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PREVALENCE OF *EIMERIA* SPECIES OF LAMBS IN BAGHDAD AREA (IRAQ)

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SUMMARY

Four hundred and two faecal samples from lambs up to four months pld from the center of Baghdad area, were examined for the presence of coccidia parasites. The highest rate of infection (83.8) occurred in lambs about 3-8 weeks of age. Nine species of *Eimeria* were recovered for the first time in Baghdad namely; *E. ovinoidalis, E. crandallis, E.parva, E. ninakolykimovae, E. ahsata E. Faurie, E. pallida, E.granulosa, and E. intricata.*

E.ovinoidalis and E. crandalli occured most frequently and were generally most predominent, the percentage of these species recorded during December were 34.7% and 21.7% respectively.

INTRODUCTION

It was observed that coccidiosis may be an important serious disease of lambs in Iraq. It occurs in lambs over 3 weeks of age or even in adult. (1) stated that coccidiosis is a contagious enteritis which occurs in cold, moist, over crowded livestock or under unhygenic conditions.

The disease causes up to 28% reduction in wool production and 15% reduction in the weight of lambs (2).

However there is no information concerning coccidial infections of lambs in Iraq; the aim of this study is to determine the incidence of different species of *Eimeria* in lambs in this country.

MATERIALS AND METHODS

Four hundred and two fresh faecal samples were collected from lambs 3 weeks to 4 months old born in the Al-Shula farm 30 Km west of Baghdad from December to March 1985. Lambs were housed indoor and the ewes put-out to grass on stable or fallow-land during the day.

Faeces were examined once weekly to detect the presence of Eimeria cocyst by floatation method (3) . In order to the sporulation time, samples were incubated in 2.5% aqueous potassium dichromate solution at 25-28 °C for 10-14 days. Their morphology was studied and the species of oocyst were indentified according to (4).

RESULTS

Out of 402 speciments examined, a total of 337 (83.8%) of samples were positive for Eimeria species. The highest rate of infection was recorded during january (90.8%) then it declined to (72.5%) during March (Table 1). The faecal samples became positive for coccidial oocyst only when the animals were 3-4 weeks old, and a watery sever diarrhoea characteristic of coccidiosis occured in lambs, with high oocyst out-put during December; thereafter the counts declined and flactuated around 8-10 weeks of age at the end of March (Fig.1).

Nine different species of Eimeria were identified (Fig.2) and the morphological characteristics of these species are shown in (Table 2). The incidence of these nine species are shown in (Table 3) *E. ovinoidalis (26.8%), E. crandallisu (21.6%), E.parva (15.8%), E.ninakolykimovae (13.1%), E.ahsata (10.6%), E.faurie (6.0%) , E. pallida (5.5%), E.granulosa (0.5%), and E.intricata (0.1%)*, are shown in (Table 2). The most predominant species during the study were *E. ovinoidalis and E. crandallis*.

Table 1:Lambs coccidiosis during 4 month (Decembar.March)

Months	No.of samples	No. positive	Percentage %
December	104	91	87.5
January	98	89	90.8
February	98	83	84.6
March	102	74	72.5
Total	402	337	87.8

