

# Does Flooring Surface Affect Estrous Behaviour In Lactating Dairy Cows?

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Poor estrus detection rate is a contributing factor to the decline in reproductive efficiency of dairy cows. Many factors negatively impact estrus detection efficiency and estrous behaviour; one in particular, is flooring surface (footing). Therefore, the objective of this study was to investigate estrous behaviour differences in dairy cows observed on two floor types. Seven lactating Holstein cows housed in tie-stalls were induced into estrus. Cows were observed for estrous behaviour on concrete and straw-bedded dirt floors, twice daily (0700 h and 1700 h), for 7 consecutive days. At each observation cows were observed on one floor type for 30 minutes, and immediately moved to the second floor type for another 30-minute observation period. The order in which cows were observed on the concrete or straw floor alternated each period. Blood progesterone concentrations were measured before and after the estrus induction, and we confirmed that all cows responded to treatment. Standing estrus was observed in 5 of the 7 cows. Although ovulations were confirmed by ultrasonography in 5 cows, only 4 of these cows had shown standing estrus. This observation indicates that while a majority of the ovulations are preceded by standing estrus, some cows ovulate without overt signs of estrus. An increase in licking, head-butting, attempting-to-mount, mounted-but-not-standing, and standing estrus was observed on the straw floor compared to the concrete floor ( $P < 0.10$ ). Cows laid down a total of 15 times on the straw floor *versus* 0 times on the concrete floor ( $P = 0.10$ ). Numerous slips and 2 falls occurred on the concrete floor, whereas none occurred on the straw floor. Tailgating behaviour was only observed on the concrete floor ( $P = 0.06$ ), which could imply that although cows were in estrus, they were more reluctant to mount on the concrete floor.

**Implications:** Increased estrous behaviour was observed on the straw-bedded floor compared to the concrete floor. This indicates that the natural flooring provides good footing, can improve cows' willingness to mount, which, with increased observations could improve estrus detection efficiency.

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