# Udder and Teat Conformation in buffalo and their association with milk production and mastitis: A mini review

**A Clinical Report Submitted**

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## Abstract:

The study was planned to review the udder and teat morphology of buffalo and their association with milk production and mastitis. Different morphometric parameters of teat and udder were studied and they showed significant difference with milk production and mastitis in buffalo. The udder morphology was categorized into different types such as trough/bowl, round/globular, goaty and pendulous. Similarly shape of teats were also categorized into cylindrical, funnel, bottle, pear shaped, conical, pointy and others. Among them the frequency of bowl shaped udder and cylindrical teats were higher and both of them showed significant positive correlation with milk production but negative correlation with mastitis. Others parameters like udder depth, udder length, udder width, teat length, teat diameter, teat end shape, milk vein size, teat end to floor distance, distance between teats were also observed to see their relation with milk production and mastitis in buffalo. These parameters vary within different breeds and show significant difference with milk production and mastitis. Results showed significant and positive correlation of Udder width with milk production and lactation number. milk vein size also correlates significantly and positively with milk production and lactation number. Whereas negative correlation of milk vein size with lactation stage was observed. Teat length and teat diameter Showed positive and significant relationship with milk production. Pendulous udder showed high incidence of mastitis among buffaloes. Live wight, milk yield, udder depth, teat apex diameter showed significant positive correlation with mastitis. On the other hand, teat end to floor distance

showed significant negative correlation with mastitis. However, the studies revealed a protective effect of increased teat length, advancement of lactation, culling of animals and more housing space. Teat and udder morphometric traits seem to be associated with indicators of udder health in buffaloes, thus their inclusion in breeding programmes for selection against undesirable dairy types traits may be of value reducing susceptibility to low milk yield and mastitis in buffaloes.

**Keywords:** Buffalo, Milk yield, Mastitis, Udder morphology, Teat morphology

## Introduction:

Buffalo has been an integral part of livestock agriculture in Asia. Buffalo is a triple purpose animal producing milk, meat and draft power. Buffaloes are well adapted to hot and humid climate and play a distinct role in improving the rural economy which is primarily based on agricultural production systems. In fact, these animals can be considered as a financial asset in times of crisis. The global buffalo population is 194.29 million and buffalo in Asia dominate the world population, representing 92.52% (179.75 million) of the total buffalo population (FAO, 2012; Chakravarty, 2013). Within the Asian region, about 79.74% of buffaloes are in South Asian countries and the rest 20.26% in other countries. India and Pakistan are the two buffalo rich countries in the world that contributes 58.11% and 16.83% of world buffalo population, respectively. In Bangladesh, the total buffalo population is about 1.464 million (DLS, 2015) of which coastal regions possess about 40% (Faruque et al., 1990).

Buffalo milk constitutes over 12% of the global milk production, and in the Indian subcontinent the greater part of the milk produced is by buffaloes (>53% in India and >68% in Pakistan, of the total milk production). Buffalo milk provides more energy per unit volume than provided by cow's milk due to its higher fat and protein content. Due to the higher content of total solids, fat, proteins, and colloidal calcium, and the larger size of the casein micelles and fat globules, buffalo milk is well suited for fluid milk supply, fermented products (dahi, yogurt shrikhand, lassi, leben, cremir, etc.), fat-rich dairy products (cream, butter, ghee, butter oil, etc.), heat desiccated and acid-coagulated products (khoa, paneer, casein, and caseinate), ice cream, and dairy whitener. The lower heat capacity and the higher thermal conductivity and thermal expansion of buffalo milk clearly indicate that a lower amount of heat energy is required to achieve certain desired heat effects in buffalo milk as compared to cow's milk. Therefore, time–temperature combinations for its heat processing may have to be standardized and suitably modified to get the desired effect.( Encyclopedia of Dairy Sciences ,Second Edition,

2011, Pages 503-511)

