



Center for Food and
**Agricultural
Business**
at Purdue University

**2009 Precision Agricultural
Services: *Dealership Survey Results***

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** Linda D. Whipker is a marketing consultant in Raleigh, NC. Jay T. Akridge is the Glenn W. Sample Dean of Agriculture at Purdue University. The financial support of Trimble for this project is gratefully acknowledged.*

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2009 Precision Agricultural Services Dealership Survey Results

Introduction

In the spring of 2009, *Crop Life* magazine and Purdue University's Center for Food and Agricultural Business conducted a survey of crop input dealers for the 14th consecutive year. In February, a questionnaire was mailed to 2500 *Crop Life* retail crop input dealership readers across the US. (See Appendix I to this report for a copy of the questionnaire.) A total of 258 questionnaires were returned, with 241 being usable. This provided an effective response rate of 9.6 percent, the lowest response rate in the 14 year history of the project. (In prior years, response rates have ranged from a high of 38 percent in 1996 to a low of 11 percent in 2001 and 2008.)

Consistent with previous surveys, dealerships were asked questions about the types of precision services they offer and/or use in their businesses, how quickly their customers are adopting precision agriculture practices, and how profitable they are finding precision services to be in their businesses. This year additional questions were asked about the current barriers to adoption in terms of customers, dealers and technology, and their view on what future development in precision technology services would have the most impact on their business. Also explored this year were retailer-manufacturer roles and the changes expected over the next 2 to 3 years.

Questionnaire and Data Analysis Notes

As in other years, questionnaires were deemed "unusable" for several reasons. Some questionnaires were not filled out completely; others were from wholesalers who did not sell directly to farmers; some respondents sold only seed, while a few were from farmers. This year there were 17 unusable questionnaires among the 241 returned.

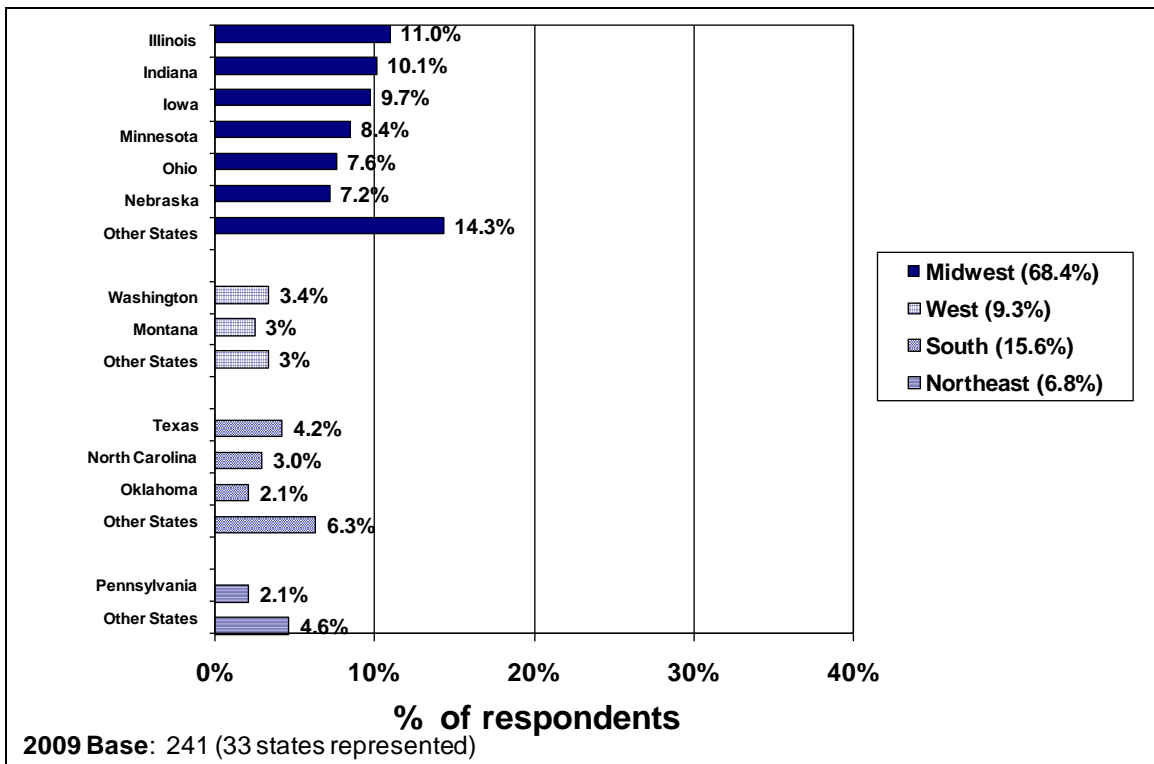
In 2000, 2001, and 2007 the data were statistically weighted to have the same demographics as previous years' demographics in order to make year-to-year comparisons more meaningful. These demographics included the region, organizational type and outlet size in terms of sales. Several procedural changes in the survey process in 2000 and 2001 made this necessary (timing of the survey, survey length, etc.). In 2007, the sample demographics did not compare to other years, resulting in the need to weight by demographics once again. This year, despite the low response rate, the demographic results were similar to previous years and therefore no weighting was necessary.

The data were analyzed to identify statistical differences by region (Midwest versus other states) and differences between organizational types within the Midwest (cooperative, local independent, regional/national). Where charts or data are provided for these breakouts, differences are statistically different at $p < .05$ unless specifically stated otherwise.

The Respondents

The 241 survey respondents came from 33 states with the highest state representation from Illinois, accounting for 11.0 percent of the respondents, and Indiana with 10.1 percent of the respondents (Figure 1). By region, the Midwest was heavily represented in the sample, with 68 percent of the respondents being from the Midwest states of Indiana, Illinois, Iowa, Kansas, Wisconsin, Minnesota, Michigan, Missouri, Nebraska, North and South Dakota, and Ohio. Sixteen percent of the respondents were from the South, 9 percent were from the West, and 7 percent were from the Northeast.

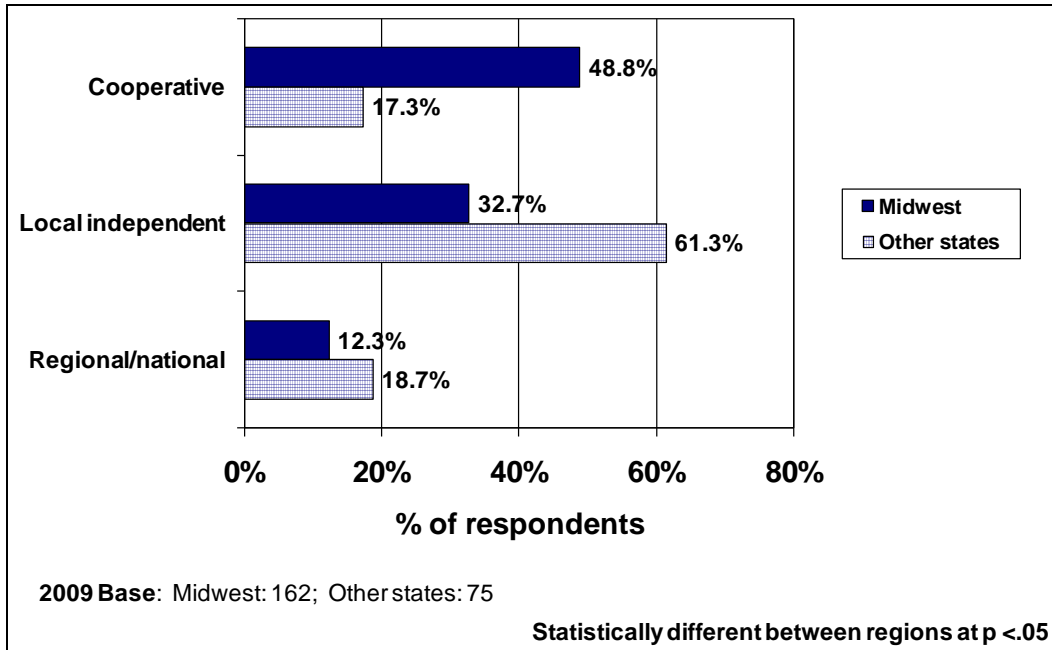
Figure 1. States Represented



Responding dealerships represented a variety of organizational types with 4 out of 10 of the sample respondents being cooperatives (39 percent), 42 percent representing local independents, and 14 percent being part of a national or regional chain of dealerships.

Figure 2 shows the organizational types for the Midwest and non-Midwestern respondents. Cooperatives accounted for approximately half of the Midwest sample while local independents accounted for approximately a third of the Midwest sample. In non-Midwestern states, local independents accounted for 61 percent of the sample this year.

Figure 2. Organization Types by Region



The size of the responding dealerships ranged from one outlet (27 percent of the respondents) to more than 25 outlets (19 percent of the respondents) (Figure 3). When the number of retail outlets was broken out by region (Figure 4), respondents with only one retail outlet were the most common in non-Midwestern states (37 percent of the respondents from other states) but almost a third of the Midwestern respondents were from dealerships with 2 to 5 outlets. This makes the overall sample more heavily weighted toward dealerships with 2 to 5 outlets instead of one outlet as in previous years.

In the Midwest, local independents were significantly more likely to have only one retail outlet (49 percent compared to 9 percent of the cooperatives and 0 percent of the regional/nationals) while the most common size for cooperatives was 2 to 15 outlets (38 percent) and the majority of the regional/national organizations had over 25 outlets (85 percent of these respondents).

Figure 3. Number of Retail Outlets Owned or Managed

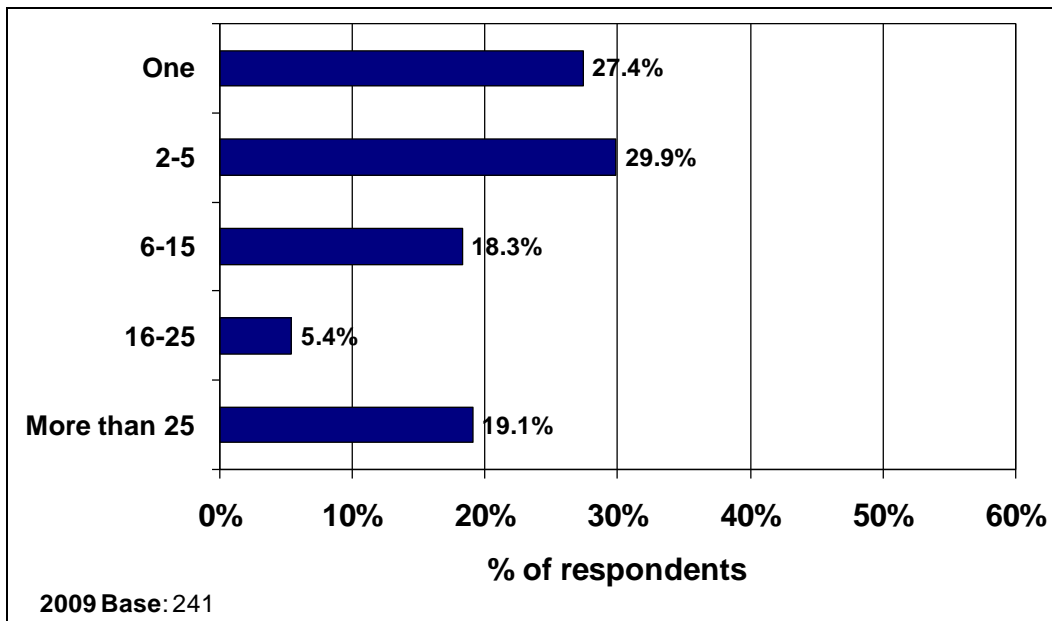
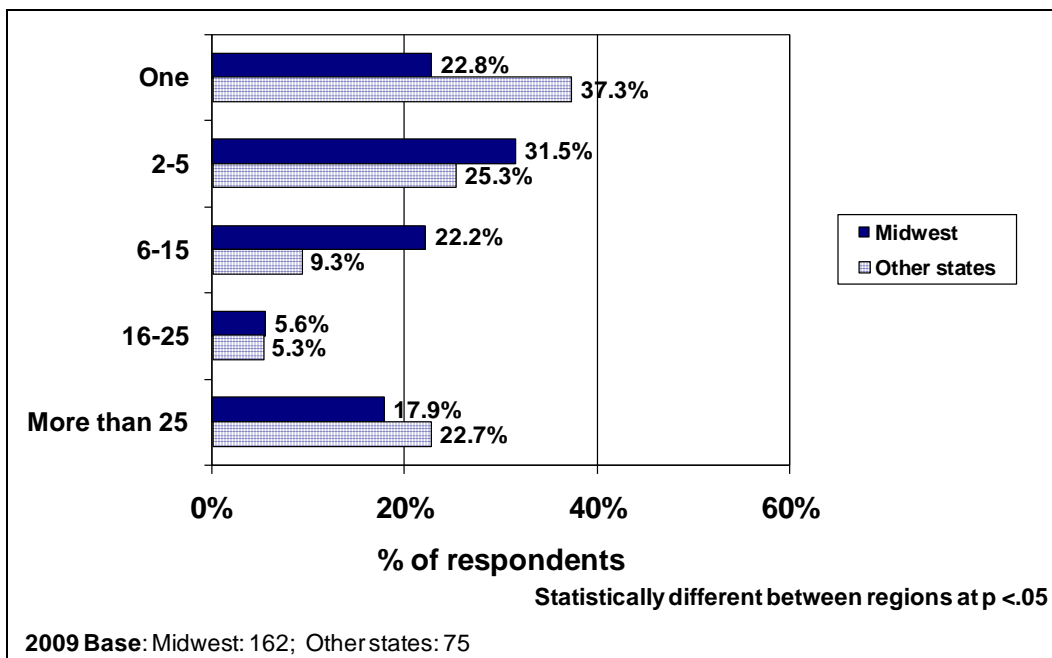


Figure 4. Number of Retail Outlets Owned or Managed by Region



Respondents also represented a range of outlet sizes. Eleven percent of this year's respondents had annual crop input sales of less than \$1 million at their location, similar to last year, while 50 percent had \$5 million or more in annual agronomy sales, up from 38 percent in 2008 (Figure 5). This year, the outlets were significantly larger in the Midwest than in other states with 54 percent of the Midwestern respondents coming from outlets with over \$5 million

in agronomy sales in 2008 compared to only 40 percent of the respondents from non-Midwestern states (Figure 6).

Figure 5. 2008 Annual Agronomy Sales at Location

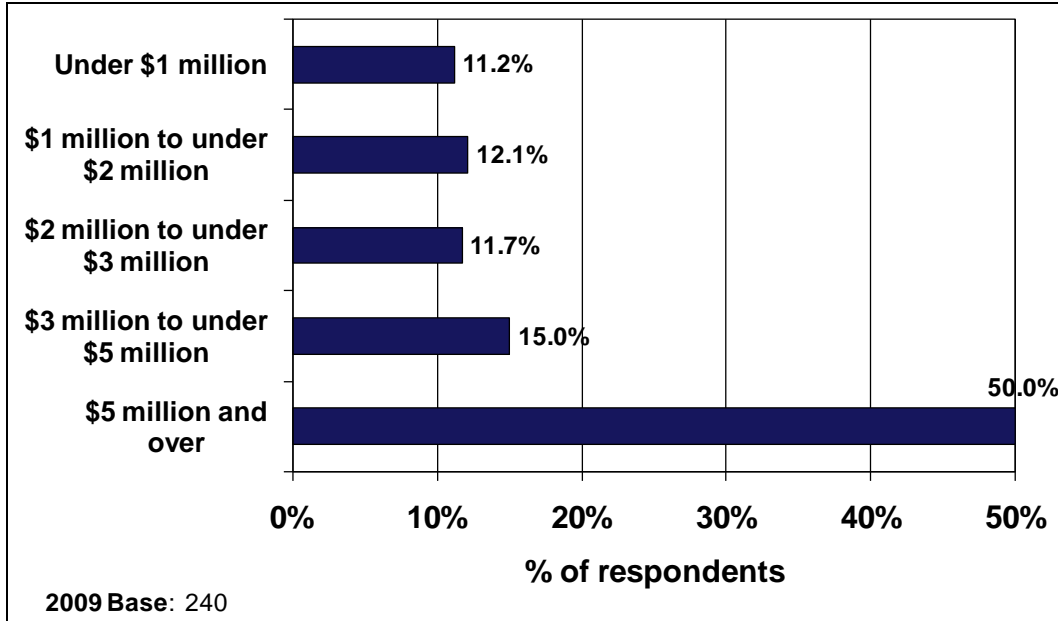
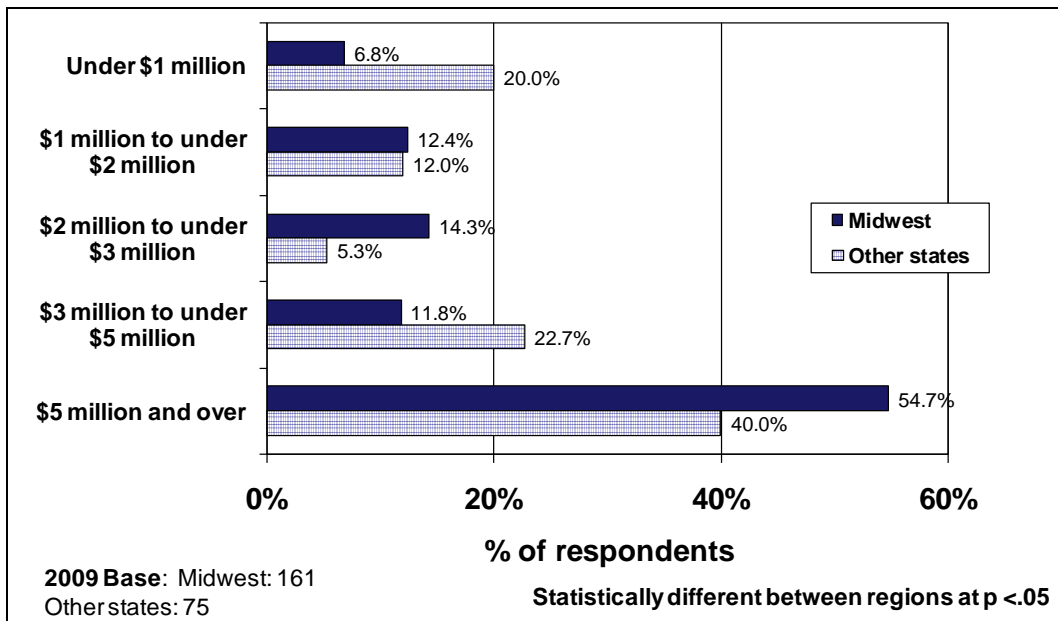
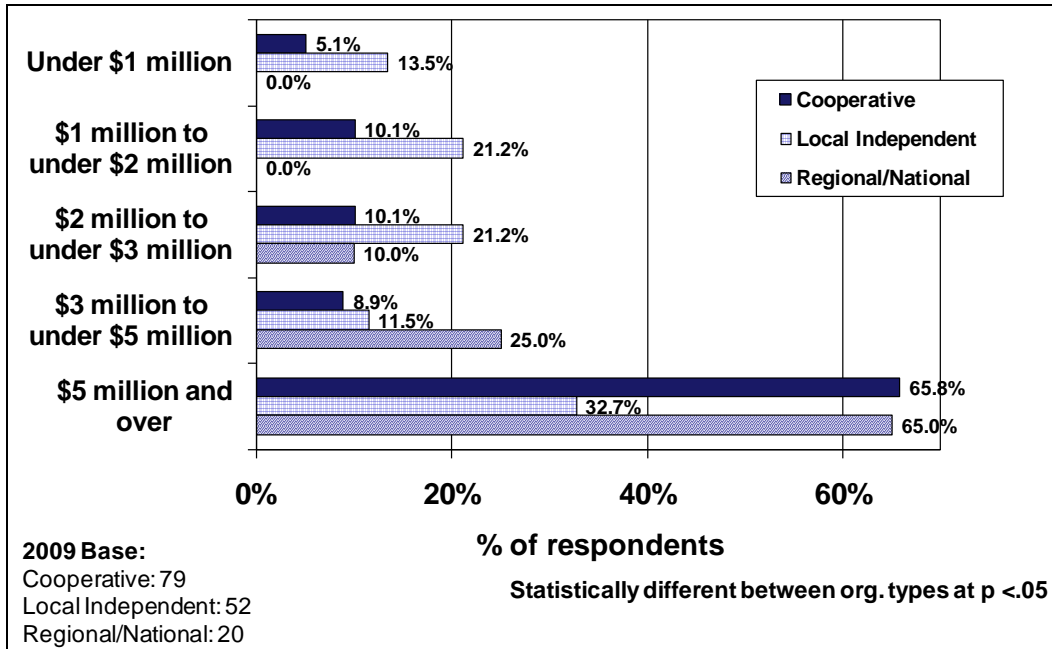


