

Concrete versus Rubber Flooring

Researchers at Agriculture and Agri-Food Canada's Lennoxville and Agassiz Research Centres have conducted several studies of the effects of flooring on cow behaviour.

In one study, smooth concrete flooring was compared with a floor covered with Animat®-brand rubber mats (see photo). These mats have a rough surface and provide good friction and resilience. The study showed that the cows walked 8% faster and slipped less often on the rubber flooring. Of the cows walking on the concrete, 70% slipped at least once, but only 20% slipped when walking on the mats.

The difference between flooring types was more apparent when the cows had to turn a corner or cross an open gutter. When the cows were walking on the concrete, the handler had to encourage all of them to jump over the gutter or continue walking down the alley. With the rubber flooring, only 70% of the cows need encouragement, suggesting that improving the quality of the floor covering can lead to reduced livestock handling costs. The advantages of the rubber mats were observed both when the floors were dry and when they were slurry-covered.

Free-stall barns commonly have concrete floors that are grooved to increase their degree of friction. Which has the greater effect on mobility, friction or compressibility? To answer this question, the researchers again compared smooth concrete with

rubber mats but this time, both were covered with a material providing a good degree of friction. The results suggested that a floor's degree of compressibility has a more significant impact on walking speed than its degree of friction. The results of other studies confirm the advantages of flooring that is softer, more resilient and more compressible, such as geotextile mattresses, and that is covered with a fabric that provides a good degree of friction.

A third study was aimed at gaining a better understanding of the impact of floor covering type on the behaviour of dry cows at the feed bunk.

The floors in front of the feed bunks were made of either slatted concrete or slatted concrete covered with rubber mats. The results showed that the cows that had access to the rubber floor covering spent more time standing at the feed bunk than the cows on the slatted concrete did—an average of 5.5 hours more per day. The cows that had access to the Animat® flooring spent less time standing in their stalls. The results suggest that cows that spend a great deal of time standing in their stalls do so because they do not have access to other places that are comfortable enough for resting while on their feet.

Lame cows reduce their feed intake because they are uncomfortable. More resilient flooring in front of the feed bunk could reduce the negative impacts of lameness.

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