Conformational traits of the udder and teats have a direct relation with milk production potential in dairy animals including buffaloes (Thomas et al. 2004; Prasad et al. 2010; Deng et al. 2012). The udder and teat measurements vary in different stages of lactation and parities and also between breeds and individuals in the same herd (Tilki et al. 2005; Abdullah et al. 2013). The morphological characteristics of teats have high heritability and can be used in breeding programmes to improve milk production and quality (Coban et al. 2009; Nakov et al. 2014). The most common cow-related risk factors for mastitis are breed,parity,stage of lactation,udder and

teat morphology, udder oedema, milk production, milk somatic cell count (SCC) and reproductive disorders (Nyman et al. 2007; Valde et al. 2007; Nakov et al. 2014). These factors may play a significant role in decision making by the dairy farmers at the time of selection of dairy animals to lower the incidence of mastitis. The teat is the first line of defence against intramammary infection (IMI). Thus, udder and teat morphometric traits are among the potential risk factors that may predispose the animal to intramammary infections (Okano et al. 2015). It is important that teats have a suitable morphology to reduce susceptibility to the invasion of pathogenic organisms. The probability of mastitis occurring varies considerably between different teat and teat-end shapes, sizes, and teat placement (Bardakcioglu et al. 2011). Previously, studies on the risks of developing SCM in dairy cows in have indicated the possible effects of teat length , teat diameter , and teat morphology (Bhutto et al. 2010; Singh et al. 2014). Uzmay et al. (2003) and Singh et al. (2014) identified longer teats as a potential risk factor for mastitis. The Teat diameter was also found to be positively correlated with the IMI in lactating cows (Kuczaj, 2003; Singh et al. 2014). Bharti et al. (2015) reported that teats with flat/wide teat-ends were more susceptible to clinical mastitis. The dairy buffalo is considered to be less susceptible to mastitis than the dairy cow (Mustafa et al. 2013). Some important udder morphological characteristics of the buffalo may influence any difference from the cow in predisposition for infections and inflammations, e.g. the tighter teat sphincter of buffaloes (Uppal et al. 1994).

## Objectives:

Although the dairy buffalo has huge economic importance, very little work has been done to demonstrate associations between teat morphological traits and the occurrence of mastitis and milk production in this species. It was reported that both morphological and physiological

mammary properties affect the milk yield in cattle (Tilki et al 2005). But not much research was done on the udder and teat morphology and their influence on the milk yield in buffaloes. The main objective to do the study was to find out how different udder and teat morphology affect the milk production and mastitis in buffaloes.

**Materials and method:** the study was conducted by reviewing 7 articles based on the morphology of udder and teat and their association with milk production and mastitis. The papers are..

| SLNO. | Name of the Articles | Authors |
|---|---|---|
| 1. | **Studies on the udder and teat morphology and their relationship with milk yield in Murrah buffaloes** | **(prasad et al 2010)** |
| 2.. | **Relationship of Udder and Teat Morphology with Milk Production in Nili-Ravi Buffaloes of Pakistan** | **(ABDULLAH et al 2013)** |
| 3 | **Relationship between Peak Milk Yield and Udder Parameters of Dehong Crossbred Dairy Buffaloes(Z.B. Gu et al 2018), Risks factors associated with subclinical mastitis in water buffaloes in Pakistan** | **(Hussain et al 2013)** |
| 4. | **Udder and teat morphology and their relation with incidence of sub-clinical and clinical mastitis in Sahiwal, Karan Fries cows and Murrah buffaloes** | **(Danish et al 2018)** |
| 5. | **Associations of teat morphometric parameters and subclinical mastitis in riverine buffaloes** | **( Kaur et al 2018)** |
| 6. | **Risks factors associated with subclinical mastitis in water buffaloes in Pakistan** | **(Hussain et al 2013)** |
| 7. | **Association between udder morphology and in vitro activity of milk leukocytes in high yielding crossbred cows** | **Tripti Sharma (Buragohain), Pradip** |

| | | |
|---|---|---|
| | | **Kumar Das, Prabal** |

Source of these paper was Google and researchgate by downloading them.The aim of the study was to concentrate the informations from the above articles and sum up them to find out the morphometric traits of teat and udder and their relation to milk production and mastitis.

