

We chose a two-row barn with feed bunks

— by Hoard's Dairyman magazine and farm staff —

THERE are two aspects of our new dairy facilities that are different than current trends. First, we chose to have just two rows of face-to-face free stalls, rather than four, six, or even eight which are showing up in some cross-ventilated barns. Second, we chose to install feed bunks rather than have flat mangers. We were familiar with two Holstein operations, both with 30,000-pound plus herd averages, one with a two-row curtain barn with no fans and the other with bunks.

The main reasons for us to go two-row involve ventilation. Our site is well exposed to prevailing south/southwest summer winds. Average wind speed for Fort Atkinson during August is 7 mph. (Of course, we do have our dog days.)

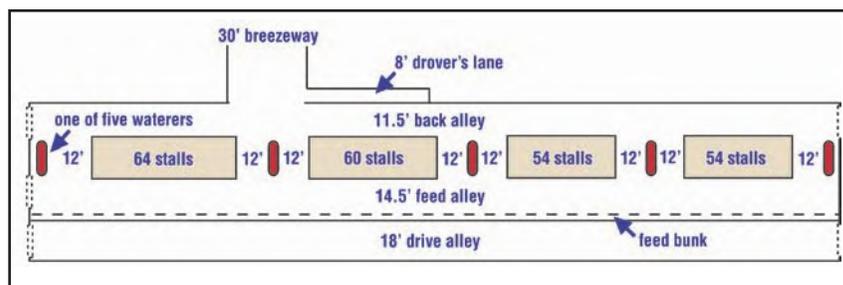
However, with 16-foot-high sidewalls, 60-foot width, and our relatively heat-tolerant Guernseys, we

Blake Scharine, Whitewater, Wis., we did some pencil pushing on the trade-offs. The following comparisons are all based on covered drive alleys and 250 stalls, although our new barn has 232 stalls.

A 116- by 200-foot, six-row barn would have 23,200 square feet or 93 square feet per cow. A four-row barn might tape 99 by 300 feet and have 29,700 square feet or 119 square feet per stall. You can see why people have been drawn to six-row barns, just based on initial cost.

With a 60- by 600-foot, two-row barn, you end up with 36,000 square feet or 144 square feet per stall. But, as we have said, we don't plan to use fans in our two-row barn.

For the sake of comparison, a 250-stall, four-row barn might have four rows of fans with six fans in each row, for a total of 24. In each side of the barn, one row of fans would be



chose not to install fans in the free stall barn. We do have fans in the holding pen and could add misters there if we thought we needed to. There is no insulation under the free stall barn roof.

We believe our cows went through last summer without showing much heat stress. Milk production held well during hot spells, although, as reported in our January 10, 2008, issue, page 22, we felt that new barn/new herd mates' stress was keeping our somatic cell counts higher than we liked to see them.

Having a narrow barn means having a long barn . . . 568 feet, in fact. And having one drive alley for two rows of stalls means having more building space per stall. Working with our general contractor and dairy equipment supplier,

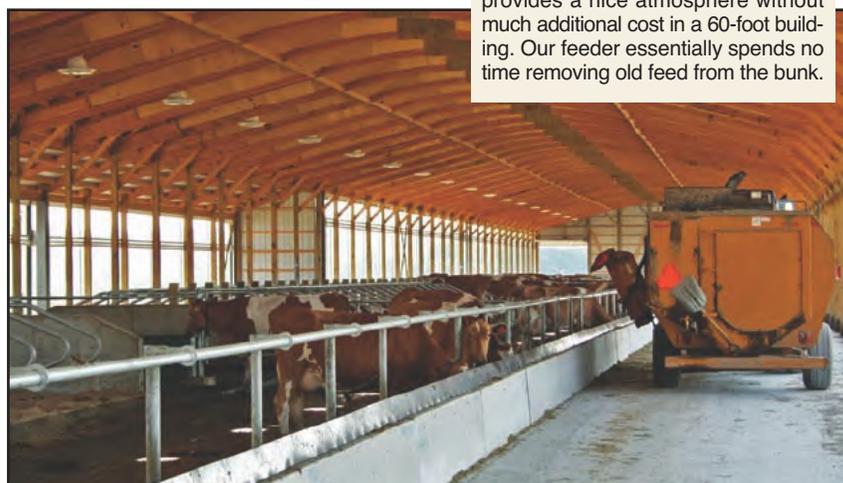
placed over the feed and the other over the double row of stalls.

We estimate the fans, wiring, and installation would cost between \$30,000 and \$35,000. Electricity cost is going to be in range of \$10,000 per year assuming 10 cents per kilowatt hour and that the fans run an average of 12 hours a day between May 1 and September 30.

We compared our ventilation cost analysis with a similar one prepared by Curt Gooch at Cornell University. In both cases, the cost of owning and operating the fans was between \$15,000 and \$20,000 per year.

Having a one-time expense of extra building space per stall compared to annual ventilation expense in the \$15,000 to \$20,000 range

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made sense to us. Here's why.

Let's call ventilation cost \$17,000 a year over a 7-year period. That's \$119,000 for mechanical ventilation. But we built about 6,800 additional square foot of building because of our two-row design . . . 5,800 to account for the drive alley factor and 960 for the drover's lane. At \$10 per square of building (shell and flat work) our additional building cost was \$68,000.

That seems like a good trade-off to us. The result is a quieter, lower-maintenance, and more energy-efficient barn.

