

cause of stall refusal since they hinder the cow getting up or laying down.

Free Stall Bases:

Concrete stall bases require the least maintenance and dirt stall bases are most often selected by cows when given a choice. This should come as no surprise. While various other items have been tried, other popular bases in new installations in addition to concrete and dirt are planks laid on porous fill (sand or small gravel), tires embedded in earth fill or mattresses. A free stall mattress consists of a plastic tarp type material covering a soft fill of sawdust, shavings, straw or rubber dust. All of these methods provide for a reasonably comfortable bed and reduced maintenance (Gamroth & Moore, 1987) (Hodgson, 1986) (McFarland, 1991).

Free Stall Bedding:

No free stall base is satisfactory without the use of bedding. Bedding provides a more friendly surface to lay on and serves to absorb manure and urine that is deposited in the stall. Soiled bedding, especially organic bedding, that is allowed to build up in the stall will usually result in increased mastitis problems due to the build up of microorganisms. Bedding type and management should keep in mind the "clean, dry and comfortable" admonition.

Alley Surfaces:

Concrete alleys are another health hazard in free stall barns. Continuous polishing by scraper blades and deterioration from freezing and thawing and the ever present coating of liquid manure usually result in a very smooth and

treacherous surface. Field experience indicates that grooving of a new concrete and regrooving of older worn concrete is the only effective method of improving animal traction. This reduces injuries from slips and falls and usually improves heat detection. Before animals are exposed to new concrete surfaces, sharp edges should be removed from the concrete by dragging with concrete blocks or a scraper blade with down pressure. Scrapers cut from large earthmover tires help squeegee wet manure from the alley and reduce concrete wear.

A common recommendation for grooving concrete is to place grooves in a diamond pattern 3/8-1/2" deep and wide in a 6-8" diamond pattern (NDPC-1,1980). Recent work in England indicates that parallel grooves 2-3 inches apart may be just as effective as the diamond pattern. Regardless of pattern, grooves should not be placed perpendicular to the normal travel of the scraping tractor. When regrooving existing concrete, the pattern and direction of the grooves is usually dictated by the size and type of machine.

Grouping/Feeding:

Another potential problem area in free stall housing is the lack of sufficient groups. This leads to problems from a feeding standpoint such as overweight dry cows. A separate hospital group to contain all cows requiring special attention such as withholding of milk should also be established on more farms.

For information on articles reference in this column, contact the authors.

Inspect Your Housing System

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It seems like everything from a package of new underwear to a computer has a slip of paper inside with "inspected by..." and initials or a number on it.

This is supposed to assure us that the item is well made and ready for use. Sometimes this "inspection certificate" is not worth the paper it's printed on. Even items that are well made require follow-up inspections and maintenance.

What about your cows, what do they think about where they live and work? Is the "inspection certificate" for their barn worth the paper it's written on?

It's your responsibility to assure that your dairy facilities are cow, worker, neighbor, and environment friendly. This begins with the planning and design of the facility.

Select a location that provides for good ventilation and easy access, allows for environmental protection, and leaves room for expansion. Quality materials assembled by workers who know and care about what they are doing are also important.

Day-to-day wear and tear decreases cow comfort in any dairy facility. We often take for granted little changes here and there. Missing stall parts, waterers that don't work right, or slippery floors become a normal part of the barn. The list is endless.

Assign yourself a specific time this week to inspect your cow facilities and make a list of what needs fixing, replacing, or upgrading. Often the most important things don't require a large expenditure of time or money to fix.

Items to check in freestall barns:

✓ **Cows appear comfortable.** Do cows look and act like they are enjoying themselves? Are cows spread out around the barn eating, drinking, and lying down? Would you like to walk, rest, eat, and drink where your cows live and work?

✓ **Fresh air.** Is the barn fresh and airy, or is it filled with wet smelly air? Do cows crowd around "fresh air sources" such as open doors or windows? What is it like at different times of the year?

✓ **Freestall use.** Do cows go directly to freestalls and lie down after eating or drinking? Or, do cows tend to stand around with their heads down doing nothing?

✓ **Rising and reclining.** Can cows rise and recline naturally and quickly in freestalls without excessive rocking or preparation movements? Is the freestall resting surface clean, dry, and comfortable?

✓ **Opportunity to drink.** Are there at least two sources of clean, fresh water so cows can take a long, cool drink whenever they desire? Is the water dispenser at a convenient height with adequate space around it for cows to drink without being pushed and shoved by other cows? Is the water supply adequate year round?

✓ **Feed area.** Do cows have a smooth, easily-cleaned eating surface? Can cows eat in a natural head-down grazing position without excessive interference from bars, cables, or lockups? Is feed regularly distributed and pushed up?

✓ **Cow movement.** Do cows walk around with confidence and comfort, or do they hesitate or slip and fall readily? How extensive is lameness and injury to feet and legs?

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