

EFFECT OF DAIRY TEMPERAMENT ON MILKABILITY OF LACTATING KANKREJ COWS

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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, milking time and milk yield and milk flow rate due to different dairy temperaments.

Key Words: Milkability, Dairy Temperament, Cows

Milk and milk products are widely accepted source of animal protein. Milk plays a major role in economic significance in cattle and buffaloes. India has emerged as leading milk producing country in the world (FAO, 2002). Milk harvesting is an art and science as well as it is the most important aspects on a dairy farm management (Bhagat et al., 1992). The milk yield and dairy temperament are inter-related (Roy and Nagpaul, 1984). Cows with docile temperament are good milk yielder and on an average have longer lactation period. The temperament of animal is important in the handling of animals and improving their productive and reproductive abilities. Full co-operation of the milch animal is required for harvesting clean and maximum milk. Thus, the present experiment was conducted to find out effect dairy temperament 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 lactation 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 were being 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 dairy temperament of cows was recorded according to score card (Table: 1) developed by Mishra et al., (1975). 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/minute) was calculated by dividing total milk yield by total milking time per cow at each milking. The observations were taken at weekly intervals. The data so obtained were analyzed using standard statistical methods (Snedecor and Cochran, 1994).

RESULTS AND DISCUSSION

Dairy Temperament

Dairy temperament of experimental animals is presented in table: 2. It reveals that maximum (53.51 %) cows had docile temperament followed by nervous (28.69 %), aggressive (9.18 %) and restless cows (8.62 %). The temperament score recorded was 1.94 which is more than Red Sindhi (1.85), Holstein (1.9) and Murrah buffaloes as recorded by Nayak and Mishra (1984), Dickson et al., (1970) and Gupta et al., (1985), respectively. The Kankrej breed having nervous temperament also noted by Patel and Shah (1988).

Table: 1 Score card for dairy temperament

Temperament score	Dairy Temperament	Description
1	Docile	The cows which stand quietly at milking rarely move except to raise or lower their heads. Extremely docile during milking preparations. The ideal milker and unaffected by the whole procedure.
2	Restless	The cows which move, continuously pulling and pushing at milking and disturbing the side animals. Flick tail, frequently snort. May lift feet during preparation for milking but do not kick, may be stubborn.
3	Nervous	Appear very restless during preparation and milking. Generally quiver when hand is placed on their back. Defaecate on feeds and fodder. Flick tail frequently and kick at handlers occasionally.
4	Aggressive	Very restless cows which struggle violently, bellows and froths. Attack observers / milkers by kicking or butting. Move from side to side always and very difficult in handling.

Mishra et al., (1975)

Table: 2 Relative frequencies of dairy temperament score recorded in Kankrej cows

Particulars	Temperament Score				Total
	1(Docile)	2(Restless)	3 (Nervous)	4 (Aggressive)	
Frequency	472	76	253	81	882
Percentage	53.51	8.62	28.69	9.18	100

Table: 3 Milking attributes recorded during different Dairy Temperament in Kankrej cows.

Dairy Temperament	Milking attributes			
	Let down time (Seconds)	Milking time (Seconds)	Milk yield/ milking (Kilogram)	Milk flow rate (Kg/Milking)
Docile	51.45	216.13	5.190	1.430
Restless	62.83	246.85	4.150	0.990
Nervous	67.69	261.29	4.080	0.930
Aggressive	77.36	287.23	2.900	0.590
Average	64.83 ± 4.476	252.87 ± 7.114	4.08 ± 0.257	0.970 ± 0.053
C.D.	13.792 **	21.921 **	0.793**	0.162 **

** P < 0.01

Letdown Time

Letdown time according to temperament is presented in table: 3. The average letdown time was recorded 64.83 ± 4.476 seconds. The difference due to temperament was highly significant. The cows with docile temperament took minimum (51.45 sec.) letdown time. Cows with aggressive temperament took highest (77.36 sec.) letdown time, followed by nervous (67.69 sec.), restless (62.83 sec.) and docile (51.45

sec.). These observations are in close agreement with the studies conducted by Rawat et al., (1973), Gupta and Mishra (1979) and Nayak and Mishra (1984) on Sahiwal, Karan Swiss and Red Sindhi, respectively.

Milking Time

The overall average milking time recorded per milking was 252.87 ± 7.114 sec. (Table: 3). The difference in milking time due to temperament was highly significant.

Maximum time in milking was recorded in aggressive (287.23 sec.) followed by nervous (261.29 sec.), restless (246.85 sec.) and minimum time recorded in Docile (216.13 sec) cows. Aggressive cows required more time because worker spent maximum time for milking due to more time required for letting down and difficult handling. Same findings were recorded in Karan Swiss and Crossbred cows by Gupta and Mishra (1979) and Ambulkar et al., (1996) respectively.

Milk yield per milking

The average milk yield (Kg) per milking in Docile, Restless, Nervous and Aggressive cows were recorded 5.190, 4.150, 4.080 and 2.900 respectively. The difference in milk yield due to temperament was highly significant. Maximum milk yield (Kg) / milking was recorded in Docile while minimum milk yield was noted in Aggressive (2.900) cows. These observations are in agreement to those reported by Nayak and Mishra (1984), Rahman et al., (1988) and Gupta et al., (1985).

Milk Flow Rate

The overall average milk flow rate was recorded 0.970 ± 0.053 Kg/minute. (Table: 3). The maximum milk flow rate was recorded in Docile (1.430 kg/min.) cows, while minimum milk flow rate was recorded in Aggressive (0.590 kg/min) cows. The difference due to temperament was highly significant. This is due to more milk yield by docile cows. Same findings are also reported by Gupta and Mishra (1979) in Karan Swiss cows.

CONCLUSIONS

Milking attributes of lactating Kankrej cows were recorded during different Dairy Temperament. The differences due to temperament in all milking attributes were found highly significant ($P < 0.01$). Docile cows performed well with best milking ability. Therefore, it is desirable to select docile animals for best milking performance.

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