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## Occurrence of sub clinical mastitis in buffaloes in Periurban areas of Hyderabad

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### Abstract

In present investigation, a total 440 quarter milk samples of 110 buffaloes were screened for subclinical mastitis (SCM). Out of these, 76 quarters from 40 buffaloes were found positive based on bacterial cultural examination. The animal-wise and quarter-wise occurrence of subclinical mastitis recorded was 36.36 and 17.27 percent, respectively. Age-wise occurrence was highest in the age group of 6-8 years and lowest in the age group of above 12 years both animal and quarter basis. The occurrence of SCM both animal and quarter wise, in relation to lactation number was observed highest during fifth lactation and lowest in the first lactations and; in relation to lactation stage the occurrence was found highest in mid lactation, followed by early and least during late lactations on quarter as well as animal basis. Based on quarter disposition, occurrence of SCM was highest in right hind quarter followed by right fore. Buffaloes with milk production of more than 8 liters/day were affected more with SCM.

**Keywords:** buffaloes, subclinical mastitis, occurrence, lactation number and quarter disposition

### Introduction

Mastitis is an important disease of dairy animals caused by several infectious and non-infectious agents and is characterized by inflammation of parenchyma of the mammary gland with physical, chemical and bacteriological changes in the milk and pathological changes in the glandular tissues (Radostits *et al.*, 2007) [8]. High milk yielding cattle were more prone to mastitis when compared to low milk yielding cattle (Kavitha *et al.*, 2009). According to the severity, duration, nature of the exudates and primary cause, mastitis can occur in clinical and subclinical form in buffaloes (Sharma and Sindhu, 2007) [7]. It was reported that 14 per cent reduction in milk yield in animals affected with subclinical mastitis (Antanaitis *et al.*, 2015) [1]. Higher infection rate of subclinical mastitis is found in hindquarters as compared to the fore quarters (Belina *et al.*, 2016) [3]. Moreover, subclinical infected udder quarters may develop into clinical mastitis if left untreated. Subclinical mastitis was observed more frequently and characterized by absence of apparent clinical symptoms, but presence of chemical and bacteriological changes in the milk and often goes unnoticed. In buffaloes, the prevalence of subclinical mastitis is 3-40 times more common than the clinical mastitis and causes huge overall losses in most of the dairy herds (Sharma *et al.*, 2018) [10].

### Materials and methods

The present study was carried out on Graded Murrah lactating buffaloes from three different dairy farms and individual holdings located in and around Ibrahimpatnam mandal, Ranga Reddy District, Telangana state during the period from May 2019 to August 2019 were selected. The graded Murrah buffaloes in lactation below three months after calving were taken as in their early lactation, those in between three to six months were taken as in their mid-lactation and above six months were taken as in their late lactation. The graded Murrah buffaloes in very early (<15days post calving) and very late lactation were excluded from the study due to false positive results. The data pertaining to age, breed, lactation number, stage of lactation, parity was collected. The milk samples were collected from a total of 440 quarters of 110 lactating Graded Murrah buffaloes to diagnose subclinical mastitis. Occurrence of SCM was calculated taking into account the milk samples positive for bacterial growth out of total samples screened on animal and quarter basis irrespective of other tests performed.

### Results and Discussion

In the present study, out of 110 buffaloes screened, 40 were diagnosed positive for subclinical mastitis (SCM) based on cultural examination, forming an overall animal wise occurrence of

SCM as 36.36% (Table.1). These findings were in agreement with Sharma *et al.* (2007)<sup>[10]</sup> and Mir *et al.* (2014), with the occurrence rates of SCM as 32.90 and 30.73 percent respectively. Overall quarter wise occurrence was 17.27% and is in agreement with Sharma *et al.* (2018)<sup>[7]</sup> with the 15.33% respectively. Age wise occurrence of SCM was highest in buffaloes aged between 6-8 years (44.44%), followed by 9-11 (34.28%), 3-5 (30.00%) and 12 years above (20.00%) on animal basis (Table 2). Whereas, quarter wise occurrence of SCM was highest in 6-8 years (20.00%), followed by 3-5 years (16.52%) 9-11years (15.83%) and 12 years above (14.00%) Similar findings of occurrence of SCM in the age group of 7-10 years and 5-8 years respectively were reported by Kurjogi *et al.* (2014)<sup>[6]</sup> and Rady *et al.* (2009)<sup>[9]</sup>. Animal wise occurrence of SCM in relation to lactation number showed highest in fifth (81.82%) lactation followed by second (61.11%), six and above (40.00%), third (32.26%), fourth (30.00%), and least in the first lactations (08.00%) (Table 3). While, quarter wise occurrence of SCM was found highest in fifth (22.73%) lactation followed by third (21.30%), fourth (16.25%), six and above (15.63%), second (15.48%), and least in first lactation (7.14%), respectively. These findings were in agreement with Kurjogi *et al.* (2014)<sup>[6]</sup> with the report of highest occurrence of SCM in fifth lactation.

