EFFECT OF HOUSING ON OPG (OOCYSTS PER GRAM) COUNT OF OSMANABADI KIDS IN MUMBAI REGION

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Abstract: The present study was conducted to investigate the effect of housing on the occurance of coccidiosis in stall fed male Osmanabadi kids after weaning. For this reason, sixty kids were randomly selected and half of that were housed in katcha housing system and other half in pucca housing system. In both the houses, the kids were divided into three groups Gr.T_0, T_1 and T_2 with different floor space allowance of $0.8m^2$, $0.7m^2$ and $0.6m^2$/kid respectively. All the management practices were same in all of the groups. There was significant ($P<0.05$) effect of housing system on the occurance of Coccidiosis and thereby on Oocysts per gram (OPG). Floor space allocation also played a catalyst for the emergence of the Coccidiosis and was directly proportional to the OPG count.
Keywords: Housing, Floor space, Coccidiosis, Osmanabadi kids, katcha housing, pucca housing, OPG.

INTRODUCTION

Goat, in real sense, is regarded as a poor man's cow due to its tremendous economic implications in contributing milk, meat and ultimately household nutrition security to the socially and economically rotten people. Goat milk is considered as one of the good milk for infants, children and other human beings as the goats feeds on variety of plants, grasses and leaves. In recent years, there has been much interest worldwide in rearing goats, since goats are superior in many respects to other farm animals. Goats are more tolerant to unfavourable condition of the surrounding than other farm animals. Owing to such advantages, goat husbandry is becoming important despite the perceived notion that goats are destructive (Agyei *et al*., 2004).

The goat population in India ranks (135.17 million) second in the world. The success of goat husbandry depends on the disease free status of the herd, for which knowledge of various disease entities affecting them is of paramount importance (Kumar and Prasad, 1986). To provide full health coverage and optimize the production from goats, it is mperative to minimize the disease of goat. Amongst pathogen oriented diseases, ecto-endo parasites are

known to cause lowered resistance, loss of production and even mortality. One of the economic important internal parasite of the goat is Eimeria species causing coccidiosis.

Coccidiosis is one of the most economic vital disease of sheep and goats worldwide (Foreyt, 1990) and more particularly when goats are reared on intensive management practices (Chhabra and Pandey, 1991). Coccidia infection may occur in clinical and subclinical form. Clinical coccidiosis is characterized by diarrhoea, dehydration, emaciation, weakness, loss of appetite and death results if not treated timely (Maiti *et al*., 1997). Eimeria infestation happens more commonly in kids of 4-6 months of age when goats are kept under unhygienic and overcrowded houses (Varghese and Yayabu, 1985). Usually poor management is a predisposing factor for coccidiosis.

13 species of Eimeria have been documented causing coccidiosis in goats (Chhabra and Pandey, 1991) of which E. arloingi, E.ninakohlyakimovae and E.christenseni are considered as most pathogenic. The disease condition results in heavy losses in goats (Craig, 1982), in the form of diarrhoea and poor weight gain (Fuente and Alunda, 1992), morbidity and mortality (Lalan kumar *et al*., 2005). Therefore the present study was framed to analyse the effect of housing system and floor space allowance on the prevalence of coccidiosis in the designed experiment.

MATERIALS AND METHODS

Total fifty Osmanabadi kids after weaning i.e after 3 months of age were taken into consideration for the above study. Thirty numbers of kids were housed in katcha house and other thirty were in pucca house under intensive management. There was again partition arrangement in both the houses for the sake of study into 3 compartments like Gr. T_0, T_1 and T_2 basing on the floor space availability.

Gr.T_0- 0.8m^2 floor space/kid (10 kids)

Gr.T_1- 0.7m^2 floor space/kid (10 kids)

Gr.T_2- 0.6m^2 floor space/kid (10 kids)

There is no difference between katcha and pucca housing system except the fact that the floor of the earlier one was made of normal mud and soil and the floor of the later one was made of concrete. The height of the shed was same as 3m in both the houses which was a lean type of house. Feeding management was taken care of by providing both roughage as green fodder and concentrate as pellets purchased from the market which contains all essential nutrients and given twice a day. Waterer was provided as drinking facility at the corner of each group. Vaccination was performed before their entry into research. The maximum efforts were being

exerted to make the floor of houses dry and clean. The houses were cleaned once a day. All the animal were confined and entirely stall fed throughout the experiment. The research was carried out in the month of April.

