

Lying time and behavior for dairy cows: an update from Dr. Cassandra Tucker (UC Davis)

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As part of Cornell's Herd Health & Nutrition Conference last month (April 2022), Dr. Cassandra Tucker (UC Davis) presented on the importance of lying time and lying behavior for dairy cows. Dr. Tucker started her presentation by describing that a majority of lactating cows will lie down for ~10-12 hours per day and this behavior is often made up of 9-11 bouts per day that last 1 to 1.5 hours. Dr. Tucker further highlighted that there is a lot of cow-to-cow variability as the result of environmental stressors, animal health factors, and milk production levels. For example, lame cows will lie more than non-lame cows, and cows with mastitis will lie down less than their healthy counterparts.

Furthermore, although not surprising, it is interesting to see how housing influences lying time. Cows in a pasture system on average spent 9.3 hours/d lying down, whereas cows in a freestall system spent 11.4 hours/d, and cows in a tie stall spent 11.6 hours/d lying down. Dr. Tucker concluded that these cows may be giving up lying time to graze and perhaps cows in general are more willing to stand on pasture than they are to stand on concrete. Environmental factors also play a role in lying time. For example, Dr. Tucker summarized several studies that concluded cows will spend more time standing (and less time lying) as the ambient temperature increases. Not only does environmental temperature play a role, but so does the quality of the surface that they have access to. Cows that had a dry surface always spent more time lying compared to cows that only had access to a muddy or wet surface.

After highlighting some of the factors that influence lying time, Dr. Tucker discussed how important lying time is to cows. To no surprise, it turns out cows really want to lie down! In one study where cows were forced to stand for 4 hours, they would lie down within 4-7 minutes when they were finally given the opportunity to do so. They would also try to compensate for this by spending more time lying down in the following 4 hours compared to cows that were not forced to stand. In a separate experiment, Dr. Tucker and colleagues looked at how badly cows want to lie down and more specifically how hard they would work for it. In this study, the researchers concluded that cows would exert up to 570 lbs to have access to a spot to lie down. Some of these cows also spent 13.5 hours trying to push through the gate before they gave up, and 5 cows never gave up! These findings highlight the fact that cows really do value their lying time and will work very hard to get it.

To conclude her presentation Dr. Tucker emphasized that cows should not be forced to stand for longer than 3 hours at a time. While 3h may seem like a lot, time adds up quickly when you consider how early you may bring cows to the holding area for milking and how long cows stand in lockups for herd health checks. Additionally, it's important to consider that not all lying time is the same. The quality of lying time is not as well understood but is equally important for cow welfare and productivity. Dr. Tucker's research group will continue to explore this important area.