Animal wise occurrence of sub clinical mastitis in relation to lactation stage showed highest in mid lactation (38.30%),

followed by early (37.50%) and least in late lactations (32.26%) respectively (Table 4). While, quarter wise occurrence of SCM was highest in mid (21.81%) followed by early lactation (16.94%) and least in late lactations (10.94%), respectively These findings were similar with Joshi *et al.* (2006)<sup>[5]</sup> and Beheshti *et al.* (2011)<sup>[2]</sup> with the recording of highest occurrence of SCM in mid lactation as (59.49%) and (37.94%), respectively. The occurrence of SCM was highest in right hind quarter (23.64 %) followed by right fore quarter (20.91%), left hind quarter (17.27 %) and left fore quarter (07.27 %) (Table 5) and these results were in accordance with Hase *et al.* (2013)<sup>[4]</sup> with highest occurrence of SCM in right hind, left hind, right fore and left for quarters. Quarter wise occurrence of subclinical mastitis based on no. of quarters affected was 50.00, 20.00, 20.00 and 10.00 percent in single quarter, two quarters, and three quarters and four quarters respectively these results were in accordance with Srinivasan *et al.* (2013)<sup>[12]</sup> and Langer *et al.* (2014)<sup>[7]</sup> who also documented highest occurrence of SCM in single quarters lactating animals. Out of 110 buffaloes screened, higher occurrence was observed in buffaloes yielding 8 litres/day followed by 6-8 litres/day and 3-5 litres/day (Table.6). These results were in accordance with Siddiquee *et al.* (2013)<sup>[11]</sup> and Kathiria *et al.* (2014) who recorded higher prevalence of SCM in lactating animals producing more than 10 liters per day.

**Table 1:** Occurrence of Subclinical mastitis in buffaloes

S. No	Occurrence	No. of buffaloes screened	No. of buffaloes affected	Percentage
1	Animal-wise	110	40	36.36
2	Quarter-wise	440	76	17.27

**Table 2:** Age wise occurrence of SCM in buffaloes on animal basis.

S. No	Age group (years)	No. of animals screened	No. of animals positive	Percentage
1	3-5	20	6	30.00
2	6-8	45	20	44.44
3	9-11	35	12	34.28
4	>12	10	2	20.00
5	Total	110	40	36.36

**Table 3:** Lactation number wise occurrence of SCM in buffaloes on animal basis

S No	Lactation number	No. of buffaloes Screened	No. of buffaloes affected	Percentage
1.	First	25	2	08.00
2.	Second	20	6	30.00
3.	Third	5	2	40.00
4.	Fourth	18	11	61.11
5	Fifth	11	9	81.82
6	Six & above	31	10	32.26
7	Total	110	40	36.36

**Table 4:** Lactation stage wise occurrence of SCM in buffaloes on animal basis.

S No	Stage of lactation	No. of buffaloes tested	No. of buffaloes affected	Percentage
1.	Early lactation (up to 120 days)	32	12	37.50
2.	Mid lactation (121 to 240 days)	47	18	38.30
3.	Late lactation (above 240 days)	31	10	32.26
	Total	110	40	36.36

**Table 5:** Occurrence of SCM in buffaloes based on Quarter disposition.

S No.	Quarter disposition	No. of quarters screened	No. of quarters affected	Percentage
1	Right fore	110	23	20.91
	Right hind	110	26	23.64
	Total	220	49	22.27
2	Left fore	110	8	07.27
	Left hind	110	19	17.27
	Total	220	27	12.27

**Table 6:** Occurrence of subclinical mastitis in buffaloes in relation to milk yield.

S No	Milk production (lit/day)	No. of buffaloes screened	No. of buffaloes affected	Percentage
1.	3-5	30	5	16.67
2.	6-8	55	25	45.45
3	>8	15	10	66.67
4.	Total	110	40	36.36

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