## Results and discussion:

**Udder conformation in Buffaloes:**

Among the result of the studies the percentage of bowl-shaped udder is highest among buffaloes. It was about 78% ( Abdullah et al. 2013) and 61% (prasad et al. 2010) followed by globular, pendulous and goaty shaped udder. It showed that bowl shaped udder has a significant positive correlation with the milk yield in buffaloes. The greater number of bowl shaped were found in these studies as farmers preferred this type of udder for milking(Tripathi et al.1982). It was also reported that udder of bowl shaped was more desirable than other shapes as this shape yeild more milk.

**Teat conformation in Buffaloes:**

This study also showed that the percentage of cylindrical shaped teat is higher among the buffaloes which was 89%(Abdullah et al.2013) .The high frequency of cylindrical teat is due to this teat shapes are associated with increased milk yield compared with other teat shapes. (Bhardwaj et al 2007; prasad et al 2010).

**Teat conformation and Milking:**

Teat length and teat diameter showed positive and significant relationship with milk production(ABDULLAH et al 2013; prasad et al 2010). The udder width showed high positive and significant relation with the avg teat length, teat diameter and distance between fore teats. The peak milk yield was negatively correlated with udder depth and positively correlated with other mammary parameters (rear udder width, rear udder height, udder length, distance of rear udder, distance of fore-rear teats ,left fore teat length, left rear teat length, right fore teat length and right rear teat length. However, no significant correlation was found betwteen peak milk yield and mammary vein and teat conformation. (Z.B. Gu et al 2018).

**Comparison of Udder and Teats between buffalo and cows:**

The buffalo has an udder similar to that of cattle in the gross anatomy. The teats vary in shape and size. Generally they are larger than cattle teats.Krishnaswamy et al (1965) stated that the teat sphincter of buffaloes have smoother muscle fibre in such a way it constitutes a better barrier to microbes invasion that cow's teat sphincter.

**Udder and Teat conformation and mastitis:**

The incidence of mastitis was high among pendulous shaped udder (72.43%) followed by goaty (40.00%), round (18.18%) and trough/bowl (9.52%) shaped udder (Danish et al 2018). The number of frequency of udder shape along with mastitis on that study shown in table 1.

**Table 1:** Incidence of mastitis in Murrah(n=44) buffaloes with respect to different udder morphology(Danish et a l2018)

| **Udder shape** | **n** | **Healthy (%)** | **Sub-clinical Mastitis (%)** | **Clinical Mastitis (%)** | **Incidence of mastitis (%)** |
|---|---|---|---|---|---|
| Trough | 21 | 90..48(19) | 4.76(1) | 4.76(1) | 9.52 |
| Round | 11 | 81.82(9) | 0.00(0) | 18.18(2) | 18.18 |
| Goaty | 5 | 60.00(30 | 40.00(2) | 0.00(0) | 40.00 |
| pendulous | 7 | 28.57(2) | 57.14(4) | 14.29(1) | 71. |

The results about the number and percentages of quarters involved are presented in Table 2.

**Table 2**: Quarter-based prevalence of subclinical mastitis in buffaloes (hossain et al 2013).

| Quarter | No. positive (trace CMT+ to CMT 3+) | Total examined | % prevalence | 95%CI |
|---|---|---|---|---|
| FR | 38 | 563 | 6.8 | 4.89–9.05 |
| LF | 27 | 570 | 4.7 | 3.21–6.72 |
| RR | 44 | 521 | 8.4 | 6.28–11.07 |
| RL | 31 | 548 | 5.6 | 3.94–7.84 |
| Total | 140 | 2,202 | 6.4 | 5.39–7.44 |

RF front right, FL front left, RR rear right, RL rear left

Right rear and front quarters are significantly highly affected by mastitis. It may be due to the milking practice by suckling calves from right side of the udder. (hossain et al 2013)

Overall cylindrical teats were predominant (40.1%) followed by pointed, conical, bottle and others. (Kaur et al 2018). The most prevalent teat end shape was pointed (64.4%) followed by round (3.5%). Flat end teats were rare. (Kaur et al 2018)

Left sided teats were longer than right sided teats. Hind teats were longer and wider than fore teats. (Kaur et al 2018). The teat end floor distance didn't vary between teats. (Kaur et al 2018).

