ABSTRACT

Efficient and accurate estrus detection is essential for optimal conception rates in cattle. Comprehensive estrous behaviour studies in Jersey upgraded cattle were lacking and therefore undertaken.

In the first part of study, cows under loose housing system were observed visually daily for 30 min each at 07:00, 11:30, 15:30 and 18:30 h, respectively. A total of 313 estrous periods were detected in 136 cows; 256 were in breedable cows, whereas the remaining 28, nine and 20 were in cows in voluntary waiting period (VWP), mid-cyclic estrus (MCE) and gestational estrus (GE), respectively. In breedable cows, restlessness, sniffing and chin rest were most common signs recorded during 97.7, 94.5 and 89.5 per cent estrous periods with a respective frequency of 15.2 ± 0.6, 11.2 ± 0.5 and 8.8 ± 0.4, respectively. The average estrous behaviour score and duration were 1054.3 ± 476.0 and 16.6 ± 0.4 h, respectively. Standing heat was recorded in 60.2 per cent of the estrous periods and was associated with relatively longer estrous duration (17.1 ± 0.4 h). Majority of the estrous periods (62.5%) were first detected in the morning observation (07:00 h). In more than 50 per cent estrous periods, two or more cows had estrus onset in the same observation period, thereby indicating a strong synchronization effect. Cows in VWP, MCE and GE had less intense estrus than when these were in ovulatory estrus. The efficiency of visual detection method in present study was 89.5 per cent with 100 per cent accuracy.

Heifers, compared to lactating cows, had higher estrous behaviour score (1523.8 ± 100.6 versus 825.0 ± 41.0) and longer duration (17.6 ± 0.7 versus 16.1 ± 0.4 h). Body condition score of 3.0 to 3.25, temperature humidity index of 60-70, age of 4-6 years and lactation stage of < 90 d were associated with a higher frequency of certain EBS in cows.

In the second part of study, 400 cows from different areas, raised under tied conditions, were surveyed with the help of a questionnaire. The Jersey-upgraded lactating cows had much better estrous expression than heifers with same blood, as well as the Zebu
heifers and lactating cows; the expression was, however, less than the Jersey-upgraded cows maintained under loose housing conditions in the first part of study.

In conclusion, the method of estrous detection in the present study was quite efficient and highly accurate. Restlessness, sniffing and chin rest behaviour need to be incorporated in the estrus detection protocols so as to detect maximum cows in estrus. These would be helpful in the lactating cows and cows not showing standing heat due to the lower associated estrous intensity and/or duration. Under field conditions, Jersey upgraded lactating cows were the most likely candidates to be detected in estrus more efficiently.