

Associations of teat morphometric parameters and subclinical mastitis in riverine buffaloes

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Short title: Teat morphometry and quarter health in buffaloes

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Abstract

The present research was conducted to explore the possible association between teat morphometric traits and subclinical mastitis (SCM) in dairy buffaloes. Clinically healthy buffaloes (47 Murrah and 34 Nili-Ravi breeds) were involved and teat morphometric parameters i.e. teat shape (bottle, conical, cylindrical, and others), teat-end shape (flat, round, inverted, and pointed), teat length (TL), teat diameter (TD), and teat-end to floor distance were measured before milking but after proper milk let-down. Subclinical mastitis was defined on the basis of bacteriology and somatic cell counts (SCC) of quarter foremilk samples. Overall, a higher proportion of cylindrical teats (40%) and pointed teat-ends (64.4%) were observed. Hind teats were longer and thicker as compared with front teats ($P < 0.05$). A significant breed effect was found with respect to teat shape, TL and TD ($P < 0.05$). Teats were mostly cylindrical (43.3 vs. 35.4%) and conical (34.2 vs. 30.8%) shaped, smaller (mean 8.2 vs. 9.5 cm) and thinner (mean 3.3 vs. 3.6 cm) in the Murrah breed as compared with the Nili-Ravi breed. Teats that were 'other' shaped, longer, wider, and placed closer to the floor were more associated with SCM ($P < 0.05$). Mean SCC was significantly higher ($P < 0.05$) in Nili-Ravi buffaloes, teat shapes classified as 'others', and quarters with SCM. In conclusion, teat morphometric traits seem to be associated with indicators of udder health in buffaloes, thus, their inclusion in breeding programmes for selection against undesirable dairy type traits may be of value in reducing susceptibility to intramammary infections in Indian buffaloes.