

Iowa farmer Dennis Smith says he gets a good return on investment from using precision ag tools.

PHOTO: BOB ELBERT

## Precision Ag Pays Back

Growers say comfort and less stress are as important as lower input costs.

BY KURT LAWTON

Asking farmers for return-on-investment numbers on their precision farming tools is often like asking the value of their family room recliners. Both answers often have more to do with comfort than hard numbers.

“We just don’t get that tired anymore,” sums up Ames, Iowa, farmer Dennis Smith’s feeling on the value of his favorite precision farming tool: RTK and autosteer. “The intrinsic value of this guidance is really, really valuable with our zone tillage practice. In the past two seasons, we’ve struggled with wet weather, which really narrowed the corn planting window. When fields did dry out, we were able to plant 24 hours a day with complete accuracy.

“How much is that worth? It’s invaluable,” he says.

Make no mistake, astute growers understand the cost and value of every piece of equipment and input they buy. But unlike a tractor, combine or sprayer, tools of precision agriculture have the ability to reduce input costs—every year. And when growers know they can save input dollars with every trip across the field, the need to track exact dollar savings isn’t necessary anymore. These tools become just as necessary as a tractor, only more valuable.

**PLANTER CLUTCHES AND RTK.** Smith, who farms 2,000 acres of continuous corn using zone tillage with his Soil Warrior rig, has invested a lot of money in everything from a Trimble RTK tower network, Trimble navigation control and Ag Leader Insight monitor to a planter row control, boom section control and more.

“We’ve adopted so much technology in such a short period of time that it’s hard to put a dollar figure on return on investment. But I feel like I’ve been paid back in full already, after three seasons,” Smith says.

“The fastest payback I’ve had with a specific precision tool is the Tru Count clutches on the planter. But it’s really the RTK correction signal that drives the input savings with the planter and sprayer, not to mention the fuel savings, time

savings and less operator fatigue,” he says. “When you throw the whole cumulative cost of all the technology together, it’s a much faster payback than any one piece of technology.”

Wynne, Ark., grower Joey Owens echoes Smith’s comfort return on investment. “I just know that autosteer delivers less stress and strain on drivers, and that makes a huge difference to our family operation.”

Owens, who farms 4,200 acres of rice and soybeans with his dad, George, his brother Tommy and his son Matt, started with a lightbar in a sprayer, then added three more lightbars, then switched to AutoTrac when John Deere introduced it.

**AUTOTRAC AND BOOM CONTROL.** “The quickest payback on any technology we’ve bought is AutoTrac with Swath Control Pro on our spray rig,” Owens says. “With a 90-foot boom, you sit 45 feet from the end of the boom and you cannot accurately see where you were the pass before. With this automatic boom control, we have no more overlap, no more wasted product and less plant damage and yield loss due to overspraying.

“Now everything we buy—from combines to tractors to spray rigs—is AutoTrac-ready because there’s a lot of value in taking the steering strain off, and I think that is a big part of the money savings. You can focus on monitoring your planting, spraying and harvesting to improve your production, you can cover more ground and you’re not as tired at the end of the day. But I’m not sure how to put a dollar figure on that value.

“I know with my combine I can average cutting an extra truckload a day. How much is a shorter harvest worth? And this efficiency has given us the ability to expand our acres without adding equipment.”

**UNIVERSITY RESEARCH.** One group that helps growers quantify precision payback is university ag engineers. Matt Darr, ag engineer at Iowa State University, has looked at technologies with his research associates. They have compiled some baseline acre numbers that are needed to help recoup the cost of the specific technology.

“To cover costs for simple lightbar guidance, which every tractor should have at the minimum for tillage and fertilizer application, it takes only 300 acres per year,” Darr says. “For a universal autosteer with a basic WAAS correction, you should figure payback at 400 to 500 acres per year. This technology can benefit smaller farmers, especially on smaller, irregular-shaped fields.

“For the highest level of integrated autosteering, you’ll see payback at 900 acres per year—thanks to reduced input costs, reduced passes, less time needed

per field and more. And for auto swath control on a sprayer—such as boom section and height control plus autosteer—payback runs about 1,800 sprayed acres per year,” Darr says.

“With rising seed costs, a planter row-control system can provide pretty immediate payback. If you figure \$300-a-bag seed costs that equals \$120 per acre, if autosteer saves you a minimum of 2% savings, that equals \$2,500 saved over 1,000 acres,” he says.

There are also site-specific solutions that can save money, such as variable-rate fertilizer, but that is harder to put actual payback numbers against. “But there are many inherent benefits, such as empowering the operator to improve crop performance across a field by allowing the machine to handle more and more operations and settings [like in a combine],” Darr says.

And the next big thing that will save growers money is using the state Department of Transportation’s CORS (Continuously Operating Reference Station) Network to achieve RTK-corrected accuracy for less cost and improved signals in some areas, according to Darr.

**SOUTHERN PAYBACK.** At Auburn University in Alabama, ag engineer John Fulton and his researchers studied auto swath (section control) of sprayers and planters. “We looked at peanuts, corn, cotton and soybeans, and in a lot of cases growers in the Southeast can see payback on this technology in the first year—two years at most.”

Fulton’s precision ag team delivers these statistics in meetings with growers: 12% savings with GPS-based

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guidance systems, 3% savings with implement guidance, 7.3% savings with variable-rate application and 4.6% savings with auto swath—for a total of 26.9% savings.

“If you look at a grower with 2,000 acres—an average size here in Alabama—their chemical bill will be around \$120,000 to \$140,000. If they can save 4 to 7% in one year, just on their sprayer alone using swath control, then you can easily pay off that technology in one to two years,” Fulton says.

“If you add planter row unit control, we saw cost savings of \$4.83 per acre per year for this planter/sprayer technology. And when we added a third technology of variable-rate sidedressed nitrogen application, the combined savings was nearly \$8 per acre per year [using 2009 input prices],” he adds. ●