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Blood Status of Mehsani Buffaloes of Surat District

M. B. Pande, H. B. Desai and P. C. Shukla

Animal Nutrition Department, Gujarat Agricultural University, Anand—388 110.

ABSTRACT

In order to study the haematological and chemical constituents of blood of Mehsani buffaloes in Surat district a survey work was conducted. For this study 7 villages of Surat district were selected randomly and blood samples of Mehsani buffaloes during monsoon, winter and summer seasons were collected. In all about 145 samples were analysed. The study indicated that the haemoglobin, TEC and TLC values varied from 7·5 and 10·8 gm per cent, 3·41 to 6·39 $\times$ 10^6/cmm and 8·8 to 16·37 $\times$ 10^3/cmm respectively. The serum calcium, phosphorus and magnesium concentration varied from 10·30 to 13·00, 4·22 to 9·42 and 2·24 to 4·54 mg per cent respectively. *(Received on August 23, '77)*

INTRODUCTION

THE paucity of work regarding blood status of Mehsani buffaloes instigated to study some blood constituents of Mehsani buffaloes in Surat district.

METHODS AND MATERIALS

Blood samples of Mehsani breed of buffaloes from Surat district were collected. The following villages were selected for the study i.e. Afva, Zervavra, Katargam, Nansad, Dhatva, Pipodra and Kosamba. The blood was collected from jugular vein, during three seasons i.e. Monsoon, Winter and Summer. The haematological constituents were determined by the methods described by Napier and Dasgupta (1954) and the chemical constituents were analysed according to the methods recommended by Oser (1965).

RESULTS AND DISCUSSION

The average results of morphological constituents are given in Table 1.

Haemoglobin: The results showed that the average haemoglobin content of buffaloes varied from 7·5 to 10·8 gm per cent in different villages during the different seasons. The village to village and seasonal variation seems to be considerable. This might be due to change in feeding or the age of the buffaloes etc. However, the values are in normal range. Patel, Vaidya, Patel and Patel (1969) reported the average values of Surti buffaloes to be 10·5 gm per cent. Hafez and Anwar (1956) and Soliman and Selim (1965) reported higher values than these in Egyptian buffaloes. Mullick (1964) also reported higher haemoglobin percentage in Indian buffalo bulls as compared to the values reported under present study.

Total Erythrocyte count: The total erythrocyte count of buffaloes varied from 3·41 to 6·39 million/cmm in different villages during different seasons. The variations during different seasons may be attributed to the different seasons or

TABLE 1

Morphological constituents of blood of Mehsani buffaloes.

Villages	*Seasons*	*Haemoglobin (gm %)*	*TEC 10^6/cmm*	*TLC 10^3/cmm*
Afva	M (15)	9·7 ± 0·27	4·48 ± 0·34	12·95 ± 0·76
	W (6)	9·3 ± 0·24	5·55 ± 0·45	12·91 ± 1·37
	S (6)	9·7 ± 0·47	5·83 ± 1·20	9·13 ± 0·87
Zeravra	M (9)	9·8 ± 0·59	3·43 ± 0·50	13·02 ± 0·94
	W (8)	10·2 ± 0·21	4·99 ± 0·28	15·22 ± 1·44
	S (8)	9·1 ± 0·45	6·19 ± 0·35	15·51 ± 1·66
Katargam	M (9)	9·9 ± 0·31	4·87 ± 0·46	8·96 ± 0·79
	W (11)	9·9 ± 0·28	6·39 ± 0·26	16·37 ± 0·71
	S (5)	10·0 ± 0·61	5·59 ± 0·25	10·15 ± 0·59
Nansad	M (3)	9·3 ± 0·88	4·12 ± 0·60	9·78 ± 0·67
	W (1)	10·5	5·96	15·52
	S (2)	8·7	5·43	10·20
Dhatva	M (8)	9·4 ± 0·58	3·41 ± 0·41	10·49 ± 0·74
	W (7)	10·8 ± 0·31	5·86 ± 0·47	15·17 ± 1·07
	S (8)	9·0 ± 0·43	5·54 ± 0·66	13·76 ± 1·28
Pipodra	M (7)	8·3 ± 0·25	5·10 ± 0·46	11·63 ± 0·87
	W (8)	10·3 ± 0·35	5·55 ± 0·31	13·82 ± 1·18
	S (4)	9·5 ± 0·41	3·55 ± 0·43	12·51 ± 0·32
Kosamba	M (8)	7·5 ± 0·50	4·79 ± 0·26	8·91 ± 0·79
	W (6)	10·6 ± 0·49	6·16 ± 0·69	14·07 ± 0·71
	S (6)	9·4 ± 0·58	3·98 ± 0·42	8·8 ± 1·03
	Gen. AV.	9·60 ± 0·17	5·08 ± 0·20	12·33 ± 0·55