Teats of nili ravi were longer and wider and nearer to the floor than murrah (kaur et al 2018). There found a positive correlation with teat diameter and teat length with avg daily milk yield in murrah buffaloes (Kaur et al 2018).

Increased teat length, teat diameter showed significant positive correlation with mastitis. The teat length and teat diameter associated with mastitis were 9.7cm and 3.8 cm respectively (Kaur et al 2018). Teat end to floor distance negatively correlated with the mastitis. The teat end to floor distance associated with mastitis was 39.7 cm. (Kaur et al).

The logistic regression analysis revealed significant positive association of mastitis with milk leakage, teat apex diameter, live body weight, milk yield, Parity, calf suckling, pendulous udder, number of attendants in farm, dirty hind legs and udder depth. (hossain et al 2013).

Age and tail have no significant effect on mastitis (hossain et al 2013). However some other studies reported a significant association of mastitis with age in cattle (Valde et al. 2004; Nyman et al. 2007).Mastitic quarters have lower teat length and higher teat apex diameter. The teat mid diameter in right front quarters and teat base diameter in front and left rear quarters are also higher in mastic animals (hossain et al 2013). Prevalence of mastitis is higher in animals at 3rd stage of lactation. Having vatious pathological lesions, flat or round teat shape also increase the prevalence of mastitis. (hossain et al 2013)The studies stated that there was a protective effect of increased teat length, advancement in lactation, culling of animals and more housing space. Cylindrical teats have lower incidence of mastitis than other shapes (hossain et al 2013).

**Buffalo milk composition and Mastitis:**

Both buffalo and cow's milk are highly nutritious and provide a great amount of vitamins and minerals, but buffalo milk packs more nutrients and calories per serving.

Below is a comparison between 1 cup (244 ml) of buffalo and whole cow's milk

| | **Buffalo milk** | **Whole cow's milk** |
|---|---|---|
| **Calories** | 237 | 149 |
| **Water** | 83% | 88% |
| **Carbs** | 12 grams | 12 grams |
| **Protein** | 9 grams | 8 grams |
| **Fat** | 17 grams | 8 grams |
| **Lactose** | 13 grams | 11 grams |
| **Calcium** | 32% of the Daily Value (DV) | 21% of the DV |

Buffalo milk has more protein, fat, and lactose than whole cow's milk.

Buffalo milk contains less water, more total solids, more fat, slightly more lactose, and more protein than cow's milk. It seems thicker than cow's milk because it generally contains more than 16 percent total solids compared with 12-14 percent for cow's milk. In addition, its fat content is usually 50-60 percent higher (or more) than that of cow's milk. Although the butterfat content is usually 6-8 percent,( An analysis of 7,770 records of Nili/Ravi buffaloes in herds at the Pakistan Research Institute showed that average butterfat content was 6.40 (a mean based on 10 tests over 10 months). of all the samples tested, 77 percent ranged between 5 and 8 percent butterfat and 12 percent were below 5 percent butterfat. -information supplied by R. E. McDowell.) it can go much higher in the milk of some well fed dairy buffaloes and in the milk of Swamp buffaloes

(which are not normally used for milking). Cow's milk butterfat content is usually between 3 and 5 percent.

Because of its high butterfat content, buffalo milk has considerably higher energy value than cow's milk. Phospholipids are lower but cholesterol and saturated fatty acids are higher in buffalo milk. Studies have shown that digestibility is not adversely affected by this. Because of the high fat content, the buffalo's total fat yield per lactation compares favorably with that of improved breeds of dairy cattle; it is much higher than that of indigenous cows.

Normally the protein in buffalo milk contains more casein and slightly more albumin and globulin than cow's milk. Several researchers have claimed that the biological value of buffalo milk protein is higher than that of cow's milk, but this has not yet been proved conclusively. The mineral content of buffalo milk is nearly the same as that of cow's milk except for phosphorus, which occurs in roughly twice the amount in buffalo milk. Buffalo milk tends to be lower in salt.