Figure 6. 2008 Annual Agronomy Sales at Location by Region



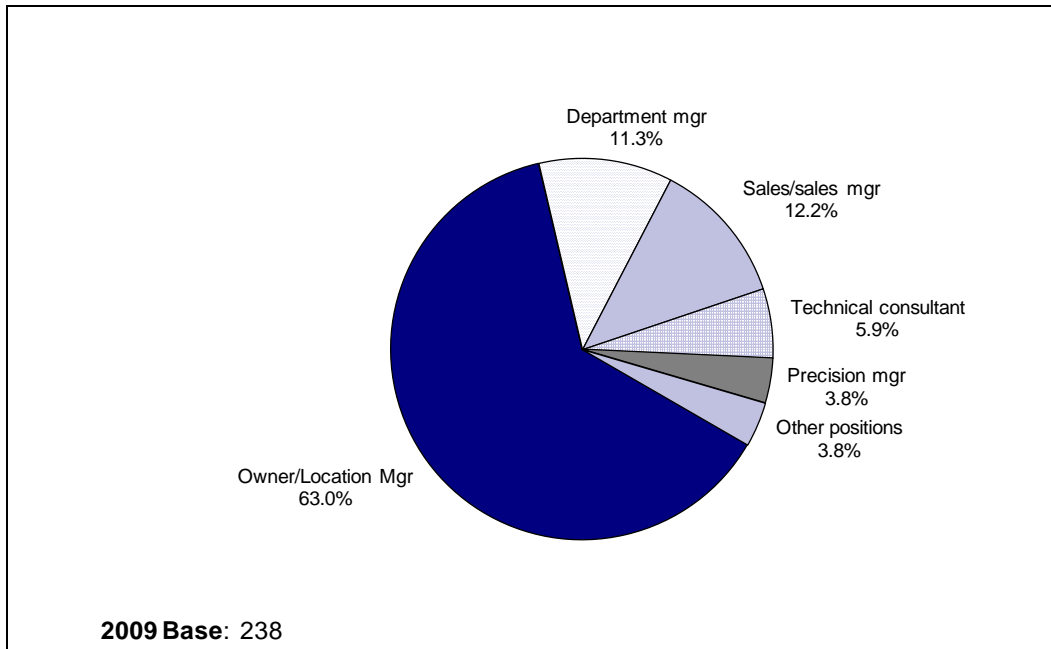
Within the Midwest, there were significant differences in annual crop input sales by organizational type. Local independents were not only smaller in terms of the number of outlets in their businesses, but their outlets were also significantly smaller in terms of crop input sales dollars per outlet (Figure 7). Only a third of the local independents had outlet sales of over \$5 million, compared to almost two-thirds of both the cooperatives and regional/national dealerships.

Figure 7. 2008 Annual Agronomy Sales at Location by Organizational Type in the Midwest



Almost two-thirds of the questionnaires were completed by the owner or manager of the outlet (63 percent), while 11 percent of the respondents were departmental managers (Figure 8). Technical consultants and precision managers together accounted for 9 percent of the respondents. There were no significant differences between regions as far as who completed the questionnaire. In the Midwest, the owner/manager was again the most common position for respondents from all three types of organizations. Three-quarters (75 percent) of the respondents representing local independents owned or managed the location, while 65 percent of those representing regional/national organizations were owners/managers and 47 percent of the respondents representing cooperatives were the manager.

Figure 8. Responsibility of Survey Respondent



Custom Application

Custom application was offered by 86 percent of the respondents. (Custom application here is defined as dealership application of fertilizer, pesticides, and/or custom seeding.) Over half of the respondents custom applied more than 25,000 acres per year (63 percent) (Figure 9). Across the U.S., however, custom application was most common in the Midwest where 89 percent of the respondents offered custom application services compared to 81 percent of the respondents from other states (Figure 10).

Figure 9. Acres Custom Applied

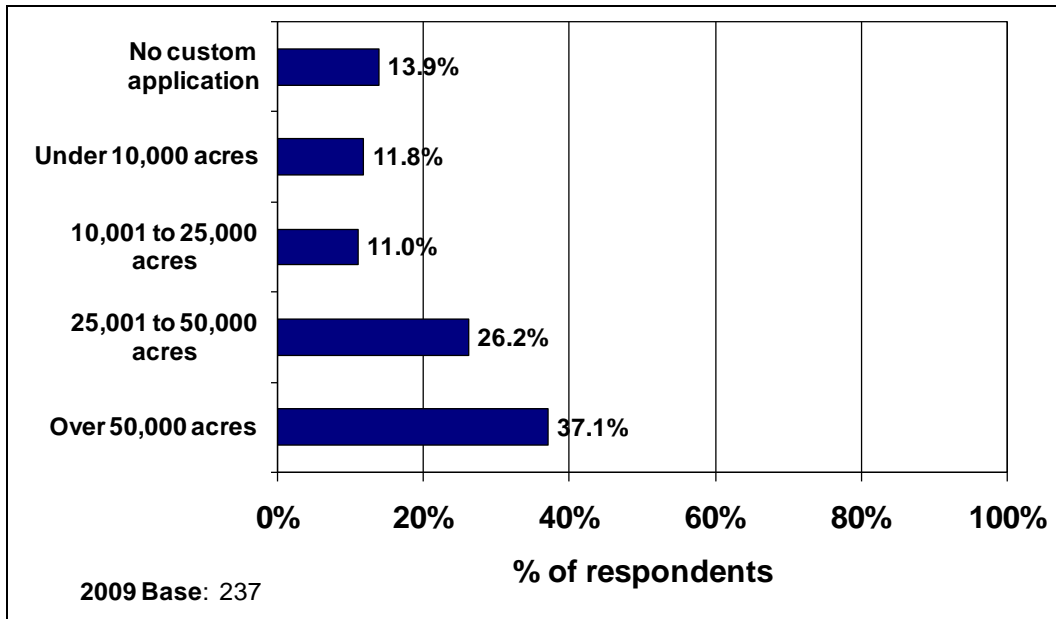
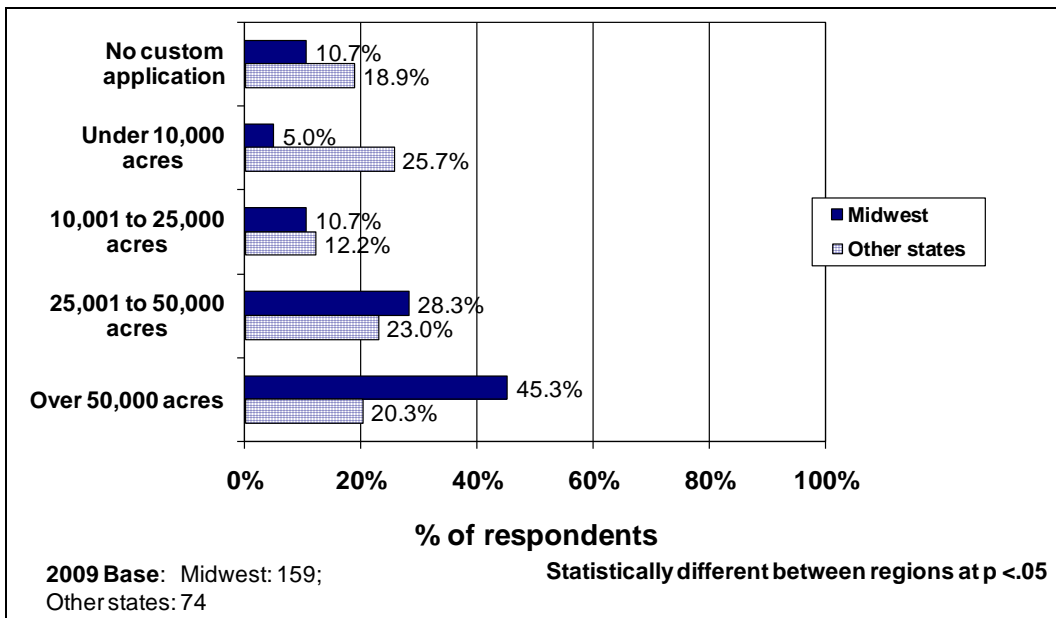
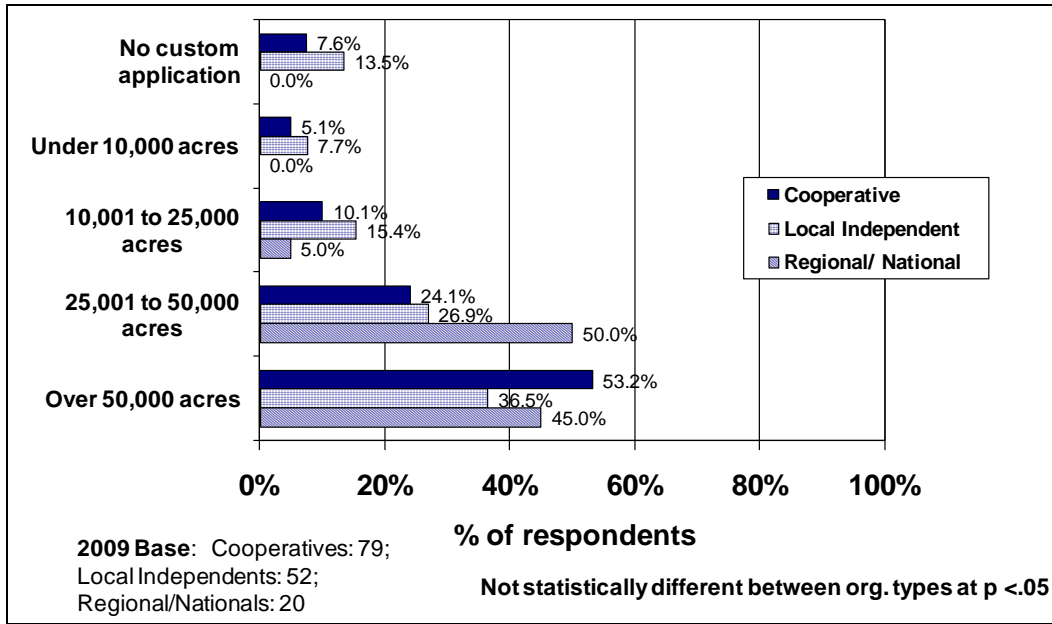


Figure 10. Acres Custom Applied by Region



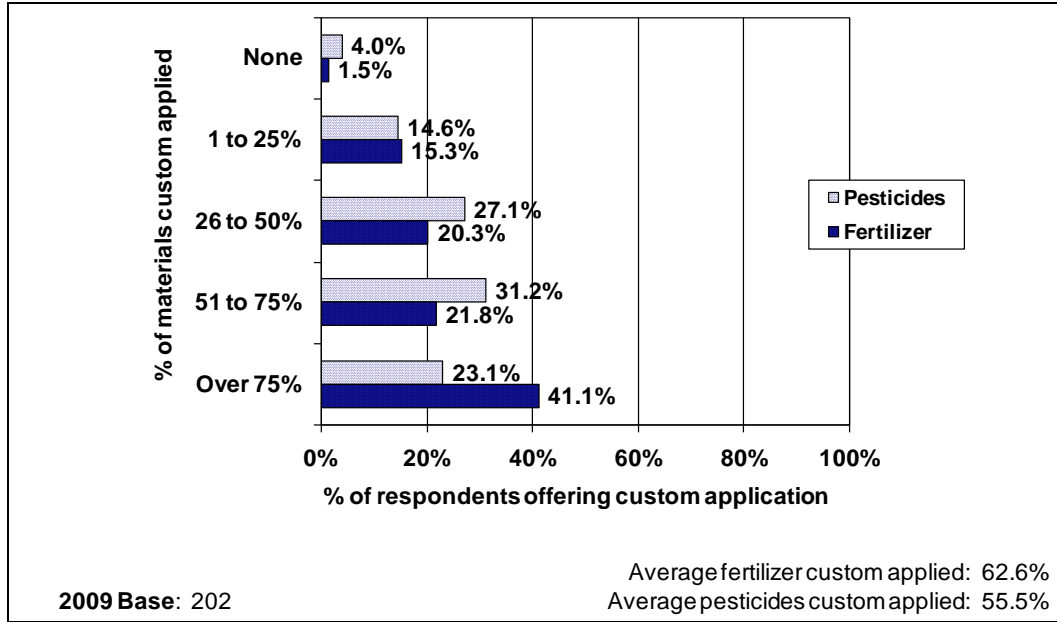
Similar to other years, local independents in the Midwest were less likely to offer custom application than were other organizations, with 14 percent of the local independents not offering custom application compared to only 8 percent of the cooperatives and none of the regional/nationals (Figure 11).

Figure 11. Acres Custom Applied by Organizational Type in the Midwest



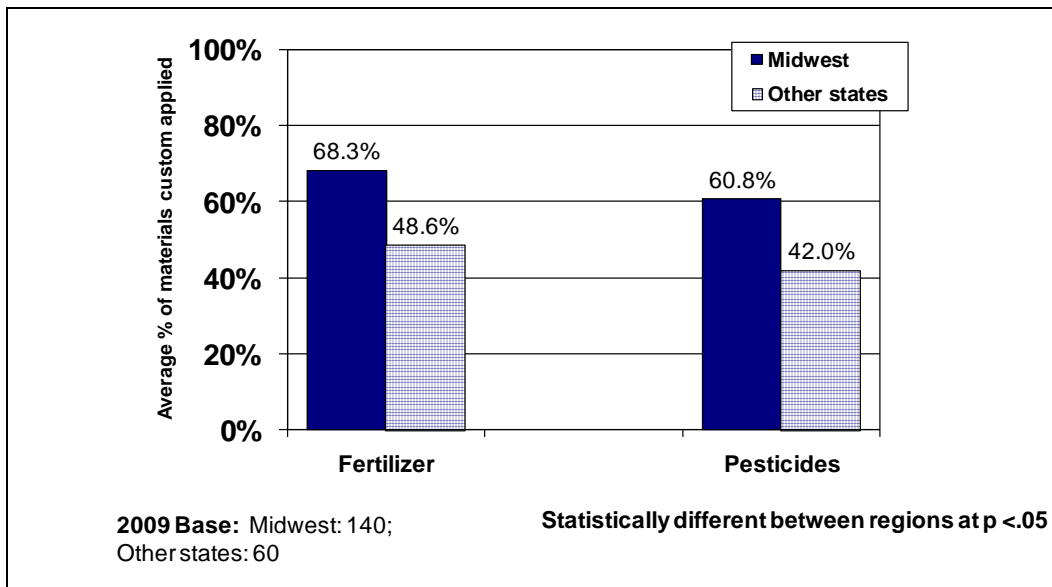
When asked specifically about custom application of fertilizer versus pesticides, respondents custom applied a slightly greater proportion of the fertilizer they sold relative to pesticides. On average, respondents who indicated their outlet offered custom application applied 63 percent of the fertilizer they sold and 56 percent of the pesticides they sold (Figure 12). A quarter of the respondents (23 percent) said their dealership custom applied over 75 percent of the pesticides sold. Over a third of the respondents (41 percent) said they custom applied over 75 percent of the fertilizer they sold.

Figure 12. Custom Application of Fertilizer and Pesticides



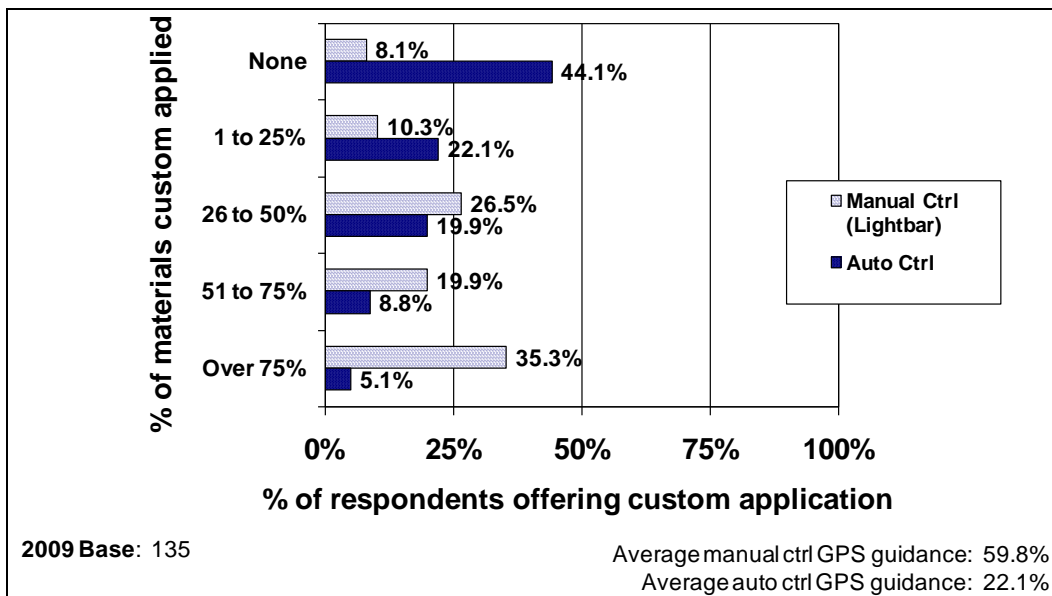
Those dealerships from the Midwest who offered custom application typically applied a greater proportion of the fertilizer and pesticides they sold. Midwestern respondents said they custom applied an average of 68 percent of the fertilizer they sold and 61 percent of the pesticides they sold while those from non-Midwestern states applied an average of 49 percent of the fertilizer sold and 42 percent of the pesticides sold (Figure 13). In the Midwest, there were no differences in the average amount of fertilizer or pesticides custom applied by organizational type.

