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Morbidity Pattern in Deccani Sheep Maintained at Organised Farm

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Abstract: *A study was undertaken to investigate Morbidity profile of Deccani Sheep maintained at organized farm. The data recorded over the period from 2000 to 2014 at the Network Project on Sheep Improvement, Mahatma Phule Krishi Vidyapeeth, Rahuri (M.S) were utilized for the present study. During this period morbidity of 3266 animals was recorded out of 18159 animals. The overall morbidity during the period was 17.99per cent. The higher morbidity was recorded in the late age i.e. adults. According to their birth weights, the highest percentage of morbidity was found in the lamb with low birth weights (below 3 kg) (20.99per cent) than the heavy birth weights (above 3.5 kg) (14.31per cent). The overall morbidity was highest in winter (24.58per cent), followed by rainy (16.72per cent) and summer (14.39per cent) seasons. The morbidity in females (27.59per cent) was higher than that of males (11.68per cent) in all age groups studied. The maximum number of lamb infected due to disorders of Alimentary tract (30.80per cent), followed by General systemic (20.91) disorders and Non- specific (18.86per cent). In the Alimentary disorder Diarrhea and anorexia was the major cause, while in general systemic Pneumonia, pyrexia accounted for higher morbidity in Deccani sheep.*

Key Words: *Deccani sheep, Morbidity, Sex wise morbidity,birth weight wise morbidity.*

INTRODUCTION

India ranks 3rd in sheep population (65.06 million) in the world with annual growth rate of 4.13 per cent. Wool obtained from sheep was 46.10 million kg. Sheep contribute Rs. 21,787 corers to the national income through mutton, skin, wool, hide, and manure production among livestock enterprise (Anonymous, 2012).

India is a rich repository of sheep in genetic resources having 42 breeds (Jain *et al.*, 1998). Among them, Deccani is promising breed of Maharashtra mainly reared on the eastern part of state where maximum rainfall is 75 to 87 cm and temperature ranges from 5 to 40°c. The breed is classified as course type wool breed and also used for mutton purpose. Among various factors contributing to suboptimal productivity of sheep, diseases appear to cause substantial economic losses. Information on diseases occurring in the flock is essential for development of modification of sheep health management programme. The available data on diseases of sheep, however, is fragmented and statistically invalid, and do not represent the whole spectrum of health problems of sheep in many South Asian countries.

MATERIALS AND METHODS

The data generated during the period from 2000 to 2014 at the Network Project on Sheep Improvement, Mahatma Phule Krishi Vidyapeeth, Rahuri (M.S). The observations on the date of birth, body weight, season, age at the time of disease incidence and causes of morbidity were recorded from annual reports maintained at the project. The data were classified according to various effects such as Year wise morbidity pattern, Season of disease incidence

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i.e. (Rainy, Winter and Summer), Birth weight groups i.e. (Below 3.0 kg, 3.0 to 3.5 kg and Above 3.5 kg), Age groups i.e. (Up to 3 months, 3-6 month, 6-12 months and Adults), Type of sex, causes of morbidity. The causes of morbidity were studied as per the standard nomenclature of veterinary diseases and case paper maintained at sheep project. The data of morbidity presented were tested for their significance by Chi-square test (Snedecor and Cochran, 1994).

RESULTS AND DISCUSSION

Table 1
Effect of non-genetic factors on morbidity in Deccani sheep

Effect	*Season*		*Birth Weight (per cent)*		*Age (per cent)*		*Sex*	
Overall Mean	*17.99*		*17.99*		*17.99*		*17.99*	
	Summer	**14.39**	0-3 kg	**20.99**	0-3 Month	**8.67**	Female	**27.59**
	Rainy	**16.72**	3-3.5 kg	**19.37**	3-6 Month	**7.52**		
	Winter	**24.58**	Above 3.5 kg	**14.31**	6-12 Month	**15.33**	Male	**11.68**
					Adult	**30.87**		
Chi-square value(X2)	**205.82****		**94.016****		**1305.16****		**737.19****	

** = P<0.01

Effect of season

Effect of season of disease incidence on morbidity was highly significant (p<0.01). The overall morbidity is significantly high in winter season (24.58 per cent) of disease incidence followed by rainy season (16.72 per cent) and the lowest in summer season (14.39per cent). Similar pattern is also noticed in all the age group under study. The results obtained indicate significant (P < 0.01) difference in morbidity between the seasons because in winter season there is more number of insects and another parasites found on lush of grasses this is the main reason of digestive disorder. Since from last ten years seasons were shifting 2 to 3 months forward this is also reason for more morbidity observed in winter. The results clearly show the increasing trend of morbidity in winter, rainy and summer season respectively. The lamb morbidity which coincides with the our results reported by Sharma *et al.* (1984), Gupta and Sengar (1985), Singh *et al.* (1990), Thiruvenkadam *et al.* (2003), , and Erhan *et al.* (2013). Chaudhary (2014)

