

## Study on prevalence rate of Coccidiosis in diarrheic calves in East-Azerbaijan province

<sup>1</sup>Yousef Davoudi, <sup>2</sup>Yagoob Garedaghi, <sup>3</sup>Freydoun Nourmohammadzadeh, <sup>3</sup>Zahra Eftekhari, <sup>4</sup>Saied Safarmashaei

<sup>1</sup>Department of clinical science, Sarab Branch, Islamic Azad University, Sarab, Iran.

<sup>2</sup>Department of Pathobiology, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

<sup>3</sup>Department of clinical science, Tehran University, Tehran, Iran.

<sup>4</sup>Young Researchers Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

Yousef Davoudi, Yagoob Garedaghi, Freydoun Nourmohammadzadeh, Zahra Eftekhari, Saied Safarmashaei

### ABSTRACT

Neonatal calf diarrhea is a major health problem that has economical losses as a culling, emaciation and treatment costs. Coccidiosis is an importance disease for calves and case of diarrheal disease in animals that cause dysentery in calves especially in 3 months old. This study was carried out on newborn calves in different parts of East Azerbaijan province due to one year. Five hundred fecal samples were taken from diarrheic calves under the age of months from 25 commercial dairy farms. After taking samples from rectum of the diarrheic calves, the samples kept in formalin 5 % the samples were examined by direct test and concentration with formalin ether. The positive samples for Coccidia were confirmed as 18 % a significant difference was found between the prevalence rates in relation to the seasons of study ( $p < 0.05$ ). The highest prevalence rate was in summer (28%) and the least rate was in winter (13.6%).

**Key words:** Coccidiosis, calves, diarrheic, East Azerbaijan province, Iran.

### Introduction

Bovine coccidiosis occurs worldwide and usually affects cattle under 1 year old, but is occasionally seen in yearlings and even adults, especially if massive infections are acquired [11]. Of the 13 species recorded, two of the principal pathogens are *Eimeria zuernii* and *E. bovis* [12]. *E. zuernii* and *E. bovis* are usually isolated when clinical cases of bovine coccidiosis (severe diarrhea, dysentery, or tenesmus) occur in heavy infections [13,12]. Some authors [14,15] reported that the experimental calves infected with *E. zuernii* and *E. bovis* lost weight rapidly on day 21 after infection. According to Bejsovec [16], of 988 calves examined in large-capacity calf houses, 61.1% excreted coccidia oocysts and the most commonly recorded species were *E. zuernii* (49.5%) and *E. bovis* (28.8%). Drake *et al.* [17] reported that the prevalence of coccidia oocyst

was 18.7% in California's beef cattle. Eimerian coccidian are members of the suborder Eimeriina, and they are typically highly host-, organ- and tissue-specific. *Eimeria* spp. is one of the parasites of preferential interest during the early life span of both calves and lambs, with increasing prevalence beginning 3 weeks after birth and finally cumulative incidences of up to 100% [9,1]. The aim of present study was to determine the prevalence rate of Coccidiosis in diarrheic calves in East-Azerbaijan province.

### Material and method

This survey is one cross-sectional study and from April 2010 to April 2011 was done. In present study a total number of 500 fecal samples from different industrially farm in Tabriz area were taken. These fecal samples of diarrheic calves with age of

### Corresponding Author

Yousef Davoudi, Department of clinical science, Sarab Branch, Islamic Azad University, Sarab, Iran.  
E-mail: Davoudi.yousef@gmail.com

less than 2 month during 4 seasons (every season 125 samples) for parasitology examination were collected. Fecal samples by swab or finger touch rectal were taken and after transferred to parasitology laboratory, and then these samples by direct smear were studied. Of course for observation the internal stature of this parasite of logol were used. Values were represented as mean±SEM. Data were analyzed by one-way analysis of variance (ANOVA) followed by Dunnett's test using statistical package for social sciences (SPSS) version 10. P<0.05 was considered significant.

**Results**

All results of present study consist of prevalence rate of Coccidiasis in different ages and season that in following table have been shown.

**Table 1:** Prevalence rate of Coccidiosis in fecal samples during different season

Prevalence Rate	Number of Samples	Positive Samples	Season
14.4%	125	18	Spring
28%	125	35	Summer
16%	125	20	Autumn
13.6%	125	17	Winter

**Table 2:** Prevalence rate of Coccidiosis in different age

Prevalence Rate %	Number of Samples	Positive Samples	Age (week)
6.95	115	8	1
13.43	134	18	2
21.5	93	20	4
22.77	101	23	6
36.84	57	21	8

temperature, and oxygen tension influence the pattern of the disease [6]. In addition, stress factors like weaning, change of diet, harsh environment, poor nutrition and sanitation, and overcrowding can increase level of infection and incidence of the disease due to stress-induced immunosuppression [7,8]. According to results of present study maximum infestation rate from season and age aspects in summer and in age of 8 week were observed. The results of the present work show the importance of eimerial infections in calves in the area of study. This parasite could be responsible for important body condition losses in these ruminant hosts.

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**Conclusion:**

Eimeria infections are one of the most common and important disease of cattle worldwide [4,5]. Bovine coccidiosis has been observed in almost all areas where cattle are raised and is usually most common and important in calves younger than 1 year. All calves managed under conventional systems are exposed and become infected early in life. All age groups of cattle are susceptible to infection, but clinical eimeriosis is most common in young animals [5]. Coccidiosis in cattle commonly occurs as subclinical disease without signs of the disease and involving great economical losses due to reduced appetite, reduced body weight, impaired feed conversion, unthriftiness, diarrhea, dysentery, anemia, and increased susceptibility to other diseases [10,2]. A number of epidemiological factors like moisture,

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