BUFFALO MASTITIS - RISK FACTORS

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ABSTRACT

Buffaloes are the major part of subsidiary economy to the rural people in coastal Andhra Pradesh in India. However, buffaloes along with cattle are prone to the intramammary infections, and these have a lot of economic impact on the farmer. The present work was taken up with the objective to find out whether the risk factors influencing mastitis in cattle and buffaloes are the same or whether any additional risk factors play a role in buffalo mastitis. Further the study also focussed on whether normal, clinical and sub-clinical somatic cell counts in buffaloes are the same in buffaloes as in cattle.

Keywords: mastitis, buffalo, risk factors, somatic cell count, comparison

INTRODUCTION

Bovine mastitis is an important and a persistent infection in the buffalo population producing economic losses, drop in milk production, increased cost of treatment and culling process (Dhakal and Thapa, 2002 and Singh and Bansal, 2004). Moreover there are no proper control measures in order to contain the disease because of its multifactorial nature. Further, in the consumers’ and processors’ point of view, milk from the affected animals will have lot of organisms which will decrease the quality of the milk products and also affect the health of the consumer (Bilal et al., 2004). In this regard, it is preferred to know about the risk factors that govern buffalo mastitis and any interventions that will reduce the incidence of the disease. Hence an analysis was undertaken of the different risk factors in relation to buffalo mastitis.

MATERIALS AND METHODS

Milk samples were obtained from 125 Murrah cross buffaloes that were presented to the Teaching Veterinary Clinical Complex of NTR College of Veterinary Science with or without problems of the mammary gland. The milk samples were collected aseptically after cleaning of the teats with 70% alcohol and leaving the first few strippings of milk, and then the samples were brought to the laboratory in the Department of Veterinary Epidemiology and Preventive Medicine. A total of 1000 quarters were examined for the presence of mastitis by testing the pH of the milk, the California Mastitis Test and Somatic cell count. pH was examined by using the pH papers of range 3 to 8 (Qualigens). Whereas, the California Mastitis test was conducted as described by Amalendu Chakrabarti, 2004. The direct somatic cell count was done by staining the milk sample that was placed on one cubic millimetre area of a glass slide with Newmann-Lampert stain as per the procedure described in Brar et al., 2000. Further, direct microscopic somatic cell counting was done by using the procedure described by Sharma et al., 2005. The standards for the somatic cell count were taken from Dhakal, 2004 and Moroni et al., 2006.

RESULTS AND DISCUSSION

On observation of a total of 1,000 quarters, it was found that 31 quarters were clinically affected...
with mastitis, and 17 animals were affected with sub-clinical mastitis. Among the clinically infected quarters, the inflammation was distributed as: fore left quarters 14.2%, fore right quarters 9.8%, hind left quarters 10.7% and hind right quarters 12.5%. Whereas 7.03% of fore left quarters, 10.1% of fore right quarters, 10.93% of hind left quarters and 10.93% of hind right quarters showed sub-clinical mastitis, which indicated higher prevalence of clinical and sub-clinical mastitis on hind quarters, which may be due to the greater chances of hind quarters being soiled with urine or from the tail. The mean normal somatic cell counts were observed as 1,60,536 cells/ml of milk whereas the mean somatic cell count of the sub-clinical mastitis cases were 2.59 lacks/ml (2 lacks to 3.5 lacks/ml) and the mean somatic cell count of the clinical cases was 6.05 lacks/ml of milk (3.5 lack cells/ml of milk and above). It was observed that the normal somatic cell counts in buffalo milk were lower when compared to cow milk which was in agreement with the findings of Dhakal, 2004 and Moroni et al., 2006. Further, on observation of different risk factors, it was found that the buffaloes in the first stage of lactation (1-4 months) and the last part of dry period (10-12 months) were more prone to mastitis (Figure 1) which was agreement with studies on cattle (Aarestrup and Jensen, 1997). Another risk factor, parity level also had a pronounced effect on the development of mastitis. As the parity increased, there was an increase in the incidence of mastitis (Figure 2). On consideration of the type of bedding as another risk factor, it was found that the incidence of mastitis was less on sand flooring than concrete, and that when soil was used as the bedding material, the incidence was high (Figure 3) which was in agreement Bartlett et al., 1990. On observation of the method of milking, the incidence of clinical and sub-clinical mastitis was high when knuckling was practiced rather than stripping (Figure 4) on comparison with the full-hand method. The relative risk was 2.8 and 2.2 in both clinical and sub-clinical mastitis which exhibited a strong positive association between the risk factor and mastitis. It was observed that wallowing habit of buffaloes also had a significant effect on clinical and sub-clinical mastitis which exhibited a strong positive association between the risk factor and mastitis. It was observed that wallowing habit of buffaloes also had a significant effect on clinical and sub-clinical mastitis. As the parity increased, there was an increase in the incidence of mastitis (Figure 2). On consideration of the type of bedding as another risk factor, it was found that the incidence of mastitis was less on sand flooring than concrete, and that when soil was used as the bedding material, the incidence was high (Figure 3) which was in agreement Bartlett et al., 1990. On observation of the method of milking, the incidence of clinical and sub-clinical mastitis was high when knuckling was practiced rather than stripping (Figure 4) on comparison with the full-hand method. The relative risk was 2.8 and 2.2 in both clinical and sub-clinical mastitis which exhibited a strong positive association between the risk factor and mastitis. It was observed that wallowing habit of buffaloes also had a significant effect on clinical and sub-clinical mastitis which exhibited a strong positive association between the risk factor and mastitis. It was observed that wallowing
Fig 2. Influence of Parity level on the Incidence of Clinical and Sub clinical mastitis

Fig 3. Influence of Bedding material on clinical and subclinical mastitis
REFERENCES


