

Cow Waterbeds: Providing Comfort and Cleanliness

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Ramona, S.D., producer fills barns with waterbeds

For Ramona, S.D., dairy producer Floyd Swier, the decision to switch from using sand in his barns to using waterbeds was a necessity for his operation.

Swier needed to move away from using sand for his herd of Holstein daily cows a year ago because he had installed a whole-automated manure system with scrapers, pits and lagoon.

“It was too expensive to stay with sand because we had to buy a separator and that was like a quarter of a million dollars more, he said. “The water mattresses were advertised to have less bedding than the other ones were.”

Swier and his wife, Eileen, have been operating their dairy since 1969 near Ramona. Their son, Brian, has since joined the farm.

The Swiers had 175 waterbeds installed a year ago. The only place in the barns without waterbeds is the hospital and maternity areas. In those places, they have rubber-filled mats.

After installing the manure system, Swier wanted to find a mattress that would use little bedding and the waterbeds promised just that. Now, Swier ‘throws just a little chopped straw on them about once every two weeks.

Dean Thronsdon, owner of Relative Products, LLC [*Advanced Comfort Technology, Inc.*] — a cow waterbed manufacturer in Wisconsin, said that determining how much bedding to use on the waterbeds is a management decision made by the dairyman. He also said that climate might be a determining factor for the amount of bedding to be used. For example, he said California dairies do not use any bedding because they have a constant breeze that would get rid of any residual moisture on the mattresses.

However, when looking at Midwestern dairies, they have to deal with hot and humid weather in the summer and cold weather in the winter. If a farmer puts the side curtains down on the barn, they do not have a breeze blowing through the barn to get rid of that residual moisture so some bedding is needed to keep the cow dry.

“There’s two reasons that you have bedding. Number one is for the moisture: number two is for the abrasion. Both of those issues with the waterbeds are, well, they’re just not issues,” Thronsdon said.

Cow waterbeds are made of natural rubber that contains a cord, which prevents the rubber from stretching. The rubber is vulcanized to strengthen it and resist stretching. The rubber surface is relatively soft so the cows' hooves do not dig into it, but also textured enough for the cows to get some traction.

Swier said they can run a shovel over the mattresses and not do any damage. At first, he was a little concerned that the cows might slip on them, but has not seen that happen. The beds come on one big roll of rubber, but each bed is a separate pocket to be filled with water. Each pocket is separated by a 6-inch piece of vulcanization. In addition, the pockets can be cut to size to install as many beds as the producer needs.

Before waterbeds could be installed at the Swier dairy, they needed to concrete the stalls. After the concrete was ready, the company could roll out the beds and fill each pocket individually with water through its own valve.

Thronsdon estimated that two people installing the waterbeds could install about 100 a day, but that can vary from place to place. At the Swier dairy, 175 beds took about three days to install.

Most dairies fill the waterbeds with 15 gallons of plain water. Some will put in about three gallons of windshield washer fluid, or calcium chloride, mixed with water to keep the beds from freezing. However, Thronsdon said that adding windshield washer fluid is unnecessary because the cows keep the beds very warm,

Thronsdon also pointed out that the rubber retains heat during the winter. Concrete remains about 45 degrees year-round. Since the waterbeds need to be laid on concrete and concrete does not freeze, the heat remains in the beds and does not disperse out through the concrete.

“You have the rubber that kind of retains heat and you have the concrete that’s about 45 degrees so it kind of maintains that,” Thronsdon said. “The beds maintain a pretty consistent heat throughout the seasons.”

Floyd and Eileen Swier disagree about how much water should be in the beds. Eileen feels that the beds could use a little more water, but Floyd thinks the water level is fine. However, Thronsdon said the beds do not need to be refilled because nothing gets in and nothing gets out.

The mattresses do not leak, but a cow did rip a stall out at the Swiers, which fell and punctured a hole in one of the beds. Thronsdon said that he has heard of very few cow-related failures. Even though it is unknown for sure how long the beds are supposed to last, Thronsdon expects them to last for 15-20 years and they have a 10-year warranty.

The Swiers did add a brisket at the top of their beds to keep the cows from moving too far forward.

“At first, we didn’t think we’d need a brisket to keep them moved back and so we didn’t put it in, but within a week the cows would move too far so they couldn’t get out. So then about a week later we put the brisket in and that solved that pretty much,” Swier said,

Besides requiring little bedding, the waterbeds provide comfort for the cows. The beds move with the cow’s skin, keeping her from getting sores. All other types of manmade stall bedding surfaces are flat, like sand and rubber-filled mats. With those types of bedding the cow’s skin moves but the surface does not, resulting in sores.

“A cow has pressure points and those pressure points are her knees, her hocks and the udder. What a waterbed does is it floats those so that when she moves, the surface moves. When those pressure points move, the surface moves with her. Thus alleviating the pressure on those points,” Thronsen said.

The Swiers have noticed a change in their cows. They have not seen any swollen hocks like they were used to seeing when their cows were on sand. They also noted that their hoof trimmers like the mattresses much better because the cows do not get sand stuck in their hooves.

“The hocks on the cows, even in the sand, would get swollen. We just don’t hardly have anything now. It’s amazing for that,” Floyd Swier said.

In addition to comfort, the mattresses also keep clean. The beds do not need to be washed because the surface is always flexing. Since the surface is always moving, the manure and bedding do not build up. Swier likes the water mattress because it moves all the time and stays a lot cleaner than the rubber filled ones.

“We use less bedding. There’s less maintenance,” Swier said “The floors are slipperier, I don’t like that. The sand would come off on their hooves and give them a grip. Now we’re going to have to groove the cement, which we didn’t before.”

For the most part, the cows will adjust quickly to the new waterbeds in some cases, it might take a couple of days, but most cows will go to the beds right away. Swier said they put some dried manure and straw on the beds the first day and they went right in.

“They take to them pretty good. I thought it’d be a challenge to get them from sand to mattresses but it wasn’t,” he said.