Vol. XIII (2), 1976

EFFECT OF CALVING SEASON ON LACTATION LENGTH AND DRY PERIOD IN NILI-RAVI BUFFALOES

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The records of Nili-Ravi buffaloes maintained at the Dairy Farm, University of Agriculture, Lyallpur from 1937 to 1964 were used for this experimental data. The average lactation length in Nili-Ravi buffaloes is 289.5 days with a range of 276.0 days in March calvers to 365.0 days for February calvers. The month or the season of calving has no significant effect on mean lactation length. The average dry period is 156.87 days with a range of 127.7 days for August calvers to 237.0 days in animals who calved in April. The month of calving also had no significant effect on the mean length of dry period.

INTRODUCTION

Cattle and Buffaloes are the main sources of milk supply, and in Pakistan buffaloes provide about 56% of the total milk produced annually (Haq and Masud, 1966). To devise better breeding methods, it is imperative to obtain adequate information on genetic and environmental influences that affect the milk production in buffaloes. Among the environmental influences, the effect of calving season on lactation length and dry period are important factors, considering the average lactation and lifetime production of the animal. The present experiment was designed to study the effect of month of calving on lactation length and dry period and of calving season on lactation length in Nili-Ravi buffaloes.

MATERIALS AND METHODS

Data were collected for this experiment from the history sheets of the buffaloes herd maintained at the University of Agriculture, Lyallpur. The records on date of calving and date of drying for each lactation available for the period 1937-64 were used in the study. A total of 184 records on date of calving and 142 on date of drying were available. The data were grouped according to the month of calving as well as the season of calving to study the effect of these two factors on lactation length and of month of calving

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on dry period. The following four seasons of calving were used for the grouping of data.

Season A — 16th November to 15th February
Season B — 16th February to 15th May.
Season C — 16th May to 15th August.
Season D — 16th August to 15th November.

The data on lactation length as well as on dry period were subjected to the analysis of variance, using one-way classification. The main effects thus studied were the month of calving and the season of calving, the test being the ratio of mean squares for between and within terms in each case.

RESULTS AND DISCUSSION

The record of lactation length and dry period were classified according to the month of calving and are presented in table, 1. The overall average of lactation length and dry period was 289.50 and 156.87 days, respectively.

TABLE 1. *Average length of lactation and dry period according to the month of calving.*

Month of calving	Lactation length (days)	Dry period (days)
January	326.00	147.33
February	365.83	212.00
March	276.00	173.42
April	340.30	237.00
May	293.30	141.20
June	288.10	157.68
July	312.80	140.30
August	294.40	127.70
September	301.40	159.50
October	311.00	192.70
November	332.50	174.25
December	303.00	136.30
Overall average	289.50	156.87

The average lactation length according to the month of calving was different in all the twelve months. It was maximum of 365.83 days for those buffaloes who calved in February and minimum of 276.00 days in March calvers. My finding about the average lactation length of 289.50 days in Nili-Ravi buffaloes, are in closed agreement to the findings of Kothavala (1934) who reported that the average lactation length in buffaloes was about 300 days. The Government of India (1950) concluded that average lactation length in Murrah buffaloes in 1944 was 292.00 days.

The average dry period according to the month of calving ranges from 127.70 days in August calvers to 237.00 days in those buffaloes who calved in April as shown in table 1. Our results about the average dry period of 156.87 days in Nili-Ravi buffaloes are very close to the finding of Yasin and Wahid (1952) who reported that average dry period in Nili-Ravi buffaloes was 144.00 days. This slight variation of about 11 days in dry period may be due to the environmental factors.

Effect of Month of Calving on Lactation Length : To find out the effect of month of calving on lactation length, the classified data according to the month of calving were subjected to the analysis of variance. The results of analysis shows that there is no significant difference between the mean lactation lengths of buffaloes calving in different months (Table 2).

TABLE 2. *Effect of month of calving on lactation length in Nili-Ravi buffaloes*

Variation due to	D.F.	S.S.	M.S.	F.R.
Month	11	70257.59	6383.05	0.915NS
Error	172	1199355.19	6972.99	
Total	183	1269612.78		

NS = Nonsignificant.

Effect of Month of Calving on Dry Period : As the length of dry period influences the economy and lifetime production of an animal. So the relevant data were subjected to the analysis of variance after arranging into twelve groups according to the month of calving. It was found that the month of calving had no significant effect on the mean dry period in buffaloes freshening in different months (Table 3).

TABLE 3. *Effect of month of calving on dry period*

Variation due to	D.F.	S.S.	M.S.	F.R.
Month	11	119447.82	10858.89	18.28NS
Error	130	771853.15	5937.33	
Total	141	891300.97		

NS = Nonsignificant

Effect of Season of Calving on Lactation Length : As the number of animals calving in different months were insufficient to indicate any definite trend or the effect of month of calving on the lactation length So the data

were classified into four groups or seasons i.e., A, B, C and D as indicated before. When this grouped data were subjected to the analysis of variance, the results showed no significant difference between mean lactation length of buffaloes calving in different seasons (Table 4).

TABLE 4. *Effect of calving season on lactation length in Nili-Ravi buffaloes*

Variation due to	D.F.	S.S.	M.S.	F.R.
Season	3	14166.29	4722.09	0.677NS
Error	180	1255446.49	6974.70	
Total	183	1269612.78		

NS = Nonsignificant.

It was confirmed that the month or the season of calving had no significant effect on the lactation length. Our finding coincide with the results of Desai and Kumar (1964) as they concluded that the season of calving had no effect on the length of lactation. This was also confirmed by Venkataratnan and Venkalah (1964).

LITERATURE CITED

Desai, R.N. and D. Kumar. 1964. Method of fitting constants and wighted squares of means to study the effect of season of calving on production traits in Murrah Buffaloes. Ind. Vet. J. 41:275-280. (Anim. Breed. Abst. 33:34, 1965).

Government of India. 1950. Annual reports of the Imperial dairy departments for the year ending June, 1943 (Anim. Breed. Abst. 20:279, 1962) 1944, 1945, 1946 and 1947. Calcutta. Govt. of India Press.

Haq I. and M. Masud. 1966. Livestock Poultry and their products. WPAU., Lyallpur.

Kothavala, Z. R. 1934. The Indian Buffaloes as a Milk animal suitable from tropical countries. Agriculture and Livestock in India 5:47-51, 1935.

Venkataratnum, G. and A. Kenkalah. 1964. Some observations on the production characteristics of Murrah Buffaloes (ii) Season of calving. Ind. Vet. J. 41 : 205-211 (Anim. Breed. Abst. 33: 384. 1965).

Yasin, S.A. and A.W. Khan. 1952. Morphological and Physiological character of Pakistani cattle Agriculture Pakistan 3 : 257-273, 1952.