

## EFFECT OF TEMPERAMENT ON MEHSANA BUFFALO

H.A. Patel<sup>1</sup>, J.B. Patel<sup>2</sup>, V.D. Dodia<sup>1</sup>, V.S. Prajapati<sup>1</sup> and S.B. Patel<sup>3</sup>

<sup>1</sup>Junagadh Agricultural University, Junagadh

<sup>2</sup>Livestock Research Station, SDAU, Dantiwada

<sup>3</sup>Research Assistant, Sun Pharma Advanced Research Company Ltd.

E-mail: dr.vaibhavsinh@gmail.com (\*Corresponding Author)

**Abstract:** The study was conducted at Livestock Research Station, Sardarkrushinagar on milking behavior in Mehsana buffaloes. Twenty four Mehsana buffaloes were divided into four groups on the basis of parity (1-4 lactation). They were subjected to routine feeding and management practices followed at the farm during the experimental period. Data on milking temperament, let down time, milking time, milk yield and milk flow rate were collected six days in a month at morning and evening milking for six months. The average milking temperament score of Mehsana buffaloes was 1.89. The average let down time for Mehsana buffaloes in Lactation-I (L<sub>1</sub>), Lactation-II (L<sub>2</sub>), Lactation-III (L<sub>3</sub>) and Lactation-IV (L<sub>4</sub>) was 71.15, 69.22, 62.30 and 56.65 seconds, respectively with overall average of 64.83 seconds. The average milking time observed were 336.25, 363.59, 351.37 and 351.95 seconds in L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub> and L<sub>4</sub>, respectively with overall average of 350.79 seconds. Average milk yield per milking recorded were 3.54, 4.27, 4.07 and 4.44 kg for L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub> and L<sub>4</sub>, respectively with overall average of 4.08 kg. Both months and lactations had significant effect on milk yield. Average milk flow rate recorded were 0.91, 0.98, 0.97 and 1.03 kg/minute in L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub> and L<sub>4</sub>, respectively with overall average of 0.97 kg/minute. Temperament had greatly influenced on all the milking attributes. Best milk ability was performed by docile buffaloes followed by restless, nervous and aggressive. All four milkers had performed equally good showing no significant effect on milking attributes.

**Keywords:** Mehsana buffaloes, milking behavior and Temperament.

### INTRODUCTION

Milk and milk products are widely accepted source of animal protein in the diet of Indian human being. Milk plays a major role in economic significance in cattle and buffaloes. India has emerged as leading milk producer country (114.2 million tones milk FAO-2010) in the world.

Milk harvesting is an art and science as well as it is the most important aspects on a dairy farm management, which has a direct bearing on profitability of dairy business (Bhagat *et al.*, 1992). Dairy cows are different in temperament as well as in economic dairy attributes. The temperament and activity during milking facilitate the management care on dairy farms (Mac-Lachlan, 1967).

The milk yield and dairy temperament are interrelated (Roy and Nagpaul, 1984). Buffaloes 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 in improving their productive and reproductive abilities. The temperament of mother at parturition exerts an influence on neonatal mortality (Nema *et al.*, 1999). The study on the dairy temperament was initiated by Dove (1936) and also carried out by (Gupta *et al.*, 1984). Schein and Forhman (1955) observed that the social dominance order largely dependent on age, weight and productivity of animals.

Keeping all these points in view the present study was undertaken in Mehsana buffaloes with following objectives, as the Mehsana buffalo is a milch purpose breed for farmers in North Gujarat.

### **MATERIAL AND METHODS**

The study was conducted from 1<sup>st</sup> August, 2011 to 31<sup>st</sup> January, 2012 for six months was divided into two seasons viz.: Hot & Humid season (August, September, October) and Cold & dry season. (November, December, January) at Livestock Research Station, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar. All the experimental animals were kept under cement-concrete sheds, in loose housing system with *ad libitum* fresh potable water. The experimented Mehsana buffaloes were milked in 27 x 10 meter size milking parlour with East-West direction with cement-concrete flooring. The experiment was conducted on 24 milking Mehsana buffaloes which were divided into four groups on the basis of lactation and calving before 10 days to 2 months of starting of experiment with similar performance and all the animals were kept under uniform feeding and managemental conditions throughout the experimental period. All the animals were milked two times at 4.00 a.m. and 4.00 p.m., in a day by hand milking. Observations were taken at morning (T<sub>1</sub>) and evening (T<sub>2</sub>) milking for three consecutive days (Tuesday, Wednesday and Thursday) for each group of the animals. Observations were repeated after 15 days in a month. The Following parameters were recorded (Time recorded with the use of stop-watch with accuracy of 0.1 second) in morning and evening like milk Let down time, milking time, milk yield, Milk flow rate (kg/minute) and temperament and statistical analysis was carried out using Factorial Completely Randomized Design (FCRD) with six replications.

