

Time for Technology



The Demise of the Drive Through?

Jack Rodenburg, DairyLogix

While drive through coffee, burgers and banking are all the rage these days, new dairy barns in some parts of Europe are bucking the trend. I am writing this from a hotel room in Helsinki Finland, and three of the last dairy barn plans I have looked at will cost their owners substantially less to build, and they have not sacrificed one square inch of cow space. A Finish dairy barn designer named, Jouni Pitkaranta has developed and commercialized a concept that can take 2500 square feet or more out of a dairy barn project without compromising stall sizes, alley widths or space in front of the robotic milking systems.

Jouni accomplishes that cost saving by feeding on the outside of the barn. The side walls of these barns consist of a 32 inch high stainless steel feed manger with a specially designed panel above it that tilts into the barn, so that feed can be delivered from the outside, by driving the TMR mixer along the high side of the manger. The panel is mounted on a heavy duty pipe assembly that can turn it in, to create an opening for feed delivery, and it can also turn it out to a horizontal position for maximum summer ventilation. A hydraulic drive unit is used to open and close the wall, and a rubber flap on the lower edge of the panel seals to the top of the manger to keep cold air out in winter. The most recent version has an optional bird screen and there is also a version in which the panel brackets are fitted with a roll up curtain so summer ventilation can be maximized without moving the panel to the full open position. There are many of these barns in use in Finland and the concept has spread to Denmark and Sweden and has been picked up by a dairy equipment company in Holland as well. To see a video of this unique device, go to www.outsidefeeding.com.

The cost of the wall package, which is available in Canada from Advanced Dairy Systems in Wellesley is about \$100 per running foot, but it saves money by reducing the size of the barn substantially. For example a three row barn for 120 milking cows is about 192 feet long so the wall adds \$20,000 to construction costs. But if the alternative is a 14 or 16 foot wide feed alley vs. the manger which is 3 feet wide, the wall saves 11 to 13 feet of barn width, or roughly 2500 square feet of floor area. Depending on the style of building, barn construction for just the floor area with no extra stabling or forming probably costs about \$18 per square foot. Using this number, the saving in barn space is worth roughly 45,000. You also eliminate 2 big overhead doors which will cost close to \$2500 each bringing the net saving to about \$30,000.

But replacing the drive through and the "flat feeding" associated with it also changes the dynamics of the barn. And may well improve cow comfort. On the inside of the barn the bunk is quite open and while there may be a top rail, the cows never touch it reaching for feed. And since the cow cannot push the feed away, there is no need for you to push it back. In a survey of 105 dairies conducted two years ago

by Progressive Dairy Operators. According to those results, farmers with drive through feed alleys pushed up feed 4.27 times per day and invested 26 minutes per day in this activity. That's 158 hours per year of work that is no longer necessary with the feed wall or for that matter with any bunk feeder. Before fresh feed is delivered, both manger types have to be cleaned out, and although there is lots of working space, making it a 'stand up job" it does not lend itself well to mechanical clean out. So far all the farms I have seen with the wall, are cleaning the manger with a broom and shovel, but one Swedish farmer I visited recently has prototype blade that he will mount on a skid steer in the welding shop now.

On a stormy winter day the job of feeding may also take more time, because it has to be preceded by snow removal, but on the other side of the coin there is no alley inside to keep clean the rest of the year. Inside the barn, the clean space you might normally walk in to observe heats and entertain visitors is gone. As we increase our use of management tools like pedometers, cameras etc. this may become less important but I suspect most Canadian dairy farmers would still miss their drive through alley for that reason. In a three row barn, the cheapest way to address this is to lengthen the stall on the outside row on the side where you don't feed, to about 11 feet vs. 9 minimum. Then if you use a short stall on this platform, you can have a 3 ½ foot wide alley to walk through that also serves as lunge space for the cows. More costly options include a high observation area built into the end of the barn or on top of the robot, or a catwalk above the stalls. In winter, I often see tractors and TMR mixers parked in the drive through feed alley to keep them out of the elements, and of course if there is no drive through you need another place to park the mixer. But considering that in extremely cold weather the barn air will be stale, moisture laden and filled with ammonia and other gasses, there may be better places to park the mixer anyway.

Since robotic milking barns work best with perimeter feeding the feed walls, which can replace two alleys in a perimeter fed robot barn, will be a big asset for dairymen thinking robots, and since that technology seems to be taking off like never before, I anticipate there will be a few of these feed wall barns around Ontario in the next few years as well.



The feed wall, closed for winter time feeding.

End view with door open for manual or automated clean out, and panle tipped in for feed delivery.

