

PREVALENCE OF GASTROINTESTINAL PARASITES IN CATTLE AND BUFFALOES IN THI-QAR PROVINCE, SOUTH OF IRAQ

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ABSTRACT

The present study was carried out to determine the prevalence of gastrointestinal parasites in large ruminants (cattle and buffalo) in Thi-Qar province south of Iraq . For this purpose, 628 fecal samples were collected including 312 from buffaloes and 316 from cattle, from different areas of Thi-Qar Province between February 2017 and February 2018. Parasitological procedures used for the identification of helminthes were direct and indirect methods(Flotation and sedimentation techniques). The results revealed that the prevalence of GI parasitic infestation were 54.7% in cattle and 23.71% in buffalo ,Moreover *Fasciola* spp. was the most prevalent GI parasite in both cattle and buffaloes. Parasitic infestation was recorded throughout the year with seasonal variations.

INTRODUCTION

Cattle and buffaloes are regarded as economically important animals because they are multipurpose animals providing milk, meat and good quality hides (1).

Domestic ruminants due to improper management, unhygienic conditions and improper use of anthelmintic drugs, are suffering from various helminthes parasitic infestations and mostly infection occurs when they drinking water and grazing near the ponds. Mature worm produce eggs that are passed to field in the feces or stool. Under favourable conditions the egg will hatch and larva transmitted to intermediate host lymnaeid snails and by snail infects many cattle and buffalo as well as man, anthelmintic treatment are used to reduce the shedding of parasitic eggs in the feces and will reduce pasture contamination (2,3).

Gastro intestinal infection with various types of gastro- intestinal parasites in cattle and buffaloes is a worldwide problem, gastro-intestinal nematodes such as *Trichostrongylus* spp., and flukes such as *Fasciola* spp. are the most common parasites in ruminants(4).

Buffaloes suffer from various intestinal protozoan infections(5). Moreover, some helminthes of buffaloes are also transmissible (directly or indirectly) to humans where they can cause significant clinical diseases, such as schistosomiasis and fascioliasis in a number of countries (6)

The effects of parasitism can be sub clinical , clinical or chronic, productivity losses through decreased inappetence lead to problems of feed and water intake, whilst protein losses due to gastrointestinal damage diminishes availabilities for growth and decreased efficiency in feed utilization due to subclinical infections that are responsible for economic losses(7). Losses in animal productivity(milk production, weight gain, altered carcass composition, conception rate, etc.) are all sub clinical effects; whereas, visible, disease-like symptoms (roughness of coat, anaemia, oedema, diarrhea) are clinical effects. The sub clinical effects are of major economic importance to the producer(8). The types of disease and parasites outbreaks among animal populations are greatly influenced by the geographic location and seasons(9). Moreover, climatic conditions like ambient temperature and rainfall patterns have great influence on the pasture and the food resources availability cycle throughout the year (10).

Aims of the study

A study was conducted to determine the prevalence of gastrointestinal parasitic infection in Cattle and buffaloes of Thi-Qar province. Further studies are needed for planning future research and to design rational and prospective locally GI parasites control programmers.

MATERIALS AND METHODS

The study was conducted between February 2017 and February 2018 from various districts of Thi-Qar province (Al-Nasiriya–Al-Shatra- Suq-Alshuyook- Sayed dekeel –Al-Naser - Al-Fhood and ALhammar),. 628(involving 312 from buffaloes and 316 from cattle) fresh fecal samples(about 30 g) were collected from rectum and stored in plastic containers and refrigerated at 4°C and transported to the laboratories of Thi-

quire veterinary hospital. The samples were processed and screened by direct smear method and ova of parasites were identified through their morphological features(11). Flotation technique with saturated NaCl method was conducted to detect the nematode eggs, while the Fecal Sedimentation Technique was carried out for the detection of Trematode eggs (12).

