

Survey on prevalence of sheep and goats lungworms in Tabriz abattoir, Iran

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ABSTRACT:

Bronchopneumonia is one of the important sheep and goat's disease in Iran that several agents such as bacteria, virus and parasite can be cause it. It seems that lungworms in ruminant have most roles in this disease incidence. The aim of this study was assessment of sheep and goats contamination to lungworms of Tabriz area. In this study initially with referring to Tabriz abattoir were selected rejected and apparently healthy lungs by randomly and then sent to parasitology laboratory of veterinary faculty. In lab, lungs were opened and contents were isolated. Then with staining of parasites and creating of slides, type of parasite was detected by light microscope. Of 400 collected lungs, were infected 46 cases (11.5%) to *hydatid cyst*, 185 cases (46.2%) to *Dictyocaulus filaria*, 63 cases (15.6%) to *Protostrongylus rufescent* and 25 cases (6.2%) to *Muellerius capillaries*. also 12 cases (3.7%) of 320 sheep lungs were infected to *Linguatula cerata* larva. with attention to relatively high contamination rate in Iran, exerting of prevention and treatment measures was recommended.

Key words: sheep, goats, lungworms, Tabriz, Iran.

Introduction

Nowadays, one of the problems in sheep nurturing industry in Iran is bronchopneumonia that several agents involve it. Etiological agents such as bacteria, virus and parasites can be caused it. It seems that parasites have most roles in this disease incidence [3]. Primary infection to pulmonary parasites causes immune suppressing in lungs and subsequently secondary microbial contamination causes inflammation and bronchopneumonia [2]. *Dictyocaulus filarial* for first time reported by Rafae and Alavi in 1963 in Iran. Also there are other reports of contamination to *Protostrongylus rufescent*, *cystocaulus ocreatus* and *Muellerius capillaries* [2]. Small ruminant's lungworms with waste and losing of

livestock productions cause significant damages. *Dictyocaulus filarial*, *cystocaulus ocreatus*, *Protostrongylus rufescent* and *Muellerius capillaries* are responsible to these damages. Most of done observes and studies are based on detection of contamination to sheep and goats lungworms in Tabriz according to fecal experiments and abattoir assessments[8].

Materials and methods

This study was done in 3 steps as follow:

Collection of lungs, work on lungs and work on parasites.

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Collection of lungs:

For 4 month with referring to Tabriz abattoir rejected sheep and goats lungs for 300 samples and apparently healthy lungs for 100 samples were selected by randomly and were located into plastic packages and sent to parasitology laboratory of Islamic Azad university, veterinary faculty, Tabriz branch.

Work on lungs:

In this study we cut the lungs from trachea and then washed opened lungs with water and contents were collected in the basin and then were screened with number 60 and 100 bolter, then remaining contents transported to other bottle with formalin 5% and finally labeled. Of course, before opening of lungs, the lungs were evaluated from existence of hydatid cyst and other nodules.

Work on parasites:

Collected content from step 2 were assayed under loop then detected parasites were transported again to formalin 5%. The parasites were stained with azocarman color and then assayed under light microscope [1].

Results and discussion

Of 320 sheep and 80 goats assayed lungs these results were achieved as follow:

Of 400 total lungs, 46 cases (11.5%) were infected by *hydatid cyst*, of 320 sheep lungs, only 12 cases (3.7%) were infected by *Linguatula cerata* larva. among nematodes, totally 3 species were isolated as follow:

Of 400 total lungs, 185 cases (46.2%) were infected by *Dictyocaulus filaria* which is includes highest infection rate. of 400 total lungs, 63 cases (15.6%) were suffered from *Protostrongylus rufescent* and finally, of 400 total lungs, 25 cases (6.2%) were infected by *Muellerius capillaries* (table 1).

Discussion:

In one study carried out by Uriarte, J. *et al.* [10] on ewe revealed that *prostrongyloides* family monopolized highest contamination and among this family *cystocaulus* with 24.6% had maximum prevalence, after it, *Protostrongylus*, *Muellerius capillaries* and *Neostromylus* with 12.8, 9 and 8.8% occupied in next classes, respectively. In one other study were done by Gorski, P. *et al.* [5] in Poland demonstrated that of 400 experimental sheep samples, prevalence rate to *Muellerius capillaries* in polish mountain colored sheep, polish mountain sheep and Kamieniec sheep races were 4.6, 4.5 and 2.5 percent respectively. Also in other research carried out in Poland by same researcher [5] delineated that in total, incidence rate in goats is very high than sheep as well as demonstrated that infection rate to *fasciola hepatica* was 10.9% and infection to tapeworms in sheep is very high than goats but infection to *Eimeria* and *Muellerius capillaries* in goats were more than sheep. In other study were done by Nematollahi, A. and Moghaddam, Gh. (2008) revealed that of 100 collected fecal samples, 445 samples (44.5%) were infected to *Dictyocaulus filaria* larva, 195 samples (19.5%) were infected to *Protostrongylus rufescent*, 448 samples (44.8%) were infected to *Muellerius capillaries* larva and 452 samples (45.2%) were infected to *cystocaulus ocreatus*.

Table 1: type and number of found parasite in sheep and goats lungs.

parasite	Sheep (320 samples)	Goats (80 samples)	Total (400 samples)
hydatid cyst	40	6	46
Linguatula cerata	12	0	12
Dictyocaulus filaria	121	64	185
Protostrongylus rufescent	51	12	63
Muellerius capillaries	19	6	25

In other research accomplished by Maraqa, A. [7] demonstrated that of 443 experimental native sheep, 90 cases were infected to *hydatid cyst* and no cases were infected to *fasciola hepatica* and *Dicrocoelium dendriticum* but, these values in 473 Romanian sheep were 0, 26, 15, and 272 respectively. In other research carried out by Yildiz, K. and Gurcan, S. (2005) revealed that 3.2% of 553 lambs and 50.9% of 1320 adults suffered from *hydatid cyst* and most common locations of cysts were in the lung (64.7%) and liver (51.8%). In one other study were done by Sami, K.A. *et al.* [9] of 471 sheep, 118 goats, 157 cattle and 56 slaughtered

camels in north Jordan abattoir, total contamination rate to pulmonary *hydatid cyst* were 27.8, 1.7, 5.8 and 10.7 percent respectively. In other study conducted by Imari, A.J. (1962) in Iraq, infection to pulmonary *hydatid cyst* in sheep were 42%, lambs were 12%, cattle were 22%, goats were 40%, buffalo were 50% and camels were 75%. by comparing of these results with our research results can be conclude that infection rate to pulmonary worms in Iran is very high and must be take measures in prevention and treatment fields.

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