

# Farm-based industry

Innovating a camera system designed for the rigors of farming spawns a business

By Dee Goerge

**D**ave Rubey faced the wheat harvest in 1999 in a back brace. The North Dakota farmer had just undergone back surgery and needed to get his crop out of the field. Not able to turn his neck, Dave rigged his combine with a black-and-white camera system.

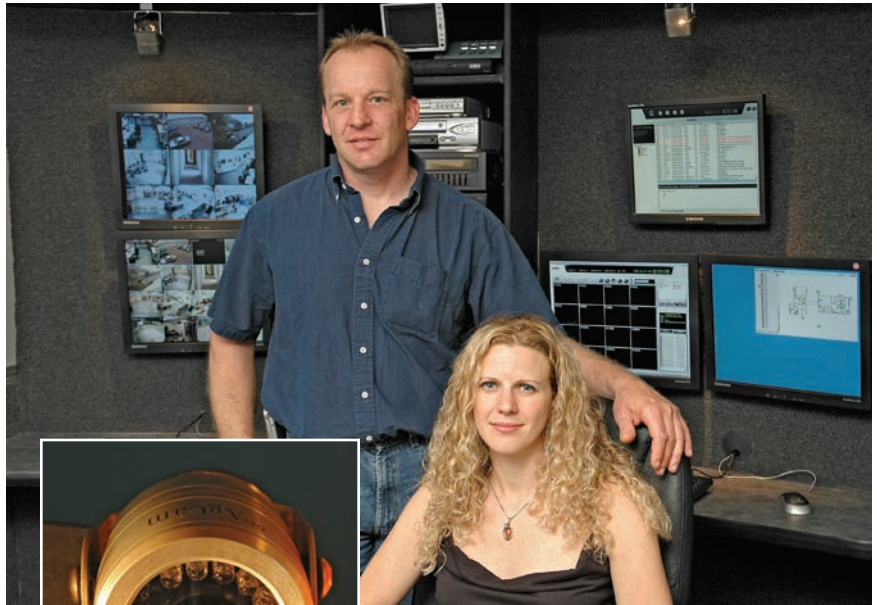
“The quality was poor, at best,” he recalls. “When the cameras turned into the sun, they went blank. There had to be a better system out there.”

This wasn’t the case. Postharvest research by Dave and wife Charissa revealed that portable camera technology was rudimentary, at best. So they set out to build a better mouse-trap. Or, in their case, a high-quality camera system for agriculture.

That mission not only spawned a bulletproof design that stands up to the rigors of agriculture, but also began a business for the Rubeyes.

## FARM-BASED BUSINESS

Less than a decade later, the Rubeyes’ rural company, Dakota Micro, employs about 30 people to build AgCam systems. Wanting to stay close to the farm, the Rubeyes set up the business on their Lidgerwood, North Dakota, operation. The company’s offices fill remodeled rooms of the farmhouse where Dave



In the Rubey team, Dave is the engineer and innovator and Charissa is the business manager. Dedication to the company, a devotion to quality, and a hard-working rural workforce have spawned a thriving farm-based business.

grew up. A nearby 7,200-square-foot post-and-frame steel building is home to employees who assemble and package AgCam systems.

“We’re able to make a high-quality camera because of who we are and where we are,” Dave says. Being in rural North Dakota on his own farm significantly reduces overhead costs, plus there is a hard-working and willing workforce nearby.

Still, building a successful business has had its moments of panic, the Rubeyes point out. Making the transition from full-time farmer to manufacturer was the first scary

step. To do that, the Rubeyes drew on Dave’s farmer-like inventiveness and Charissa’s sense for business.

Their enterprise’s growing success owes much to innovation. While developing the AgCam system, Dave constantly sought out common-sense innovations. He discovered, for example, a camera lens that tints automatically in sunlight but employs infrared bulbs to provide black-and-white images at night.

## EXPERIMENTING WAS CRUCIAL

Further searches turned up a high-quality camera that delivered crisp detail to a flat-screen monitor. Dave went on to experiment with camera housings, eventually creating a design that is waterproof, dustproof, and tough enough to remain intact ▶▶



## learn more

Dakota Micro, 8659 148th Ave. SE, Cayuga, ND 58013  
866/462-4226 | [www.agcam.com](http://www.agcam.com)

Photographs: Ron Van Zee

# Farm-based industry

▶▶ after being run over by a grain cart. Plus, the camera works in temperatures ranging from -45°F. to 150°F.

The last crucial innovation was building the camera system to mount on anything metal using 20-pound-pull magnets. “I didn’t necessarily invent anything, I only improved it,” Dave says, adding AgCam is truly field-tested by a farmer, for farmers.

The Rubey’s first cameras were built at a loss, Charissa says. But \$65,000 in sales the first year encouraged the couple to find original sources for components to reduce expenses.

## CONTINUE TO GROW

Today the business thrives and is rapidly growing. Much of that success is due to AgCam’s adaptability and portability. Customers can use the same AgCam system to see behind them while driving large implements, to peer into a planter’s seed tank, or to watch an unloading auger fill carts. Currently, nearly 20 manufacturers, such as Redball Manufacturing, install AgCams on new equipment.



Dakota Micro’s workforce is rural and draws upon the skills of hardworking neighbors.

Off-season, the cameras can be reemployed for surveillance around the farm. Wireless components (at a cost of \$300) can pick up signals from cameras up to 7 miles away using antennas. “We’ve saved many marriages,” Charissa laughs, explaining that AgCams are in use in calving pens so couples don’t make as many late-night trips to the barn.

The Rubey’s have made their systems easy for customers to set up

and use. The cameras are compact and feed 6- to 9-inch monitors. Different size lenses provide close-up, wide-angle, and long-range views. Cable systems are designed to be plugged into a cigarette lighter outlet or can readily be hardwired into a vehicle’s electronics.

A basic system costs about \$1,000 with a three-year warranty. There are many options, such as digital video recorders and Web servers so you can see your farm over the Internet. ■

## LESSONS LEARNED FROM STARTING A BUSINESS

The decade-long effort to make Dakota Micro into a thriving business wasn’t without challenges. Besides the dedication to hard work learned by farming, Dave and Charissa Rubey draw upon skills learned from off-farm businesses.

The couple had owned a video store and sold advertising for a Canadian farm publication. Dave has worked with computers. Charissa is a graphic designer and has bookkeeping skills.

“He is the innovator, which entails

risk. I am adverse to risk,” Charissa says, adding that the two balance each other out and they compromise.

Early on, Dakota Micro suffered losses. The Rubey’s learned they had to make shifts every time they moved to a new level. After working directly with dealers, for example, they switched to working with distributors to offer better service to dealers and customers.

Employees are hired from the nearby rural community. Dakota Micro follows a very efficient, lean manufacturing assembly-line system. Quality workers,

many of them with farm backgrounds or from an active farm, make the business successful, the Rubey’s say. “We have many farmwives with the company,” Charissa says.

Recently they teamed up with North Dakota State University to hire students for technical support at a second office they opened in Fargo.

The couple’s adherence to a quality product is crucial to success and has made marketing the AgCam easier. “Charissa is very creative with artwork and good on the phone,” Dave says. “She makes it look easy.” ■