Conclusion

All thirty individual cow and calf pairs displayed the enlisted behaviors in Table 1 during the mother and calf interaction time permitted by care givers which was only during milking hours.Behavior associated with maternal care in domesticated *Bos indicus* were for the most part similar to those observed in wild counter parts by Marina et al., 2007.

The expression of the maternal behavior included licking, nursing and protection from potential predators. In this case, it included human strangers other than the caregivers.

Cows spent much of the first few hours after birth licking the calf, a behavior that is important in stimulating calf activity and may have physiological effects including stimulating breathing, circulation, urination and defecation. Tail wagging was more in Smallhoder cows.Neck movement & rumination was greater in Smallholder cows while feeding was least compared to Dayalbagh Goshala & Mathura.

Cows' routine vocalizations were anticipatory calls given to their calves who had not arrived yet. The proximity of calf during milking is strongly recommended to discourage the use of oxytocin as let down of milk in cow becomes difficult after separation of calf.

Future plans include examining of milk samples from smallholders in Agra region for presence of oxytocin to create better awareness by the consumer. We also suggest that highest level of welfare can be provided by discouraging the use of anti-kicker chains by allowing prolonged mother-calf proximity as an alternative to the chains.

We also propose provision of larger free ranging space so that they can express different types of behavior and loss of any behavioral trait due to intensive domestication and 24x7 caregiving.