Figure 13. Custom Application of Fertilizer and Pesticides by Region



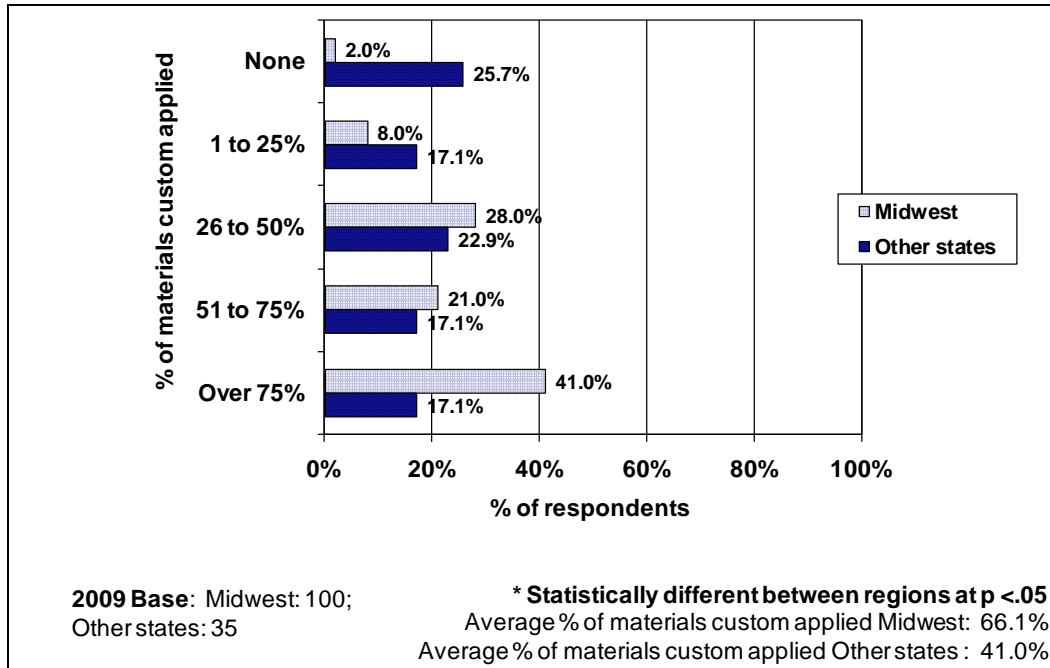
One of the important technology trends the past few years has been the use of GPS guidance systems for custom application. In 2009, of those who offered custom application, 92 percent said they were custom applying at least some of the fertilizer/chemicals using a GPS guidance system with manual control/light bar, up from 86 percent in 2008 (Figure 19). 56 percent said they used a GPS guidance system with auto control/auto steer for at least some of their custom application, a large increase from last year's 28 percent. Overall, an average of 60 percent of the materials custom applied were applied with GPS with manual control/light bar (compared to 63 percent in 2008) and 22 percent of the materials custom applied were applied with auto control GPS (compared to 16 percent in 2008).

Figure 14. Use of GPS Guidance Systems for Custom Application



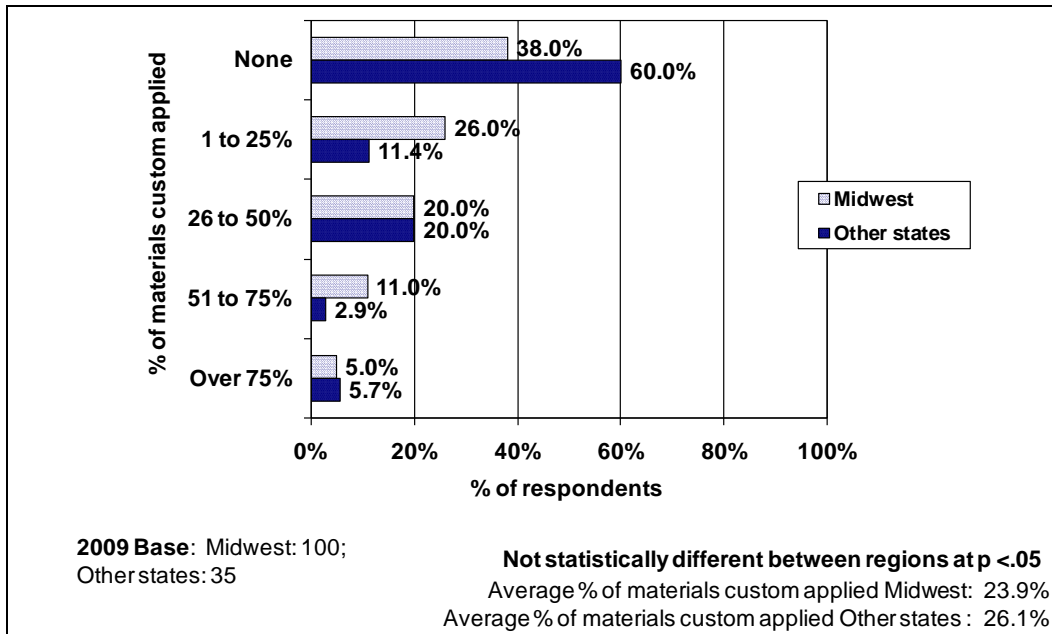
The use of GPS guidance systems with manual control/lightbars varied by region (Figure 15), with heavier use in the Midwest than in non-Midwestern states. Almost all the respondents from the Midwest used some form of GPS guidance system with manual control (98 percent), compared to 74 percent of the respondents from non-Midwestern states. On average, 66 percent of the materials being custom applied in the Midwest were applied with manual control GPS guidance systems (down from 69 percent last year), compared to 41 percent of the material in non-Midwestern states (down from 49 percent).

Figure 15. Use of GPS Guidance Systems for Custom Application by Region: Manual Control



There was no statistical difference in the use of auto control/autosteer GPS guidance systems between respondents from the Midwest states and respondents from non-Midwestern states (Figure 16), with approximately a quarter of the materials being custom applied with auto control/autosteer GPS guidance systems. In the Midwest, 62 percent of the dealerships used auto control guidance systems compared to 40 percent of the respondents from non-Midwestern states.

Figure 16. Use of GPS Guidance Systems for Custom Application by Region: Auto Control



In the Midwest, neither the use of GPS guidance systems with manual control nor GPS guidance systems with autosteer showed any statistical difference between the types of organizations (Figure 17 and Figure 18), though all types of organizations showed growth in the use of auto-control guidance systems and some decline in lightbar/manual control guidance.

Figure 17. Use of GPS Guidance Systems for Custom Application by Organizational Type in the Midwest: Manual Control

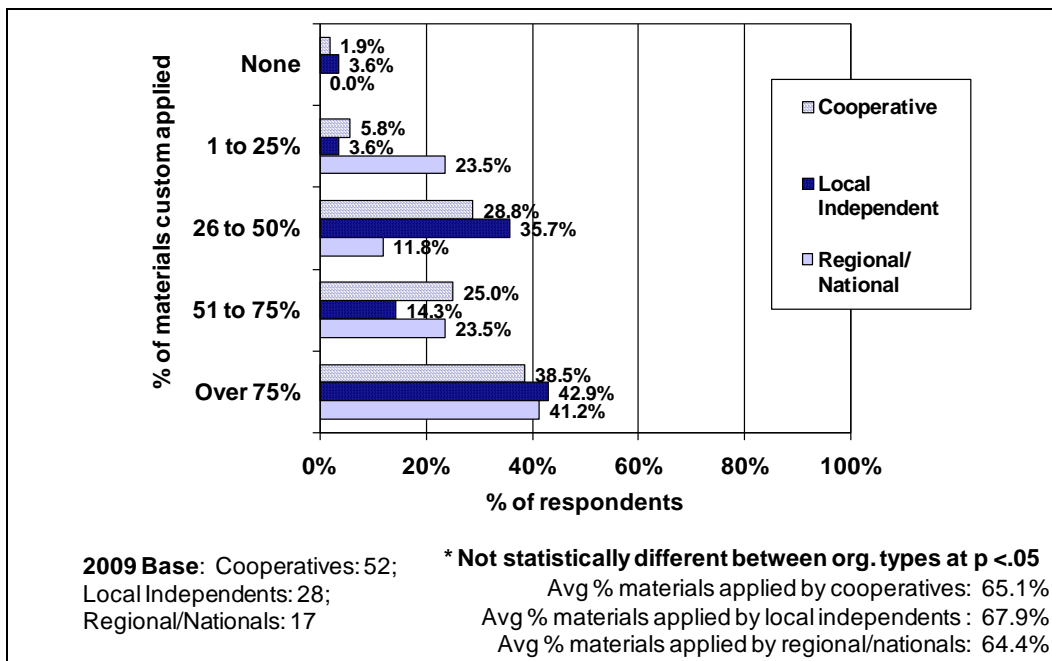
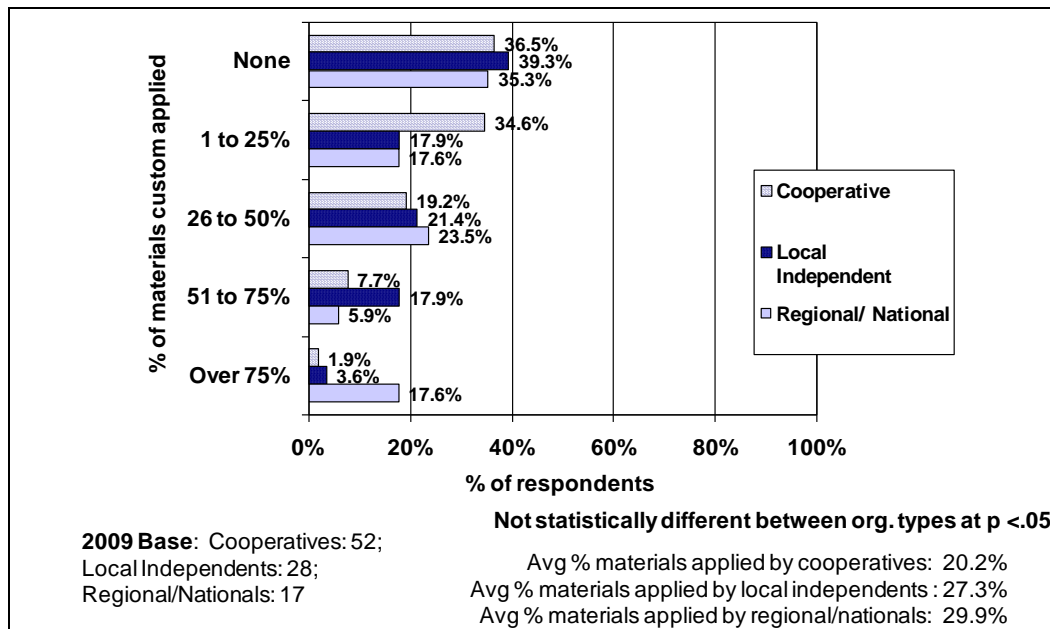


Figure 18. Use of GPS Guidance Systems for Custom Application by Organizational Type in the Midwest: Auto Control



Use of Precision Technologies and Offerings of Site-Specific Services

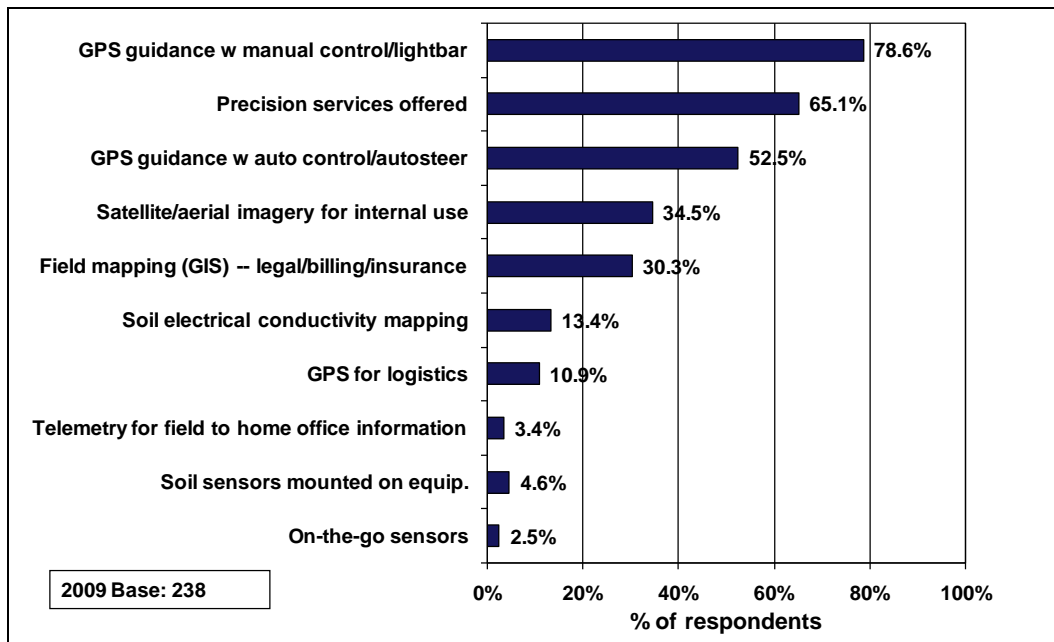
Respondents were asked several questions about their use of precision technologies and which site-specific services they were currently offering (or would be offering by the fall of 2009).

Use of Precision Technologies

Dealerships were asked how they were using precision technology in their dealerships – from offering their customers precision services to using precision technologies internally for guidance systems, satellite/aerial imagery, billing/insurance/legal activities, logistics, or field-to-home office communications.

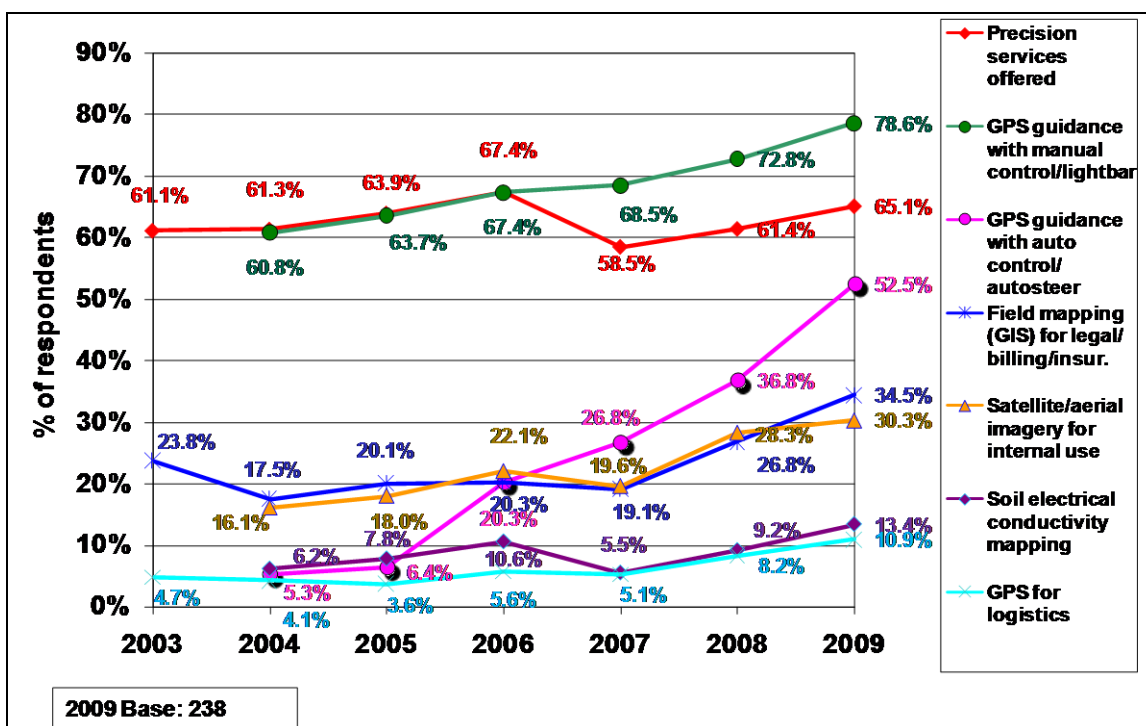
Similar to last year, 85 percent of the respondents used precision technologies in some way in their dealership. The two most common uses of precision technology were using GPS guidance with manual control/light bar (79 percent of respondents) and precision service offerings for customers (65 percent of respondents) (Figure 19). Like the last two years, the next three most common uses were GPS guidance with auto control/autosteer, satellite/aerial photography for internal uses and field mapping with GIS (Geographical Information Systems) for legal/billing/insurance purposes (53, 35 and 30 percent of respondents, respectively). Thirteen percent of the respondents said they used soil electrical conductivity mapping (Veris) (up from 10 percent last year) and 11 percent used GPS for logistics.

Figure 19. Use of Precision Technology



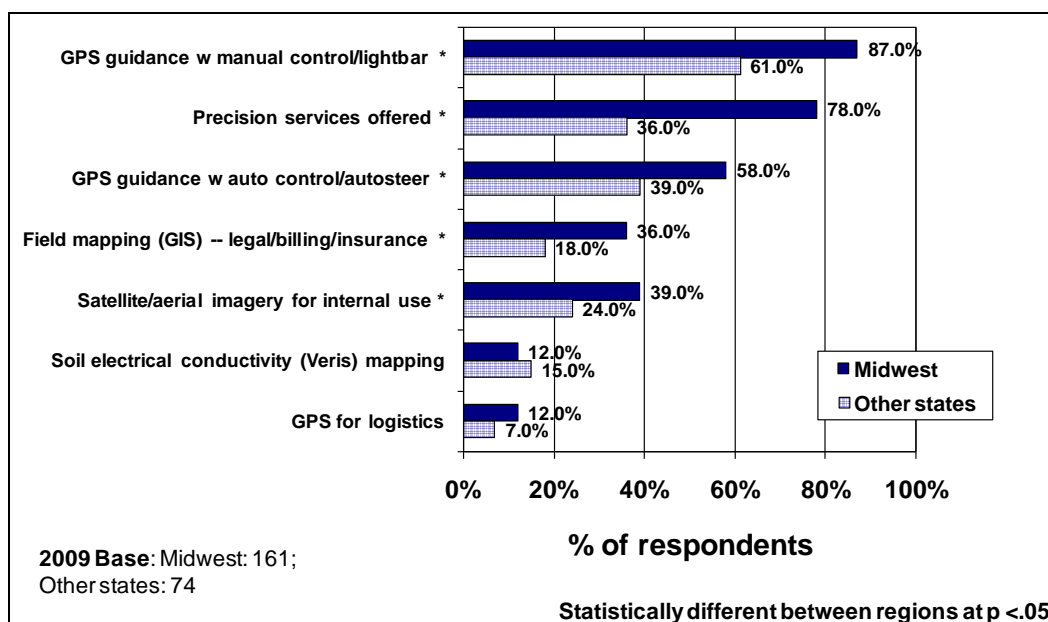
Over time, some uses of precision technology have grown while others have remained fairly stable (Figure 20). The biggest growth seen from 2008 to 2009 was in the use of GPS guidance systems with autocontrol/autosteer, growing from 37 percent of the dealerships in 2008 to 53 percent in 2009. However, all the other uses of precision technology also increased from last year. GPS guidance with manual control, GPS guidance with auto control/auto steer, satellite/aerial imagery, field mapping with GIS for legal/billing/insurance purposes, GPS for logistics and soil electrical conductivity mapping were all being used at a historically high levels. Only precision service offerings (any precision service) did not reach a historical high.

