

## Sharing Your Passion. Supporting Your Success.



### Addressing **THE IMPACT OF SAND ON YOUR SOIL**

#### THE CHANGING LAND

If 50 lbs. of sand per stall per day is used on the farm, is  
= **9.125 tons of sand to spread per stall per year.**

**Look at your dairy. Do you have two, three or four acres of land per stall? Less? More?**

Acres of land per stall	Tons of sand applied per acre per year	Number of years it takes for loam soil (40% sand) to change to sandy loam soil (60% sand)	
		6 2/3" deep plow	3 1/3" vertical tillage
2 acres	4.56 tons per acre	46.9 years	23.5 years
3 acres	3.04 tons per acre	70.3 years	35.2 years
4 acres	2.28 tons per acre	93.8 years	46.9 years

Everything that goes into your dairy system, must come out. For every ton of sand that you put in the free stalls, that same sand must come out. Setting aside the high cost of buying, moving, bedding, and removal of sand bedding (see next page for financial impact), the biggest cost of sand involves what sand does to your soil over time.

#### Sustainability matters

Stewardship of the land has long been a core value of farmers. The land provides, so farmers care for the land for generations. What dairy producers may not consider is how the spreading of sand may be causing irreversible damage to the land itself.

#### Changing loam soil (40% sand) to sandy loam soil (60% sand)

Loam soil holds more water and nutrients than sandy loam soil. Loam soil isn't as prone to crusting. According to an estimate by the Department of Soil Science, College of Agriculture & Life Science at UW-Madison, if an acre of loam soil is plowed 6 2/3" deep it will take 214 tons of sand to permanently change the soil from loam soil to sandy loam soil. If vertical tillage practices are applied at 3 1/3", it will take just 107 tons of sand to permanently change the soil.

#### Your land may be changing

If you are spreading sand, you could be damaging your soil and its future yield potential in just a generation. We have calculated in the figure at left the number of years of spreading it takes to change loam soil to sandy loam based on 50 lbs. of sand added per stall per day. Is this sustainable to you?

# COST COMPARISON

## DCC Waterbeds®

Dual Chamber Cow Waterbeds

### SAND VS. DCC WATERBEDS COST PER STALL PER YEAR

DCC Waterbeds are on par with sand bedding for comfort. Producers report consistent or increased production, no hock swelling, and overall satisfaction. When factoring in the increased cost of managing sand, DCC Waterbeds become an even clearer top choice.

#### COST OF BEDDING MATERIAL

Cost of purchasing sand (50 lbs. per stall per day) versus cost of purchasing loose material like sawdust, straw, or other bedding material (1 gallon per stall per day).

Sand

**\$67.56**

DCC Waterbeds

**\$36.68**

**EXTRA COST OF SAND**

**\$30.88**



#### COST OF BEDDING MAINTENANCE

Cost of labor time, skid steer fuel, and skid steer depreciation for the process of adding bedding material to the stalls.

Sand

**\$27.33**

DCC Waterbeds

**\$5.84**

**\$21.49**



#### COST OF GROOMING STALLS

Cost of labor time, skid steer fuel, and skid steer depreciation for the process of grooming and leveling sand stalls. DCC Waterbeds stalls do not require grooming.

Sand

**\$19.86**

DCC Waterbeds

**\$0**

**\$19.86**



#### COST OF ALLEY SCRAPING

Cost of time, labor, skid steer fuel, and skid steer depreciation for the process of alley scraping.

Sand

**\$7.71**

DCC Waterbeds

**\$5.14**

**\$2.57**



#### COST OF MANURE HAULING

Cost of hauling manure, factoring in the added volume and increased cost per gallon of hauling sand-laden manure.

Sand

**\$98.86**

DCC Waterbeds

**\$71.35**

**\$27.51**



#### COST OF PERIODIC MAINTENANCE

Cost of the process of periodically digging out and refilling the back ends of sand stalls. DCC Waterbeds do not require periodic maintenance.

Sand

**\$9.04**

DCC Waterbeds

**\$0**

**\$9.04**



#### EXTRA SAND SKID STEER EXPENSES

Due to increased time on the skid steer managing sand, extra skid steer maintenance including tire replacement and oil changes are required each year.

Sand

**\$2.44**

DCC Waterbeds

**\$0**

**\$2.44**

**TOTAL EXTRA COST OF SAND BEDDING PER STALL PER YEAR**

**Total cost of bedding management per stall per year:**

Sand

**\$232.80**

DCC Waterbeds

**\$119.01**

**\$113.79**

For calculations, visit <http://bit.ly/sandseries>

## Dorchester, Iowa **LKS Jerseys switched from sand, couldn't be happier with the result**

We spoke to Kevin Schulte about why LKS Jerseys switched from sand bedding to DCC Waterbeds.

**Q: Why did you choose DCC Waterbeds?**

**A:** We were building a completely new facility. We had sand, and looked at it, but sand is getting more expensive, it's a lot of work, and cow comfort was not great year round.

**Q: What's your favorite thing about DCC Waterbeds?**

**A:** I don't think there is just one favorite thing. They are easy to maintain and don't pack down. There isn't much stall maintenance and the comfort – you can go in there and see cows sound asleep.

