Aim: The present study was undertaken to know the Prevalence of chicken coccidiosis in Jammu division in both organized and backyard chickens during the year 2010-11.

Materials and Methods: A total of 720 faecal samples were collected from both organized farms and backyard poultry (unorganized) sector of Jammu.

Results: The overall prevalence of 39.58% was recorded in the present study and five Eimeria species were identified viz., E. tenella, E. necatrix, E. maxima, E. acervulina and E. mitis. E. tenella was the predominant species in both organized and unorganized farms.

Conclusion: Higher prevalence of 53.61% in unorganized (backyard poultry birds) as compared to organized birds (25.55%) was recorded. The prevalence was the highest in monsoon from both organized and unorganized managerial practices.

Key words: backyard chicken, Eimeria, Jammu, poultry,

Introduction

India is one of the world’s largest and fastest growing poultry industries, ranking third in hen egg production and sixth in broiler meat production. According to Ministry of Food Processing Industries, about 70% of poultry is in the organized sector and 30% is in the unorganized sector. Broiler production grew at an annual percentage growth rate of 8.35% from 2001(1.25 million metric tons) to 2010 (2.65 million metric tons). Per capita consumption has grown from 1.22 kilograms in 2001 to 2.26 kilograms in 2010. India’s egg production is anticipated to reach 2.039 million in 2003 to 3.48 million in 2007 [2]. But the tremendous growth of poultry industry in India is hampered by various factors and prevalence of various diseases in poultry are of main concern. Among the various diseases, protozoan parasites of the genus Eimeria, which resides and multiplies in intestinal mucosa causing coccidiosis [3] characterized by dysentery, enteritis, emaciation, drooping wings, poor growth, low production [4,5] with high rate of mortality and morbidity [6]. Mortality and economic losses especially in case of outbreaks, are frequent [7, 8] and it causes high mortality in young chicks because most of the Eimeria spp affects birds between the age of 3 and 18 weeks [9,10]. Due to higher stocking densities and intensive husbandry practices, its incidence is being increased in poultry [11].

E. tenella and E. necatrix are the most pathogenic species. E. acervulina, E. maxima and E. mivati are common and slightly to moderately pathogenic; E. brunetti is uncommon but pathogenic when it does occur. E. mitis, E. praecox and E. hagani are relatively non-pathogenic species [12,13]. In view of the lack of authentic information available regarding the prevalence of Eimeria sp. affecting poultry in Jammu region, the present study was undertaken to find out the prevalence and identify various species of Eimeria affecting poultry in the area.

Materials and Methods

Poultry birds maintained under two managemental conditions viz. organized and unorganized (backyard poultry birds) were used in this study. A total of 720 faecal samples were collected from organised farms and backyard poultry (unorganised) of Jammu. The faecal samples were collected directly from floors of backyard poultry and commercial farms and stored in plastic containers. The particulars like age, farm and economic losses especially in case of outbreaks, were recorded. The samples are frequent [7, 8] and it causes high mortality in young
recovered were kept in two lots of 2.5% potassium dichromate solution (K2Cr2O7). The material of one lot was poured in Petri dishes to a depth of 3-4 mm and kept in Biological Oxygen Demand (BOD) incubator at a temperature of 30±2°C for sporulation. The other lot of culture was kept at 4°C. The culture of both the lots was examined and morphological characters were studied before and after sporulation [12,14,15].

**Results and Discussion**

The results of microscopic examination of 720 faecal samples are depicted in the (Table-1). An overall occurrence of 39.58 % infection recorded was mostly of a mixed type with two or more Eimeria sp. Among the two managemental practices, poultry reared under organized farm management showed 25.55% infection while as the backyard chickens (un-organised) harbored 53.61% infection with Eimeria sp. The prevalence was the highest in monsoon from both organized and unorganized managemental practices at 58.24% and 68.82% respectively. In the present study, percentage prevalence of infection in backyard chickens may be high due to poor managemental practices, malnutrition and non-use of coccidiosis as preventive measures. The warmth and moisture in such environment favours greater transmission and contamination of oocysts. In the present study, the prevalence of coccidiosis in chickens was highest in monsoon and lowest in summer. The present finding is in commensuration of Jithendran [16] who recorded highest coccidial infection in chickens during monsoon season in India, indicating the seasonal influence on the prevalence of coccidiosis. However, the higher prevalence rate of coccidiosis during the rainy season also agrees with earlier reports of [18, 19, 20]. In the present study, the high prevalence in monsoon period could be attributed to increase in rainfall with subsequent high humidity and drop in temperature which is conducive for sporulation of oocysts for easy dispersion and transmission.

**Authors’ contribution**

SS and SA implemented the study design. AI and HS helped in collection of research material, drafted the manuscript and revised the manuscript. All authors read and approved the final manuscript.

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**Competing interests**

Authors declare that they have no competing interest.

**References**


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Coccidiosis in Poultry Also known as: Eimeria Coccidiosis is an intestinal disease caused by intracellular protozoal parasites (Allen and Fetterer, 2002). Coccidiosis occurs when pathogenic populations of the causative agent rapidly build up. However, one study found that oregano may only be effective in birds that were not already vaccinated against coccidia (Oviedo-Rondon et al, 2006). Treating Coccidiosis. Many products are available for prevention or treatment of coccidiosis in chickens, via both feed and water, with withdrawal periods ranging from 0-10 days. Some drugs can be used to treat the disease and support the build up of immunity, whereas others only treat infection at the time of administration, with follow-up doses required. Poultry coccidiosis is an economically important disease in chicken caused by the intracellular protozoan parasite of Eimeria species in the genus Eimeria family Eimeridae order Eucoccidiorida and phylum Apicomplexa (Taylor et al., 2007). Seven species of Eimeria (E. acervulina, E. brunetti, E. maxima, E. mitis, E. necatrix, E. praecox and E. tenella) are recognized as infecting chickens. For instance prevalence rate of 50.8% and 11% in deep litter intensive system and backyard extensive production system, respectively was reported from Debrezeit and its surrounding (Fessessework, 1990). Study on coccidiosis in Kombolcha poultry farm, Ethiopia. Tropical Animal Health and Production, 37 (3): 245-251. Reid. In this study prevalence of chicken coccidiosis in Jammu division were undertaken in both organized and backyard chickens during the year 2010-2011, with an overall prevalence of 39.58% on examination of 720 faecal samples. Five Eimeria species were identified viz., E. tenella, E. necatrix, E. maxima, E. acervulina and E. mitis. E. tenella was the predominant species in both organized and unorganized farms. The highest prevalence percentage was found in July, 2011 (68.9%) and the lowest percentage was found in May, 2011 (12.5%). Coccidial prevalence was found to be 53.61% in unorganized (b...