

A New Future

As precision agriculture moves into its second decade, new technologies have begun to step up.

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PRECISION technologies are now well integrated into the agricultural industry — both at the farm level and at the dealership level. No longer are dealers only using the technologies to bring new services to their customers. They are also utilizing the technology in their own businesses to improve efficiencies and quality of their business operations. In addition, dealerships are seeing an impact of the technology on their businesses in terms of differences in what their precision customers demand of them compared to their traditional customers.

This spring, *CropLife* magazine and Purdue University's Center for Food and Agricultural Business — with sponsorship from Trimble — conducted a survey of ag dealers for the 11th year. This was done to see which precision technologies were being used by dealers, what type of precision services they were expecting to offer in the future, and how precision customers were impacting their businesses. As in previous years, a survey was sent to 2,500 *CropLife* dealership readers to "take the pulse of the industry" with respect to precision technologies.

How Are Dealers Using Precision?

GPS-based precision technologies and products have impacted dealers' businesses not only in the services they have offered to their customers, but also in the tools they use in conducting their own business. Two-thirds of the dealerships responding said they offered some form of precision technology services.

However, this year an equal number of respondents said they used a GPS guidance system with manual control/lightbar on their own equipment — a tool for improving their own efficiency instead of a market-oriented

FIGURE 1

Precision Technology Used In The Dealership In 2006

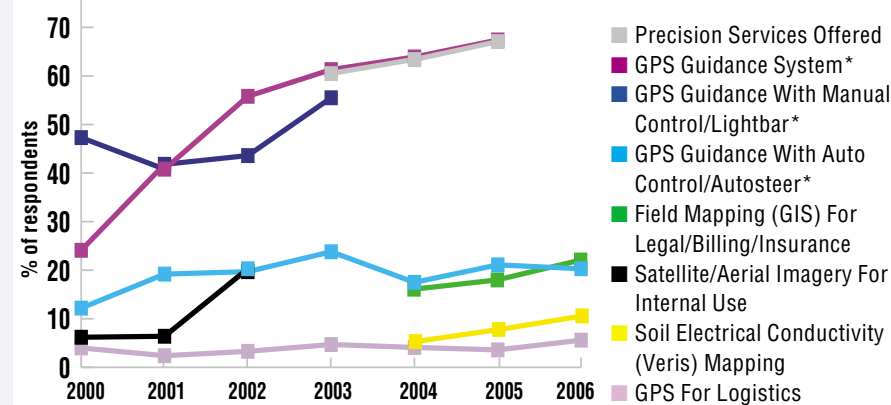
Precision Services Offered	67.4%
GPS Guidance With Manual Control/Lightbar	67.4%
Satellite/Aerial Imagery For Internal Use	22.1%
Field Mapping (GIS) — Legal/Billing/Insurance	20.3%
GPS Steering	20.3%
Soil Electrical Conductivity (Veris) Mapping	10.6%
GPS For Logistics	5.6%
Telemetry For Field To Home Office Information	3.2%
Sensors Mounted On Equipment	1.8%

