Grooving 15-year old Concrete improved footing

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Following years of daily manure scraping from 200 cows with a tractor mounted blade, plus increased cow and mechanical traffic, the outdoor concrete lots at the Purdue Dairy Center had become excessively slick. Many cows moved like they were waling on eggs.

We considered using a scabbler (small air hammers mounted on a two-wheel carriage) as is done in the New England area to roughen concrete. We decided against it since we were afraid of cracking the concrete at lower depths.

In the fall of 1978, we decided to renovate the existing slick concrete with grooves for the well-being of the herd and workers. The contract was to groove the holding pen, walkways to and from the milking parlor, the free stall alleys and several feed bank areas.

One year after having this work done, no cows were culled due to skid accidents, slipping or "doing the splits." During the past 15 years two or three cows were culled each year due to slipping on wet concrete.
Cows in heat now are mounting one another in the free stall alleys. There is more action and greater confidence in walking, especially in the holding pen where all cows congregate.

In the immediate past year, two cows were injured. In March 1980, one did the "splits" and another cow went down in July. Both cows were injured away from the grooved area at the west end of our facilities where there is a hazardous slope.

Grooving of existing, highly polished concrete in free stall alleys, holding areas, walking lanes and cow lots reduces cow injuries and attrition. Grooving is increasing in popularity with little or no increase in cost. New confinement and stanchion barn construction should utilize grooving.

Why haven't heavy-duty rubber or wood scrapers been used instead of steel blades to scrape lots and alleys?
Also, US, Free stall alleys are extremely slick compared to alleys in England. The English pour and tramp their alleys to a less smooth finish.

Recently, a long-awaited 44-foot by 130-foot nutrition and heifer barn with fence-line feeding was built at Purdue. During construction, grooves roughly 4" apart, 1" wide and 1/2" deep - were placed in the free stall alleys and outdoor lot.

A homemade tool was used. It was patterned after instructions in Agricultural Engineer's Digest 19, "Slip resistant concrete Floors", Midwest Plan Service, Iowa State University, Ames, Iowa 50011. Preliminary observations show no apparent foot or walking problems.

To get dairy cows off of concrete within a confinement system, an earthen mound was erected for the Southern Indiana Purdue Agricultural Center milking herd. Observations were made on the 50-foot long structure.

During the hot summer weather of July and August 1980, cows preferred to stay under roof in the loose housing barns. Also, putting half the milking herd out for half days is preferred for detecting heat in the 35-cow group over using the mound on alternate days.

General observations of other area dairy farmers show that some are using water and prefabricated shade to advantage for cow comfort to avoid 'summer slump' or drop in milk production during the summer.

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