Figure 20. Use of Precision Technology over Time



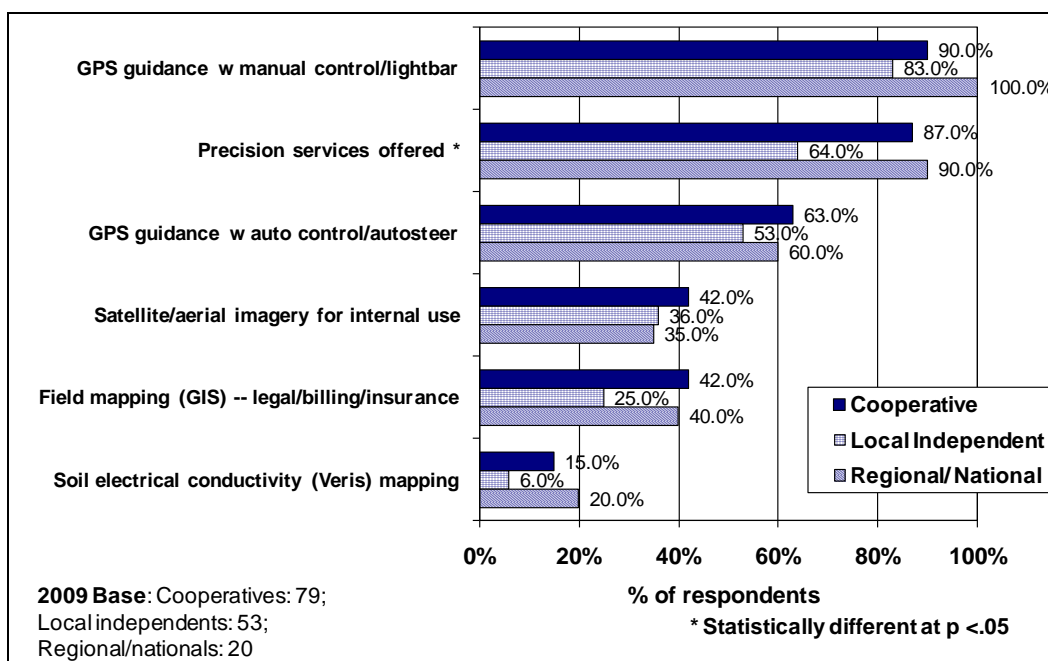
As in other years, precision technologies were being used by significantly more dealerships in the Midwest than in non-Midwestern states (Figure 21). Nine out of 10 of the respondents in the Midwest (91 percent) said their dealership used precision technologies in some way, compared to 7 out of 10 of the respondents from other states (72 percent). This compared to 81 percent of the Midwestern respondents in 2008 and 67 percent of the non-Midwestern respondents. GPS was used as a guidance system with manual control/lightbar by 87 percent of the Midwestern dealerships compared to 61 percent of the non-Midwestern respondents. Over three-quarters (78 percent) of the Midwestern respondents said their dealership offered precision services compared to only 36 percent of the non-Midwestern respondents. GPS guidance systems with auto control/autosteer were used by 58 percent of the Midwestern respondents but only 39 percent of the respondents from other states.

Figure 21. Use of Precision Technology by Region



In the Midwest, adoption of precision technology varied by organizational type. Almost all of the respondents representing cooperatives and regional/nationals used at least one precision technology (96 and 100 percent, respectively) while 83 percent of the local independents said they used at least one precision technology. Nine out of ten of the cooperatives and regional/national outlets offered precision services to their customers (87 and 90 percent) (Figure 22), while only 64 percent of the local independents offered precision services. GPS guidance systems (both manual control/lightbar and autocontrol/autosteer) were used more commonly by cooperatives and regional/nationals than by local independents. This pattern of more intense use among cooperatives and regional/nationals was consistent for all the precision technology applications except for satellite/aerial imagery which was used most heavily by cooperatives, though it was not statistically different across organizational types.

Figure 22. Use of Precision Technology by Organizational Type in the Midwest



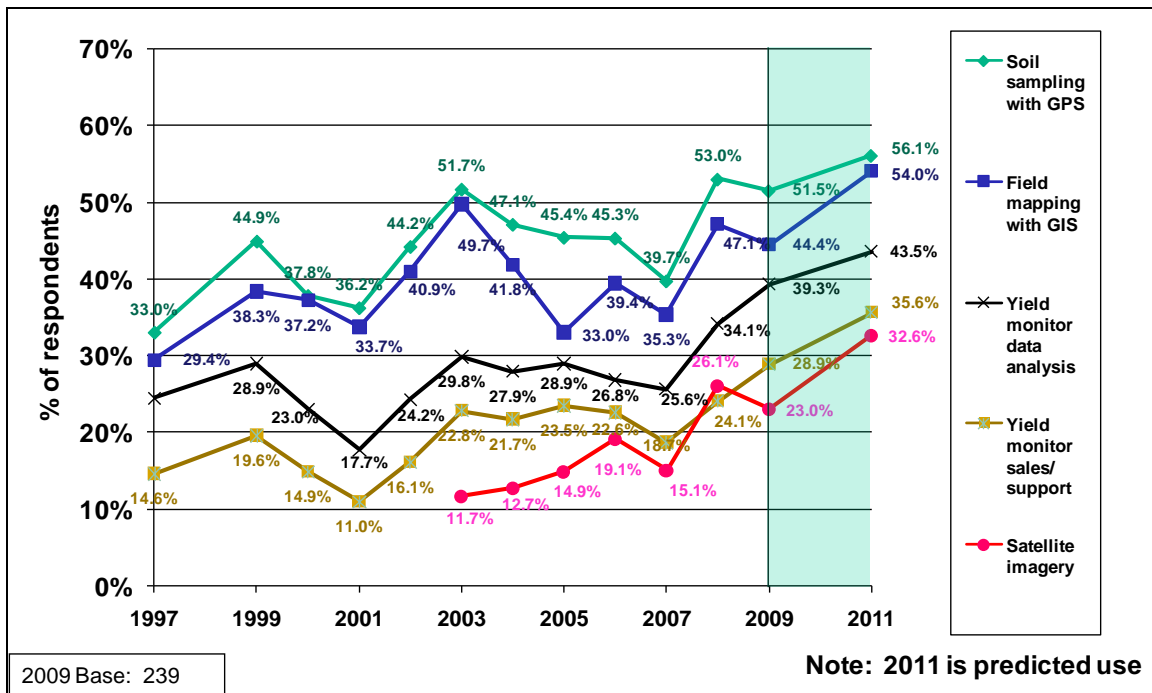
Precision Service Offerings

Respondents were asked which specific precision services they would be offering their customers by the fall of 2009. In most cases, current use and projections were up compared to 2008. As in previous years, the most common precision service offered by these dealerships was soil sampling with GPS – offered by 52 percent of the respondents (Figure 23). By 2011, 56 percent of the respondents expected their dealerships to be offering soil sampling with GPS. This shows a slight slowing in expected growth as the 2008 predicted use for 2010 was 61 percent.

Consistent with most previous years, field mapping with GIS was the second most common precision technology service to be offered, with 44 percent of the respondents offering the service by the fall of 2009. By 2011, 54 percent of respondents expected to be offering this service.

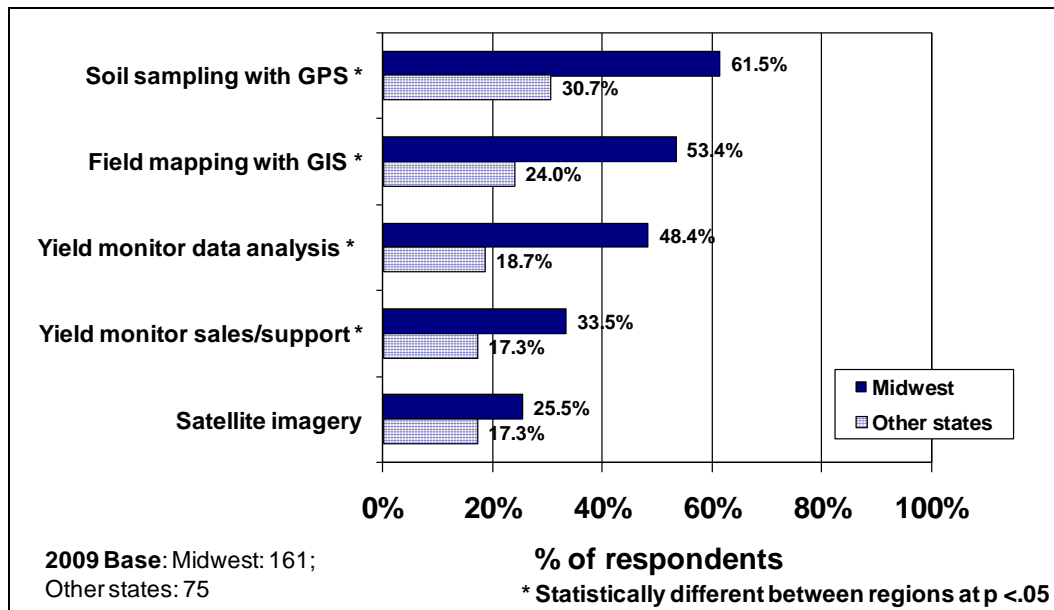
Yield monitor data analysis showed continued growth in 2009, reaching a new high of 39 percent of the dealerships offering the service. Yield monitor sales/support rose to 28 percent of the respondents and satellite imagery fell a bit to 23 percent of the responding dealerships.

Figure 23. Precision Ag Services Offered Over Time



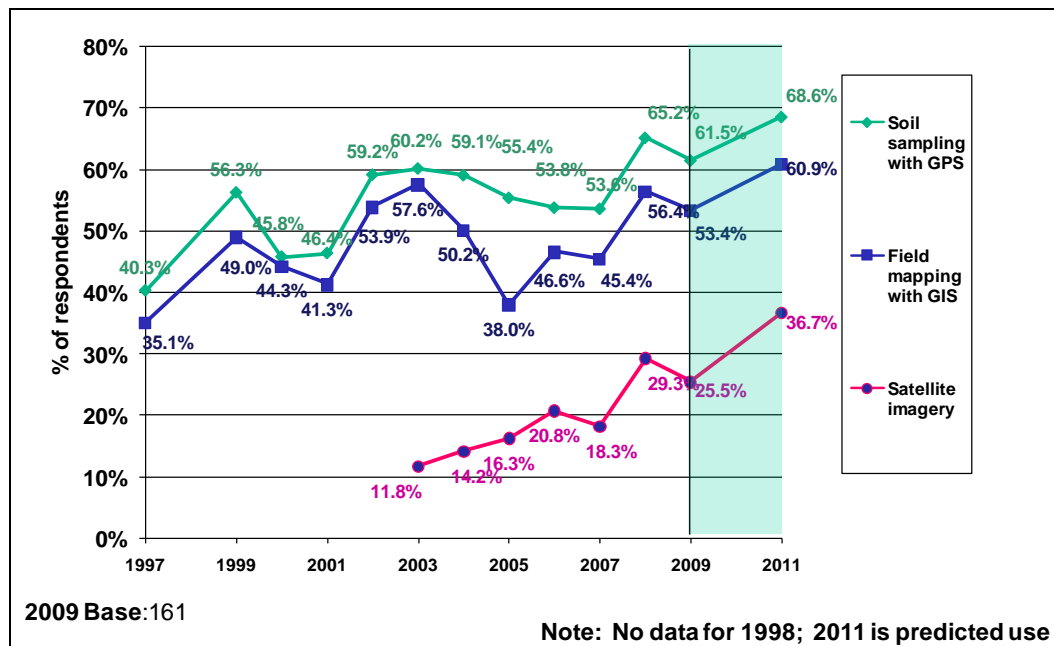
With the exception of satellite/aerial imagery, all of these precision service offerings were statistically more common in the Midwest than in other states (Figure 24). For example, 62 percent of the responding dealerships from the Midwest indicated they would be offering soil sampling with GPS by the fall of 2009. In non-Midwestern states, soil sampling with GPS was expected to be offered by only 31 percent of the respondents. Likewise, for field mapping with GIS, over half of the Midwestern respondents (53 percent) expected to be offering the service by the fall 2009 compared to 17 percent of the non-Midwestern respondents. Similar differences were apparent for yield monitor sales/support and data analysis.

Figure 24. Precision Ag Services Offered by Region



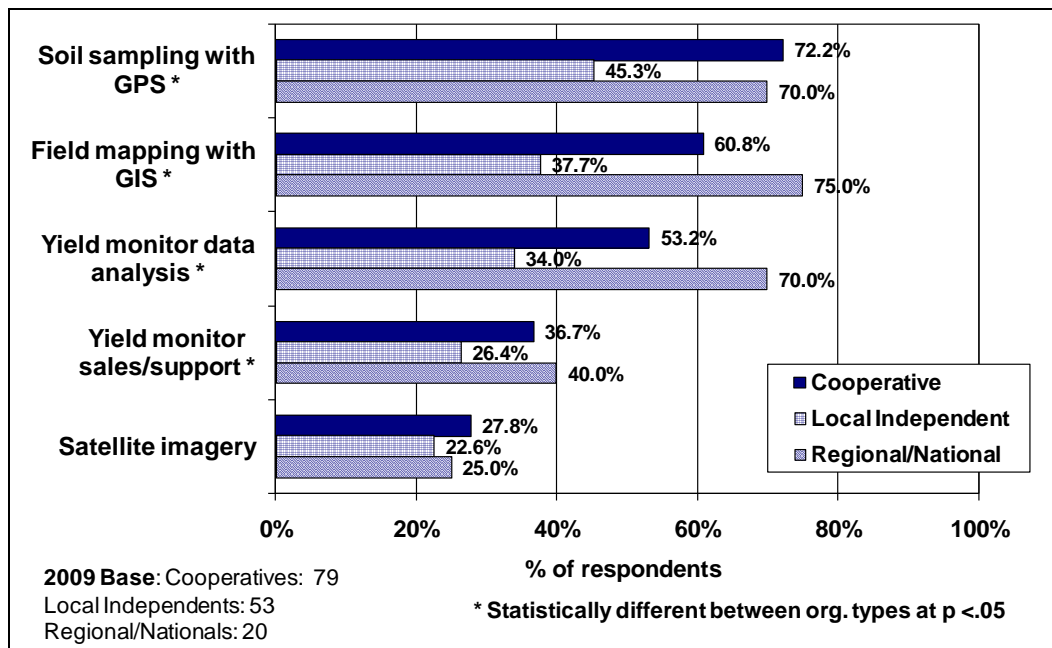
To get a better understanding of precision technology growth in the Midwest, Figure 25 shows the trends in key precision service offerings in the Midwest over the past 12 years. All three of the highlighted services were offered by fewer respondents in 2009 than 2008, though none of them fell significantly, suggesting that it could be a sampling difference rather than an actual decline in offerings.

Figure 25. Precision Ag Services Offered Over Time in the Midwest



As in previous years, precision service offerings were more extensive in national/regional organizations and cooperatives in the Midwest compared to local independents (Figure 26). In the Midwest, local independents were generally not as likely to offer these services relative to other organizational types. In 2009, only offerings of satellite imagery were not statistically different across organizational types in the Midwest, with approximately a quarter of the dealerships from each type of organizational type offering the service.

Figure 26. Precision Ag Services Offered by Organizational Type in the Midwest



A Focus on Soil Sampling

As in previous years, the types of soil sampling dealerships were offering – by grid or by soil type – were explored in more detail. Ninety-four (94) percent of the respondents offered some type of soil sampling with three-quarters indicating their dealership offered traditional soil sampling. Six out of ten of the respondents (59 percent) said they offered soil sampling by grid, while a quarter offered soil sampling by soil type (Figure 27). Over time, there have been some fluctuations, with a general increase in soil sampling offerings overall as well as an increase in grid sampling specifically (Figure 28). This year, a high of 59 percent of the responding dealerships offered grid soil sampling, the highest figure reported in the history of this survey.

