

Making composting a revenue stream, not an expense

Brown Bear has a perfect fit, regardless of the size of the operation.

To compost or not to compost. Not quite Shakespearean in rhyme or verse, but it is definitely the question of the 21st century at Dairy farms across the US. The push is on in almost every state for dairies to become compliant with various environmental regulations. As more and more dairyman become fully aware of these various requirements, one common theme that seems to run through all of the states is composting.

So it was on the Brown South Valley Dairy near Holtsville, Utah. The dairy sits on 100 acres, milking 300 cows 3 times per day. Mike Brown the owner shared, "We recently participated in The Federal Waste Management program



through the USDA. One of the primary objectives of the USDA program is to reduce the water and solids leaving the dairy and causing contamination near or elsewhere. With our solids being sold off farm, we are able to reduce the need for land application of those solids, which was one of the programs goals.

This is one time I felt we got our money's worth from a government program. They came in with a positive program that has really helped us become completely compliant with the new rules and regulations for our area, said Mike Brown. "With new development getting ever closer to our facility, the need to comply was a major concern. We now keep and contain every drop of water we use on the dairy and were eligible for financial help to pay for the costs to get the systems in place.

"We started composting nearly two years ago on a pad that is about 5 acres in size.. I saw the Brown Bear skid loader style, compost turner at the 2005 World Ag Expo in Tulare and made the purchase shortly after that visit. We mounted the turner to the front of a Bobcat A300, and away we went. The best way to describe how I feel about the Brown Bear product, is that it makes a very nice compost and it's simple."

"Keeping it simple was my number one concern. With the Bobcat and the Brown Bear I can send anyone down to the site to run the equipment and they can do a great job. I bought it with that in mind. Other

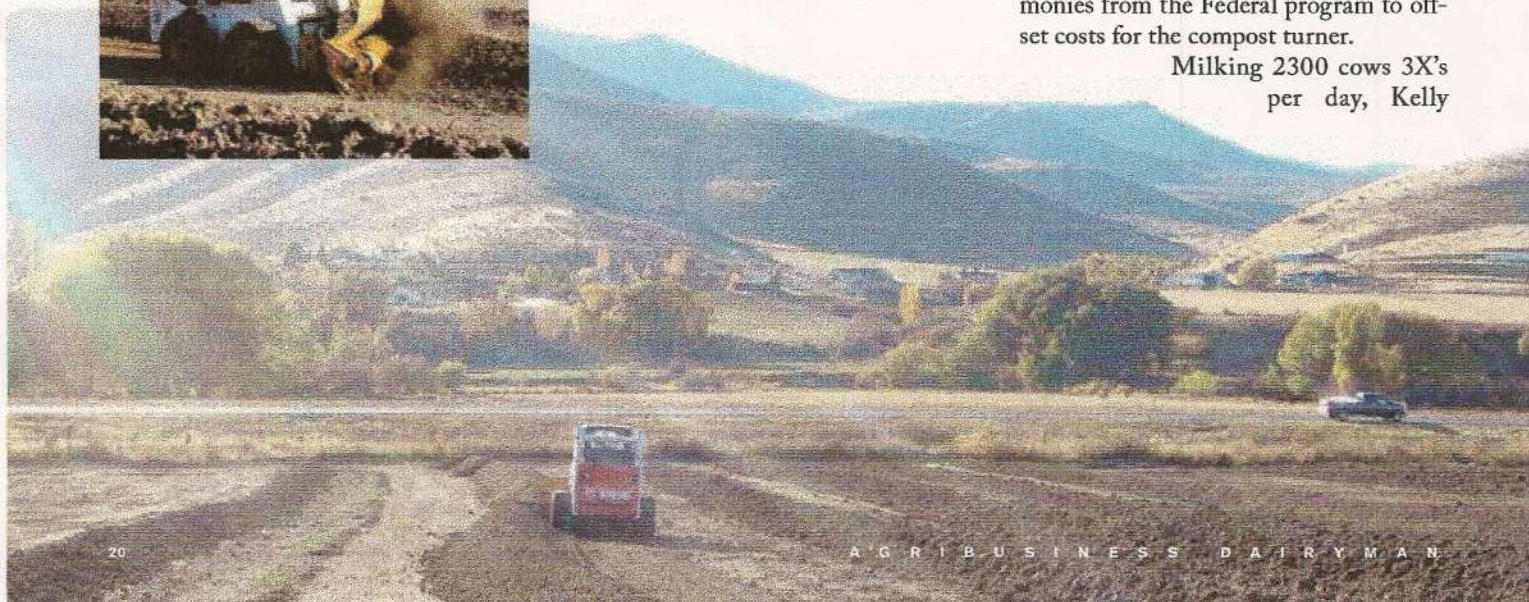
systems would require special training and would restrict me as far as who could handle the day-to-day operation. With the Brown Bear it's easy to use, easy to train and we haven't had to do a thing to it, except grease the bearings."