### **RESULT AND DISCUSSION**

The present study the relative frequency of temperament score recorded at the time of milking in Mehsana buffaloes that maximum (55.56%) buffaloes had docile temperament followed by

nervous (26.74%), aggressive (9.25%) and restless buffaloes (8.45%). Among the 30 buffaloes of farm herd maximum buffaloes (53.33%) had docile temperament. The temperament score of Mehsana buffaloes was 1.89 which is more than Murrah buffaloes (1.72) Red Sindhi (1.85), and less than kankrej cow (1.94), Holstein (1.90), recorded by Nayak and Mishra, 1984, Dickson *et al.*, 1970 and Chauhan, 2004), Gupta *et al.*, 1985), respectively. The percentage of buffaloes with nervous temperament were 26.74% which is more than Murrah buffaloes (8.7%) and Karan Swiss (10.2%) recorded by (Sastry *et al.*, 1988 and Mishra *et al.*, 1975).

**Table: Relative frequency of temperament score recorded during milking among Mehsana buffaloes**

| Temperament score.          | 1 (Docile) | 2 (Restless) | 3 (Nervous) | 4 (Aggressive) | Total |
|-----------------------------|------------|--------------|-------------|----------------|-------|
| Frequency                   | 480        | 73           | 231         | 80             | 864   |
| Percentage                  | 55.56      | 8.45         | 26.74       | 9.25           | 100   |
| Average score               | 1.0        | 2.0          | 3.0         | 4.0            | 1.89  |
| Whole herd (no. of animals) | 16         | 3            | 6           | 5              | 30    |
| Percentage                  | 53.33      | 10           | 20          | 16.67          | 100   |

### Conclusion

In present research work it was revealed that more than fifty percent Mehsana buffaloes had docile temperament. It was concluded that temperament had great influence on all the milking attributes. Docile buffaloes performed well with best milking ability. Therefore, it is desirable to select docile animals for best milking performance.

### References

- [1] Bhagat, S.S., Sastry, N.S.R. and Yadav, R.S. (1992). Studies on the efficiency of milker in relation to milk ability of Murrah buffaloes. *Indian J. Anim. Prod. Mgmt.*, **8** (4): 240-45.
- [2] Chauhan, H.D. (2004). Studies on milking behaviour in Kankrej cows. M.V.Sc. Thesis, SardarkrushinagarDantiwada Agricultural University.
- [3] Dickson, D.P., Barr, G.R, Johnson, L.P. and Wieckert, D.A. (1970). Social dominance and temperament of Holstein cows. *J. Dairy Sci.*, **53** (7): 904-907.
- [4] Dove, W.F. (1936). *Science* (monthly). **42**: 431. (Cited from *Indian J. Dairy Sci.*, **28** (2): 85-88).

- [5] Gupta, S.C., Handa, M.C. and Sahoo, G. (1985). Dairy temperament of buffaloes in relation to their milking ability. *Indian J. Anim. Prod. Mgmt.*, **1** (3): 116-119.
- [6] Gupta, S.C., Thakuria, K. and Rehman, S.M. (1984). Dairy temperament of Crossbred cows. *J. Res. Punjab Agric. Univ.*, **21** (4): 623-625.
- [7] Mac-Lachlan, D.L. (1967). A study of dairy chore labour under different systems of free-stall housing. Thesis Mich State University in Dairy Cattle. (Cited from Principles, Practices, Problems and Profits. Foley, R.C., Bath, D.Z. Dickson, F.N. and Tucket, H.A., 1972).
- [8] Mishra, R.R., Chauhan, R.S. and Gupta, S.C. (1975). Studies of dairy temperament of Karan-Swiss cows. *Indian J. Dairy Sci.*, **28** (2): 85-88.
- [9] Nayak, S. and Mishra, M. (1984). Dairy temperament of Red-Sindhi, Crossbred cows and Murrah buffaloes in relation to their milking ability and composition. *Indian J. Dairy Sci.*, **37** (1-4): 20-23.
- [10] Nema, R.K., Mishra, S. and Tiwari, D.P. (1999). Dairy temperament and its influence on milking ability. *Indian J. Anim. Prod. Mgmt.*, **15**(1):1-6.
- [11] Roy, P.K. and Nagpaul, P.K. (1984). Studies on the effect of dairy temperament score on different traits in dairy animals. *Indian J. Dairy Sci.*, **37**:74.
- [12] Sastry, N.S.R., Bhagat, S.S. and Bhardwaj, A. (1988). Aspects to be considered in the milking management of buffaloes. *Indian J. Anim. Prod Mgmt.*, **4** (3&4): 378-393.
- [13] Schein, M.W. and Fohrman, M.H. (1955). Social dominance relationships in a herd of dairy cattle. *Brit. J. Anim. Behaviour*, **3**: 45.