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Percentage Prevalence of Eimerian Species Composition of Sheep and Goats from Beed District, Maharashtra

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Abstract

During the present study ten specimens of *Eimeria* from sheep and twelve species of *Eimeria* from goats were encountered. The relative prevalence of the sheep and goats are analysed.

Key Words: *Eimeria*, Sheep, Goats

Introduction

Eimeria is a genus of apicomplexan parasites that includes various species responsible for the disease coccidiosis. Coccidia are microscopic, spore – forming, obligate, and intracellular parasite. These species cause pathological damage and mortality in poultry, cattle, sheep, goats, pig, rabbit and other animals. Because of this reason coccidia have attracted the attention of many workers. The coccidia have enhanced medical as well as veterinary and general biological importance. In view of this the present study was initiated to record the coccidia in sheep and goats of this region. Several workers have studied the % prevalence of Eimerian species in sheep and goats; [15, 10, 4, 3, 13, 6, 20, 18, 5, 16, 9, 2, 12, 17, 19, 8, 14, 22, 1, 7, 21 and 11]

Material and Methods

The material for the study of the coccidia of sheep and goats was obtained from various slaughter houses in and around Beed district (M.S.). The different parts of the intestine of slaughtered sheep and goats were examined and processed within 4 – 5 hours after collection. The sample was examined for the presence of oocysts after sieving and centrifugation at 3000 rpm for 10 minute. The oocysts collected were spread out in shallow petridishes in 2.5% potassium dichromate solution for sporulation.

Observations and Results

A comparative study of the prevalence in sheep and goats in this area showed that the prevalence is higher in sheep than goats, being 24.12% as against 20.03% Table1.

Table 1. Prevalence of incidence (%) in sheep and goats.

Sr.No.		Samples examined	Samples positive	% of prevalence
1.	Sheep	2462	594	24.12%
2.	Goats	2636	528	20.03%

Table 2. Prevalence of Eimerian species in sheep and goats in Beed district.

Sr. No.	Species	% of Prevalence			
		Positive samples (594)	Total samples (2462)	Positive samples (528)	Total samples (2636)
1	*E. ahsata*	9.25	02.23	07.57	01.51
2	*E. crandallis*	18.18	04.38	13.63	02.73
3	*E. intricata*	10.26	02.47	10.41	02.08
4	*E. ninakohlyakimovae*	12.62	03.04	11.17	02.23
5	*E. parva*	15.15	03.65	12.12	02.42
6	*E. weybridgensis*	13.80	03.33	--	--

7	*E. ajantai*	05.72	01.38	--	--
8	*E. ovina*	06.90	01.66	--	--
9	*E. balloonii* n.sp.	04.37	01.05	--	--
10	*E.beedatus* n. sp.	03.70	00.89	--	--
11	*E.arloingi*	--	--	15.15	03.03
12	*E. christenseni*	--	--	08.90	01.78
13	*E. parbhaniensis*	--	--	05.68	01.13
14	*E. hirci*	--	--	06.62	01.32
15	*E.straightatus* n. sp.	--	--	03.97	00.79
16	*E. susheelensis* n. sp.	--	--	02.84	00.56
17	*E. leafii* n. sp.	--	--	01.89	00.37

The species composition showed that the sheep in Beed district harboured ten species of *Eimeria* while the goats had twelve species. Five species of *Eimeria* were common in both the hosts, while five species occurred only in sheep and seven species only in goats.

The Eimerian species found in sheep are *E. crandallis, E. parva, E. weybridgensis, E. ninakohlyakimovae, E. intricata, E. ahsata, E. ovina, E. ajantai, E. balloonii* (n.sp.) and *E. beedatus* (n.sp.) and in goats *E. arloingi, E. crandallis, E. parva, E. ninakohlyakimovae, E. intricata, E. christenseni, E. ahsata, E. hirci, E. parbhaniensis, E. straightatus* (n.sp.), *E. susheelensis* (n.sp.) and *E. leafii* (n.sp.). Percentage of ten Eimerian species in sheep show that *Eimeria crandallis* was the most frequent, being found in 108 out of 594 positive samples (18.18%) or 4.38% of the total samples. *Eimeria parva* was the second common species found in 90 out of 594 positive samples, representing 15.15% of the positive samples and 3.65% of the total samples examined. *Eimeria weybridgensis* was the third species found in 82 out of 594 positive samples, representing 13.80% of the positive samples and 3.33% of the total samples examined. *Eimeria ninakohlyakimovae* was the fourth found in 75out of 594 positive samples, representing 12.62% of the positive samples and 3.04% of the total samples examined. *Eimeria intricata* was the fifth found in 61out of 594 positive samples, representing 10.26% of the positive samples and 2.47% of the total samples examined. *Eimeria ahsata* was the sixth species found in 55 out of 594 positive samples, representing 9.25% of the positive samples and 2.23% of the total samples examined. *Eimeria ovina* was the seventh species found in 41 out of 594 positive samples, representing 6.90% of the positive samples and 1.66% of the total samples examined. *Eimeria ajantai* was the eighth species found in 34 out of 594 positive samples, representing 5.72% of the positive samples and 1.38% of the total samples examined. Two new species are recorded, *Eimeria balloonii* and *Eimeria beedatus. Eimeria balloonii (n.sp.)* was the new species found in 26 out of 594 positive samples, representing 4.37% of the positive samples and 1.05% of the total samples examined. *Eimeria beedatus (n.sp.)* was the new species found in 22 out of 3.70% of the positives samples and 0.89% of the total samples examined.

Percentage of twelve Eimerian species in goats show that the commonest was *E. arloingi*, it was found in 80 of 528 positive samples, showing a prevalence of 15.15% of the positive samples or 3.03% of the total sample examined. *E. crandallis* was the second common species found in 72 out of 528 positive samples representing 13.63% of the positive samples and 2.73% of the total samples examined. *E. parva* was the third species found 64 out of 528 positive samples representing 12.12% of the positive samples and 2.42% of the total samples. *E. ninakohlyakimovae* was the fourth found 59 out of 528 positive samples representing 11.17% of the positive samples and 2.23% of the total samples examined. *E. intricata* was the fifth found in 55 out of 528 positive samples, representing 10.41% of the positive samples 2.08% of the total samples. *E. christenseni* was the sixth species found in 47 out of 528 positive samples, representing 8.90% of the positive samples and 1.78% of the total samples examined. *E. ahsata* was the seventh species found in 40 out of 528 positive samples representing 7.57% of the positive samples and 1.51% of the total samples. *E. hirci* was the eighth species found in 35 out of 528 positives samples, representing 6.62% of the positive samples, and 1.32% of the total samples. *E. parbhaniensis* was the ninenth species found in 30 out of 528 positives samples, representing 5.68% of the positive samples and 1.13% of the total samples. Three new species are recorded, *Eimeria straightatus*, *Eimeria susheelensis* and *E. leafii. E. straightatus was* the new species found 21out of 528 positive samples representing 3.97% of the positive samples and 0.79% of total samples. *E. susheelensis* was the second most new species found in 15 out of 528 positives samples, representing 2.84% and 0.56% of the total samples examined. *Eimeria leafii* (n.sp) was the third found in 10 out of 528 positives samples representing 6.62% of positive samples and 1.32% of the total samples examined, the percentage was being frequently less. (Table 2)

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