"It's perfect for our size of operation. It can easily handle the size of windrows that we need, which are smaller than some. The beauty of the Brown Bear is that it moves the material to a new spot every time we turn. This way we don't create a huge wet spot like you would if the material was turned in place during the whole process.

It is fast and allows us to make uniform rows that we can control. We put it in rows, and let it cook. We have no trouble getting temperatures up to as high as 170 degrees. Our regular turning, about 2-3 times per week, allows for all of the material to be exposed to the high temperatures. The entire process takes approximately 12 weeks from start to finish. When the composting process is complete, the material is sold off site; sold by the yard, and in bulk to the general public and landscaping firms.

"Last year we made 15 to 20 thousand yards of compost. We are marketing it under the label, Soil Booster. We recommend that it be mixed with their existing soil and the customers really like the quality of the product. We sell all we can make at \$20.00 per yard. Turning the process into a revenue stream makes a huge difference." We even qualified for monies from the Federal program to offset costs for the compost turner.

Milking 2300 cows 3X's per day, Kelly



Cunningham a partner with Milk Unlimited Dairy Farm near Atlantic, Iowa uses Brown Bear's Self Propelled Model 500 to handle the 17 tons of manure coming out of their separation system each and every day. The dairy was designed with flush lanes and we have now achieved a level of total confinement, says Kelly. "Our system includes a 3 stage lagoon system to provide clean water for flushing. The captured solids are processed through a Houle Slope Separator and a Vincent Screw Press which handles the 17 tons per day to 35% dry matter, 65% moisture."

The manure is then trucked to the composting site on the dairy where the composting process is started with a pile from the trucks that is 5 feet high and about 10 feet wide. The operator using the Brown Bear unit then pushes the material into three separate windrows where it is allowed to come up to temperature. Temperature is the driving force, said Kelly. It takes about 2 days for the temperatures to rise to more than 150 degrees. We turn the material 2 times per week, again largely based on temperature, but we have found that turning it on Monday and Friday works well for our operation and volume.

How do you know when it is done seemed to be a logical question? "Temperature", was Kelly's response. "The key is to get it back up to temperature

as many times as possible. Eventually it just stops cooking. Research has taught us that we need to maintain at least 135 degrees for 72 hours. Our core temperatures are above that, but the outside of the windrows are not that hot, thus the need to turn the material repeatedly to insure that all of the material has been exposed to those temperatures for the necessary amount of time. When you turn it and the temperature doesn't go back up, you know that was the last turn for that particular material. We know at that time we have done all we can to kill off any pathogens and have a quality-bedding product for the barns. It is dry, it is clean, and it's ready to use."

The site for composting was chosen as the optimum location on the dairy. It is located on the top of a hill and encompasses about 5 acres. There is a vegetative or green belt that surrounds the composting site, which helps prevent run off of solids during rainy seasons.. The "top of the hill" location also maximizes the water run off, away from the compost as compared to being in a low land site.

After completing the composting process, which takes about 2 months under optimal conditions the remaining dry matter is moved back to the barns to be use as bedding. We mix our dry matter 50/50 with sawdust for bedding. We rarely have more than we need to meet our needs for bedding material. What many people don't realize about composting is that we reduce our volumes by half during the composting process. Half as many truckloads come back from the composting site, compared to the number of truckloads that it

took to get the manure to the site in the first place."

I haven't run the numbers lately, Kelly said, but the first year I was able to cut my sawdust bill in half it saved us \$60,000 dollars. When you combine that savings with the ability to control our solids that would otherwise end up in the lagoons and would have to be handled sooner or later we feel we are headed in the right direction.

"Our Brown Bear unit is a brute of a machine", Kelly said. It never lacks the power we need to do the job. It has just kept on running with very little maintenance. It is easy to run and the help and service we have received from Stan Brown and his company has been the very best. They have allowed us to accomplish an important part of our overall program to become and remain a total confinement facility. We have not seen any increase in mastitis and our SSC runs below 250,000."

When asked if Kelly had had experience with any other compost turner he said, "We've only had a Brown Bear." That pretty much says it all. 