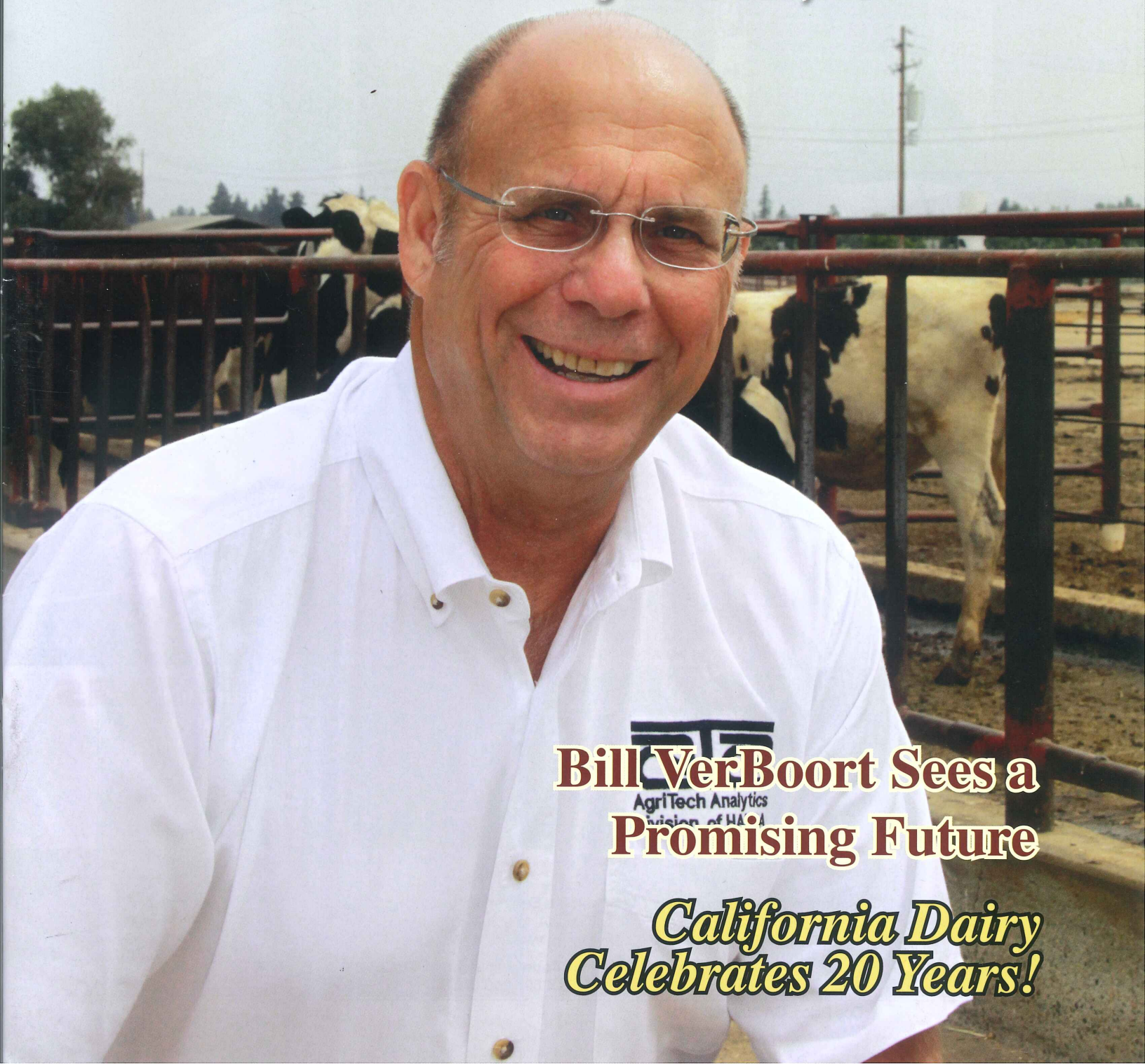


# CALIFORNIA DAIRY

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Home of America's Large Herd Dairymen



**Bill VerBoort Sees a  
Promising Future**

***California Dairy  
Celebrates 20 Years!***



# Manure composting

## Turning waste into profit

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INSET PHOTO: Compost turners agitate the windrow to create air space for the exchange of CO<sub>2</sub> gasses for oxygen. The windrow can reach temperatures of up to 150 degrees.