Figure 27. Types of Soil Sampling Offered

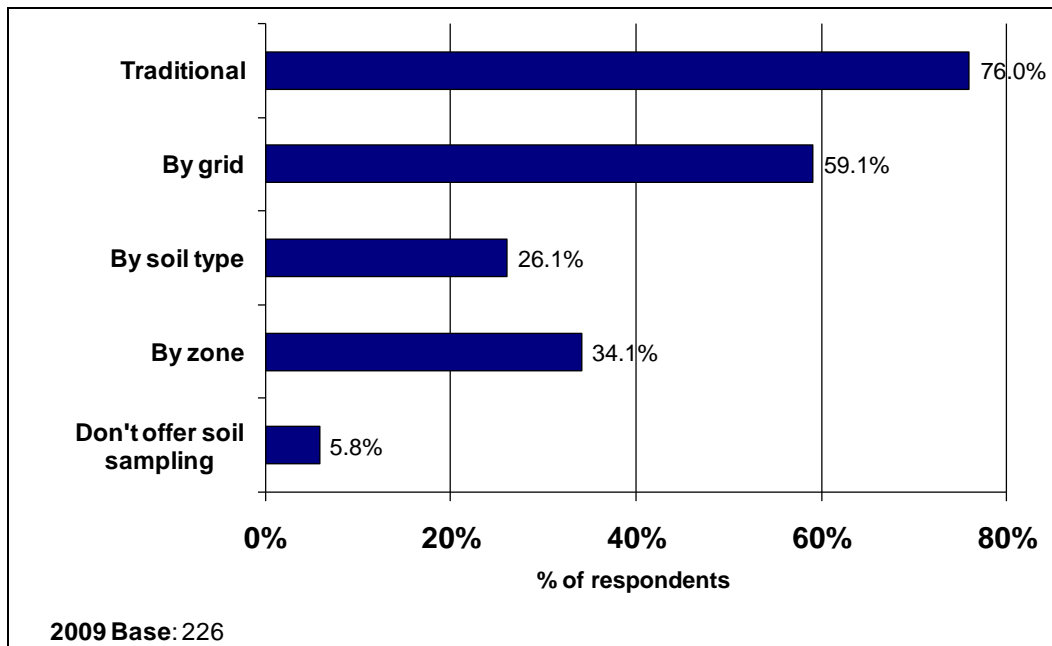
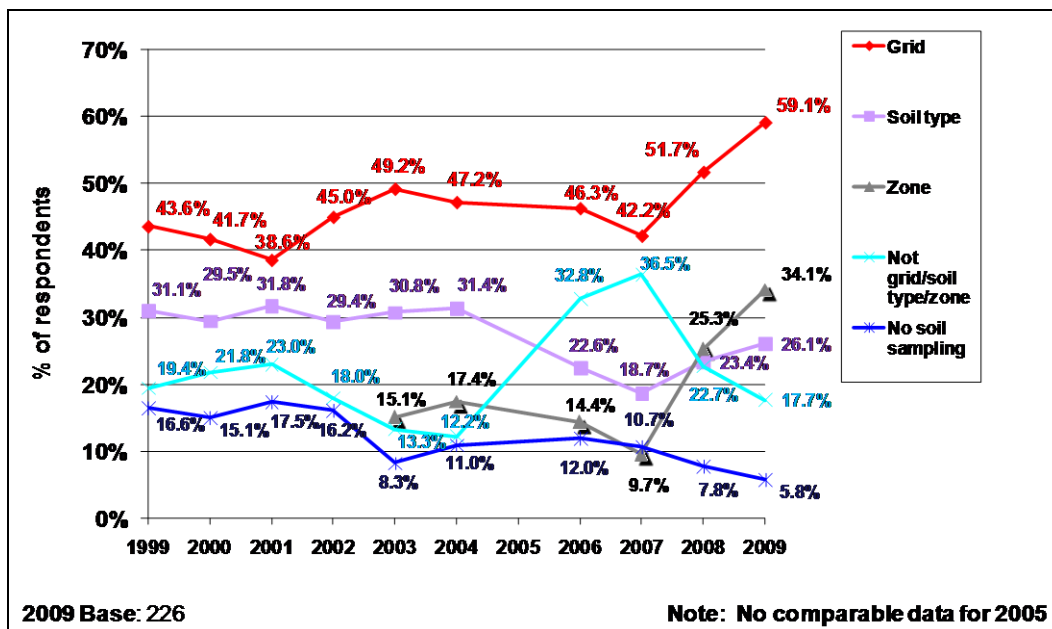
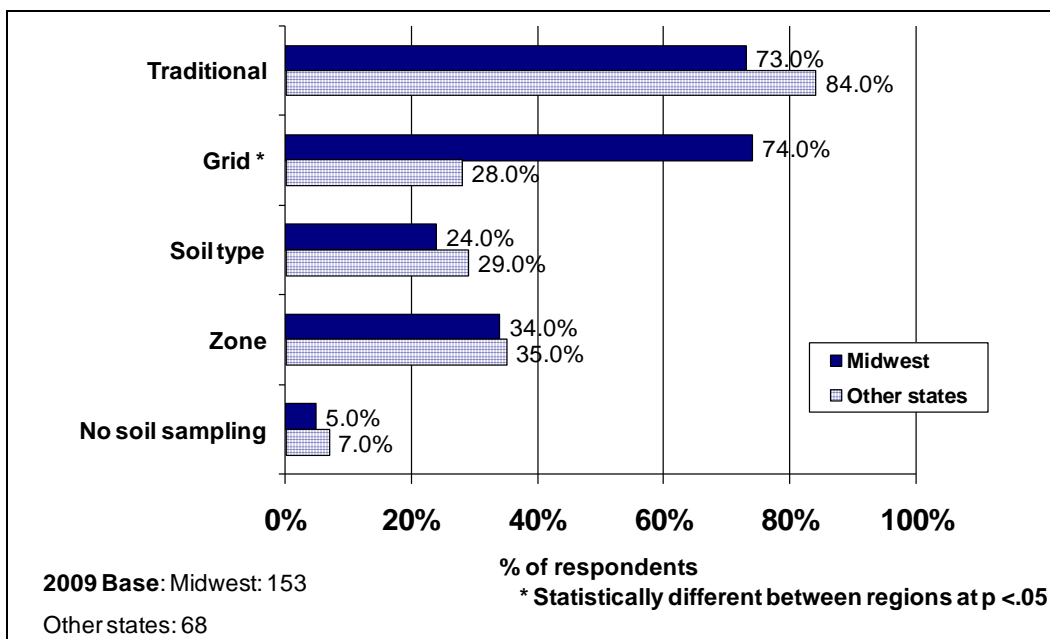


Figure 28. Types of Soil Sampling Offered Over Time



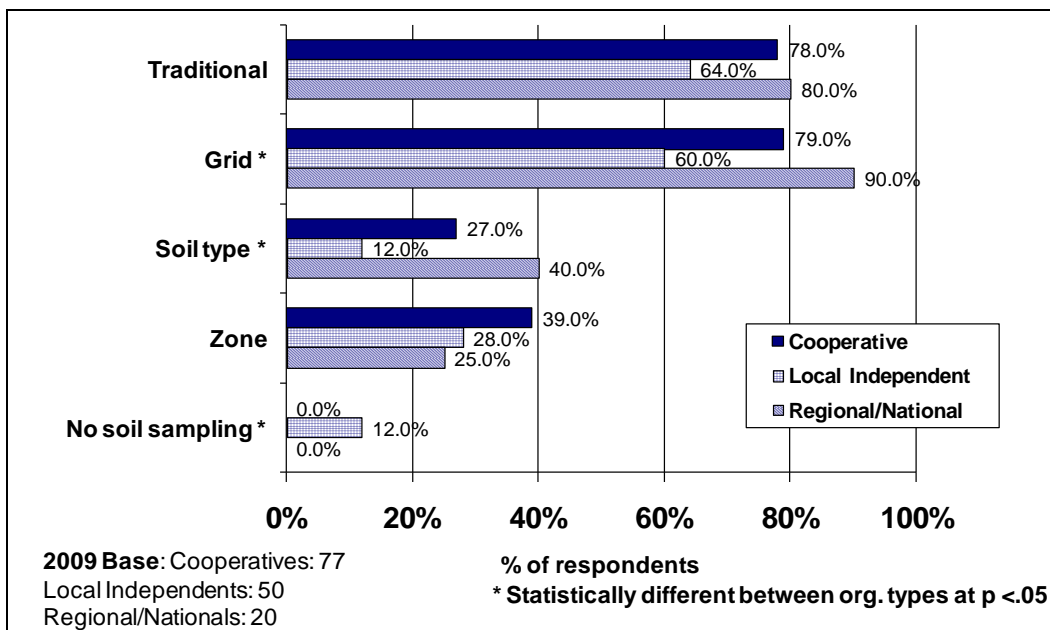
Soil sampling is slightly more common in the Midwest than in other states (Figure 29) with 95 percent of the respondents in the Midwest saying their dealership offered some type of soil sampling, compared to 93 percent of the respondents from non-Midwestern states. The only specific type of soil sampling that varied statistically by region was grid sampling – offered by almost three times as many dealerships in the Midwest compared to other states (74 percent compared to 28 percent).

Figure 29. Types of Soil Sampling Offered by Region



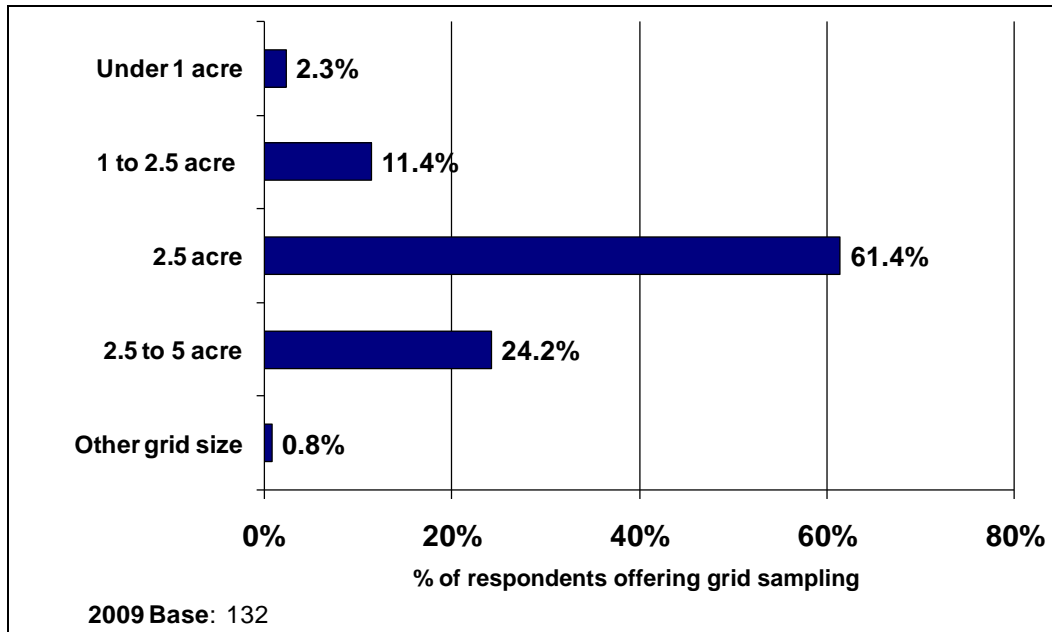
In the Midwest, the type of soil sampling also varied by organizational type (Figure 30). This year, every cooperative dealership and national/regional dealership who participated in the survey offered some type of soil sampling, along with 88 percent of the local independents. Grid soil sampling and sampling by soil type were both more likely to be offered by cooperatives and national/regional dealerships than by local independents.

Figure 30. Types of Soil Sampling Offered by Organizational Type in the Midwest



The distribution of grid sizes has remained fairly constant over time with the most common grid size continuing to be 2.5 acres, followed by 2.5 to 5.0 acres (Figure 31). There was no variation in grid size by region or by organizational type within the Midwest.

Figure 31. Grid Sizes Used in Grid Sampling



Variable Rate Application

Variable rate custom application of fertilizer, lime and pesticides, as well as variable rate seeding with GPS have typically been provided along with traditional custom application services. Figure 32 shows the trends in variable rate application and seeding services over time. In general, all areas have continued to show growth each year, with each area showing a survey high this year in terms of the proportion of dealerships offering the services.

Figure 32. Variable Rate Application Offered Over Time

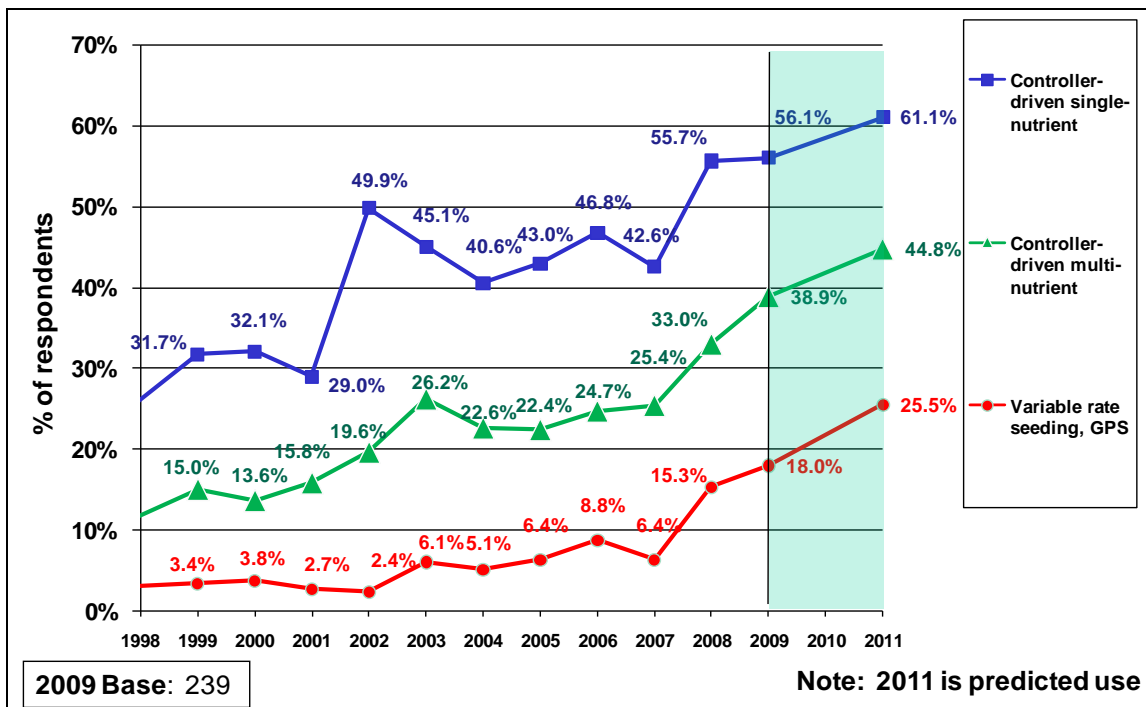


Figure 33 shows the offerings of specific controller-driven variable rate application services in 2009. Over half of the respondents (58 percent) offered some form of controller-driven application of fertilizer, lime and/or chemicals – either single nutrient or multi-nutrient application. This is similar to 2008 levels. Single nutrient controller-driven application of fertilizer was the most common controller-driven variable rate application service offered, with 52 percent of the respondents expecting to offer the service by the fall of 2009 (the same as in 2008). Forty-four percent of the respondents offered single-nutrient controller-driven variable rate application of lime in 2008, and another quarter (23 percent) offered controller-driven application of chemicals.

Multi-nutrient controller-driven application of fertilizer was up this year, with 39 percent of the responding dealerships offering the service in the fall of 2009, compared to 32 percent in fall of 2008. Almost a fifth of the responding dealerships (19 percent) offered lime in combination with other materials in multi-nutrient controller-driven application and 11 percent offered multi-nutrient controller-driven application of pesticides.

Figure 33. Precision Application Offered for Each Input Type

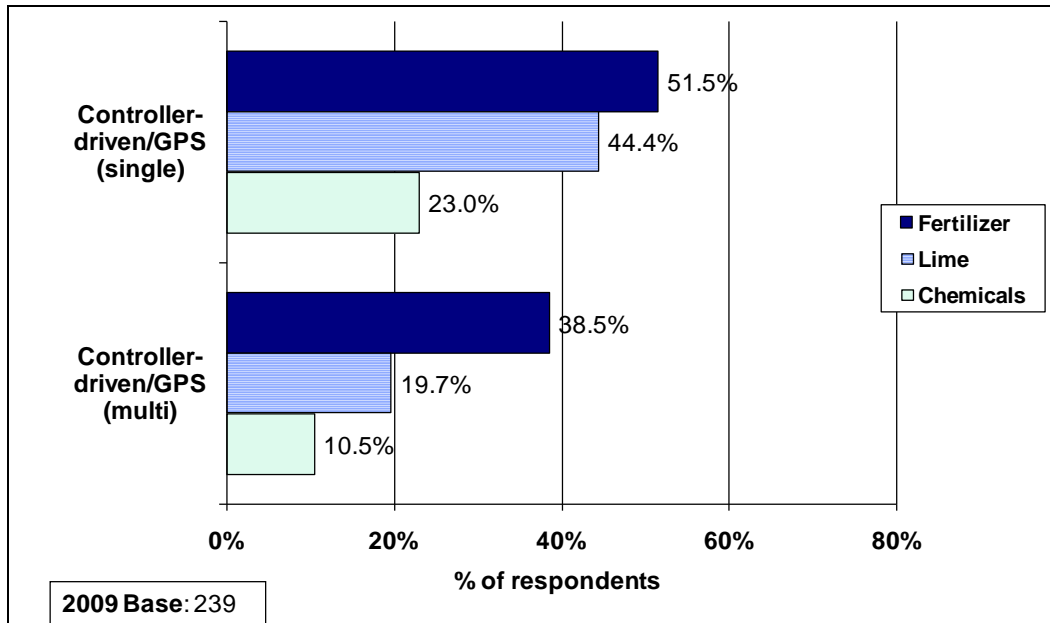
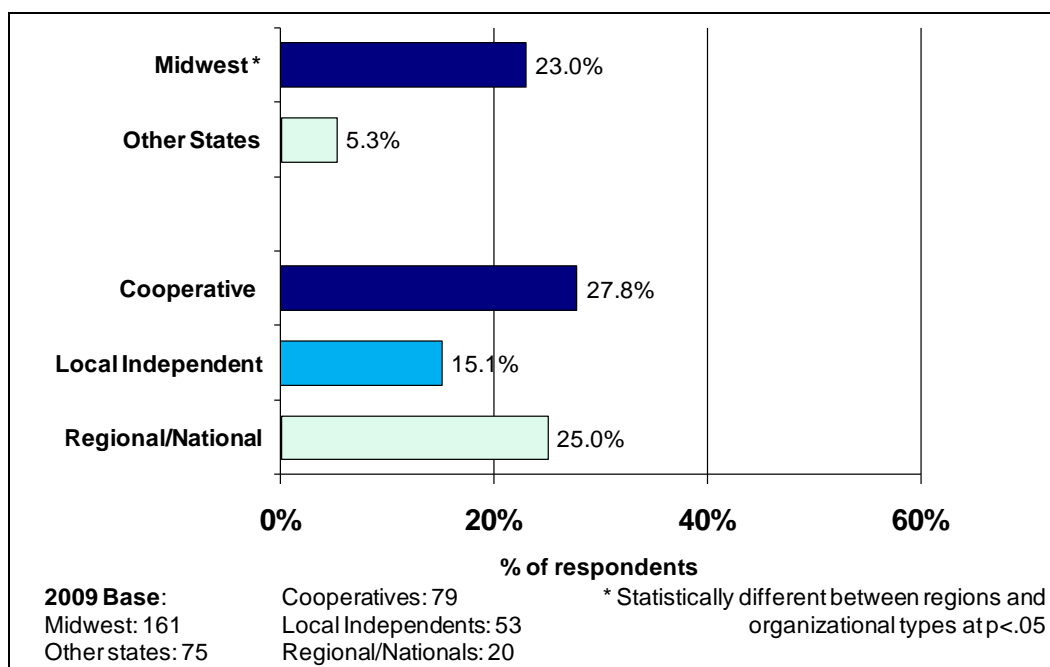


Figure 34 shows the regional and organizational breakout for variable seeding. Respondents in the Midwest were almost four times as likely to be offering variable seeding with GPS than were respondents from non-Midwestern states (23 percent of Midwestern respondents compared to 5 percent of the non-Midwestern dealerships).

In the Midwest, a quarter of cooperatives and regional/national dealerships offered variable seeding rates with GPS while 15 percent of the local independents offer the service. These differences were not statistically different.

Figure 34. Variable Rate Seeding by Regions and Organizational Types within the Midwest



Manual and controller-driven variable rate application was more common in the Midwest relative to the other states (Figure 35 to Figure 37). For fertilizer, over half of the respondents (60 percent) expected to offer single nutrient controller-driven application in the Midwest by the fall of 2009 compared to only 33 percent of the respondents from other states (Figure 35). This showed a slight increase over 2008 results of 56 percent in the Midwest and 27 percent from other states. Multi-nutrient controller-driven application of fertilizer in both Midwestern and non-Midwestern states was up in 2009. In the Midwest, multi-nutrient controller-driven application of fertilizer was offered by 48 percent of the respondents (up from 38 percent in 2008) while 17 percent of the respondents from non-Midwestern states offered the service (similar to 2008's 19 percent).

Like fertilizer, controller-driven application of lime was much more common in the Midwest than in non-Midwestern states (Figure 36) in both a single and multi-nutrient controller-driven application. Just over half of the respondents from Midwestern dealerships offered lime application in a single-nutrient controller-driven application compared to 21 percent of the respondents in non-Midwestern states. Fewer offered multi-nutrient application of lime (24 percent of the respondents from the Midwest and 9 percent of the respondents from non-Midwestern states).

For chemicals, there was no statistical difference between the Midwestern dealerships and those in non-Midwestern states for either single or multi-nutrient controller-driven application (Figure 37), with a quarter of the respondents offering chemicals in a single-nutrient controller-driven application and one out of ten offering it in a multi-nutrient application.

