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SEASONAL EFFECT ON MILKABILITY OF KANKREJ COWS

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ABSTRACT

An experiment was conducted on 20 lactating Kankrej cows divided in four groups according to lactation number one to four and initial stage of lactation with almost same production. Highly significant (P<0.01) difference was observed for let down time in cold-dry season (61.54 s) as compared to hot-humid season (68.13 s), milking time in hot-humid season (245.72 s) as compared to cold-dry season (260.02 s) and milk yield/ milking in cold-dry season (4.300 kg) as compared to hot-humid season (3.860 kg) while, significant (P<0.05) difference was observed in milk flow rate in cold-dry season (0.990 kg/min) as compared to hot-humid season (0.950 kg/min) .

Key Words : Milkability, Lactation, Kankrej.

Milk and milk products are widely accepted source of animal protein. Milk plays a major role in economic significance in cattle and buffaloes. Milking is the most important dairy management operation, which directly influences the profitability of dairy farming. Milk harvesting is an art and science as well as it is the most important aspect on a dairy farm management. Full co-operation of the milch animal is required for harvesting clean and maximum milk. In flush season higher milk production is seen while reverse trend is observed in lean season. Thus, the present experiment was conducted to find out effect of season on different milking attributes in Kankrej cows.

MATERIALS AND METHODS

The experiment was conducted on twenty lactating Kankrej cows. Animals were divided into four groups according to number of lacatation one to four (L_1 to L_4). The research work was carried out at Livestock Research Station, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar. All animals reared under semi-loose housing system and two times (Morning & Evening) milking was done with full hand milking in RCC milking parlour. All the animals were allotted routine feeding and management practices followed at Livestock Research Station. The experiment was conducted for six months. The experimental period was divided in to following seasons.

Hot-Humid season :
1st August - 2003 to 31st October - 2003

Cold-Dry season :
1st November-2003 to 31st January-2004

Let down time and milking time were recorded with use of stop watch in seconds while, milk yield was recorded by electronic weighing balance in Kilogram. Milk flow rate (kg/min.) was calculated by dividing total milk yield by total

milking time per cow at each milking. The data so obtained were analyzed using standard statistical methods.[12] (Snedecor and Cochran, 1994).

RESULTS AND DISCUSSION

Let Down Time

Season-wise let down time is presented in Table 1. In present study the average let down time was 64.83±3.5 (51.75 to 86.30 s). It was lowered than previously reported findings in same breed [10,2]. The difference due to season was highly significant. However, the let down time was reduced significantly in cold-dry season (61.54 s) as compared to hot-humid season (68.13 s). This might be due to more stress on animals in hot-humid season.

Milking Time

The average milking time was observed 252.87±14.01 seconds with a range from 222.74 to 268.87 seconds (Table 1). It was lower than earlier findings in Kankrej cows[10, 2]. In contrary to our findings, shorter milking time was reported[3] in Holstein-friesian (3.30 min). While several other workers [8,9,6] reported higher (5.83 min, 6.63 min and 8.23 min) average milking time in HF cows.

Milking time was less in hot-humid season (245.72 s) as compared to cold-dry season (260.02 s). The difference due to season was highly significant. A similar finding was also observed in Kankrej cows[2].

Milk yield per milking

The average milk yield (kg) per milking for both the season was 4.080±0.41 (Table 1). It was significantly higher in cold-dry season (4.30 kg) as compared to hot- humid season (3.86 kg). The seasonal variation in milk yield per milking might be due to more stress on animals in hot-humid season. However, the milk yield in present study was higher than previous report[2] (3.32 kg) in same breed of cattle. Though, it was lower than Sahiwal (7.20 kg), Holstein Friesian (7.50 kg) and Jersey (6.00 kg) as reported earlier[1]. As the Kankrej is a dual purpose breed it produces less milk as compared to other milch breeds (Sahiwal, HF and Jersey).

Milk Flow Rate

The overall average milk flow rate (MFR) was recorded 0.970 ± 0.04 kg/minute (Table 1). It was significantly higher in cold-dry season (0.990 kg/min.) as compared to hot-humid season (0.950 kg/min.). It was higher than reported earlier[10] (0.890 kg/min.) in same breed. On the other hand higher mean milk flow rate have been reported for Italian Brown (2.2 kg/min)[9] and for Holstein Friesian cows (2.30 kg/min)[5]. However lower average (MFR)[3] in crossbred (0.467 kg/min) and Sahiwal cows (0.597 kg/min). Further, mean MFR[11] in crossbred cows varies from 0.691 to 0.920 kg/min and these results were lower than our findings.

Table 1: Milking attributes recorded during different seasons in Kankrej cows.

Season	Milking attributes			
	Let down time (Seconds)	Milking time (Seconds)	Milk yield /milking (Kilogram)	Milk flow rate (Kg/Minute)
Hot & Humid	68.13	245.72	3.860	0.950
Cold & Dry	61.54	260.02	4.300	0.990
Average	64.83 ± 3.5	252.87 ± 14.01	4.080 ± 0.41	0.970 ± 0.04
SEM	1.114	4.112	0.113	0.0131
C.D.	3.467 **	14.013 **	0.391**	0.038 *

* P < 0.05, ** P < 0.01

CONCLUSION

Milking attributes of lactating Kankrej cows were recorded during different seasons. The difference due to season in all parameters were found highly significant (P<0.01) except in milk flow rate (P<0.05). This might be due to more availability of green and dry fodders in flush season and vice versa. Also in cold-dry season the animals remain more healthy and comfortable as compared to hot-humid season. There is no menace of wet conditions in house, flies etc also play important role in clean and higher milk production.

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