RESULTS

Out of a total (628) fecal sample were collected and examined involving (312) from buffaloes and (316) from cattle. In buffaloes there were 64(22.7%) sample positive for gastro intestinal parasites, while in cattle there were 173(45.7%) sample positive .

The prevalence of gastro-intestinal-helminthes in cattle within different districts of Thi-Qar Province, significant ($P < 0.05$) among four districts, the highest in Al-Shatra (68.3%) followed by Al-Naser (63.6%), Al-Nasiriya (52.7%) and less infestation in Suk -Alshuyook (33.3%). As in table (1).

Table(1):- Prevalence of gastrointestinal helminthes in cattle within different Thi-Qar districts.

Region	Examined No.	Total positive
Al-Nasiriya	241	127(52.7%)
Al-Shatra	41	28(68.3%)
Al-Naser	22	14(63.6%)
Suk Alshuyook	12	4(33.3%)
Total	316	173(54.7%)

While in buffaloes the prevalence of gastro-intestinal-parasites were highest in AL-Nasiriya (69.7%) followed by Al-Hammer(32.4%), and less infestation in Al-Garraf (0%) and Al-Shatra7 (8.9%) as in table (2).

Table (2):-Prevalence of gastrointestinal parasites in buffalo within Thi-Qar districts.

Region	Examined No.	Total positive
AL Nasiriya	66	46(69.7%)
Al-Shatra	79	7(8.9%)
Al-Garraf	59	0
Al-Fuhood	32	3(9.4%)
Suk-Alshuyook	42	7(16.7%)
Al-Hammar	34	11 (32.4%)
Total	312	74(23.71%)

Fasciola spp. is the most prevalence parasites in cattle of Thi-Qar Province followed by *Trichostrongylus* spp. and lastly *Ascaris* spp. as in table(3):-

Table (3):- Prevalence of gastrointestinal helminthes in cattle within different districts of Thi-Qar Province.

Region	<i>Fasciola Spp.</i>	<i>Nematod. Spp.</i>	<i>Ostertagia Spp.</i>	<i>Oesopha. Spp.</i>	<i>Strongylus Spp.</i>	<i>Tricho Spp.</i>	<i>Ascaris Spp.</i>	Total
Al-Nasiriya	26	3	5	8	1	19	1	127
Al-Shatra	3	-	7	7	2	4	-	28
Al-Naser	6	-	2	-	2	4	-	14
Suk-Alshouk	-	-	3	-	-	-	1	4
Total	35(20.2%)	3(1.8%)	17(10.55%)	15(9.31%)	5(2.9%)	27(15.6%)	2(1.24%)	173

In buffaloes all the positive samples were *Fasciola* spp. as shown in table(4):-

Table(4):-Prevalence of gastrointestinal helminthes in buffaloes within different districts of Thi-Qar province

Region	<i>Fasciola spp.</i>
Al-Nasiriya	46
Al-Shatra	7
Suk alshuyook	7
Al-Fhood	3
Al-hammar	11
Total	74

The seasonal effect on gastrointestinal parasitism in cattle and buffaloes

Were recorded in table(5 and 6).

Table (5): Seasonal prevalence of G.I.T parasites in cattle of Thi-Qar province

Season	Number of samples	Total positive	Percentage
Winter	74	17	23%
Spring	73	52	71.2%
Summer	111	57	51.35%
Autumn	58	47	81%
Total	316	173	54.74%

Table (6): Seasonal prevalence of G.I.T parasites in buffaloes of Thi-Qar Province.

Season	Number of samples	Total positive	Percentage
Winter	49	5	10.2%
Spring	74	26	35.1%
Summer	98	16	16.3%
Autumn	91	27	29.7%
Total	312	74	23.71%

DISCUSSION

The purpose of this study was to document the prevalence of internal parasites in cattle and buffaloes in Thi-Qare Province, because there were very limited studies on the survey of G.I.T parasites in cattle and buffaloes in Iraq and Arab nation. Helminthes infections in cattle and buffaloes are recognized as a major qualifications to livestock production. Usually, infections are subclinical with significant economic losses because of both high mortality and reduced productivity of animals (13,14). Prevalence of GI helminthes has been reported ranging from (0.72 to 67%) in

domestic animals from different parts of the world, and depends on the climatic conditions and management practices (15).

