

Cow Comfort Affects Somatic Cell Counts

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Maintaining a low somatic cell count in the dairy herd is a constant battle. Dairy producers who have a concern with the somatic cell count (SCC) level often look first to milking procedures that may be corrected or will check over the milking equipment to determine if there is a malfunction or an adjustment that needs to be made. But, what if nothing is found wrong in the milk house or with the milking process? The solution could be in the comfort level for the herd's housing environment. Dairy housing that improves cow comfort will help to keep cows clean and dry, which will reduce environmental pathogens and help reduce the level of the somatic cell count in the dairy herd.

Stall Design and Dimensions – In either a tiestall barn or freestall barn, stalls must be well-designed and managed to result in clean udders and less exposure to mastitis-causing organisms. In the tiestall barn, the stall size must fit the cow so manure and urine can be deposited into the gutter and not on the stall platform. For freestall barns, Nigel Cook, Clinical Associate Professor, School of Veterinary Medicine, UW-Madison presented new recommendations for stall dimensions at the 2004 National Mastitis Council conference. The recommendations are in the following table (in inches):

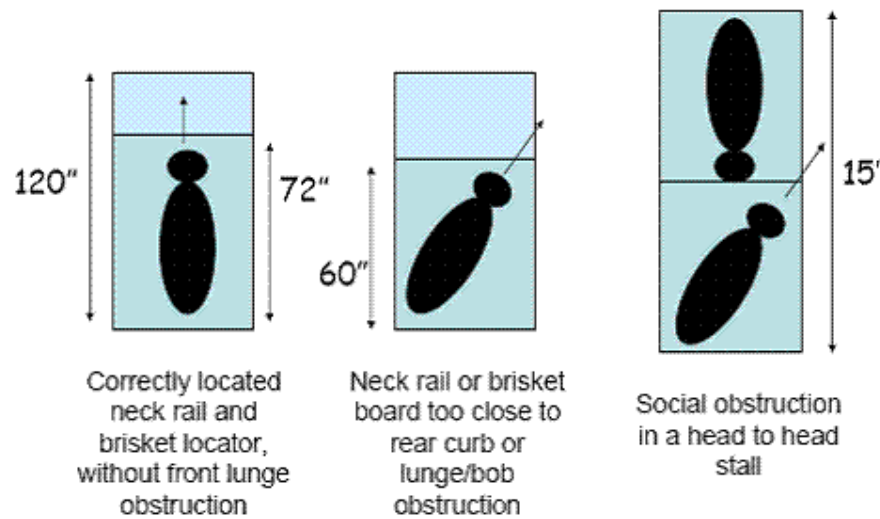
	First Lactation	Mature Cow	Pre-Fresh
Total length facing wall	108	120	120
Head to head platform	204	216	216
Rear of curb to brisket board	68-70	70-72	72
Stall width	48	50	54
Height of brisket board	4	4	4
Height of lower divider rail	11	11	11
Height below neck rail	48	50	50
Rear curb to neck rail	68-70*	70-72*	72*

**minus width of rear curb in sand stalls*

Basically, these new recommendations provide a little more space for the mature cow over 1500 lbs and more lunge space than in the past. Research has determined that a brisket board higher than 4-5 inches forces the cow to jamb her leg downward rather than forward, which increases stresses on her feet and legs. The neck rail needs to be in a position where the cow does not hit it in order to stand in the stall. If lunge space is inadequate then cows have more difficulty in rising and they may eventually stop using the stall. If that happens the cow may end up lying in an unclean location.

Cows lying or standing diagonally in the stall -- This can lead to unsanitary conditions as cows will deposit manure in the corner of the stall and contaminate the bedding material. This

manure ends up on the flank and udder. The following Figure was taken from a publication written by Dr. Cook entitled, "The Cow Comfort Link to Milk Quality."



Dr. Cook indicates that the stall design must allow for normal rising and lying movements of the cow. There must be forward lunge room for the head. There must be allowance for the forward stride of the forelimb as she rises, so that the leg can take the weight of the cow and facilitate the rising motions. Note the third diagram above where the cow resists being head to head and therefore lies diagonally. Cows will rarely front lunge into a cow lying in the opposite stall. This is a social obstruction that causes a cow to lie diagonally. Therefore, for head to head stalls, the recommendation is to have a stall platform of 18 ft. N. Anderson, in proceedings from the 36 th Annual Convention of American Association of Bovine Practitioners in Ohio in 2003, recommends that stalls located against a solid side wall be 10 ft long to allow for forward lunging by the largest cows in the herd. Therefore, diagonal lying is in response to a failure to meet some or all of these requirements.

Does water affect SCC? Cows need clean, fresh sources of water to maximize their water intake and help regulate their body temperature. Without it, they will have trouble maintaining their normal body core temperature resulting in reduced dry matter intake, lower milk production and *higher somatic cell counts* (Hay and Hutchison , Louisiana State University Research and Ag Center). Cows prefer drinking water temperature at around 70 ° - 86 ° F rather than cold water (40 ° - 60 ° F).

Ventilation can affect SCC – The ventilation system must remove moisture produced by the animals to provide drier air, which results in drier alley surfaces and drier bedding. If air movement is inadequate in hot weather, cows may seek a wet surface in an effort to increase the rate of heat dissipation from their bodies.

If sprinklers are being used in freestall barns – The goal is to soak a cow's hair coat to the skin, but not wet the udders. Do not allow water to be blown into freestalls, which *creates a mastitis hazard*.

If on pasture, move animals frequently to a clean area. If there is shade, they will tend to congregate there during hot weather, potentially making an area of mud, urine and feces, leading to more subclinical and clinical mastitis infections.

Control flies – Flies carry bacteria from one place to another including mastitis pathogens such as Staph aureus to the teat ends of heifers or cows (“Principle-based Mastitis Prevention,” Dr. John Kirk UC, Davis).

Bedding material – Whatever bedding is used must keep cows clean and dry. Keeping stalls well-bedded maximizes moisture absorption, adds resilience, makes stalls comfortable, increases usage, and reduces potential for injury.

Yes, there is a link between cow comfort and milk quality. Keeping cows clean, dry and comfortable, although always difficult to achieve, are as important to preventing udder infections and achieving high milk quality on the dairy farm as is having consistent milking procedures and milking equipment that is always functioning properly. Dairy housing that improves cow comfort will help reduce the somatic cell count level in the dairy herd.

SOURCE:

<http://www.extension.umn.edu/Dairy/dairystar/09-10-05-Broadwater.htm>