Figure 35. Precision Application of *Fertilizer* Offered by Region

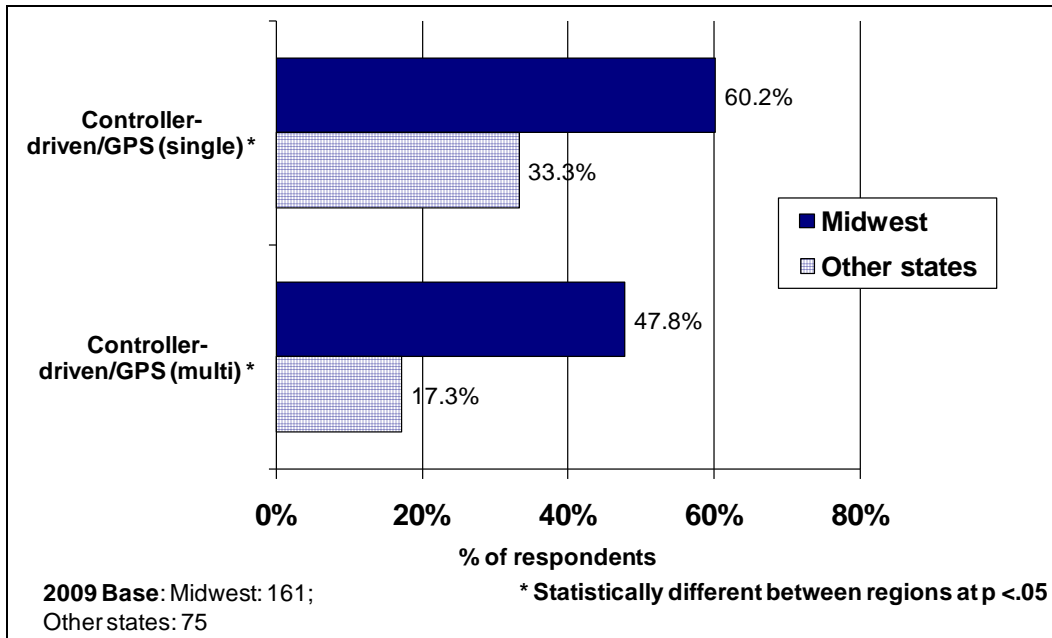


Figure 36. Precision Application of *Lime* Offered by Region

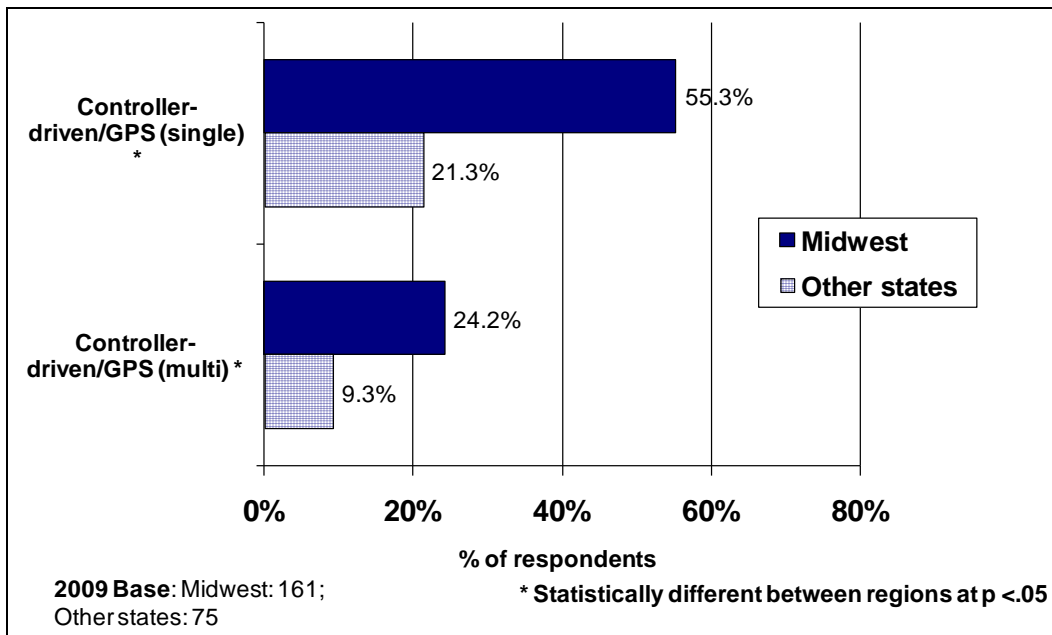
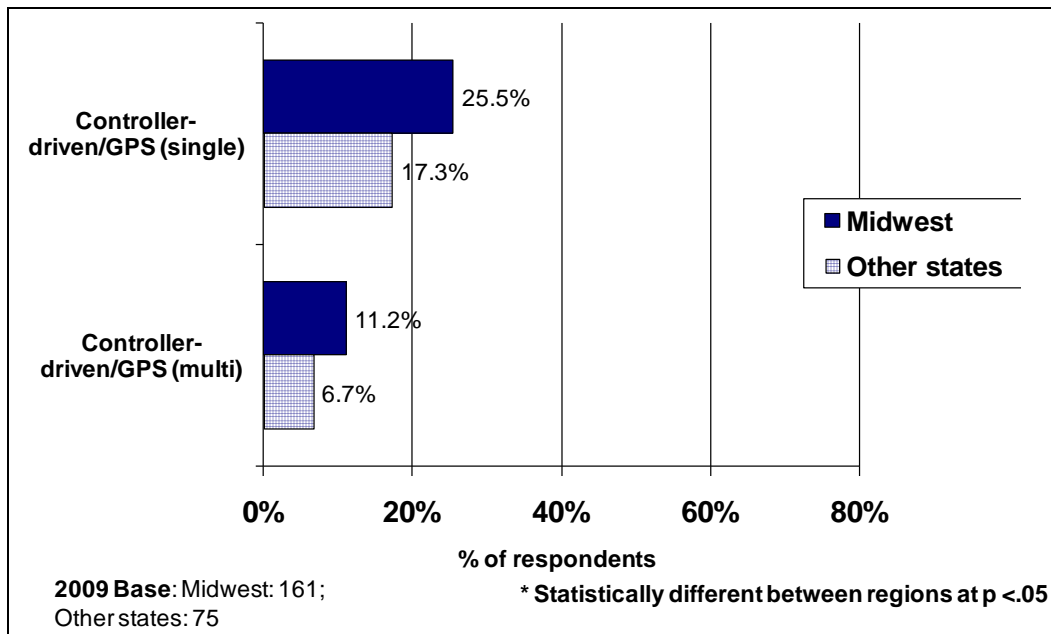


Figure 37. Precision Application of Chemicals Offered by Region



To provide a perspective of overall adoption of controller-driven application in the Midwest, Figure 38 shows the levels of controller-driven variable rate application over the past 12 years. Both single-nutrient and multi-nutrient controller-driven application have grown steadily or held level for the past few years, with both showing a larger than typical increase from 2008 to 2009.

Figure 38. Precision Application Offered Over Time in the Midwest

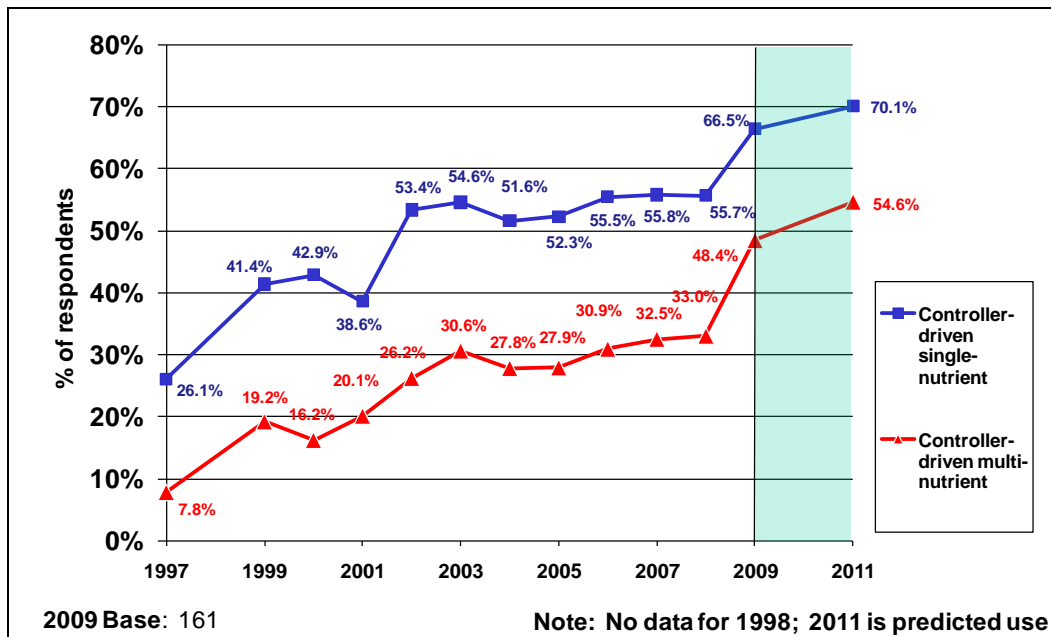
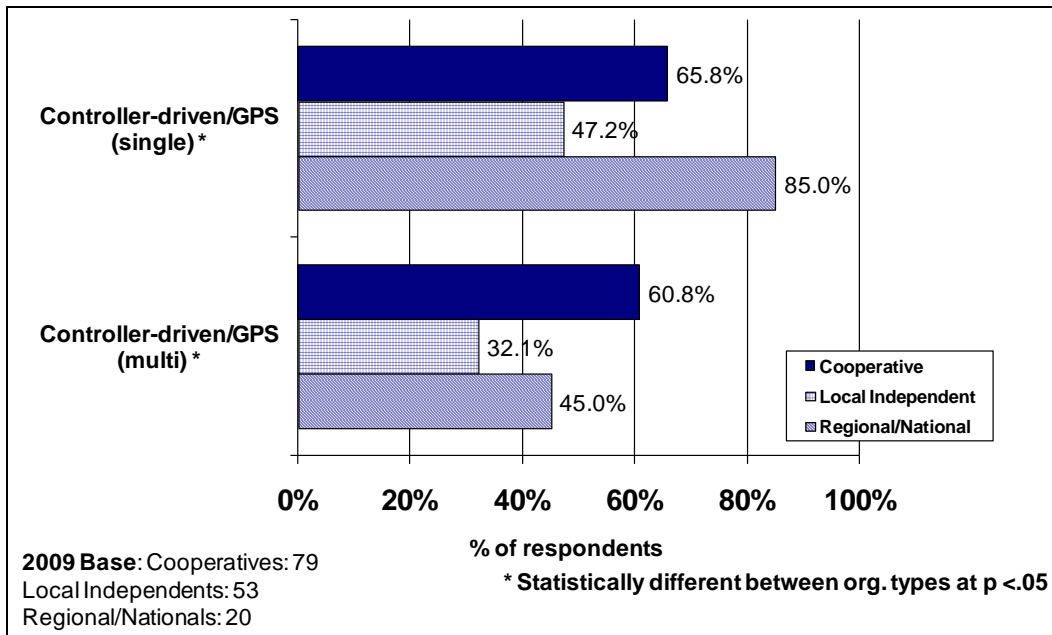


Figure 39 to Figure 41 show the precision application offerings by organizational type in the Midwest. In general, the patterns are similar to those seen for other services, with regional/national outlets and cooperatives being more likely to offer precision application than local independents. For fertilizer, 85 percent of the regional/nationals offered single-nutrient controller-driven variable rate application compared to two-thirds of the cooperatives (66 percent) and just over half of the local independents (47 percent). Multi-nutrient controller-driven application of fertilizer was much more common among cooperatives in the Midwest with 61 percent of the respondents offering the service, compared to 45 percent of the regional/national respondents and 32 percent of the local independents.

Figure 39. Precision Application of Fertilizer Offered by Organizational Type in the Midwest



Similar patterns were seen for both lime and chemical precision applications, though there is no significant difference between organizational types for single-product controller-driven application of chemicals.

Figure 40. Precision Application of *Lime* Offered by Organizational Type in the Midwest

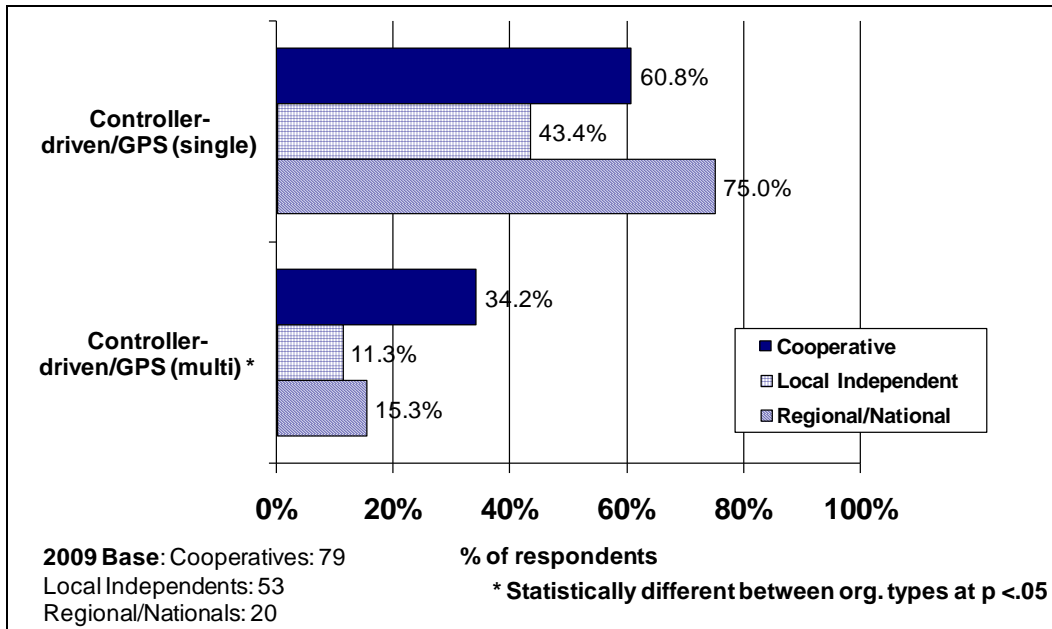
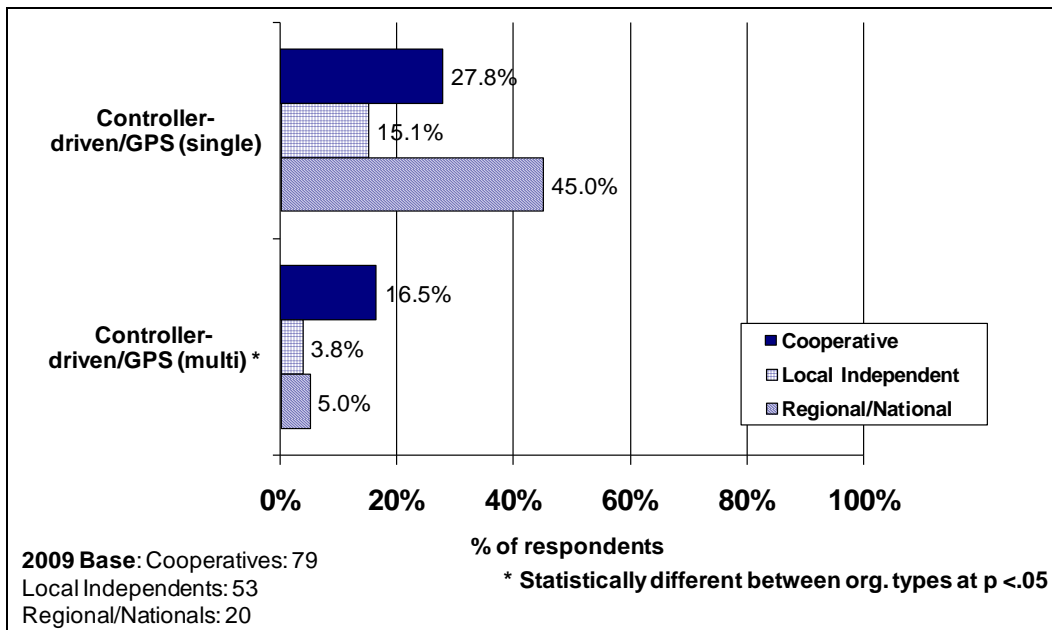


Figure 41. Precision Application of *Chemicals* Offered by Organizational Type in the Midwest



Profitability of Precision Service Offerings

Dealerships were asked how profitable they felt their precision offerings were. Overall, results were similar to those of last year.

Each bar in Figure 42 and Figure 43 shows the proportion of respondents who indicated that a particular service was:

- not covering fixed or variable costs;
- covering variable costs;
- covering both variable and fixed costs; or
- generating a profit.

Using soil sampling with GPS in Figure 42 as an example, four out of ten of the respondents said the service generated a profit for their dealership (44.1 percent). Over a quarter (29.6 percent) said that it just covered fixed and variable costs. One in ten respondents (12.5 percent) felt that they were covering variable costs but not fixed costs for soil sampling with GPS and 6.6 percent said they were covering neither variable nor fixed costs. Only 7.2 percent of the respondents did not know how profitable soil sampling with GPS was for their dealership.

In looking at the precision services in both charts, the most profitable precision service offerings appeared to be single-nutrient and multi-nutrient controller-driven application, with 50 percent of the respondents reporting that each service was generating a profit. Traditional, non-precision custom application was actually the most profitable service this year; with 54 percent of the respondents indicating they were making a profit on custom application. Soil sampling with GPS generated a profit for 44 percent of the respondents.

Similar to previous years, the least profitable of the precision services were variable seeding with GPS and yield monitor data analysis, with fewer than one in five respondents reporting they made a profit on those services. For yield monitor data analysis, only 43 percent of the respondents thought it did more than cover variable costs. Respondents were most uncertain about the profitability of variable seeding with GPS and satellite/aerial imagery, with 25 percent indicating they didn't know whether or not they were covering costs on these two services.

Overall, respondents were confident about the profitability of their total precision service offerings. Four out of ten of the respondents (43 percent) indicated their precision package generated a profit while another 31 percent said they were covering both the fixed and variable costs of providing the services. Both numbers were almost identical to 2008 results.

There were no significant differences in reported profitability between regions.