( ) Figure in parenthesis indicates number of samples analysed.
M = Monsoon
W = Winter
S = Summer

may be due to the individual variations, during different seasons. Patel *et al* (1969) reported the TEC content of buffalo calves, heifers, buffaloes and bulls to be 6·6, 6·4, 6·1 and 8·4 million/cmm respectively. In general the TEC values obtained in the Mehsani buffaloes are lower than that of Surti breed. Soliman and Selim (1965) also reported slightly higher count for Egyptian buffaloes.

Total leucocyte count: There is a considerable variation in total leucocyte count during different seasons and during the same season. The average values lie between 8·8 to 16·37 thousand/cmm. Patel *et al* (1969) reported the average value for Surti buffaloes to be 11·3 thousand/cmm. On an average, the values reported here are slightly higher than those of Patel *et al* (1969) in Surti buffaloes and Soliman and Selim (1965) for Egyptian buffaloes.

The average results for chemical constituents are given in Table 2.

Serum calcium: The serum calcium content of buffaloes varied from 10·3 to 13·0 mg per cent. The values are in agreement with those reported by

TABLE 2

Chemical constituents of blood of Mehsani buffaloes.

Villages	*Season*	*Calcium (mg%)*	*Phosphorus* (mg%)	*Magnesium (mg%)*
Afva	M (15)	10·80 ± 0·11	5·39 ± 0·29	2·44 ± 0·13
	W (6)	11·86 ± 0·18	9·42 ± 0·41	3·40 ± 0·24
	S (4)	10·90 ± 0·20	7·38	2·73
Zervavra	M (9)	10·30 ± 0·32	6·60 ± 0·56	3·14 ± 0·17
	W (8)	12·63 ± 0·26	7·16 ± 0·29	3·29 ± 0·15
	S (7)	11·90 ± 0·58	6·52 ± 0·59	2·28 ± 0·17
Katargam	M (8)	11·30 ± 0·57	7·06 ± 0·76	2·69 ± 0·30
	W (10)	12·20 ± 0·44	6·95 ± 0·22	3·39 ± 0·21
	S (4)	12·50 ± 0·16	7·73 ± 0·26	2·56 ± 0·23
Nansad	M (2)	10·30	8·98	3·19
	W (1)	13·00	6·24	2·52
	S (2)	11·40	8·00	3·48
Dhatva	M (8)	10·80 ± 0·47	5·40 ± 0·73	3·14 ± 0·26
	W (7)	12·0 ± 0·22	7·38 ± 0·45	3·54 ± 0·22
	S (7)	12·40 ± 0·41	7·69 ± 0·56	2·24 ± 0·04
Pipodra	M (7)	10·80 ± 0·48	6·62 ± 0·43	3·34 ± 0·14
	W (8)	12·40 ± 0·24	7·85 ± 0·73	2·69 ± 0·15
	S (3)	12·60 ± 0·41	6·10 ± 0·07	—
Kosamba	M (7)	10·70 ± 0·50	6·52 ± 0·42	4·54 ± 0·32
	W (6)	11·70 ± 0·38	7·94 ± 0·40	2·67 ± 0·07
	S (4)	11·50 ± 0·75	4·22	2·67
	Gen. AV.	11·62 ± 0·18	7·01 ± 0·26	3·00 ± 0·12

( ) Figure in parenthesis indicates number of samples analysed.
M = Monsoon
W = Winter
S = Summer

Raghavan and Mullick (1962) and Patel *et al* (1969).

Serum inorganic phosphorus: Serum inorganic phosphorus of Mehsani buffaloes varied from 4·42 to 9·42 mg per cent. Patel *et al* (1969) reported 6·0 mg per cent inorganic phosphorus of Surti buffaloes. The values reported by Raghavan and Mullick (1962) are also found to be in this range.

Serum magnesium: Fisher (1960) reported a wide range of serum magnesium (1·2 to 3·8 mg per cent) in ruminants. In the present investigation the values varied from 2·24 to 4·54 mg per cent. Patel *et al* (1969) reported average value of 4·5 mg per cent in Surti buffalo bulls. Pande and Shukla (1975) observed on an average 2·75 to 2·87 mg per cent magnesium in Surti buffalo of Kaira district.

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