The covered drover's lane enables cows in the far end of the barn to get to the breezeway and the milking center, without disturbing the middle group. The alternative is confining the middle group of cows to half of their free stalls while the end group is being milked. We were concerned that would interfere with cows getting as much lying time as they need and causing them stress.

Disease control was another consideration. With the two-row design, it is not necessary to cross cow-traffic alleys with the mixer wagon.

Went clear-span . . .

We like having a clear-span building which added little additional cost in such a narrow building. It provides an attractive, uncluttered atmosphere that has relatively few places for birds to perch.

Labor was the biggest consideration for the bunks. Our farm manager, Jason Yurs, likes to see fresh feed put in bunks essentially cleaned completely by the cows. Our feeder spends no time cleaning leftover feed out of the bunks.

On the other hand, pushing up feed three times between twice-daily feedings would require at least three hours worth of labor, skid-steer wear and tear, and fuel a day. At \$20 an hour, that's \$20,000 a year. Besides, with our 2x milking schedule we wouldn't have anyone to push up from 10 p.m. to 3 a.m.

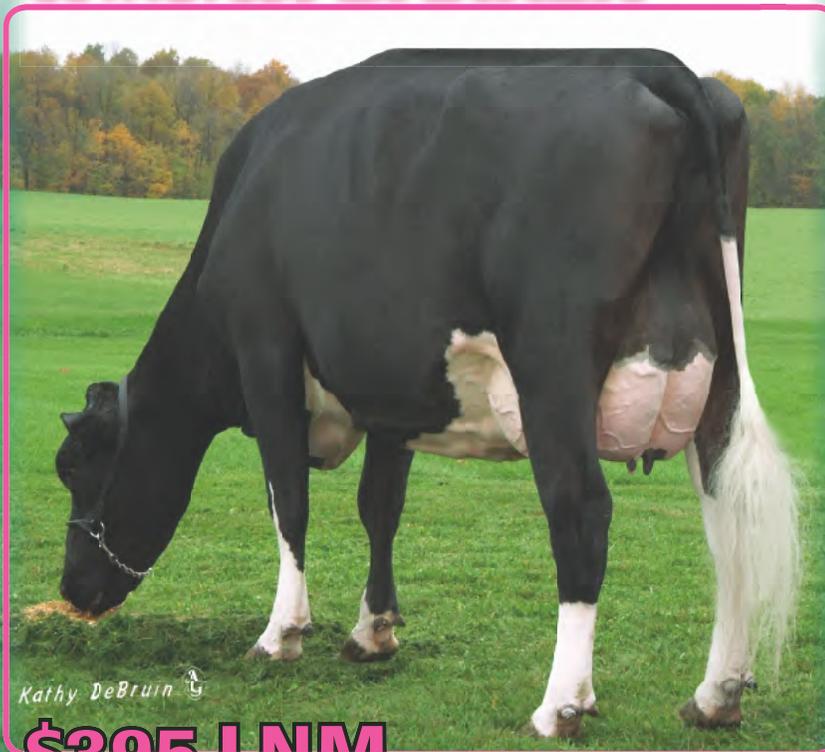
Bunks aren't cheap. Ours cost about \$16,000 or around \$28 per foot. Our second barn also will have bunks, although it likely will have a different arrangement. Because we had poured the drive alley elevated 4 inches higher, it turned out that the larger bunk we were considering gave us a throat height (25 inches) that was too high. Therefore, we settled for a smaller bunk . . . throat height of 22 inches and a fenceline height of 30 inches. It has plenty of capacity for our twice-a-day feeding, but the feeder has to be very careful to not spill feed.

Because the bunk is smaller than we planned, our contractor added an 8-inch strip of belting to the drive alley side to keep cows from tossing feed out of the manger. That belting may not have been needed. Hardly any feed ends up in the drive alley either during feeding or as the cows eat. However, the belting sure gives our cows something to chew on when they're bored. 🐮

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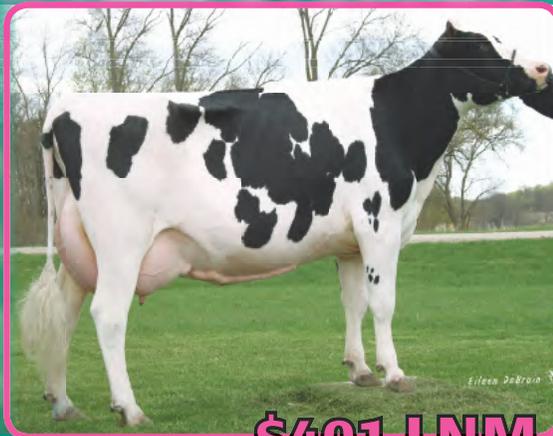
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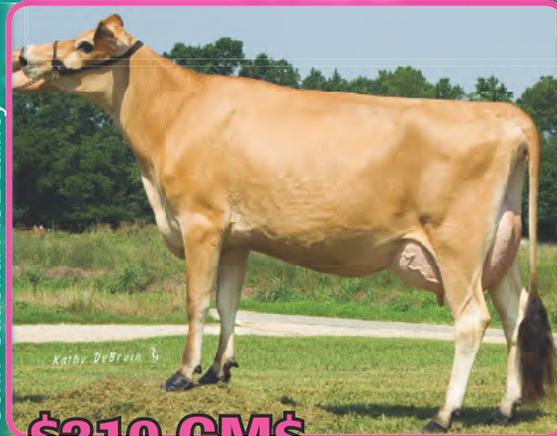
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