Effect of birth weight

The overall morbidity was significantly (p<0.01). highest in birth weight group below 3.0 kg (20.99per cent) followed by 3.0 to 3.5 kg birth weight group (19.37per cent) and the lowest in birth weight group above 3.5 kg (14.31per cent). Similar trend was also noticed in all age groups under study. The Table clearly shows the decreasing trend with advancement in birth weight in the lamb morbidity because this is the basic science that, those living animals having lower birth weight, that will be surely became physically weak and susceptible to various diseases during lifespan. Which is in agreement with the results reported by Muzumdar *et al.* (1980), Westhuysen (1980), Mahajan and Acharya (1980), Prasad (1983), Gupta and Sengar (1985),Srivastava *et al.* (1991), Bekele *et al.*(1992), and Erhan Gokce *et al.* (2013).

Effect of age

The analysis of the data indicated the highly significant differences in lamb morbidity based on age groups (P<0.01). The Table clearly shows the increasing trend with advancement of age in the lamb morbidity. Highest morbidity was recorded in the age group adults (30.87per cent) and lowest in 3-6 months (7.52per cent) age group. It indicates that lambs of age group adults were more susceptible to the diseases as compare to lambs of age groups 0-3, 3-6 and 6-12 months. High adult age

morbidity might be due to rearing of old and senile animals. The increasing trend with advancement in age in the lamb morbidity which coincides with the results reported by, Piramanayagam *et al.* (2000), Thiruvenkadam *et al.* (2003), Balkrishnan *et al.* (2005), Soundararajan *et al.* (2009), Srivastava *et al.* (2009), Palanivel *et al.* (2011), Alharbi *et al.* (2012) and Chaudhary (2014)) in small ruminant.

Effect of sex

The analysis of the data indicated that highly significant differences of sex in morbidity. The overall lamb morbidity for females was higher (27.49per cent) than the males (11.68per cent).

Table 2
Morbidity pattern according to age and diseases in Deccani Sheep

Group	*Age group*				*Overall Lamb Morbidity*
	0-3	*3-6*	*6-12*	*Adults*	
General systemic	100 (26.66)	83 (29.85)	123 (23.56)	377 (18.02)	683 **(20.91)**
Alimentary disorder	147 (39.2)	107 (38.48)	211 (40.42)	639 (30.55)	1104 **(33.80)**
Respiratory disorder	4 (1.06)	5 (1.79)	3 (0.57)	62 (2.96)	74 **(2.26)**
Urogenital disorder	2 (0.53)	1 (0.35)	5 (0.95)	32 (1.53)	40 **(1.22)**
Toxemia / Septicemia	5 (1.33)	6 (2.5)	7 (1.34)	75 (3.58)	93 **(2.84)**
Parasitic disorder	0 (0)	1 (0.35)	2 (0.38)	12 (0.57)	15 **(0.45)**
Nervous disorder	17 (4.5)	13 (4.6)	35 (6.70)	150 (7.17)	215 **(6.58)**
Miscellaneous	47 (12.53)	28 (10.07)	62 (11.87)	289 (13.82)	426 **(13.04)**
Non specific	50 (14.1)	34 (12.23)	74 (14.19)	455 (21.75)	616 **(18.86)**
Total	375	278	522	2091	3266
Chi-Square value (x^2)	**112.69 ****				

Note: Figures in the parentthesis indicates per cent morbidity

DISEASE WISE MORBIDITY

The results obtained about lamb morbidity due to various diseases and disorders are given in Table 2. From the result obtained about the morbidity in lambs, it is seen that more number of adults lambs (2091) fell victim to diseases and disorders. Out of the total lamb morbidity highest morbidity is due to the Alimentary Disorder (33.80 per cent) followed by General systemic disorders (20.91per cent) and Non-specific disease (18.86 per cent).

In all the age groups 0-3, 3-6, 6-12 and adults in which Alimentary disorder shows highest morbidity as 39.2per cent, 38.48per cent, 40.42per cent, 30.55per cent respectively followed by General systemic (Temperature, cold, cough, pyrexia etc) as 26.66 per cent, 29.85 per cent, 23.56 per cent, 18.02 per cent respectively. The lamb morbidity which coincides with the results reported by Vihan *et al.* (1986), Koul *et al.* (1988), Dubey *et al.* (1989), Bekele *et al.* (1992), Lodh *et al.* (1993), Ameh *et al.* (2000),

Kusina *et al.* (2000), Mellor and Stafford (2004), Thiruvenkadam *et al.* (2003) and Soundararajan *et al*. (2009).

CONCLUSION

Maximum lamb morbidity was recorded in winter season. The higher lamb morbidity was noticed in the lambs born with less than 3 kg birth weight. Higher lamb morbidity was found in adult (above 12 months) age group of animal. Female lamb had higher morbidity than male lamb. Alimentary disorder (Diarrhoea, Anorexia) attributed for maximum morbidity, followed by General systemic (Pyrexia, Pneumonia) and Non-specific disease.

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