

# Kinnard Farms Meets Sand Recycling Goals With McLanahan Bedding Dryer



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Lee Kinnard  
Kinnard Farms

**Located in Casco, Wis., Kinnard Farms is a second-generation family-owned dairy that comes from a long line of dairy producers. Alvin and Milly Kinnard founded the farm in 1948 and passed it along to their children: Rod and his wife, Maureen; Jackie and her husband, David Stewart; and Lee. In that time, the Kinnard family has grown their herd from an initial 14 cows to 8,400 cows.**

According to Lee Kinnard, cows have been the key to his family’s success, which is why the family chose to use sand bedding back in the early 1980s. Since then, the sand has been an important part of their operation. It is comfortable for the cows, provides traction so they don’t fall, and resists bacteria growth.

“A cow is an incredible creature,” Lee Kinnard said. “She can take food that humans cannot eat, convert it into something that humans can eat and indeed she can take an acre and be a magnifier of production.”

## **Challenge**

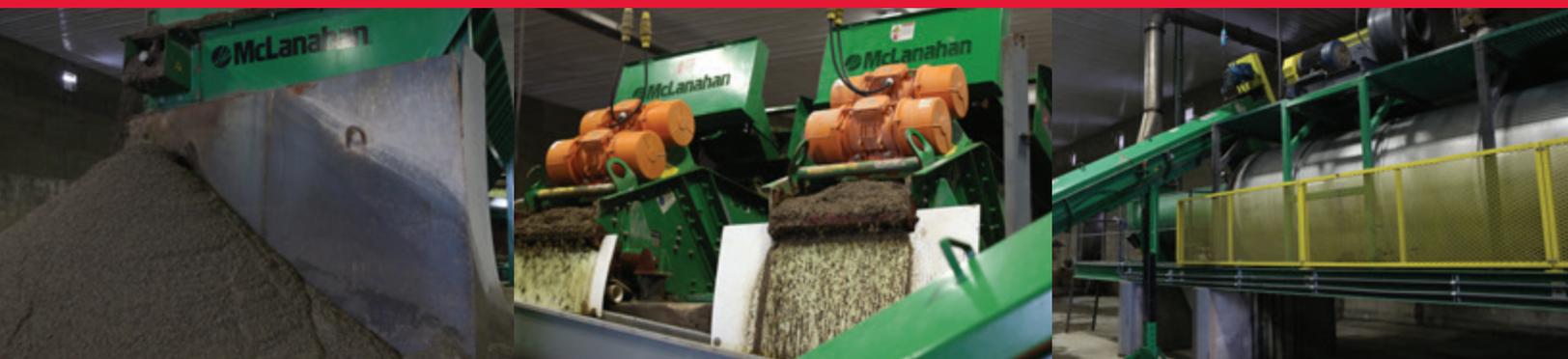
As the Kinnards grew their herd, they found it was no longer sustainable to keep buying sand and throwing it away as part of the manure stream. They developed a way to recycle their sand and were managing to get the sand down to 10% moisture.

However, with the number of cows in their herd, they still needed to windrow and move the sand. It took a full-time crew to move the 150,000 tons of sand per year, which also burned up a lot of diesel fuel and took a toll on the machinery. Kinnard Farms wanted a solution that would let them put sand back under their cows immediately.

“We knew as we were expanding we had to come up with a method that we could not only recycle, but really had to have high-quality sand to put back under our ladies,” shared Kinnard.

## **Solution**

Kinnard Farms worked with McLanahan in the past on a Sand Separation System for their dairy, so they again turned to McLanahan for a Bedding Dryer to lower the percentage of moisture in their sand.



“McLanahan was the pretty clear choice for us,” Kinnard said. “We were real familiar with McLanahan from the mining industry and, obviously, what they do with dairies. We were used to running their machinery; we had a good local dealer. It was experimental at the time – I mean, nobody had really built a dryer.”

Based on their experience with manure and sand, Kinnard Farms chose McLanahan to build them a dryer.

“Really happy with what we’ve stumbled upon here,” Kinnard shared. “It’s been a team effort with McLanahan and Kinnard Farms and a lot of others.”

The bedding dryer fit right into Kinnard Farms’ existing recycling system. After the sand leaves the Sand Separation System at 18-20% moisture, it is conveyed across Dewatering Screens to further reduce the moisture content to 10-11%. From the Dewatering Screens, the sand goes into a collection bin that meters the sand into the McLanahan Bedding Dryer. Forty-five minutes later, the sand is dry and ready for immediate reuse under the cow.

“We are now pulling the sand right off the end of our dryer system at about half a percent moisture and that’s literally a single-pass system,” Kinnard explained. “We’re going all the way from removing the manure/sand material from our barns and within four hours, having a half percent dry, clean, pasteurized sand to put back under the cows.”

## Results

Not only does the McLanahan Bedding Dryer reduce the moisture content in Kinnard Farms’ sand to half a percent, but the high heat at which the dryer operates also pasteurizes the sand. Kinnard Farms believes in prevention when it comes to mastitis, and Kinnard said the sand is “absolutely a crucial part to the prevention.”

“Our goal here is to have less than one-quarter of one percent at any given time in a treat pen,” Kinnard shared. “Since going to the dried sand, there’s no doubt about it, we consistently hit that number. That’s a pretty cool feat on 8,000 cows.”

In addition, Kinnard Farms saw a cost savings with the McLanahan Bedding Dryer, as they no longer have to purchase new sand.

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Kinnard Farms has not purchased sand for their closed-loop system in about six years.

“One of the really cool things about the dryer is we no longer have to have an inventory of sand,” Kinnard said. “It comes off the end of the dryer; it’s ready for instant reuse if we want. We’re only keeping about a two-day supply of sand on the entire dairy in advance at any given time.”

With the McLanahan Bedding Dryer, Kinnard Farms’ closed-loop recycling system is now complete.

“We’ve got a sand that is infinitely reusable, basically bacteria-free, really high-quality, really does what we set out to do with sand in the first place: keep cows around for forever, keep our milk quality within the top 1-2 percent anywhere in the world, and just not ever have to buy bedding,” said Kinnard.



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