In the buffalo species too, mastitis is the most costly disease in the dairy industry even though buffalo has been traditionally considered less susceptible to mastitis than cattle (Wanasinghe, 1985). Neverthless, as in any raw milk, microorganisms can multiply rapidly in buffalo milk due to its high nutrient content.

**Conclusion:** the results of the study indicates that among different types of udder and teat morphology of buffaloes bowl shaped udder and cylindrical teats have high positive association with milk production but has negative correlation with mastitis. As bowl shaped udder has more

compact anatomy and less distance from the floor it reduces the chance of occurring mastitis in buffaloes. On the other hand cylindrical shaped teat has narrow teat cistern which reduces the chance of accumulation of difffernt mastitis causing microorganisms. The cylindrical shaped teat has also strong teat sphincter which prevent the invasion of mastitis causing microorganisms. However other studies stated that bowl shaped udder has high incidence of mastitis(Hussain et al 2013). Udder width, length of teat, teat end to floor distance is also important parameters in order to select best animals as they have positive significant relationship with milk production and negative relationship with mastitis. High milk vain size also an indicator of more milk yield. However, it has no significance with peak milk yield (Z.B Gu et al. 2018). So, it is important to check out these parameters for the farmers to get benefitted by breeding and selection of best buffaloes.

## References:


1.Ziaullah Danish, Mukesh Bhakat, Adil Rasool Paray, Shabir Ahmad Lone, Abdul Rahim, TK Mohanty and Ranjana Sinha.Udder and teat morphology and their relation with incidence of sub-clinical and clinical mastitis in Sahiwal, Karan Fries cows and Murrah buffaloes. Journal of Entomology and Zoology Studies 2018; 6(5): 2138-214

2. Riaz Hussain & Muhammad Tariq Javed & Ahrar Khan & Ghulam Muhammad 2013.Risks factors associated with subclinical mastitis in water buffaloes in Pakistan.Tropical Animal Health and Production 45 1723–1729

3. Prasad RMV, Rao ER, Sudhakar K, Gupta BR & Mahender M 2010. Studies on the udder and teat morphology and their relationship with milk yield in Murrah buffaloes. Livestock Research for Rural Development. 2010; 22:1

4. Abdullah M., Javed K., Khalid M.S., Ahmad N., Bhatti J.A. and Younas U. (2013). Relationship of udder and teat morphology with milk production in nili-ravi buffaloes of pakistan. Buffalo Bull. 32, 1335-1338

5.Z.B.Gu, S.L. Yang, J.Wang, C.Ma, Y.Chen, W.L.Hu, S.K. Tang, H.S. Zhou, C.B. Liu, T. Che n, X.H. Fu, S.H. Xu, Z.P. Shi, R.S. Li, G.D. Mei and H.M. Mao2018.Relationship between Pea k Milk Yield and Udder Parameters of Dehong Crossbred Dairy Buffaloes. Iranian journal of applied animal science. Vol-208, Iss-201;2025-32.

6. Gagandeep Kaur, Baljinder Kumar Bansal, Raj Sukhbir Singh, Neeraj Kashyap and Shukriti Sharma 2018. Associations of teat morphometric parameters and subclinical mastitis in riverine buffaloes. Journal of Dairy Research (2018) 85 303–308.

6. Bhutto, A.L., Murray, R.D., Woldehiwet, Z., 2010. Udder shape and teat-end lesions as potential risk factors for high somatic cell counts and intra-mammary infections in dairy cows, The Veterinary Journal, 183, 63–67

7. Valde, J.P., Lawson, L.G., Lindberg, A., Agger, J.A., Saloniemi, H., Osteras, O., 2004. Cumulative risk of bovine mastitis treatments in Denmark, Finland, Norway and Sweden. Acta Veterinaria Scandinavica, 45, 201–210

8. Tripathi GS, Koul GL, Katpatal BG. Biometrical studies on shape and size of udder and teats and their relation with milk yield in Gir cattle. Indian J Dairy Sci. 1982; 35(4):539-543.

