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EFFECT OF STAGE OF LACTATION AND PARITY ON OCCURRENCE OF SUBCLINICAL MASTITIS

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Abstract: Out of 200 cows 98 (49.00%) cows were found positive for sub clinical mastitis. In present study 184 (23%) quarters from 200 cows (800 quarters) found positive for sub clinical mastitis. Thus, incidence of subclinical mastitis was 49% on cow basis and 23% on quarter basis. Highest occurrence of subclinical mastitis according to stage of lactation was observed in cows which were in late stage of lactation (55.41 %) followed by those in early (52.38%) and mid (38.10%) stage of lactation, while according to parity maximum occurrence (53.85%) of subclinical mastitis was found in cows of first parity and fifth & higher parity cows.

Keywords: Sub clinical mastitis, parity, stage of lactation, crossbred cows.

Introduction

Mastitis is an economically important disease of high yielding crossbred cows. It can occur in clinical and subclinical form. Clinical mastitis is readily apparent and easily detected by abnormalities in milk or the udder or the occurrence of secondary clinical signs. Subclinical mastitis does not lead to visible changes in milk or udder. Sub-clinical mastitis may cause heavy economic losses due to reduced milk production, discarded milk, early replacement of animal, reduced sale value and costly veterinary treatment [11; 9]. Subclinical mastitis is a management related herd problem and loss due to this is three times that of clinical case [2]. The incidences of sub-clinical mastitis in crossbred cows increased with the advancement of number of lactation [7]. Higher occurrences of subclinical mastitis in cows in early and late lactation was observed in 2013 [13]. Syridion [12] studied the effect of production system on milk quality parameters in Holstein Friesian crossbred cows and reported that according to parity the cases of subclinical mastitis were 9, 20 and 3 in organized production system and 8, 11 and 11, in traditional production system in 1st, 2-3 and ≥4 parity cows, respectively.

Materials and Methods

Milk samples were aseptically collected from each quarter of udder of 200 lactating crossbred cows belonging to 13 dairy farms of Anand district. All the cows were apparently healthy and

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free from clinical mastitis. Determination of prevalence of subclinical mastitis was based on California mastitis test [5], changes in pH of milk samples [10] and somatic cell count of milk [4].

Result and Discussion

Effect of parity (lactation order) showed maximum occurrence (53.85%) of subclinical mastitis in first parity cows and fifth and higher parity cows (Table 1). This might be due to possible lower resistance of first parity cows (mammary system not exposed earlier to the environmental pathogens) and reduced resistance in older parity cows. Once the cow acquired immunity, incidences have reduced in second and third parity. However, chi square test showed non-significant distribution of subclinical mastitis reactors between the parties. Contrary to present finding, Ramachandraiah [6] found increased incidences of mastitis with increase in lactation number in pure Jersey cows. This may be because of the fact that Jersey cows are always high milk producers as compared to crossbred cows which may predispose them to risk of mastitis. Further pure exotic cows lack disease resistance as compared to crossbred cows who have part inheritance of native cattle. Roy [7] and Sabin George [8] reported increased occurrence of subclinical mastitis with advancement of parity in crossbred cows which contradicts the present study.

According to stage of lactation the incidences of subclinical mastitis were observed higher in late stage of lactation (55.41 %) followed by early (52.38 %) and mid (38.10%) stage of lactation (Table 2). In agreement to the present study, the highest incidences of subclinical mastitis in dairy cows were observed [1; 3] during late stage of lactation. Tancin [13] reported that under practical conditions the periods after calving (early postpartum) and near the end of lactation (before drying) are critical for udder health and farmers should take more care on cows during this period. Higher occurrences of subclinical mastitis in early and late lactation observed in present study was in accordance with the Tancin [13]. Contrary to the present study, Sabin George [8] reported higher incidences of SCM during early stage of lactation in crossbred cows. Syridion [12] also reported higher incidences of SCM during late stage of lactation in Holstein Friesian crossbred cows.

References

[1] Biffa, Demelash., Debela, Etana and Beyene, Fekadu (2005). Prevalence and risk factors of mastitis in lactating dairy cows in Southern Ethiopia. *Intern. J. Appl. Res. Vet. Med.,* **3**(3):189-198.

[2] Derbyshire, J. B. (1961). The immunity of staphylococcal mastitis. *Vet. Rec.,***73**:1011.

[3] Hussain, R., Khan, A., Tariq J.M. and Rizvi, F. (2012). Possible factors associated with mastitis in Indigenous cattle in Punjab, Pakistan. *Pakistan Vet. J.*, **32**(4):605-608.

[4] International Dairy Federation. 1997. Recommendations for presenting of mastitis related data. IDF Bulletin 321. Brussels, Belgium. pp. 7-25.

[5] Pyorala, S. (2003). Indicators of inflammation in the diagnosis of mastitis. *Vet. Res.*, **34**:565–578

[6] Ramachandraiah, K., Sudharshan, K. and Sreemannarayana, O. (1990). Survey of mastitis in pure Jersey herd. *Indian Vet. J.*, **67**(2):103-106.

[7] Roy, S.K., Pyne, A.K. and Maitra, D.N. (1993). Studies on teat size and lactation number in relation to incidence of sub-clinical mastitis in some herds of crossbred cows. *Indian Vet. J.*, **70**(7):677-678.

[8] Sabin George, Joshi, H.C., Suman C.L., Rathore, R.S. and Bisht, G.S. (2007). Incidences of subclinical mastitis in crossbred cattle herd. *Indian J. Anim. Prod. Mgmt.,***23**(1-4):1-4.

[9] Samad, A. and Awaz, K.B. (1997). A rapid spot (Maum) test based on detection on trypsin inhibitors in milk to diagnose bovine subclinical mastitis. *Int. J. Anim. Sci.,***12**:97-101.

[10] Shahid, M. Sabir, N., Ahmed, I., Khan, R. W., Irshad, M., Rizwan, M., Ahmed, S. (2011). Diagnosis of subclinical mastitis in bovine using conventional methods and electronic detector. *ARPN J. Agriculture and Biological Science,***6**(11)**:**18-22.

[11] Singh, P.J., Singh, K.B., Dhingra, P.N. and Nautiyal, D.C. (1994). Incidence, etiology, and antibiogram of pathogen isolated from subclinical mastitis in machine milked cows. *Indian J. Dairy Sci.*, **47**:730-33.

[12] Syridion, D., Layek, S.S., Mohanty, T.K., Kumaresan, A., De, Kalyan.,Manimaran, A., Prasad, Shiv. And Venkatasubramanian, V. (2013). Effect of production systems on milk quality parameters in Holstein Friesian crossbred cows. *Indian J. Dairy Sci.*, **66**(5):424-431.

[13] Tancin, V. (2013). Somatic cell counts in milk of dairy cows under practical condition. *Slovak J. Anim. Sci.,***46**(1):31-34.

Table 1. Effect of parity (Lactation order) on the occurrence of subclinical mastitis in crossbred cows

Parity	N	Positive cases of SCM	%
First	52	28	53.85
Second	40	17	42.50
Third	45	20	44.44
Fourth	37	19	51.35
Fifth & above	26	14	53.85
Overall	**200**	**98**	**49.00**

Table 2. Effect of stages of lactation on the occurrence of subclinical mastitis in crossbred cows

Stage of lactation	N	Positive cases	%
Early (first 100 days)	63	33	52.38
Mid (101-200 days)	63	24	38.10
Late (more than 200 days)	74	41	55.41
Overall	**200**	**98**	**49.00**