

Short Communication

Prevalence of Haemoparasites in Exotic Cattle

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ABSTRACT

A total of 347 exotic animals were examined for haemoparasites. One hundred and seventy seven out of 347 were found to be positive. In Jersey breed, adult cows 91.6%, Young stock 15.6% and sucklers 57.6% and in Friesian breed, adult cows 91%, young stock 35.2% and sucklers 36.8% showed single or mixed infections of haemoparasites. It was found that Friesian cows were more susceptible to theileriosis and young stock were more susceptible to babesiosis and Jersey cows were more susceptible to trypanosomosis. Young stock and sucklers of both breeds were found almost resistant to trypanosomes. Mortality occurred only in Jersey adult cows 10.4% and adult Friesian cows 11.9%. Range of temperature of morbid animals were almost same in both breeds.

Key Words: Prevalence; Livestock farm; Haemoparasites; Jersey; Friesian

INTRODUCTION

Holstein-Friesian and Jersey cows imported for cross breeding and improving milk production face several attacks of different diseases like foot and mouth, hepatic, respiratory disorders and mastitis. As a result of blood smear examination, single or mixed infections of haemoparasites were diagnosed which resulted in mortality, abortion and high economic losses due to reduced milk production. The worldwide incidence of haemoparasites in cattle and buffaloes has been reported by different workers. For example trypanosomosis in cattle and buffaloes (Laha *et al.*, 1989; Thach *et al.*, 1996). The present study was designed to investigate the prevalence of haemoparasites in Holstein Friesian and Jersey cattle maintained at livestock experiment station Bhunikey (Pattoki) Kasur, Pakistan.

MATERIALS AND METHODS

A total of 347 blood smears from Jersey and Friesian cattle cows, young stock and sucklers were examined during the month of July. Diagnosis of hemoparasites was made using Giemsa's stained blood smear examination technique (Monzon *et al.*, 1990). Rectal temperature and clinical findings were recorded. All the animals were kept under similar management conditions.

RESULTS AND DISCUSSION

Out of 347 animals, 177 (51%) were found to be positive for mixed infection of haemoparasites. The prevalence of haemoparasites in adult Jersey cows,

young stock and sucklers were 91.6, 15.6 and 57.6%, respectively, In Holstein Friesian adult cows 91%, Young stock 35.2% and in sucklers the prevalence was 36.8%. However, mortality only occurred in adult Jersey cows as 10.4% and in adult Friesian cows as 11.9% (Table I). The findings of Cordoves *et al.* (1991) coincide with the present study. They reported that deaths ascribed to anaplasmosis and babesiosis increased from May, peaking in July and decreasing in September coinciding with the season of the highest population density of free living ixodids and blood sucking diptera.

Table I. Morbidity and mortality rate in Jersey and Friesian cattle due to haemoparasites

Breed	Class	Total animals	Morbidity (%)	Mortality (%)
Jersey	Cows	48	44 (91.6)	5 (10.4)
	Young stock	90	14 (15.6)	-
	Sucklers	33	19 (57.6)	-
Friesian	Cows	67	61 (91)	8 (11.9)
	Young stock	71	25 (35.2)	-
	Sucklers	38	14 (36.8)	-

Cows: over two and half years of age; Young stock: Between nine months and two and half years; Sucklers: Under nine months.

The range of temperature of the morbid animals has been presented in Table II.

Table II. Range of temperature of morbid animals

	Jersey		Friesian	
	No. of Animals	Temperature range(F)	No. of animals	Temperature range (F)
Cows	14	105-107	23	105-107
	25	103-105	34	103-105
	5	101-103	4	101-103
Young Stock	10	101-103	11	101-103
Sucklers	4	103-104	14	103-104
	13	101-103	5	101-102
	6	103-104	9	102-103

Payne *et al.* (1988) have reported an overall prevalence rate as 61% for *Trypanosoma evansi* infection in cattle which partly agrees with the present findings. Out of 48 cows, 90 young stock and 33 sucklers of Jersey breed 23(47.92%) cows, 12(13.33%) young stock and 10(30.30%) sucklers were positive for theileriosis. Similarly, out of 67(62.68%) cows, 7 out of 71(9.86%) young stock and six out of 38(15.79%) sucklers of Friesian breed were infected with single infection of theileriosis (Table III).

Table III. Pattern of infection in diseased animals

Breed	Class	Single		Mixed infections (two or more)				
		Bb	Th	Try	Bb+ Try	Bb+ Th	Th+ Try	Th+ Bb+Try
Jersey	Cows	1	23	-	-	6	10	4
	Young stock	-	12	-	-	2	-	-
	Sucklers	5	10	-	-	4	-	-
Friesian	Cows	-	42	-	-	8	5	5
	Young stock	12	7	1	-	5	-	-
	Sucklers	7	6	-	-	1	-	-

Bb=Babesiasis Th=Theileriosis Try = Trypanosomiasis

The prevalence of different haemoparasites in animals has regional variations (Kabagambe *et al.*, 1988). This variation may be due to different geographical conditions and or due to different breeds of cattle studied. Babesiosis was prevalent in one out of 48(2.08%) and five out of 33(15.15%) sucklers of Jersey breed and 12 out of 71(16.9%) young stock and seven out of 38(18.42%) sucklers of Friesian breed were infected with single infection of babesiosis (Table III). The incidence of the disease among different age groups of both the breeds was almost similar except for adult cows of both the breeds. Only one Jersey cow suffered from babesiosis. The incidence of babesiosis in the six months old vaccinated Cohorts has been reported to be as 23.6% by Guglielmone *et al.* (1992) which is quite similar to the present findings. The rate of infection in younger animals is near to the present findings.

Out of both Jersey and Friesian breeds only one out of 71(1.40%) young stock was infected with trypanosomiasis (Table III). Like other parasites, prevalence of trypanosomiasis also has wide variation (Laha *et al.*, 1989; Hoang *et al.*, 1996), which may be due to the type of cattle which were imported here and were more susceptible to infection as compared to the local cattle. This idea is supported by Payne *et al.* (1988) that imported naïve cattle rapidly become infected with blood parasites. The findings of Niak (1978) are in close agreement with the present findings who reported that culture of blood samples showed 26.47% infection of haemoparasites among Cattle of Iran.

Mixed infection with two parasites Theileria and Babesia was observed in 6(12.5%) cows in 6(12.5%). With Theileria and Trypanosoma in 10(20.8%) cows. Triple infection with Babesia, Theileria and Trypanosoma infection was observed in 4(8.3%) cows of Jersey breed. Two (2.22%) young stock and 4(12.12%) sucklers were infected with only mixed infection of Babesia and Theileria. Double infection with Babesia and trypanosome was found nil in any case. In Friesian cows double infection with Babesia and Theileria was in 8(11.9%) cows, Theileria and Trypanosome in 6(8.9%) and triple infection with Theileria, Babesia and Trypanosoma was observed in 5(7.4%) cows. However, five young calves (7%) and one suckler (2.6%) suffered with double infection of Babesia and Theileria (Table III).

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