9. OkanoW,KoetzJuniorC&BogadoALG2015Relationshipbetweenshape of teat and teat tip and somatic cell count (SCC) in dairy cows. Acta Scientiae Veterinariae 43 1276–1281

10. Sharma A & Sindhu N2007 Occurrence of clinical and sub-clinical mastitis in buffaloes in the State of Haryana (India). Italian Journal of Animal Science 6 965–967

11. Tilki M, Inal S, Colak M & Garip M 2005 Relationships between milk yield and udder measurements in Brown Swiss cows. Turkish Journal of Veterinary and Animal Sciences 29 75–81

12. Bhuiyan, M.M., M.R. Islam, M.L. Ali, M.K. Hossain, M.A. Kadir, N.S. Lucky and B.R. Das. 2004. Importance of mammary system conformation traits in selecting dairy cows on milk yield in Bangladesh. J. Biolog. Sci. 4(2): 100-102.

13. Bharadwaj A, Dixit V B, Sethi R K and Khanna S 2007 Association of breed characteristics with milk production in Murrah buffaloes. Indian Journal of Animal Science 77: 1011 -1016.

14. FAO. 2012. Food and Agricultural Organization. The State of Food and Agriculture

15. Chakravarty, A. K. 2013. Strategies for genetic improvement of buffaloes through production of quality male germplasm in SAARC countries. Seminar paper presentation in “High Yielding Dairy Buffalo Breed Development in SAARC Countries, SAARC Agriculture Centre, BARC Complex, Farmgate, Dhaka-1215

16. Faruque, M. O., Hasnath, M. A. and Siddique, N. U. 1990. Present status of buffaloes and their productivity. Asia-Australian Journal Animal Science, 3: 287-292

17. Anjaneyulu ASR, Lakshmanan V, Sharma N, Kondaiah N (1990). Buffalo meat production and meat quality: A review. Indian Food Packer, 44(4): 21-31.

18. Anjaneyulu ASR, Sharma N, Kondaiah N (1994). Effect of salt and its blend with polyphosphates on the quality of buffalo meat and patties under hot, chilled and frozen conditions. J. Food Sci. Technol. India 31(5): 404-408.

19. Arganosa FC (1973). Evaluation of carabeef as a potential substitute for beef. Philippines Journal of Nutrition 26(2): 128-143

20. Biswas S, Banerjee R, Chakraborty A, Borpuzari RN (2007). Effect of electrical stimulation on carabeef quality. J. Food Sci. Technol. 44: 487-490.

21. Desmond H (1990). Cattle and Buffalo Meat Production in the Tropics. 1 st edition pp. 180-204

22. Kondaiah N (2002). Meat and by products.In: Handbook of Animal Husbandry. 3 rd revised edition. pp. 950-975. New Delhi, India: DIPA, ICAR.

23. Ranjan SK, Pathak NN (1979). Management and Feeding Of Buffaloes. pp 217-227. New Delhi, India: Vikas Publishing House.

24. Ross C (1975). Alternative Livestock: with particular response to the water buffalo (Bubalus bubalis).In: Meat. 1 st publication pp. 507-524

25. Joksimovic J, Oqnjanovic A (1977). Comparison of carcass yield, carcass composition and quality characteristics of buffalo meat and beef. Meat Sci. 1(2):105-110

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**Biography**

This is Tawkir ahammed, son of Md.Shahabuddin Khan and Taslima Begum.I am from Faridpur District. I completed my S.S.C in 2011 from Khilgaon Govt High School(Khilgaon,Dhaka) and H.S.C in 2013 from Dhaka College(Dhaka).I got admitted into Doctor of Veterinary Medicine (DVM) degree under Chattogram Veterinary and Animal Sciences University in 2014-2015 session. As an upcoming Veterinarian, I would like to dedicate my rest of the life for the welfare of animals. I am keen to be a field veterinarian as well as a skilled practitioner.