**Q: What were the issues you faced when managing sand?**

**A:** There is just a lot of added work to sand. Managing the manure alone was a problem – every dump truck load you bring in is a dump truck load you have to deal with at least two more times down the line getting it into the stalls, then into the manure pit, and then out again. With the new barn, we would have had to put in a much larger manure pit to have sand, and we would have had to do much more grooming.

**Q: Were there comfort issues on sand?**

**A:** Sand can freeze on you. In fact, when we had sand in the free stalls, we could

have to chop corn stocks and put that on top of the frozen sand stalls so they would be warm and the cows would use them.

**Q: So winter was bad, but now with the new barn it doesn't get below freezing in the barn, right?**

**A:** Right, in the barn, but the sand outside would still freeze and we wouldn't be able to get it in the barn. And in the summer we would have to constantly be in refilling the beds because the cows kick the sand out because of the flies – you couldn't keep the sand in the stall in the summertime.

**Q: What has changed in cow comfort now that you're in the new barn?**

**A:** It took them about six weeks to get used to the whole new barn and the waterbeds, but now we have more comfort everywhere from cooling to stalls to rubber flooring, plus a more consistent and sanitary bedding – sand looks sanitary when you look at it, but if you dig down a little it's another story, you really had to keep on top of it. We've seen our SCC come down nearly 100,000.

**Q: What has changed for you?**

**A:** Manure hauling is much easier. Now we have drops from the scrapers to the reception pit that are pumped into the large pit. Now we have our barn cleaned six times a day with the automatic scrapers. We don't have near the time

on the skid loader, either. Part of having sand was being in there disrupting the cows with the skid loader, cleaning and leveling, all the time. Now we just put in shavings with a side shooter once a week and scrape the ends every day when we get the cows into milk.

**Q: What's the best thing for your cows about DCC Waterbeds?**

**A:** If there is any mess, you can see it and address it quickly right away. No manure is settling down into your bed. Our new barn stays above freezing and we have good comfort year round – and no hock swelling at all. Plus, every bed is the same all the time. They don't pack down and the cows can't dig them out. There is all of this comfort and just so much less work.

**Q: Having had sand from 1997 to 2013, and now DCC Waterbeds for two years, what advice would you give others?**

**A:** I really don't know why anyone would want anything other than waterbeds. I'm sure the waterbeds cost more up front, but it's just so much better overall. We get the same production and same healthy feet and legs as we had on sand. The investment has been worth it just in cow comfort, not to mention all of the maintenance benefits. Even the heifers love them. I haven't seen a heifer lay in the alley on the rubber flooring. The beds are just that comfortable.



### **FARM FACTS:**

Farm name // **LKS Jerseys**  
Owner // **Kevin, Leo and Adam Schulte**  
Location // **Dorchester, Iowa**  
Bedding // **216 DCC Waterbeds Original**  
Switched from // **Sand**  
Cows milking // **134**  
Milking type // **Parlor, 2x, organic production**  
SCC // **150,000**



**ADVANCED** 752 Lois Drive  
COMFORT TECHNOLOGY, INC. Sun Prairie, WI 53590 USA

## DCC WATERBEDS ARE BETTER THAN SAND

**There. We said it.**

From cost to sustainability to comfort, DCC Waterbeds come out on top.



Producers say it.

Cost calculators say it.

The soil says it.

It's time to take a second look at DCC Waterbeds. Listen to the facts about how DCC Waterbeds will provide cow comfort on par with sand, while helping dairies save time and money.

# DCC Waterbeds®

Dual Chamber Cow Waterbeds

Online: [www.DCCWaterbeds.com](http://www.DCCWaterbeds.com)

Toll Free (US Only): 1-866-524-6575 | Phone: +1(608) 709-2693

Fax: +1(608) 709-2615

Mail: 752 Lois Drive, Sun Prairie, WI 53590 USA

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## THESE PRODUCERS SWITCHED FROM SAND

DCC Waterbeds are significantly less expensive than sand. However, many bedding surfaces are less expensive than sand. What makes DCC Waterbeds the right choice? Comfort + production. DCC Waterbeds provide comfort AND milk production on par with sand, but without the added cost of sand.

### HIGHER PER-COW AVERAGE ON DCC WATERBEDS

"Sand may be the gold standard for cow comfort, but DCC Waterbeds are the diamond standard. DCC Waterbeds are a low-input, high-output system. With sand you constantly have your hand in the manure system to repair something, and sand is time consuming. You don't have time to constantly put new sand in the stalls when it's time to harvest, and when sand got dirtier it smelled very bad and caused outbreaks virulent mastitis. I have none of those problems now. DCC Waterbeds have been one of my best investments."



**Jason Esser**  
Montfort, WI

200 DCC Waterbeds Original  
Switched from sand  
Installed: 2013



**René Dutil**

St-Anselme, Québec  
75 DCC Waterbeds Original  
Switched from sand  
Installed: 2011

### MORE COMFORT, MORE CONSISTENCY, SAME PRODUCTION

"My cows are as comfortable as they were on the sand, and maybe even more. More because the waterbeds are consistent all the time. [With sand] the cow comfort goes down and up and down and up over the course of the week or month. With the waterbeds, there are 365 days in the year and the cows are laying in the exact measurements that are supposed to be the best for them on a bed that is soft and comfortable for them every time. Production wise, we are consistent with what we were with sand, and the cows are still laying down just as much."