All the samples brought to the laboratory were processed by Stoll egg dilution technique for the determination of OPG. Faecal samples were collected from the rectum of the kids.

Stoll egg dilution technique

1.   1 gram of faeces was Weigh out.

2.   15 ml of water was measured out and placed it into a dish. Using a tongue depressor, 1 gram of faeces pushed through a sieve into the water. The sieve was lifted and hold over the dish. Push out any remaining water from the faeces.

3.   While stirring the water-faeces mixture, 0.15 ml of the suspension was taken and spread over 2 slides. Each slide was covered with a long coverslip.

4.   Both slides were examined for worm eggs; the total number of eggs counted X 100 represented the number of eggs per gram of faeces.

Statistical analysis was performed by using one sample t-test among the groups and Chi-square test between the houses as performed using the software by Jangam and Thali (2008).

RESULTS AND DISCUSSION

The table and figure gave a detailed version of the happening of the prevalence of coccidia in the confined system of housing under different floor space. Average OPG counts were 9393 ± 1951.97 and 9715 ± 1943.48 in katcha and pucca housing system respectively. There was a significant effect (P<0.01) of housing system on the variation of OPG count. As far as different floor aspect is concerned, during the experiment it has been observed the augmenting trend of the OPG count as the increasing scenario of floor space provision. From the statistical point of view, the effect of different floor space allowance laid down a significant (P<0.05) difference on the OPG count in both katcha and pucca housing system.

Chabbra and Pandey (1991) opined that kids passed over 10000 OPG with severe infections. Koudela and Bokova (1998) viewed OPG in goat farm was ranging from 1000 to 80000. Fuente and Alunda (1992) deliberated the same within the range of 100-10000 in goats. The OPG count of the present studies made a same alignment with the result of above researchers. As far as the age aspect was concerned, Lloyd and Soulsby (1978) stated the OPG value of 100-186000 in 6 month above kids which justified the present research. Norton (1986) also put the fact of establishment of OPG count with a range of 50 to 33700 in goats less than 1 year old which was also an according argument with the present finding.

Since the kids were housed under complete confinement, the system called Intensive management put the consequence of having more no. of coccidian infections than the other management system.

It was observed that the prevalence of coccidian disease is high in goats reared under intensive system (Prasad *et al.* 1981; Vihan et al 1988; Ahmed *et al.* 1992). The similar image was fetched during the present study.

The goats reared on Pucca floor possess more coccidian infection than that of Katcha floor as evidenced by Lloyd and Soulsby (1978) which coincides with the present work.

Stewart and Soll (1994) postulated that Overcrowding condition favours rapid transmission and build up of environmental and high coccidian infection in animals. Same thought was carried out by Khillare (2010) who gave emphasis on the occurrence of coccidian infection as a function of keeping the animals in high density and low density housing. The present interpretation regarding effect of floor space allowance on OPG draws a congruent view to the findings of the above researchers.

CONCLUSION

It can be concluded that the housing playing an important tool for goat housing has another side of emanating the cause of coccidiosis as far as the type of housing and provision of different floor space is concerned.

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Table: Effect of housing management on OPG count of Osmanabadi kids

Groups	OPG (Mean ± Standard Error)	
	Katcha housing	**Pucca housing**
T_0	9075 ± 1937.44^a	9096 ± 1965.76^a
T_1	9090 ± 1866.29^b	10010 ± 1891.25^b
T_2	10014 ± 2052.18^c	10040 ± 1973.44^c
Average	9393 ± 1951.97^A	9715 ± 1943.48^B

a, b, c Means with different superscripts in a column differ significantly (P<0.05)
A,B Means with different superscripts in a row differ significantly (P<0.01)