2006 Base: 340

2006 CropLife/Purdue/Trimble Survey

FIGURE 2

Precision Technology Used In The Dealership Over Time

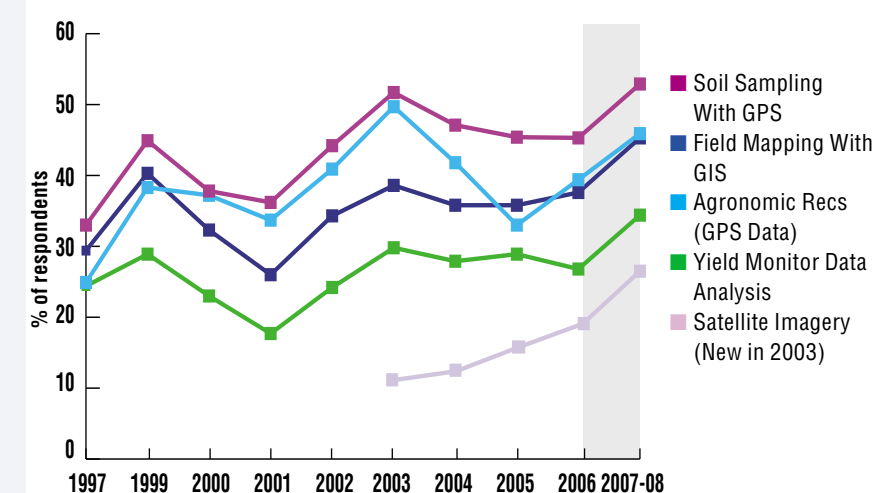


NOTE: Telemetry was used by 3% or fewer respondents each year
*GPS Guidance System definition was expanded in the 2004 survey
2006 Base: 340

2006 CropLife/Purdue/Trimble Survey

FIGURE 3

Precision Ag Services Offered Over Time



Note: No data for 1998; 2008 is predicted use
2006 Base: 340

2006 CropLife/Purdue/Trimble Survey

service (Figure 1). Field mapping with geographical information systems (GIS) was used for billing, legal, or insurance reasons, satellite/aerial imagery was for internal purposes, and GPS guidance systems with auto control was used by one out of five respondents. Soil electrical conductivity (Veris) mapping was used by 11% of the respondents.

This year was the first year we asked about sensors mounted on a pick-up, applicator, or tractor (i.e., pH soil sensors, chlorophyll/greenness sensors). Currently 2%

deals offering yield monitors in 2005 to 19% in 2006, a 28% increase (Figure 3).

Dealers are still expecting to add precision services in the next two years, with continued growth expected through 2008 for all precision services. The biggest growth expected was in satellite imagery, with over a quarter of respondents expecting to offer the service by 2008. Several service offerings show an ebb and flow, such as soil sampling with GPS where the 2008 prediction of use is similar to the peak level offered by respondents in the 2003 survey.

Precision application services also grew slightly this year, though only variable-rate seeding with GPS grew to higher levels than previously measured (Figure 4). Almost 10% (8.8%) of the dealerships said they were offering variable-

of the respondents said they used these sensors. Only 19% of the respondents did not use any of the technologies on our list.

The use of these technologies has increased over time. Figure 2 shows the trends in the last six years. (The data for some of the uses of precision technology have been added fairly recently as the questionnaire continues to be refined to reflect the changing market.) The biggest growth has been in using GPS as a guidance system for custom application. Only 24% of the dealerships used GPS guidance systems for application in 2000.

In 2006, 67% of the dealerships are using GPS guidance system with manual control (lightbar) and 20% of the dealerships are using GPS guidance for steering (up from only 6% in 2005). Satellite/aerial imagery for internal purposes and field mapping with GIS for legal, billing, and insurance purposes have both leveled out in their growth, each used by approximately one in five responding dealerships. Soil electrical conductivity (Veris) mapping appears to be growing but at a slower rate, increasing from 8% in 2005 to almost 11% in 2006.

Service Still Leads

Traditionally, precision ag service offerings were the primary use of precision technologies. As we enter into the second decade of precision technology in agriculture, the number of dealerships offering precision ag services continues to grow slowly. The biggest percentage increase among precision services has been in satellite imagery, which grew from 15% of respon-



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PRECISION AG SURVEY WAS
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Precision Ag Survey

rate seeding with GPS, with that number expected to almost double by 2008.

Controller-driven multi-nutrient application is also expected to show a lot of growth in the next two years, with over one-third of the respondents expecting to offer the service by 2008. This compares to just over half who expected to be offering manual variable-rate application or controller-driven single-nutrient application.

Figure 5 shows the different types of variable-rate application offered by nutrient type for 2006. The biggest change was in controller-driven single-nutrient application, increasing from 39% of the dealers offering the service in 2005 to 44% of the dealers in 2006. Controller-driven single-nutrient application now has similar numbers to the lower-tech manual variable-rate application for everything except chemical application, which still lags behind the manual variable-rate.