In our study the prevalence of G.I. parasitic infection in cattle and buffalo. Similarly reports were recorded by (16), (17) and (18) which suggest that the climate in this region is exclusively contributive for the development and spread of internal parasites in cattle and buffaloes. There were other factors which might be taking charge of the prevalence of GI parasites which involve constant exposure of infections, continuous deposit of infections on the pastures by adult animals as well as poor animal husbandry practices adopted by the farmers. The present study showed that the highest prevalence of helminthes was recorded in cattle followed by buffaloes because of higher proportion of time spend on grazing by cattle as compared to buffaloes which are grazed proportionally less and kept mainly in stalls for feeding in the present study area. The highest infection of helminthes in case of cattle is in agreement with (16) who reported 51.29%, (19) who reported 67.22% infection and (20) who reported 83.46% infection.

In *Fasciola spp.* (17.15%) this results agreed with (21) and (17) and disagreed with (22) and (23).

In buffalo the result is lower than (24), (25) and (26) respectively, and agreed with (27). This might be due to higher level of innate resistance to helminthes by buffaloes, and deworming with anti-helminthic drugs or sometimes strategic anthelmintic therapy contributed less parasitic infection in crossbred buffalo, deworming of buffalo is done by field veterinarians, Para-veterinarians (Assistants) and farmers themselves (28).

The climate constitute crucial factor which greatly influence the life cycle of the parasite and the transmission of endo-parasites. Therefore, our observations are in agreement with (29) that demonstrated that the season played a significant role in determining helminthes community species rate in cattle and buffalo.

In our study, the prevalence of parasitic infections in cattle and buffalo were more in spring and autumn which was in agreement with the reports of (30), (31), (27) and (24). This results might be due to adequate -moisture and optimum temperature which favored the growth and survival of infective stages, and leading to more contamination of the pasture. The variations among the findings might be due to the

difference in the geographical situation (soil and water), techniques of sample collection, availability of intermediate host, period and place of study, environmental factors and breed of the animals (24).

Conclusions

The current study showed a presence of various species of G.I parasites in cattle and buffalo and high rate of gastrointestinal parasitic infestations in cattle of Thi-Qar Province in compared with buffaloes. These results indicate the need to establish efficient control measures that improve animal health and performance by using anti-parasitic medications for dropping the gastrointestinal parasitism of cattle and buffaloes .

انتشار الاصابة بالطفيليات الداخلية المعوية في الابقار والجاموس في محافظة ذي قار في جنوب العراق

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الخلاصة

اجريت هذه الدراسة لتحديد نسبة انتشار الطفيليات المعوية في المجترات الكبيرة (الابقار والجاموس) في محافظة ذي قار. جمعت ٦٢٨ عينة براز لهذا الغرض وتضمنت ٣١٢ عينة من الجاموس و ٣١٦ عينة من الابقار، من مناطق مختلفة من محافظة ذي قار خلال الفترة الواقعة بين شباط ٢٠١٧ الى شباط ٢٠١٨. وتم التشخيص بواسطة استخدام طرق التشخيص الطفيلي التي تشتمل على الطريقة المباشرة والطرق غير المباشرة (التطويف والترسيب). اظهرت النتائج ان نسبة الاصابة في الابقار بلغت ٥٤.٧% وبلغت النسبة في الجاموس ٢٣.٧١%. استغرقت الدراسة سنة واطهرت النتائج التغيرات في نسبة الاصابة خلال الفصول المختلفة. سجلت النتائج ان ديدان الكبد كانت الاكثر انتشارا في النوعين الحيوانيين وبلغت نسبة الاصابة ٢٠.٢%

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