

# Cow Comfort and Free-stall design

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Cows spend many hours lying down. Poor stall design may result in a number of problems including reduced lying times, increased leg and hoof problems, and reduced milk production. Two aspects of free-stall design, bedding material and stall dimensions, influence stall usage. In one experiment, we investigated how three bedding types (deep bedded sawdust, sand, and geotextile mattresses bedded with 3-4 cm of sawdust) influenced stall preference and usage. Nine of 12 cows preferred deep bedded sawdust. However, when restricted to each bedding type, the average lying time was similar for deep-bedded sawdust and sawdust covered mattress. Sand was least preferred and had the lowest average lying time, three hours less than the other materials. A second study investigated the effects of stall dimensions, namely stall width and length, on stall preference and usage. Two widths, 44 and 52 inches, and two lengths, 7'6" and 9' were tested. Although cows did not show strong preferences for a given stall size, lying and standing times differed significantly when the cows were restricted to one stall size. In the largest stall (52" by 9') cows were lying down an hour and a half more than in the smallest stall (44" by 7'6"). Additionally, in the smallest stall, cows stood nearly two hours more than in the largest stall. These results indicate that both bedding material and stall dimensions can significantly influence stall usage and lying times.