. (1984) in Greece (76.26%), Cornejo-Aymat and Fernando (1987) in Mallorca (84%) and El-Akabawy (1987) in Kalubia province (100%). *Nematodirus* spp. eggs were detected in (0.8%) of examined sheep. The incidence was lower than that recorded by Tawfik and Hassan (1979) (9.58%), Dabalís et al. (1984) (17.75%), Nicolas et al. (1985) (10%), Cornejo-Aymat and Fernando (1987) (35%) and Kedees (1990) in Sinai (7.5%).

Concerning *Trichuris* spp. eggs, only 4.8% of sheep were infected. This rate of infection was much lower than that reported by Dabalís et al. (1984) (12.47%), and Cornejo-Aymat and Fernando-Alvarez (1987) in Spain (4%) and was higher than that found by Maiorov and Goncharov (1982) (1%) and Kedees (1990) (1.2%).

Strongyloides spp. eggs were found in 8% of infected sheep which was similar to that recorded by El-Akabawy (1987) in Kalyubia province (7.7%) and lower than that mentioned by Maiorov and Goncharov (1982) (29.62%) and kedees (1990) (13.7%).

The high rate of infection of gastrointestinal nematodes specially Strongylorine parasites in Dakahlia province may be attributed to the weather specially temperature, relative humidity and rainfall. This is beside to the grazing habits of sheep. However, Crofton (1955) in England reported that any species of nematode parasites occurs at all times of the year and they were presented in the flock by a very small infection in an individual animal. The rate of infection with *Moniezia* spp. eggs in the present study was 2.4%, which was lower than that reported by Lloyd and Soulsby (1978) in south Eastern Pennsylvania and northern Marylans, USA (9%) and Nicholas et al. (1985) in France (10%). However Tawfik and Hassan (1979) in North West Coast of Egypt did not record *Moniezia* spp. eggs.

Trematode infection showed low level of infection (12.8%) in comparison with nematodes. This result was lower than that recorded by the

annual report of the Ministry of Agriculture in Egypt (1984) which stated that the infection rate of trematodes was 41.48% (1979), 71.33% (1980), 96.58% (1981), 66.69% (1982) and 62.52% (1983).

Fasciola and *paramphistomum* spp. recorded 6.4% and 11% respectively. The percentage of *Fasciola* spp. in this investigation was lower than that recorded from different parts of the world by Dissamarn (1961), Bolosingam (1962), Amin (1972) Ghazy (1987) and Abdo-Rabo (1991).

This low rate of infection might be attributed to the incomplete elimination of *Fasciola* infection by sub-therapeutic doses which lead to subclinical fascioliasis with a low egg output. Moreover Looss, (1896) studied the fecundity of *Fasciola* spp. and observed that heavy infected animals may be passing eggs in a considerable number up to 7-10 weeks but thereafter counts can not be associated with degree of infestation and may be low even in heavy infection. *Paramphistomum* spp. showed 11.2% which was higher than *Fasciola* spp. This result was more or less similar to that recorded by Abdo-Rabo (1991) in Kafr-Elshiekh (13.5%) and this may be due to that *Lymnaea cailliaudi* snail the intermediate host of liver flukes is more sensitive for chemical molluscides than *Bulinus* snail, the intermediate host of stomach fluke (El-Bahi, 1984).

Regarding the relationship between different helminth parasites in Dakahlia province (Table 3), single infection with either strongylorine, *Fasciola* or *Paramphistomum* was represented by 24.8%, 3.2% and 3.2% respectively. Mixed infection with both *Fasciola* and Strongylorine was (1.6%), while *Paramphistomum* and Strongylorine was represented by (7.2%). Infection with both *Fasciola* and *Paramphistomum* was not recorded in this study, while mixed infection with the three parasites, *Fasciola*, *Paramphistomum* and Strongylorine was represented by (0.8%).

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