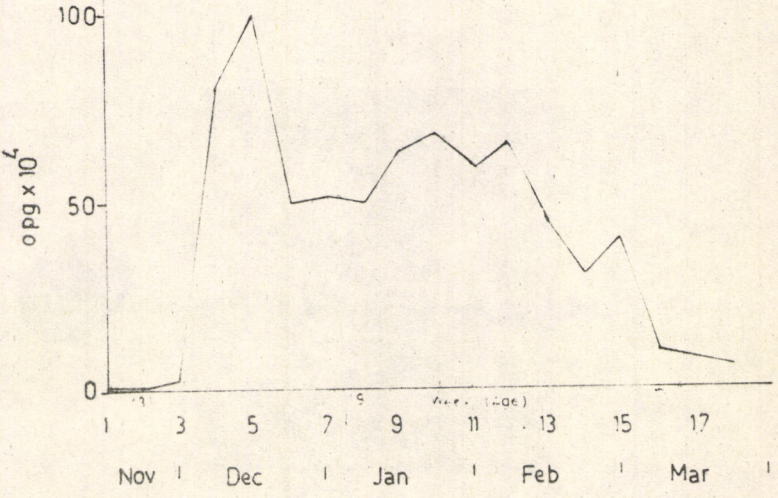

Fig.1. Weekly faecal oocyst counts of lambs in 1985

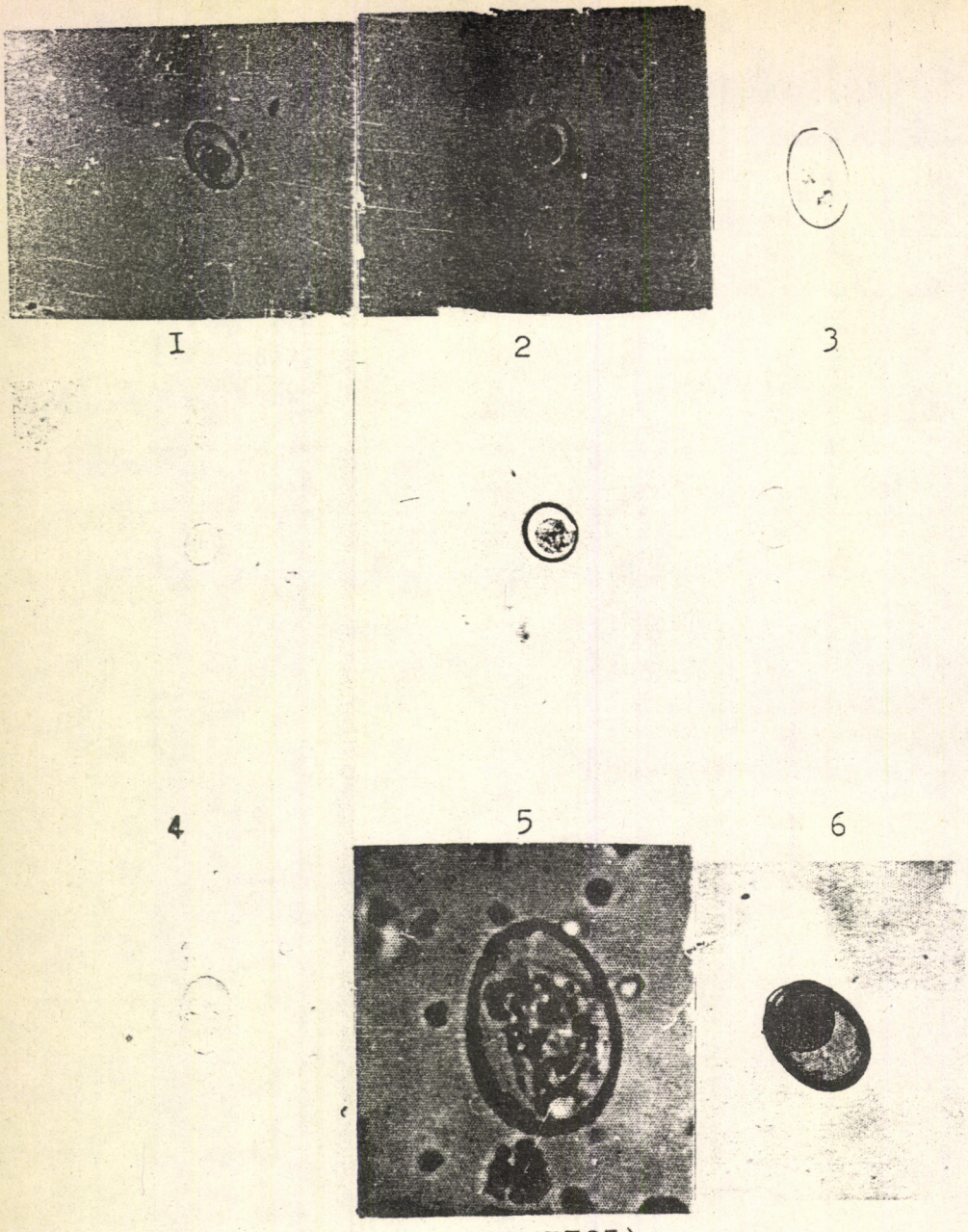

Fig.2. Nine *Eimeria* spp. recovered from lambs. *1.E. ovinoidalis 2.E. crandallis, 3.E. ahsata, 4.E. pallida, 5.E.parva, 6.E.ninakolykimovae, 7.E.granulosa, 8.E.faurie, 9.E. intricata* (X100).

Table 2: Some Characterestics of *Eimeria* species affecting Lambs

Species	Mean size of	Shape	Wall	Colour	Micropyle
E.ovinoidalis	28.6x20.8	Ellipsoidal	Smooth	Pale-yellowish brown	Present
E.crandallis	23.4x20.8	Sub-spherical	Smooth	Pale-yellowish	Present
E.parva	15.6x13.0	Spherical to subspherical	Smooth	Colourless	Absent
E.ninaekohlya-kimovae	23.4x17.5	Ellipsoidal	Smooth	Colourless	Absent
E.ahsata	39.0x26.2	Ellipsoidal	Smooth	Yellowish brown	Present
E.faurei	31.2x23.4	Ovoidal	Smooth	Pale-yellowish brown	Conspicuous
E.pallida	10.4x13.0	Ellipsoidal	Very-smooth	Pale-yellow	Absent
E.granulosa	33.8x25.7	Urn-shape	Smooth	Yellowish brown	Present
E.intricata	49.4x32.5	Ellipsoidal	Thick	Brown	Present

