

## ENHANCED MANAGEMENT

By Lindsay Ferlito

# The impact of bedding on cow comfort and lameness

Understanding just how much impact good quality bedding has on cows can help producers better manage their bedding to reduce lameness and improve cow comfort. Providing a comfortable stall base is one of the easiest ways to have a positive impact on cow comfort. Cows housed on deep-bedded stalls, compared to other types, such as mattresses, mats or waterbeds, have lower overall and less severe lameness, fewer overall and less severe hock injuries, higher lying time, especially for lame cows (see figure), lower SCC, and higher milk production. Data from a 2009 survey of Minnesota freestall herds found that dairies with sand bedding had almost a 4,000 pound higher DHIA Rolling Herd Average than those without sand. Additionally, Nigel Cook, Professor, Food Animal Production Medicine, University of Wisconsin-Madison, School of Veterinary Medicine, found using deep-bed sand can reduce culling rates. Feet and leg issues (aka lameness) are a top cause of involuntary culling in the US, so by reducing lameness with deep-beds, involuntary culling can be reduced too.

Deep-beds deliver these benefits because they provide a large amount of bedding for the cow, and because it reduces her chances of rubbing or hitting a hard stall surface. Deep-beds are not always a possibility, and mattresses can be a good option if enough bedding is used.

A study of tie-stall cows on mattresses found that for every one inch increase in compressibility of shavings, lying time was increased by 15 to 23 minutes. Moreover, a recent study in Canada found the odds of lameness were lower when there was >2 cm of bedding in the stalls. It's hard to keep bedding on a mattress for very long, so fresh bed-

**Deep-beds improve comfort and reduce lameness, but all stalls must have clean, dry and ample bedding.**

ding should be added regularly (every other day) to maintain coverage.

To get the full benefit out of a deep-bed (or well-bedded mattress), the bedding must be good quality and maintained. One study tracked the level and depth of sand in deep-beds for 10 days after bedding was added. The change in depth of sand was largest the day after bedding was added, and over time the stall became more concave. For every one inch drop in sand below the level of the curb,

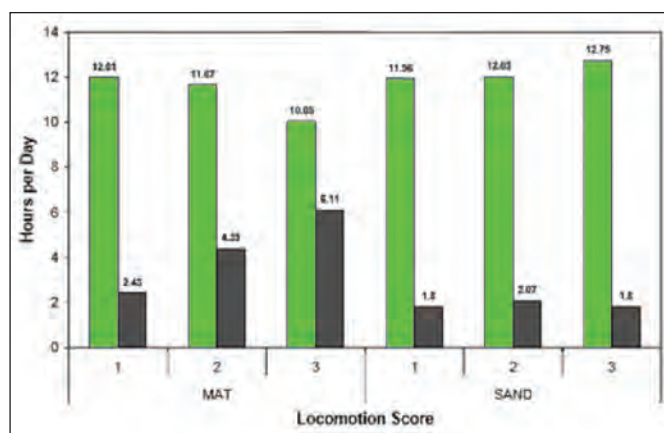
lying time was reduced by 28 minutes per day. Additionally, lying time is significantly reduced on wet, compared to dry sawdust, especially when the bedding dry matter drops below 60%. Dairies with more contaminated and dirty stalls are associated with higher severe lameness. Cows really do want clean, dry, ample bedding.

Sand is referred to as the gold standard bedding for cow comfort, as it is usually soft and pliable, has good drainage, little organic matter, and provides good traction. Ultimately, however, good cow comfort can be achieved with many different types of bedding if they're managed well. What tends to be most important is if the bedding is soft, clean, dry, and if there enough of it in the stall. It's

imperative to choose a bedding material that you can manage and that your manure system and facilities can handle.

Overall, deep-beds provide better cow comfort and reduce the risk of lameness. But all stalls must be maintained and managed to provide cows with a comfortable place to rest with clean, dry, and ample bedding. □

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Data from Dr. Nigel Cook, University of Wisconsin-Madison. The chart shows time lying down in stall (grey), and time standing up in stall (black), on mattress (MAT), and deep-bed sand (SAND) herds, for cows with locomotion scores 1 (sound), 2 (slightly lame), and 3 (severely lame).