Pricing Precision Services

Each year, dealerships are asked to tell us the typical price they charge per acre for their precision services where they can. For those offering only packages or bundled pricing, it often isn't possible to price out the components individually. Hence, far fewer dealerships typically respond to this question relative to some of the other questions in the survey.

Figures 6 and 7 show the average prices charged per acre for each of the precision services in 2006. The bars indicate what the middle 80% of the dealers were charging (as in previous years, we dropped the top 10% and bottom 10% to make the ranges a bit more consistent). Overall, the average prices charged were higher than those seen in previous years by 30¢ to 40¢ an acre.

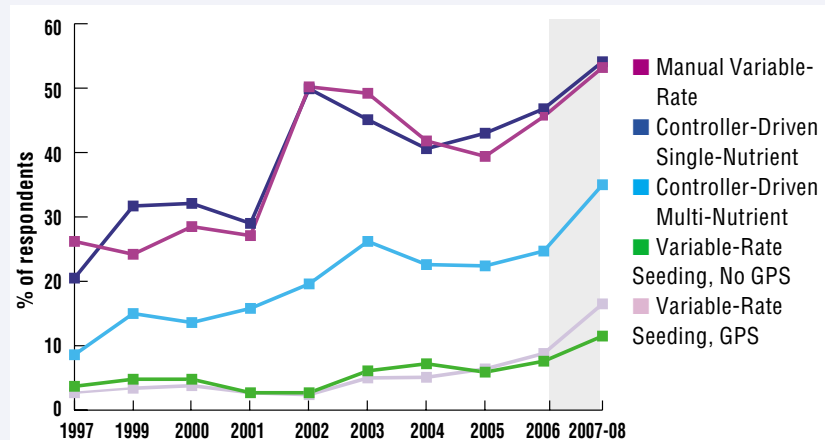
The biggest increase was seen in variable-rate seeding with GPS, where the price per acre almost tripled vs. 2005 numbers (this service also had the fewest number of responses). With this service becoming more common, the prices may be stabilizing and becoming more consistent as dealerships evaluate the cost of the service and the value to growers.

Among the application services, there was some increase in prices. One of the highest price increases, though, was in the price of traditional custom application which rose 30¢ per acre from 2005 to 2006, possibly reflecting the increase in fuel costs (Figure 7). One exception to the price increases for application was for controller-driven single-nutrient application of fertilizer, which fell slightly in 2006.

