

Types of Bedding Affect the Resting Behavior of Lactating Dairy Cattle

Dr. Gustavo Schuenemann

Extension Veterinarian

Veterinary Preventive Medicine, The Ohio State University

Animal housing designs play an important role on the overall animal health and productivity; and providing an adequate surface for animal resting is essential. According to the National Animal Health Monitoring System report (USDA, 2007), freestall barns are one of the predominant housing system (Figure 1) for lactating dairy cattle in the United States. Poor cow comfort has been associated with high incidence of lameness (Espejo et al., 2006) in lactating dairy cows. Additionally, lameness will impact negatively on cow productivity (increased milk losses; Hernandez et al., 2005) and reproductive performance (Garbarino et al., 2004) through reduced resting, walking, and feeding time. Lameness along with reproductive failure and mastitis are the top reasons for cow removal from the herds (USDA, 2007). Lactating dairy cows housed in freestall barns spent ~12 to 13 hours per day of resting (“time that cows spent lying down”; Gomez and Cook, 2010). However, there are many factors such as lameness, time spent milking, overcrowding, DIM, or stall base type (e.g., sand or crumbed-filled mattresses) that may alter the pattern of resting behavior in cows. Nonetheless, it is clear that cows must interact with the stall surface (bedding) in order to rest. A recent study conducted at the University of Wisconsin provides evidence that the stall base type (rubber crumbed-filled mattresses or sand bedding) affected the resting behavior of lactating cows (Gomez and Cook, 2010). In this study, 205 lactating dairy cows [non-lame (n=104), slightly-lame (n=66), or moderately-lame (n=35)] from 16 herds were subjected to continuous video surveillance during a 24-hour period for each cow in an effort to understand the resting behavior. Overall, lame cows spent less time standing in the alley and less time feeding compared to non-lame cows. In herds with rubber crumbed-filled mattresses, cows showed greater number of lying downs of shorter duration compared to sand bedding herds. Additionally, a greater proportion of lame cows spent more time resting in sand bedding than rubber crumbed-filled mattresses.

Implications: Losses due to lameness in lactating dairy cows can be very costly to dairy producers. It is clear that lameness impacts on the time budget (time resting, eating-drinking, standing in alleys-stalls, or walking in the pen) of cows; thus, compromising the overall animal productivity and well-being. If cows need enough resting time to enhance well-being and productivity (and to recover from a foot disease), they may benefit from stall base surfaces filled with sand as opposed to rubber-crumbed mattresses.

References

1. Espejo, L. A., M. I. Endres, and J. A. Salfer. 2006. Prevalence of lameness in high-producing Holstein cows housed in freestall barns in Minnesota. *J. Dairy Sci.* 89:3052-3058.
2. Garbarino, E. J., J. A. Hernandez, J. K. Shearer, C. A. Risco, and W. W. Thatcher. 2004. Effect of lameness on ovarian activity in postpartum Holstein cows. *J Dairy Sci.* 87:4123-4131.
3. Gomez A., and N. B. Cook. 2010. Time budgets of lactating dairy cattle in commercial freestall herds. *J. Dairy Sci.* 93:5772-5781.
4. Hernandez, J. A., E. J. Garbarino, J. K. Shearer, C. A. Risco, and W. W. Thatcher. 2005. Comparison of milk yield in dairy cows with different degrees of lameness. *JAVMA.* 227:1292-1296.
5. USDA. 2007. Dairy 2007, Part I: Reference of Dairy Cattle Health and Management Practices in the United States, 2007.