For years, manure has posed a challenge for dairy producers, not the least of which is preventing buildup in the lagoon. But using the most efficient equipment available, dairymen have taken major strides in the improvement of their waste management programs. Manure was once perceived as an on-farm burden. But today, producers view it as an asset to their operation; a profitable component of composting.

U.S. Farm Systems president Rejean Houle stated that "composting can improve your bottom line," a declaration that is being confirmed on the dairy.

Dairyman Scott Wickstrom manages Wickstrom Jersey Farms in Hillmar, Calif. and Red Top Jersey in Chowchilla, Calif. He has been composting at both facilities for several years now. In that time, he has noticed "a decreased amount of mastitis in the herds, an

improvement in milk quality and improved cow comfort."

Prior to composting, all of the manure generated at these two dairies was air-dried, a system that didn't kill the bacteria and pathogens in manure that was later used for bedding. Composting gives Wickstrom confidence in his system. "We can get better control over the moisture content," he said.

And that is a primary reason that led Wickstrom to start composting; to improve the conditions of the manure. The majority of the compost he uses is for bedding material in the freestall barns. "The cows love it," he said. "It's soft material and it's comfortable for them."

### The process

The composting process is achieved by aeration

through mechanical agitation. In the mid-1990s, HCL Machine Works, a family-owned company in Dos Palos, Calif., began manufacturing compost turners to simplify the process. As the turner mixes the windrow, it creates air space for the exchange of CO<sub>2</sub> gasses for oxygen, and begins the composting process.

Sherrill Campbell, owner of HCL Machine Works, designed and developed the compost turners. He explained that microbes need water and air. As it runs through the windrow, "the compost turner creates the environment for composting," he said. A rotating drum on the turner, helps form the windrow in a triangle shape, to produce a "chimney effect", which allows the heat and gasses to escape at the top.

The CT-10 and CT-12 model turners at HCL Machine Works create 10'x5' and 12'x6'





**LARGE PHOTO:** Manure separation is a preconditioning unit to composting. Manure separators remove three times as much manure as they did 10 years ago.

windrows, respectively. They run at speeds ranging from 10-35 ft. per minute with several adjustable features and the option for customized fabrication. Hydraulic lifts on the machine allow for easy transportation, and spot turning, to help save time.

### Manure Separation

Manure separation is a "preconditioning unit to composting," which shortens the cycle, Houle said. After ten years of manufacturing manure separators, U.S. Farm Systems has developed a separator which extracts nutrients, with a high solid removal rate.

Manure separators and compost turners work in congruence with one another, to help producers to do their job with efficiency. "They enable us to handle the amount of manure for large dairies, consistently throughout the year," Wickstrom said of his experience with the equipment.

Ten years ago, farmers who were removing 50 tons of manure per day are now



**ABOVE PHOTO:** The teeth on the compost turner perform mechanical agitation by mixing through the windrow.

removing 125 tons per day. "After 10 years, we finally got the recipe right," Houle said noting that advances at stage one separation have allowed for the increase. "Today, [producers] get 100 percent of their bedding and they produce it only when the conditions are optimal," he said.

This is true for Mike Vander Dussen with Double Diamond Dairy, who has been composting for approximately 18 months. He only uses his compost turner in the spring, summer and fall because the winter months are too wet. But when the equipment is running, it's used very heavily. "I would say that they're the lynchpin behind the bedding process," he said. "Without either of them, I couldn't do it."

Since he started composting 18 months ago, Vander Dussen has seen a reduction in somatic cells, which he says is his biggest take away.

According to Houle, composting does two things: "It makes the best bedding and it enhances the value of the dry organic fertilizer." But there are other benefits to composting, too. Producers who turn to it, never have to buy chemical fertilizer again.

In addition to the money saved on chemical fertilizers, the worm population can increase up to 10 times. Chemical fertilizers kill off the worms, but with compost they reproduce quickly and perform a natural agitation on the soil.

Composting works well on a small scale. That is why, Houle says, you will find it available at local nurseries. "But you do the same thing on a large scale," he concluded.

*If you would like more information about the benefits of composting, contact the professionals. For information on manure separators, visit [www.usfarmsystems.com](http://www.usfarmsystems.com). For inquiries about compost turners, visit [www.compostturner.com](http://www.compostturner.com).*