Figure 42. Profitability of Precision Service Offerings

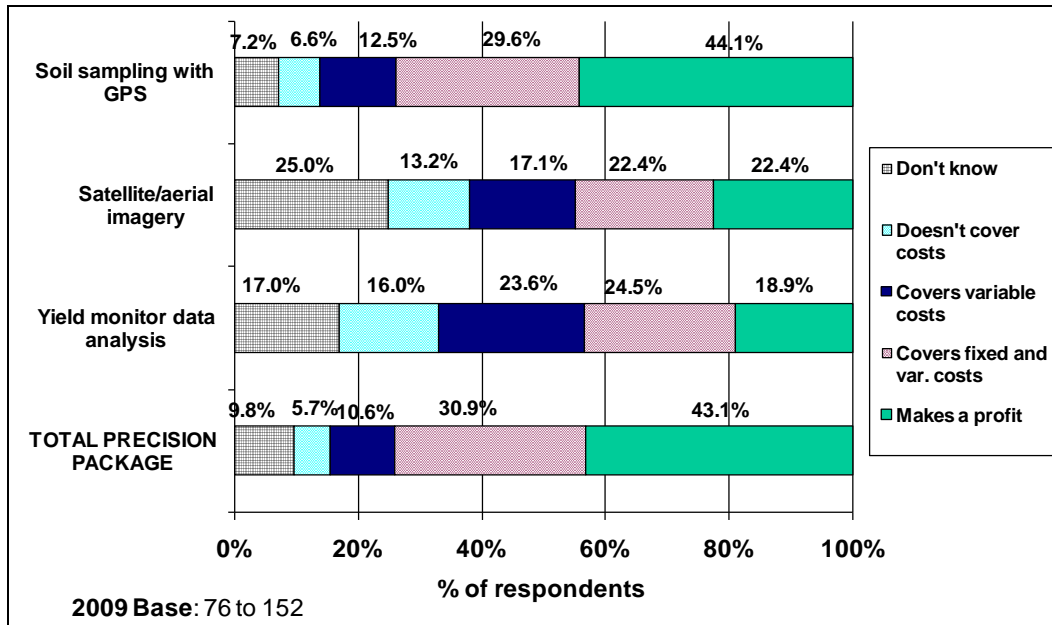


Figure 43. Profitability of Precision Application Offerings

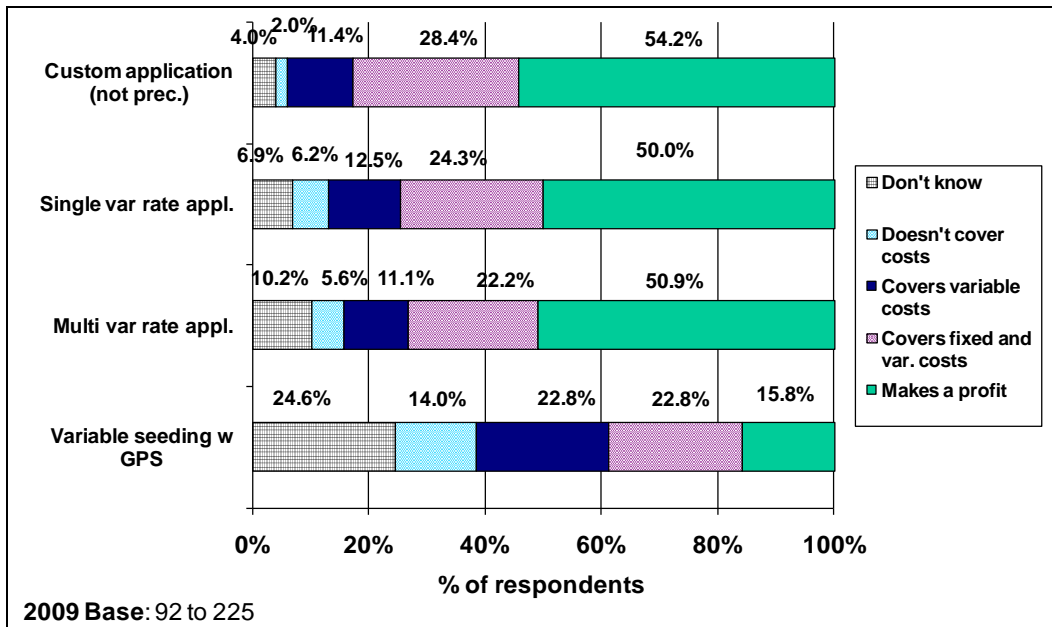


Figure 44 shows the profitability of the services across time, indicating the percentage of respondents generating a profit on the service. This year showed very few changes in profitability for any of the precision services over 2008.

Figure 45 shows the same trends broken out just for the respondents from the Midwest. Like the overall sample, there were very few changes from 2008 to 2009, with the exception of satellite imagery which showed a decline in profitability from 28 percent of respondents to 17 percent. Profitability of the total precision package was stable from 2008 to 2009, with just over 40 percent of Midwestern respondents generating a profit.

Figure 44. Respondents Generating a Profit from Precision Services

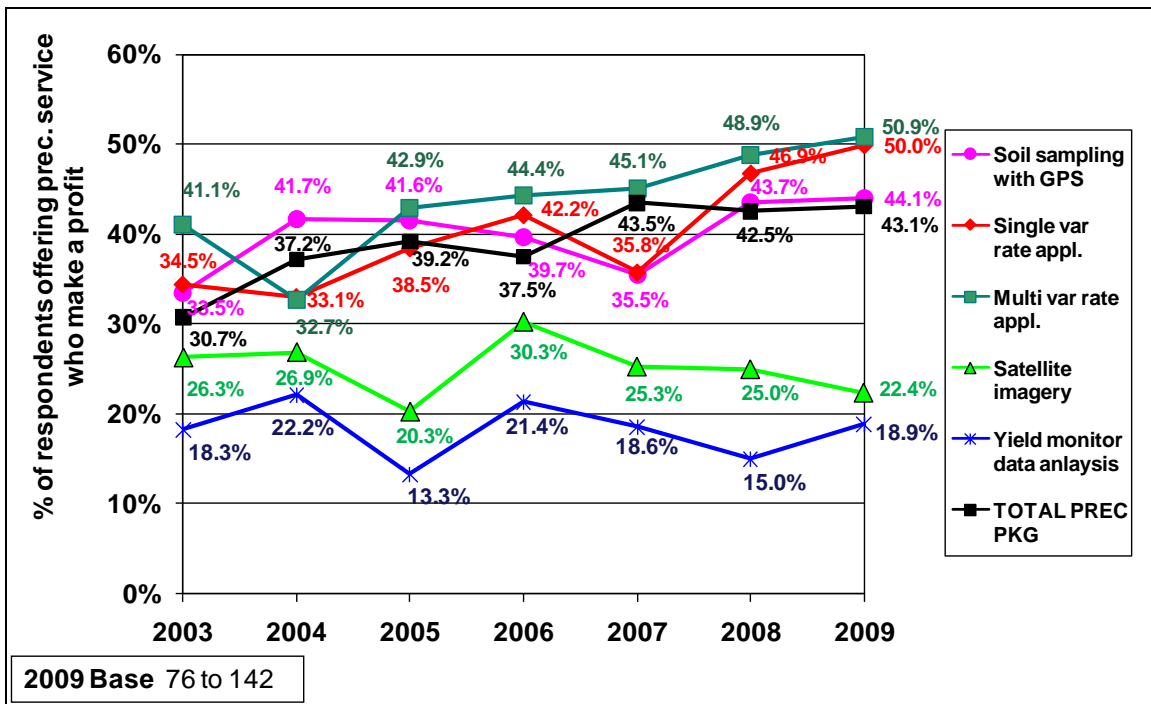
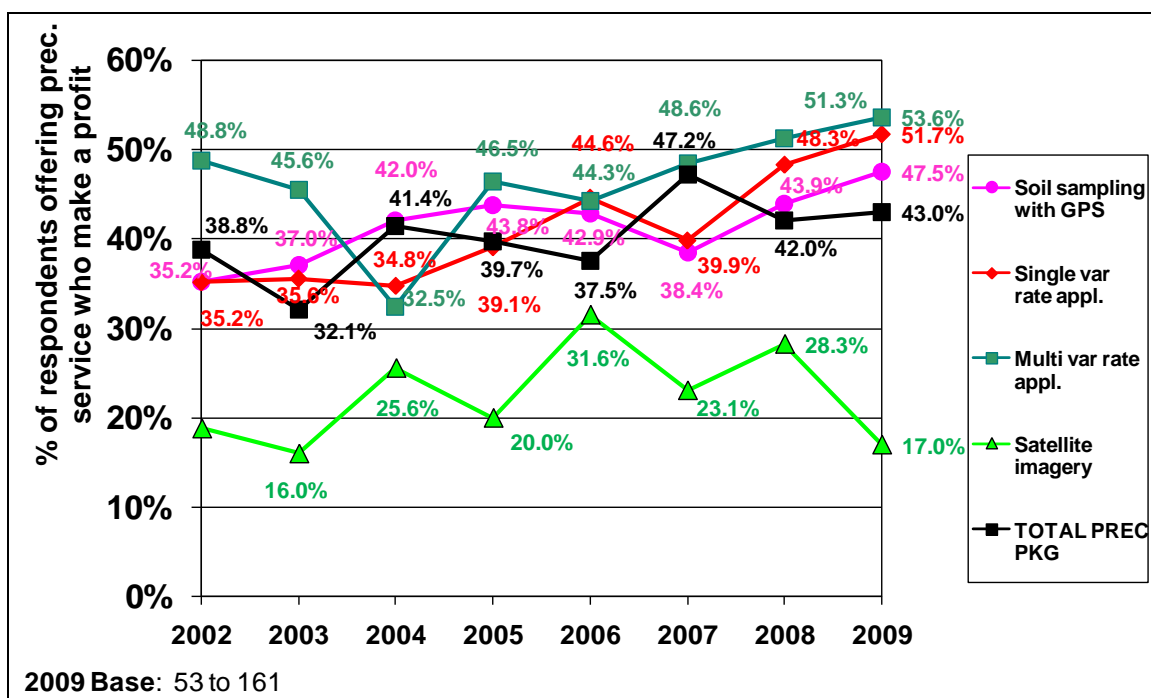


Figure 45. Respondents Generating a Profit from Precision Services in the Midwest



Customer Use of Precision Services

To get a better understanding of how quickly growers are adopting precision services, survey participants were asked what percentage of the total acreage in their market area (all growers, not just current customers) were currently using various site-specific management services; and, in their opinion, what proportion of the local market acres would be using these services in 3 years. Figure 46 to Figure 49 show the trends over time in the estimated market use of specific precision agriculture management services.

Overall the average market acreage using the specific precision technologies increased this year with the largest percentage change being in GPS guidance systems with auto control/auto steer (a almost 50 percent increase in average market area from 14.6 percent average market area to 21.3 percent as shown in Figure 47). Expectations continue to be optimistic for growth over the next 3 years.

Figure 46. Estimated Market Area Using Precision Services

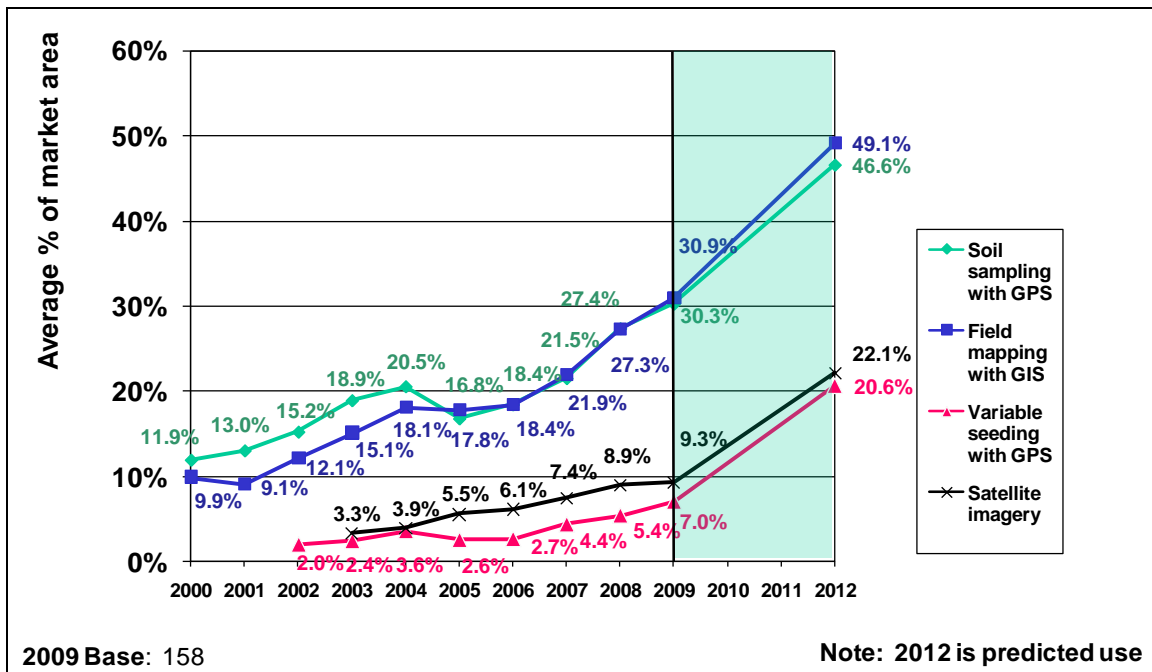
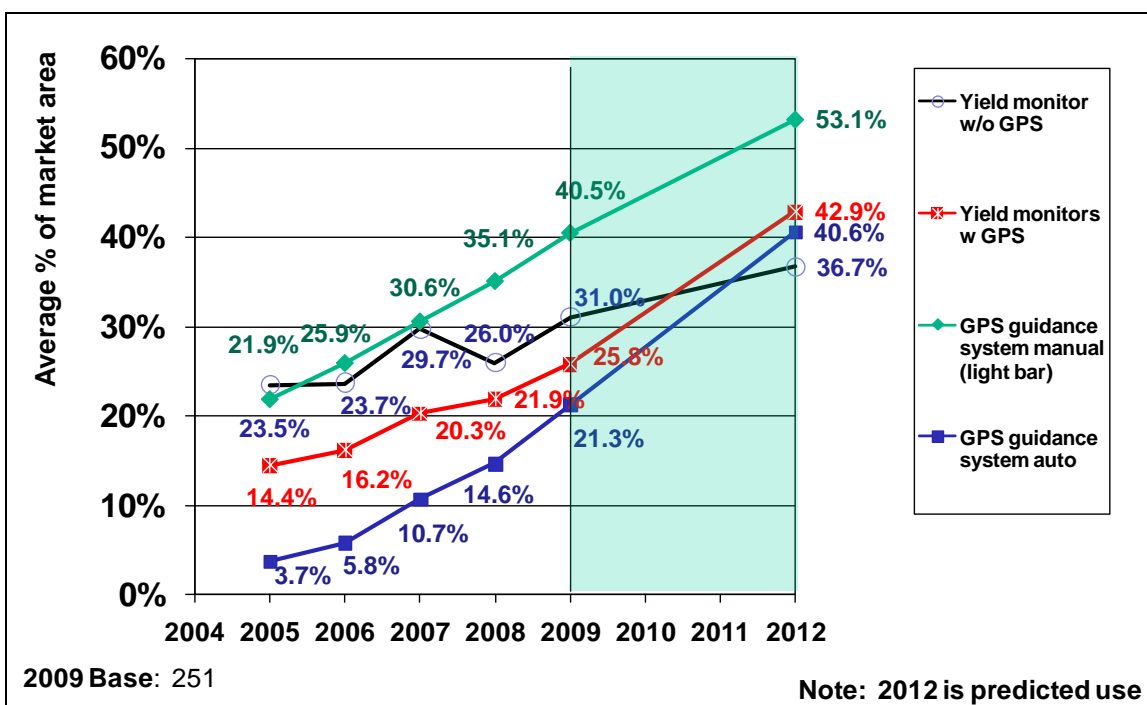


Figure 47 shows the use of yield monitors with and without GPS as well as use of the different types of guidance systems in each market area. The use of each precision technology reached an all-time high for this survey in 2009. On average, 31 percent of each respondent's market area was using yield monitors without GPS while 26 percent was using yield monitors with GPS. The use of GPS guidance systems with light bars grew from an average of 35 percent in 2008 to 41 percent of the local market in 2009 while autosteer GPS guidance systems grew from an average of 15 percent to 21 percent of the market acres.

Figure 47. Estimated Market Area Using Yield Monitors and Guidance Systems



The use of variable rate application increased from 2008 to 2009 (Figure 48 and Figure 49), with continued growth expected into 2012. By 2012, respondents estimated that, on average, almost half of their market acreage would be having lime applied using single-nutrient controller-driven application (45 percent of the market acreage), up from 33 percent in 2008. Controller-driven application of fertilizer showed a similar pattern, increasing from 27 percent of the market area in 2009 to 44 percent in 2012. Expected growth rates in the use of multi-nutrient controller-driven application were greater, with multi-nutrient controller-driven application of fertilizer expected to double in use in the next 3 years from 17 percent of the market area in 2009 to 34 percent in 2012.

Figure 48. Estimated Market Area Using Single Nutrient Controller-Driven Application

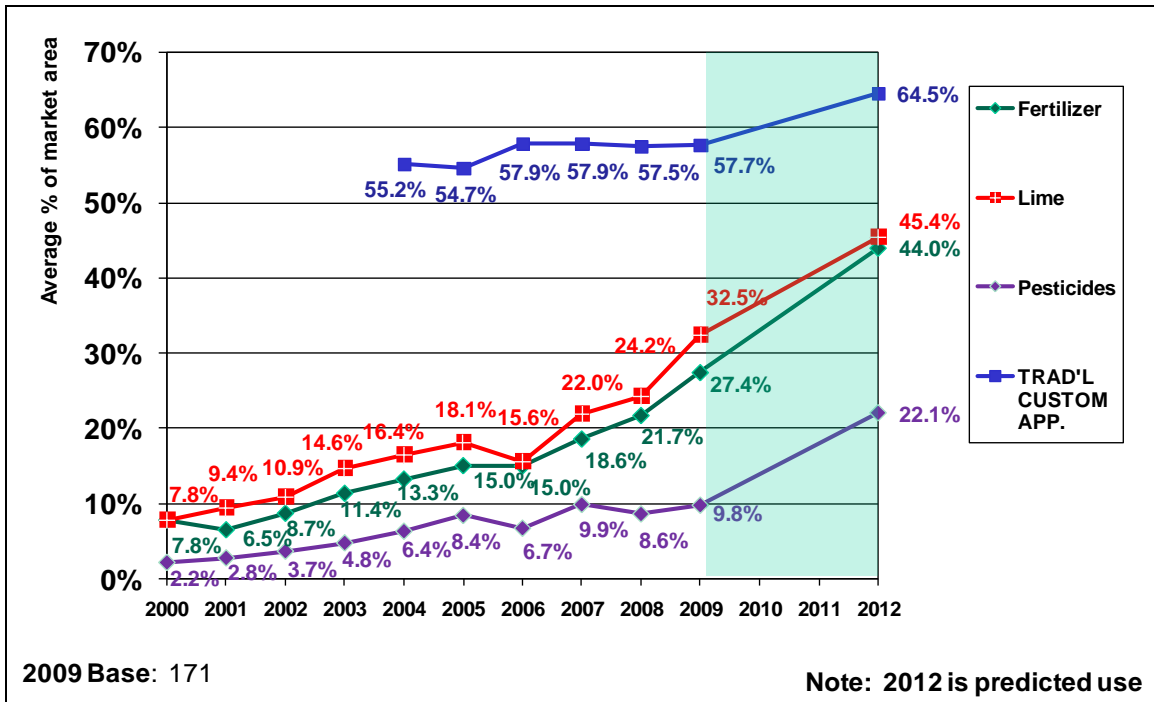


Figure 49. Estimated Market Area Using Multi-Nutrient Controller-Driven Application

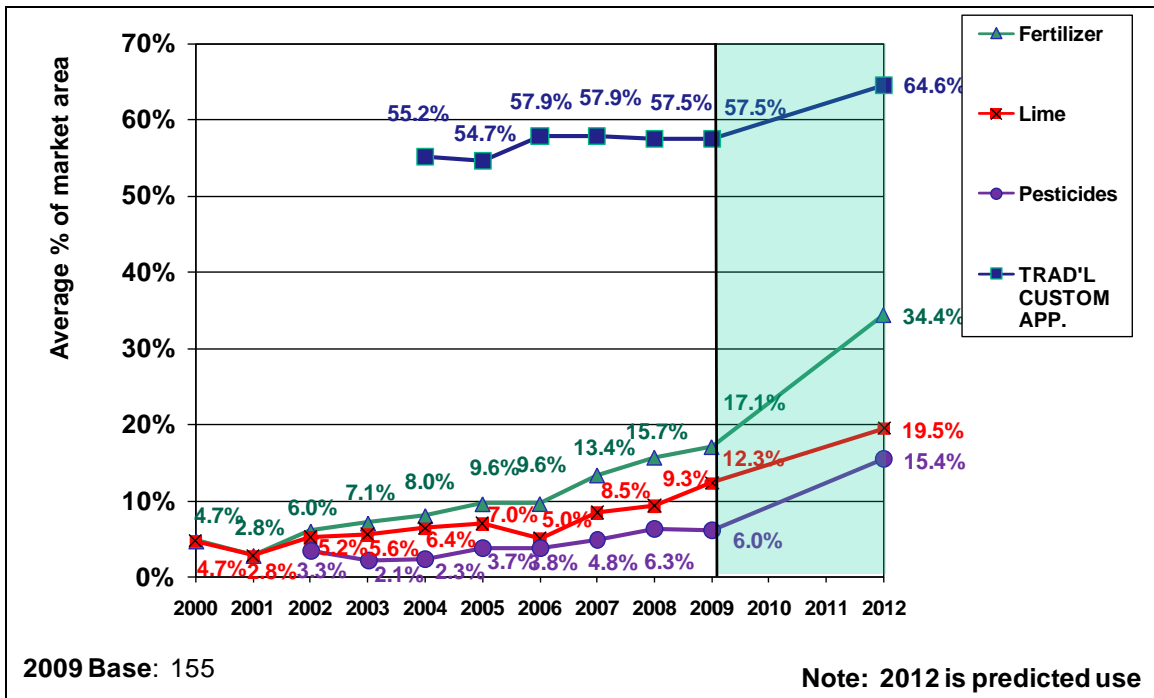


Figure 50 to Figure 57 break out estimated market usage of precision services by region. Some market use estimates were significantly higher in the Midwest than in other states. Current usage was significantly higher in the Midwest for soil sampling with GPS, field mapping with GIS, yield monitors with GPS, and controller-driven application of fertilizer (both single and multi-nutrient). There were no significant differences between regions for manual GPS guidance systems (lightbars), auto-drive guidance systems, or single and multi-nutrient controller-driven application of lime and pesticides.