We also asked dealerships how profitable

FIGURE 4

Variable-Rate Application Offered Over Time

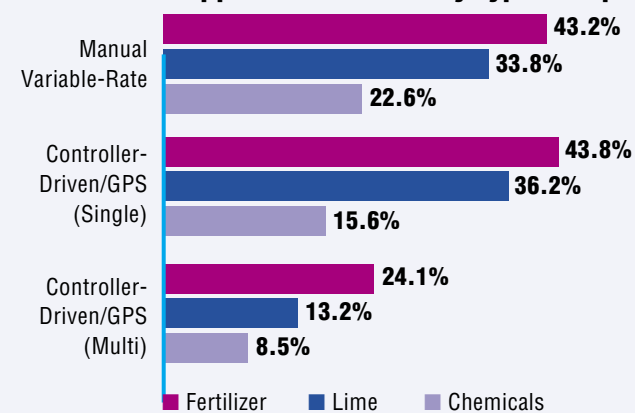


Note: No data for 1998; 2008 is predicted use
2006 Base: 340

2006 CropLife/Purdue/Trimble Survey

FIGURE 5

Variable-Rate Application Offered By Type Of Input In 2006

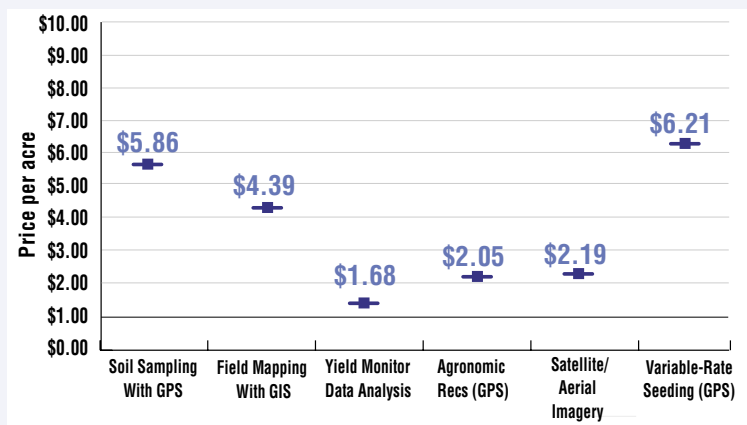


2006 Base: 340

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FIGURE 6

Prices Charged For Precision Ag Services In 2006



2006 Base: 12 to 148

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they felt their precision service offerings were. For each precision component, Figure 8 shows the percentage of respondents who said the service was generating a profit (and covering both fixed and variable costs) from 2002 to 2006. This year, 38% of the respondents felt that their total precision package was profitable, roughly the same as the last two years.

The most profitable precision service continued to be controller-driven multi-nutrient application, with 44% of the respondents saying that it generated a profit. Controller-driven single nutrient application came a close second in profitability. Satellite imagery, variable-seeding with GPS, and yield monitor data analysis were more profitable in 2006 vs. 2005.

Customer Comparison

This year, dealers were asked how their precision customers differed from traditional customers and how precision customers impacted their business. Over half of the respondents agreed or strongly agreed that the number of precision customers in their market was growing (59%) (Figure 9). Three-quarters felt that precision customers were not the same as traditional customers.

Respondents agreed or strongly agreed that precision customers tended to have larger farm sizes and be growing more rapidly than those customers using traditional agronomic services. Respondents also felt that precision customers were stronger financially than the traditional customers.

Respondents also felt that precision customers differed in how they did business with them. Over half agreed that their precision customers are more demanding than traditional customers (53%). Four out of 10 of the respondents agreed that precision customers were heavier users of their services, and 40% agreed that they provided a greater proportion of their precision customers' agronomic needs than for traditional customers.

However, only 37% thought that precision customers were more loyal than traditional customers and fewer than one-third of the respondents (32%) agreed that they made more profit on the sales and service they provided to precision customers than to traditional customers.

In Summary

Precision technology continues to evolve in the agricultural marketplace. Currently,

