

Comfortable Cows Are More Productive

Cows that are comfortable in their environment will be healthier, will give you fewer problems and will make you more money than cows that are stressed. Most astute dairymen can look at a group of cows and get a feel for whether or not the cows are reasonably content. However, when you see your cows every day and do not have any other cows to compare to, you may become cow-blind. You may not see stress or changes that occur in your cows' behaviour.

A very common problem that I see on dairy farms is uncomfortable cows. When your cows are eating, drinking or being milked they are making you money. When they are just standing around because they are under stress, milk synthesis is slowed. In stressful situations cows are pulling 20 dollar bills out of your back pocket. The objective of this article is to help you evaluate whether or not your cows are comfortable and if not, suggest how you can alleviate the problem.

Free stall design

Many dairymen believe the easiest way to manage cows within a free stall environment is to cement in the stalls and then use a salt shaker to do the bedding (it won't cause problems with the manure pump). However, what is not considered is the added stress on the cows.

Stress associated with standing for excessive periods of time is very costly. Cows that are stressed have reduced dry matter intake and, subsequently, lower levels of milk production. Longevity is also reduced. Weight loss is excessive and reproductive problems increase. Laminitis can also be a direct effect of standing for excessive periods during the day. Based on repeated farm observations, I speculate that uncomfortable free stalls will reduce milk production by 1-5 liters per day.

When a cow considers entering a free stall, she must make several decisions. The first might be, how easy is it to step up into the stall? I have seen cows step up as high as 14 inches to enter a comfortable free stall. However, an 8 inch step is probably ideal. Once she is in the free stall, how easy is it for her to lay down? Will she hit the

stall divider and get hurt? Is there a brisket board? Is there adequate lunge space?

The stall divider illustrated in figure 1 is one of the better dividers relative to minimizing injury and allowing cows to stand back up. These dividers are particularly good if your stalls are short and the cows cannot lunge forward. If there are problems with the cow wanting to lie down, she will stand for excessive periods of time. Once she is finally down she will lie there too long which causes her to go to the bunk less frequently and consequently consume less dry matter. If cows consume fewer meals during the day then the meals they eat are larger and the cows can get into yo-yo type feed intake.

There are many factors that cause cows not to enter free stalls, however I believe that 75% of the problems are related to cow comfort once she is down. Cows can generally figure out how to lie down and get back up, however if they are not comfortable when lying down there are big problems.

A good barometer to indicate how well your stalls are functioning is to evaluate your cow's hocks, knees, rump area and hooks. Swollen and abraded hocks and swollen knees are an excellent indication of stall problems. Evaluate your cows' hocks and knees the next time they are in the parlour. If your cows have abscesses or bumps and bruises on their hooks and rump area then they are most likely injuring themselves when they attempt to stand or lie down.

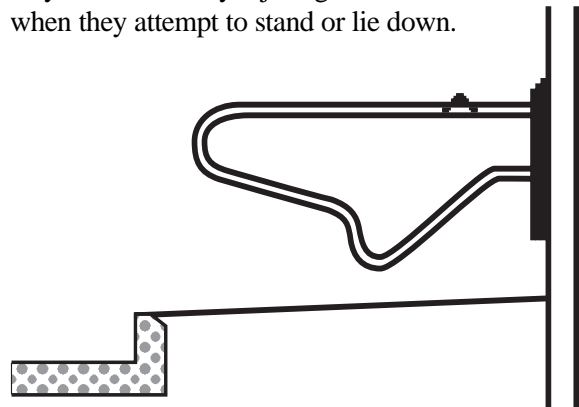


Figure 1 : Configuration of a free stall divider that minimizes injury and allows cows to easily lunge to the side. Courtesy of Hoard's Dairyman.

If you are serious about evaluating cow comfort, block off a 3 hour time frame sometime this week and do the following :

- obtain a pillow, a blanket and a ball pein hammer;
- go out to your barn and count the number of cows lying down, the number standing and the number eating and compare that to the number of cows you would see standing around if the cows were on pasture;
- enter a typical free stall, stand for a moment and then free fall to your knees. How does that feel? If you are willing to do that over and over your free stalls are probably soft enough. If not, how do you think a cow feels about dropping to sore knees day after day?
- now pick up the ball pein hammer and whack yourself in the knee, make it good and sore. Again, drop to your knees repeatedly in the free stalls. How does that feel? Any idea why your cows stand all day?
- pick up your pillow and blanket, select a typical free stall and take a nap. Go ahead curl up in there. Is it comfortable, would you be able to sleep there for 305 days in a row and get up and be 100% the next day?

Stall bedding

Sand is an excellent bedding material for free stalls. However, the sand is hard on manure equipment. Kiln dried sawdust also makes an excellent base as long as there are 5 or more inches of material in the stalls. Straw works well providing there is enough to make a nice squishy bed for your cows

Figure 2 demonstrates a new type of stall mattress which has recently become available. These are an excellent way to improve cow comfort in cemented stalls or cemented stalls that are covered with rubber mats. They are filled with ground rubber or other similar inert materials, sewn into longitudinal tubes so

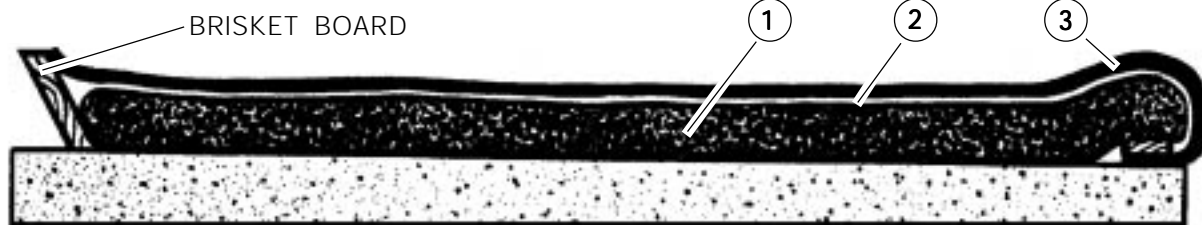


Figure 2 : Illustrations of mattresses used to improve the comfort of cemented free stalls. The upper diagram is a view looking from the end of the stall; the lower, a view from the side. (1) inner core of rubber crumbles (2) multi-celled comfort bag (3) outer wear skin. Courtesy of ProMat Ltd.

that the material can not bunch up. The individual mats, one per stall, are then covered with one continuous sheet. I have observed this type of mat in 5 dairy barns. The managers and I have been very pleased with the results up to this point.

A barn in the Westlock area recently provided an excellent demonstration of cow stall preference. This barn has cemented free stalls, free stalls with rubber mats and free stalls with the new rubber filled mattresses. There are 17 mattresses in the barn, approximately 40 cement stalls and about 23 rubber mats. Prior to disturbing the cows, we counted the number lying and standing. On the mattresses there were 13 cows lying down, 3 standing with their front feet in the stalls and 1 open stall. On the rubber mats (first 17 stalls) there were 7 cows lying down, 6 standing and 4 open stalls. In the first 17 cement stalls there were 17 empty stalls!

If you are going to upgrade your stalls, I suggest changing a few stalls at a time to evaluate the changes. If the new stalls are successful, then change the rest.

If you are designing a new dairy barn, spend time visiting other dairies and asking questions before putting your design on paper. Do not limit your travels to your local area or you circle of dairy friends. As well, Hoard's Dairyman has an excellent publication on design of free stalls entitled Plan Guide For Free Stall Systems.

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