

## Abstract

The behavioral studies on the domesticated Indian cow *Bos indicus* were conducted with three main objectives –

1. Preparing ethograms of *Bos indicus* maternal behaviour including mother – calf interactions and mutual communication.
2. Elucidation of audio spectrograms of mother/calf vocalizations, mutual responses to those vocalizations & pain vocalizations.
3. Finding an alternative to oxytocin injection in form of induced proximity between mother and calf and to observe changes in milking amount due to this proximity.

Observations revealed that Sahiwal breed of *Bos indicus* is being intensively farmed in around Agra region, thereby allowing limited interaction between mother and calf – only one hour in morning and evening for manual milking purpose, the evening observations were conducted.

Eight behaviors were expressed during this time period viz. feeding and rumination as predominant activities in mother even by calf was in close proximity. Maternal grooming activities like licking and body touch were enhanced during post-parturient phase for just one hour and only one percent of total activities during the maternal-offspring interaction hour. We found that the neonatal calves first standing occur after about few minutes of the birth. Fourier transform 2D plots of the spectrogram of the vocalization recorded (4 individual) revealed individual differences in patterns. The only site-wise differences in behavior were expressed by smallholder cows in their higher milking yield, more body movement due to natural pen yard and the calf being within vision of their mother 24x7. The higher milk yield could be attributed to this factor although oxytocin administration in their body/diet can not be ruled out for this further testing and formation of oxytocin test kit / biosensor composes our further plan in future.