Table 3: Percentage of different *Eimeria* infections in Lambs from (December-March)

Months	Weeks	(E.o)	(E.c)	(E.p)	(E.n)	(E.a)	(E.f)	(E.p)	(E.g)	(E.i)
	1	30	20	16	15.5	7.5	9	28	0	0
December	2	19	25	17.5	16.5	7	9.5	4.5	0	0
		50	15	18	11	15	10	10	0	0
	4	40	27	9	4	11	3	6	0	0
Mean		24.7	21.7	15.1	11.7	10	7.8	5.6	0	0
	5	21	19	10	7	1	13	0	0	0
January	6	25	19	16	8	4	19	8	1	0
	7	32	25	19	7	5	4	7	1	0
	8	38	18	20	8	7	4	5	0	0
Mean		29	20.9	16.2	7.5	4.2	10	5	0.5	0
	9	21	15	17	12	15	10	10	0	0
February	10	30	18	15	15	7	10	5	0	0
	11	32	18	5	15	21	1	6	2	0
	12	25	15	15	13	25	2	5	0	0
Mean		27	16.5	13	13.7	17	5.7	6.5	0.5	0
	13	12	34	27	15	5	0	5	2	0
March	14	15	25	20	20	8	2	10	0	0
	15	20	30	15	24	8	0	1	1	2
	16	20	23	14	19	15	0	6	1	1
Mean	16.7	16.7	28	19	10.7	9	0.5	5.5	1	0.7
Total		26.8	21.6	15.8	13.1	10	6	5.5	0.5	0.1

Key to *Eimeria species*

E.o *E.ovinoidalis*
E.c *E.crandallis*
E.p *E.parva*
E.n *E.nanakolykimovae*
E.a *E.ahsata*
E.f *E.faurie*
E.p *E.pallida*
E.g *E.granulosa*
E.i *E.intricata*

DISCUSSION

Nine species of Eimeria were recognized for the first time in lambs in Iraq. The morphological characteristics of these species of *Eimeria* are similar to those reported by earliar workers from other parts of the world (5.6). *E.ovinoidalis and E.crandallis* which were the most predominant species in this study are known to be particularly pathogenic causing sever lesions in the illeum and sometimes in the caecum of lambs . However the sources of the cocysts resposible for the coccidiosis in the lamb is particularly intersting, these lambs were all born indoors. Therefore the source of infection could be from the infected ewes. The faeces of most ewes contained oocyst of the predomnant species of *Eimeria*. Infection could be through chewing and biting of materials contaminated with the ewes faeces.

The correlation between the oocyst counts and clinical coccidiosis is further complicated when the same animals harbour many different species of *Eimeria*. According to the data on oocyst out-put may be misleading as oocyst out-put is usually high in healthy lamb showing no signs of clinical coccidiosis. Also lambs may die an acute coccidiosis before the occysts are shed in the faeces. Furthermore the out put of oocysts following an acute infection falls sharply after the peak which may leave critically ill animals with bloody diarrhoea and low oocyst counts. Our observations showed that lambs which were 4-8 weeks old had the highest oocysts counts while the older ones had the lowest counts (Fig. 1). They are in accordance with the observations of (8,9).

The incidence of infection was higher during December and January which may be due to rainfall, humidity, type, of management and unhygienic condition of feeding and watering, whereas the low incidence of infection recorded during March may be due to the fact that lambs have developed some immunity to various coccidial species, (10). Our findings that 83.8% of the lambs were infected with more then one coccidial species (Table 3), have also been reported by the above authors. It is hoped that our finding will be of importance and relevance to the

currently expanding sheep breeding and production programmes in Iraq.

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انتشار انواع الكوكسيديا في الحملان لمنطقة بغداد

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الخلاصة

جمعت (402) عينة من براز حملات باعمار مختلفة ولغاية (4) اشهر لمنطقة بغداد وبعد فحصها اتضح انها مخمجة بطفيلي الكوسيديا حيث كانت نسبة الخمج (83.8%) في الحملان التي تراوحت اعمارها من (3-8) اسابيع.
وقد فحصت تسعة انواع من الكوكسيديا وهي :
E.ovinoidali *E.ahsata* *E.ninakolykimovae* *E.parva* *E.crandallis* *E.intricata* *E.granulosa* *E.pallida* *E.faurie*
اما النوعان
E.crandallis : *E.ovinoidalis*
فكان اكثر انتشار من الانواع الاخرى.