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TRENDS IN PRECISION AGRICULTURE

Keeping a finger on the pulse of the precision agriculture (PA) industry is the Croplife/Purdue Precision Agriculture Survey. The PA survey is sent annually to 2,500 retail agronomy dealerships across the U.S. Dealerships are asked questions about the types of services they use and offer, the usage and adoption rates of various PA practices, as well as barriers to adoption, and about the profitability and growth potential for PA. Emerging from the 2011 survey were a few key trends that seem to exist in the PA industry.

Interest in precision agriculture practices and technologies is growing rapidly throughout the agricultural world. This fact was apparent at InfoAg 2011, a precision agriculture conference held recently in Springfield, IL, which hosted over 700 attendees. The 2-1/2 day, biennial conference featured over 50 oral presentations from university and PA industry specialists, growers, and various service providers. Attendees also had the opportunity to visit over 80 exhibition booths highlighting the newest developments in PA equipment and data collection and management. The record participation at the conference combined with the approximately 80% of dealers in the survey indicating that they plan to invest in PA technologies and services suggest that the PA industry is evolving and viable.

Agricultural practices that were once considered “precision” are now viewed as business as usual. One of the more interesting trends observed in the 2011 survey was a drop in the percentage of dealerships who said they offered PA services. This drop was interesting because it did not correspond with similar drops in specific services, suggesting that it is becoming increasingly difficult to separate out certain practices, such as georeferenced soil sampling as a stand-alone “precision” offering. Many practices previously thought of as premium PA offerings are now incorporated into standard agronomic service packages.

We are beginning to see “replacement effects” of one technology for another. One of the most rapid growing technologies in the industry has been automatic guidance (10-fold increase since 2005). However, for the first time in 2011 a virtually equal and opposite drop in manual guidance (i.e. lightbars) was observed. As prices improve and more options become available, we may see this trend begin to show up in other PA technologies and practices.

Some of the fastest growing technologies are boom section and nozzle control and variable-rate (VR) seeding. In just a few years, section control technologies have found their way onto nearly all professional grade sprayers and 39% of dealerships in the survey are using some form of GPS-enabled boom or nozzle control. Regarding section control, Purdue’s Dr. Bruce Erickson and Paul Schrimpf of CropLife agree that “For stewardship, efficiency, and product saving, it’s a no-brainer capability for most retailers”. The explosion in GPS-enabled VR seeding (service offerings expected to increase by 50% over the next three years) is being driven by the need to precisely place high-cost seed and the emergence of highly precise clutch technology. The huge interest in seed placement technology was on display at InfoAg where NCSU’s Dr. Ron Heiniger’s presentation on the topic was one of the most highly attended of the conference.

Optimism reigns about the future of precision agriculture. Dating back 16 years to the beginning of the PA survey, dealers have always been optimistic about the growth of PA services in their businesses. Although the reality has never quite matched what the retailers have anticipated, the overall positive attitude about the future of PA persists. Several of the presentations at InfoAg noted obstacles to adoption such as equipment compatibility and cost, as well as political obstacles including increased regulation and lack of support. However, these challenges were offset by demonstrated benefits in crop yield increases, more efficient use of inputs, increases in overall system efficiencies, and a higher quality of life for the user. Most notable was the recognition by the industry of the key role that PA must play to address the global food security issues that currently exist and are likely to increase with the population growth expected to occur in the coming decades.

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