Do's and Don'ts When Managing Freestalls for Dairy Cows

College of Agriculture, Food and Environment
Cooperative Extension Service

By: Thomas Sumner and Donna M. Amaral-Phillips, Ph.D.

People say that deep bedded sand freestalls are the gold standard for cow comfort on dairies in the US, but some farms prefer mattresses in freestalls. The reality is, both options for bedding surfaces have their advantages and disadvantages, and both can be challenging to manage. When a farm struggles with lameness, trying to get more milk out of the cows, or when having a high somatic cell count, it may be simple freestall management practices that can be changed and make a huge difference. With the new Farmer Assuring Responsible Management or FARM program, (a program that is now required on most dairies), 95% of the lactating and dry cows should score a 2 or less for lameness, and proper freestall management impacts the number of lame cows. Since cows should be lying down for 10 to 12 hours a day, the best surface for the cows to lie down on should be provided. Here are some do's and don'ts for both mattress and sand bedded freestalls:

Do's and Don'ts of Mattress Freestalls

- Properly Bed All Mattresses: Providing cows with the proper amount and type of bedding while keeping cost low is often a problem for farms that use freestalls with mattresses. A freestall should have at least 1 to 3 inches of bedding on it at all times to ensure the cow stays clean. When using mattresses, organic bedding will most likely be used. Wood shavings, sawdust, or paper are all forms of organic beddings that a farmer can place on top of the mattress.
- Keep Freestalls Clean and Dry: Manure and urine should be cleaned out of the stall every time milkers get the cows to be milked. If bedding is wet from rain, it should be removed and replaced with new, dry bedding.
- Replace Old Mattresses When Needed: The maximum lifespan on most foam/rubber mattresses is 10 years. By that time the rubber or foam has compressed and is very hard and not a comfortable surface for cows to lie down on. Waterbed mattress should also be replaced/fixed as soon as a leak is found.
- Design the Stalls to Fit the Cows: When designing a new freestall barn or renovating an existing barn, you need to make the stalls as big as the biggest cow in the herd. A stall too small will discourage bigger cows from lying in them. When designing a barn, refer to the recommendations by Dan McFarland, Penn State Ag Engineer, on the dimensions needed by different sized cows.

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Animal Weight (lbs)	Total Stall Length Closed Front (in)	Total Stall Length Open Front (in)	Length To Brisket Tube or Board (in)	Length to Neck Rail (in)	Stall Width Center to Center (in)	Height to Top of Partition (in)	Height to Neck Rail (in)	Brisket Board or Tube Height (in)
900-1100	90-96	78-82	64-66	62-64	41-43	42-44	42-44	4-6
1100-1300	96-102	80-86	66-68	64-66	43-45	44-46	44-46	4-6
1300-1500	102-108	90-96	68-70	66-68	45-48	46-48	46-48	4-6
1500-1700	108-114	96-102	70-72	68-70	48-52	48-52	48-52	4-6

Do's and Don'ts of Deep Bedded Sand Freestalls

- Keep the Stall Full of Sand: Keeping the freestall full of sand is critical for keeping the cow clean. When cows get up and down in stalls, they generally will throw a lot of sand out. This will create an impression in the back of the freestall which can hold moisture.
- Keep the Stall Groomed: The sand in freestalls needs to be cleaned just like the mattress freestall. The milker should scrape the manure and urine out of the back of the freestall every time cows are milked.
- Use the Right Sand: Some sand can be too small in particle size for recycling. The smaller sand will get stuck on manure and by pass the recycling phase. Also, too large particle size can increase the risk of cows becoming lame. Concrete and mason sands are both examples of sands that can be used and effectively recycled.
- Keep the Slope of the Sand Downward: The slope of the sand should be downward towards the alley with a 2 to 3% slope from the front to back.
- When Recycling Sand, Replace with the Cleanest Sand Possible: If the farm recycles sand, make sure the sand has enough time to dry before allowing it to be reused. Recycled sand should be around 10 to 12% moisture with less than 2% organic matter. Higher concentrations of organic matter can cause mastitis in the long run.