FIGURE 7
Prices Charged For Controller-Driven Application Services In 2006

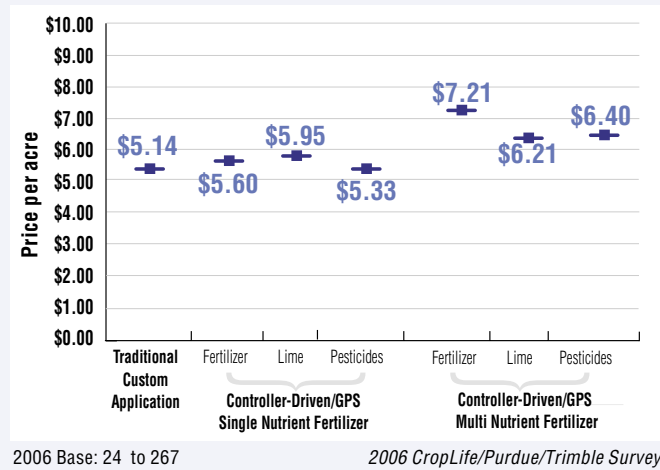


FIGURE 8
Change In Profitability Of Precision Service Offerings

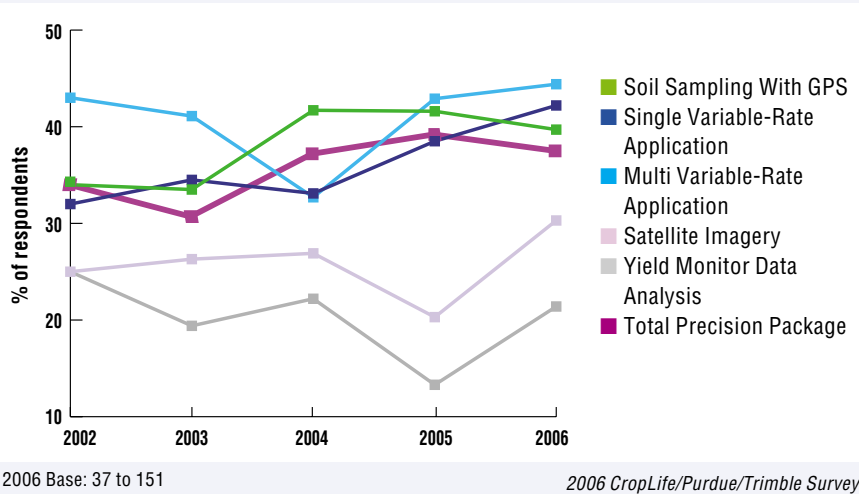
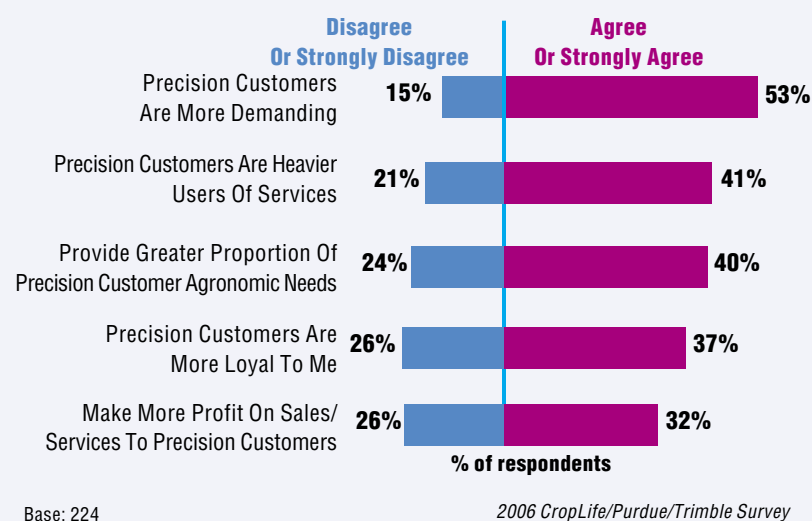


FIGURE 9
Change In Profitability Of Precision Service Offerings



growth is seen primarily within the dealership instead of in services directed at growers. Dealerships also have to manage the changing market demands due to different expectations on the part of precision customers relative to traditional customers.

More demanding customers present the opportunity to create a point of difference in the market. At the same time, dealerships must continue to explore ways of creating such differences as efficiently as possible. Utilizing precision service offerings to create more loyal and profitable customers will remain front and center for dealership leaders in 2006. ▶

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the complete survey after July 31st, visit

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ABOUT THE SURVEY

THIS is the 11th year for the annual Precision Agriculture Survey. As in previous years, the survey takes a broad look at the status of precision agriculture adoption with retail agronomy dealerships across the U.S.

The questionnaire was sent to 2,500 retail agronomy dealerships across the U.S. earlier this spring. The 343 survey respondents (13.7%) came from 40 states, with the highest representation in the Midwest (70% of the respondents). Dealerships from Illinois accounted for 10% of the respondents, followed by Iowa with 9%, and Indiana with 8% of the respondents. Ohio, Nebraska, Minnesota, Kansas, Missouri, Wisconsin, Michigan, North Dakota, and South Dakota rounded out the Midwestern states.

Almost three-fourths of the surveys (74%) were completed by the owner or manager of the outlet, while 10% were completed by departmental managers, and 9% of the respondents were involved in sales. Technical consultants, agronomists, and "precision managers" accounted for the remaining 7% of the respondents.

The responding dealerships represented a wide range of organizational types and sizes, with four out of 10 being cooperatives (43%), 44% being local independents, and 13% belonging to a regional or national organization. Some 36% of the responding dealerships had only one outlet while 30% had two to five outlets. Only 14% belonged to an organization with more than 25 outlets. When asked about 2005 annual agronomic sales at their location, 12% said they had under \$1 million in agronomic sales, while 31% were at the other end of the spectrum with over \$5 million in agronomic sales at their location in 2005.

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