Free stall design and management

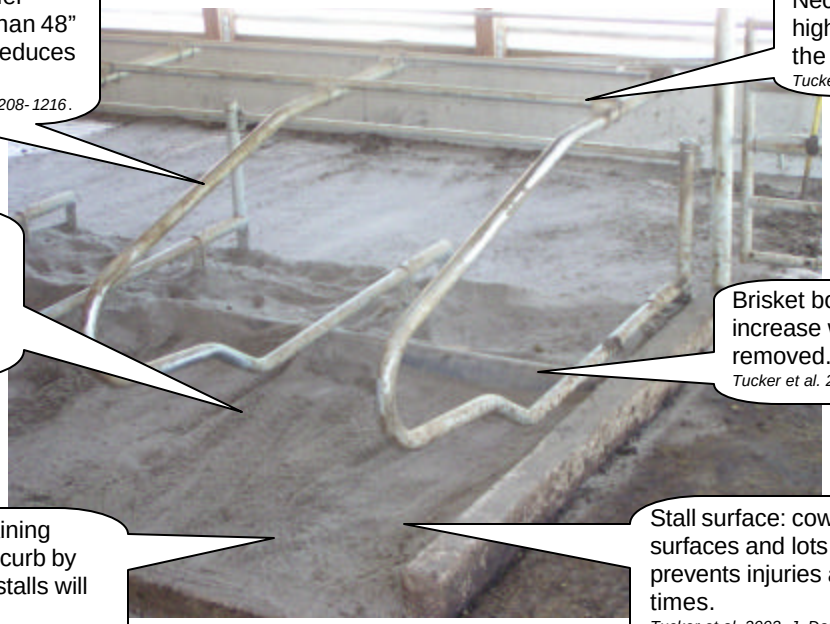
The Challenge:

To create functional and comfortable housing systems for dairy cattle. High producing dairy cows require well designed and well maintained housing that prevents injuries and allows for adequate rest.

What We've Done?

Improving housing for dairy cows has been an important focus of research at the UBC Dairy Centre. Over the past few years we have performed dozens of studies on how best to design and manage free stall systems. These experiments involve detailed measures of cow health, preferences, resting and standing times, and take advantage of specialized facilities at the Dairy Centre that allow for manipulations to stall structures and the automated monitoring of cow behaviour.

Our Findings:



Stall partitions: cows' prefer these wide apart - more than 48" improves lying time and reduces standing.
Tucker et al. 2004. J. Dairy Sci. 87:1208-1216.

Neck rail: cows' prefer these higher and closer to the front of the stall.
Tucker et al. 2005. J. Dairy Sci. 88:2730-2737.

Stocking density: reducing stall availability reduces lying times and increases competition for stalls.
Fregonesi et al. 2004. Proc. ISAE. p.243.
Winckler et al. 2003. Proc. ISAE. p.130.

Brisket board: lying times increase when these are removed.
Tucker et al. 2006. J. Dairy Sci. 89:2603-2607.

Stall maintenance: maintaining bedding to the level of the curb by adding bedding or raking stalls will improve lying times.
Drissler et al. 2005. J. Dairy Sci. 88:2381-2387.

Stall surface: cows prefer softer surfaces and lots of bedding, which prevents injuries and increases lying times.
Tucker et al. 2003. J. Dairy Sci. 86:521-529.
Tucker and Weary. 2004. J. Dairy Sci. 87:2889-2895.

Conclusions:

These results provide a scientific basis for recommendations to producers that allow for improved cow comfort and reduced risk of injury.

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