Figure 50. Estimated Market Area Using Precision Services in the Midwest

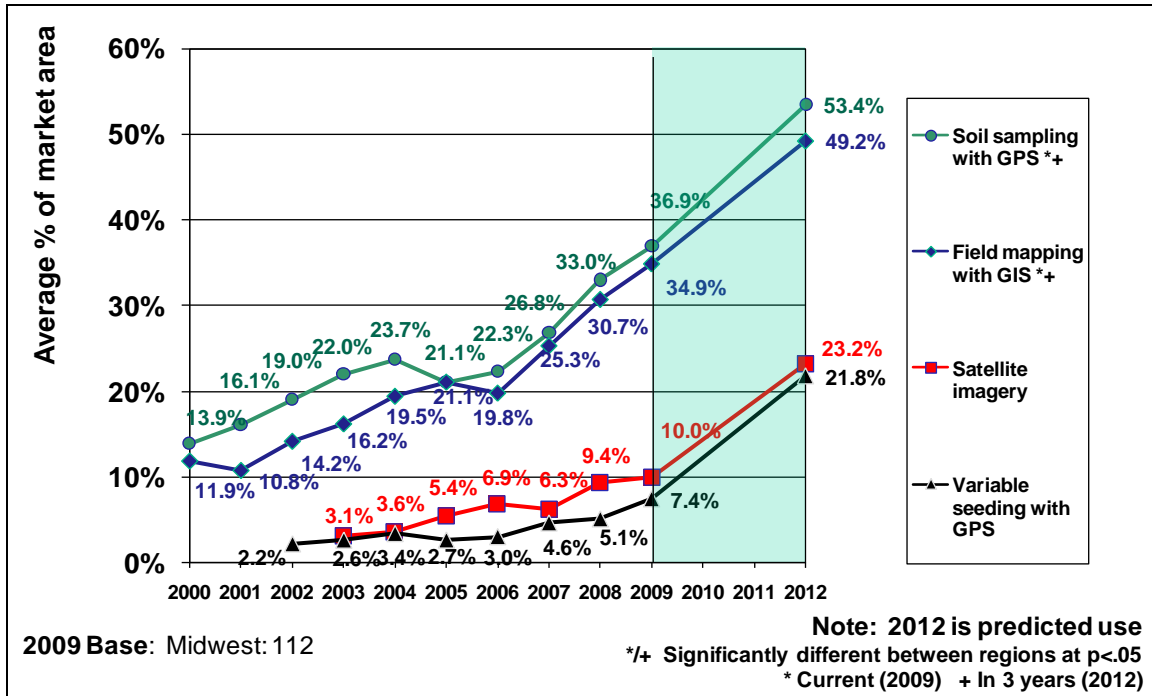


Figure 51. Estimated Market Area Using Precision Services in the Other States

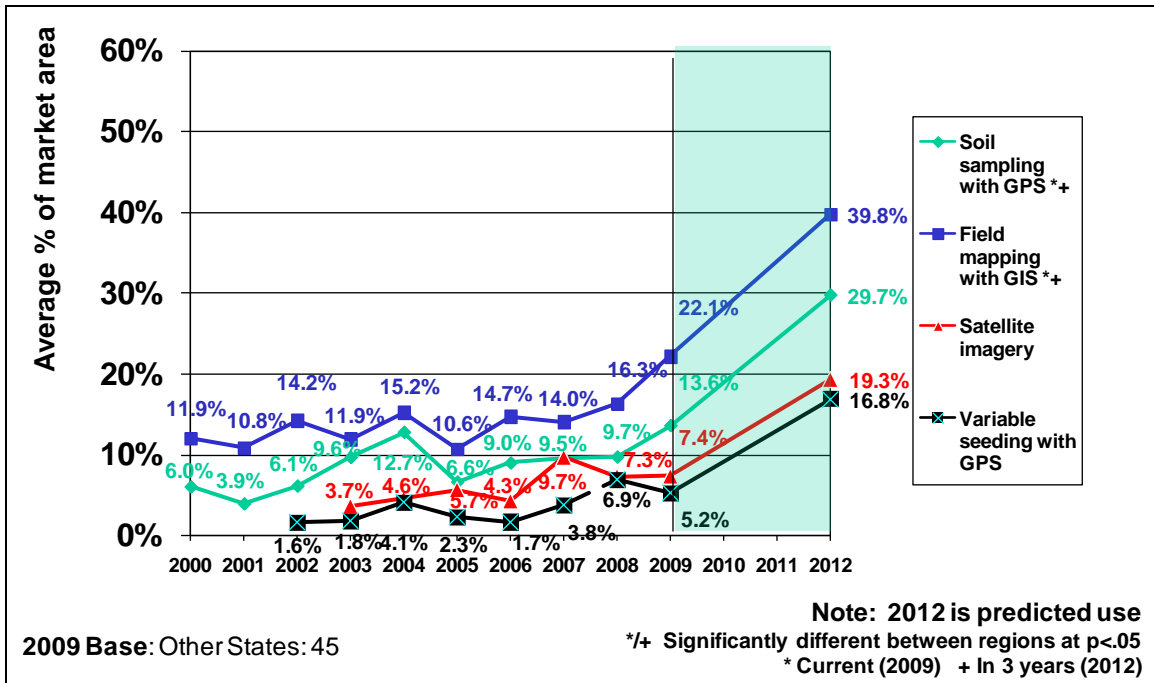


Figure 52. Estimated Market Area Using Yield Monitors and Guidance Systems in the Midwest

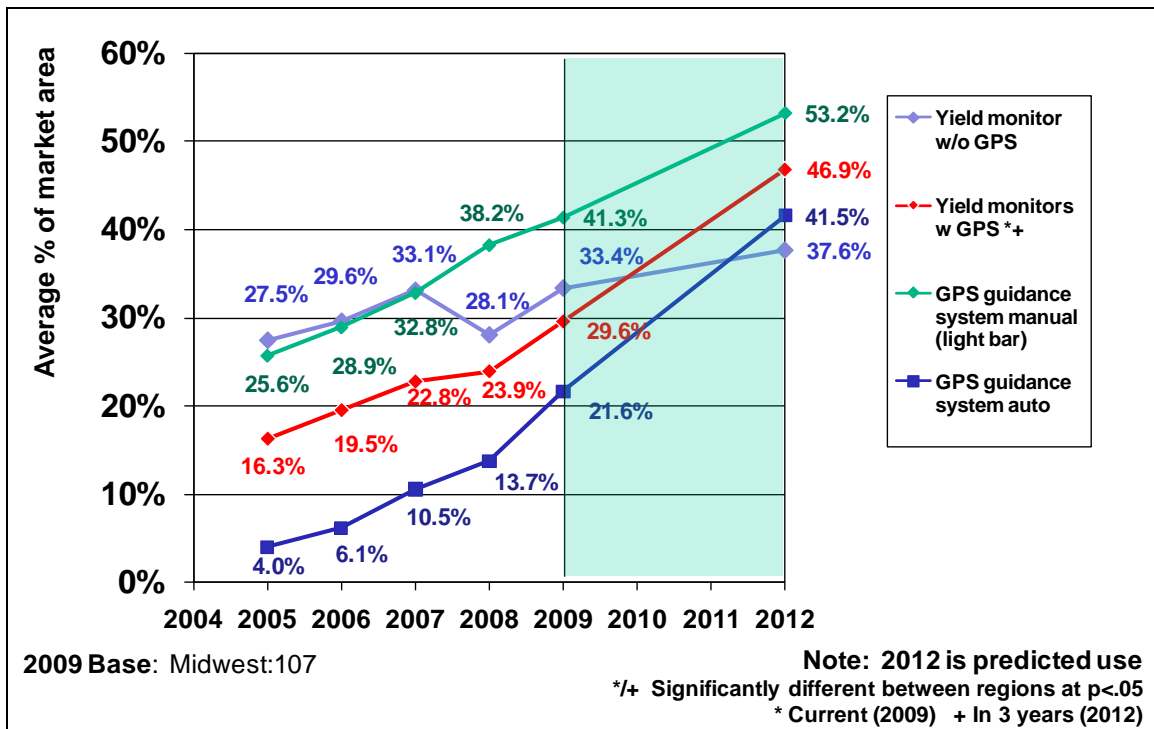


Figure 53. Estimated Market Area Using Yield Monitors and Guidance Systems in Other States

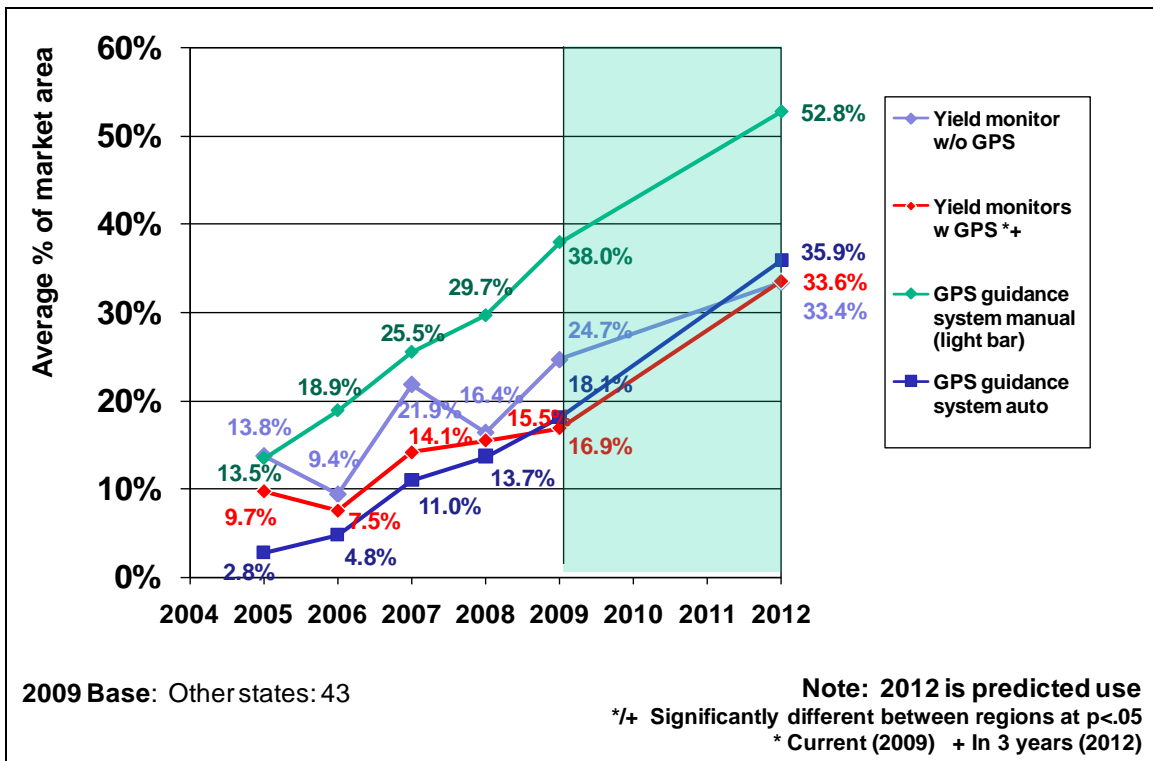


Figure 54. Estimated Market Area Using Single Nutrient Controller-Driven Application in the Midwest

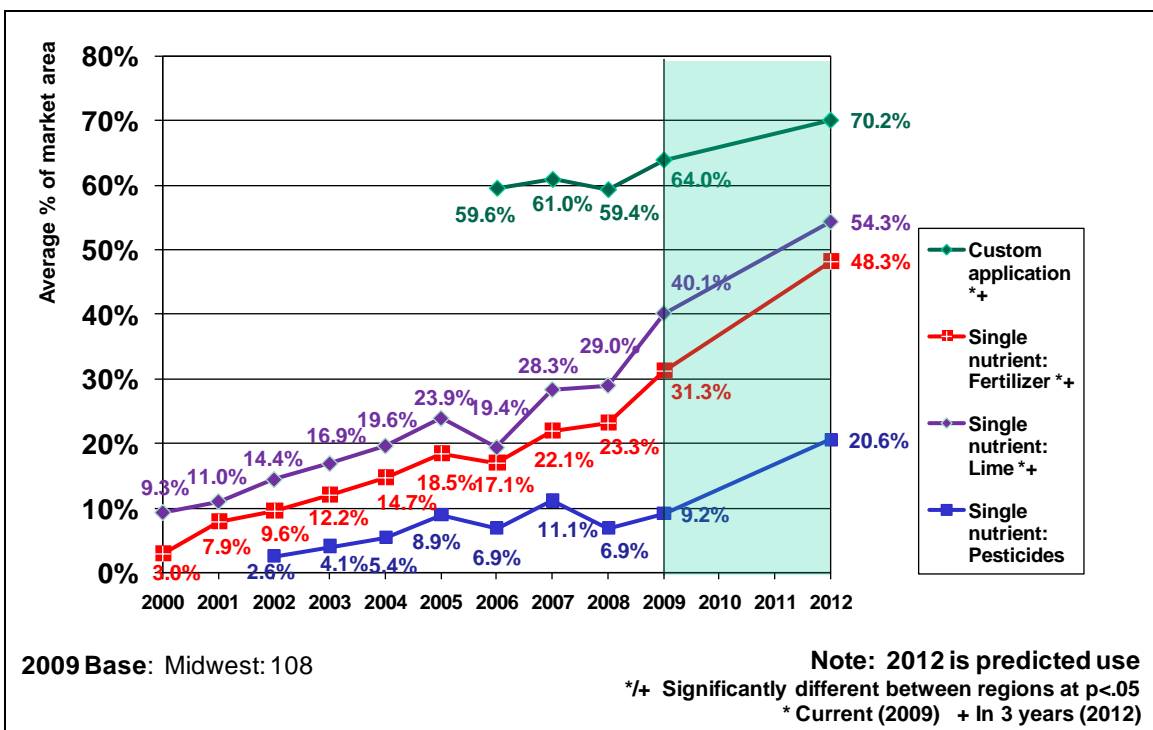


Figure 55. Estimated Market Area Using Single Nutrient Controller-Driven Application in Other States

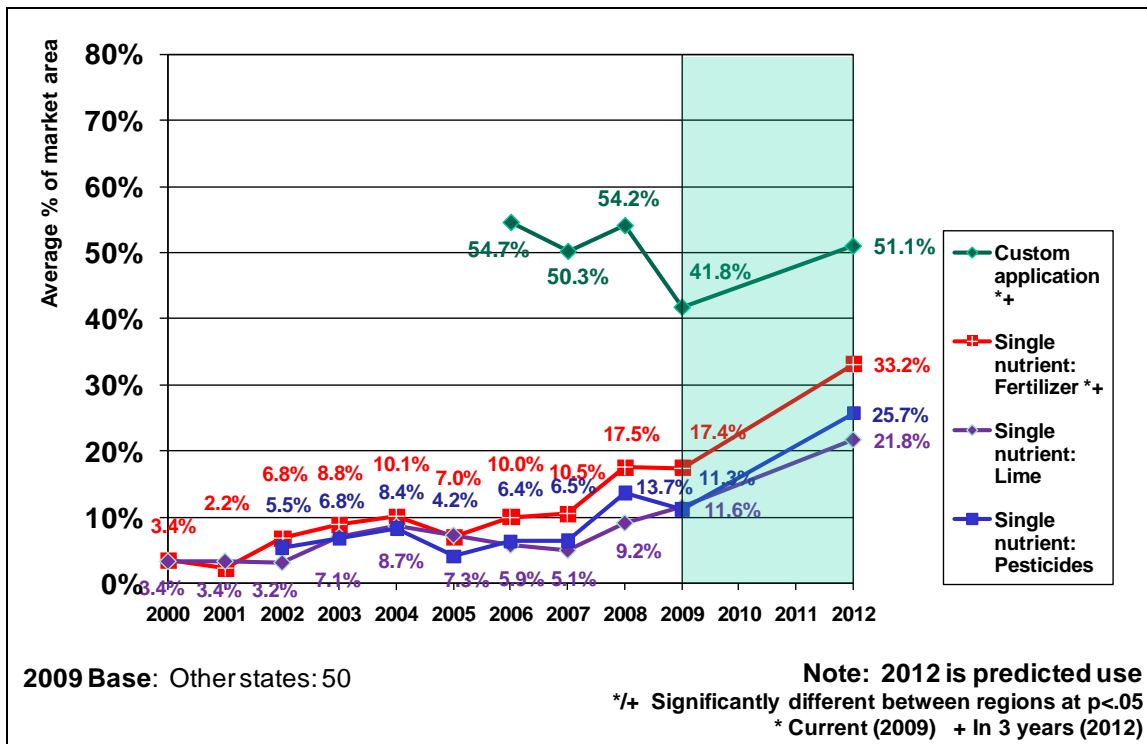


Figure 56. Estimated Market Area Using Multi Nutrient Controller-Driven Application in the Midwest

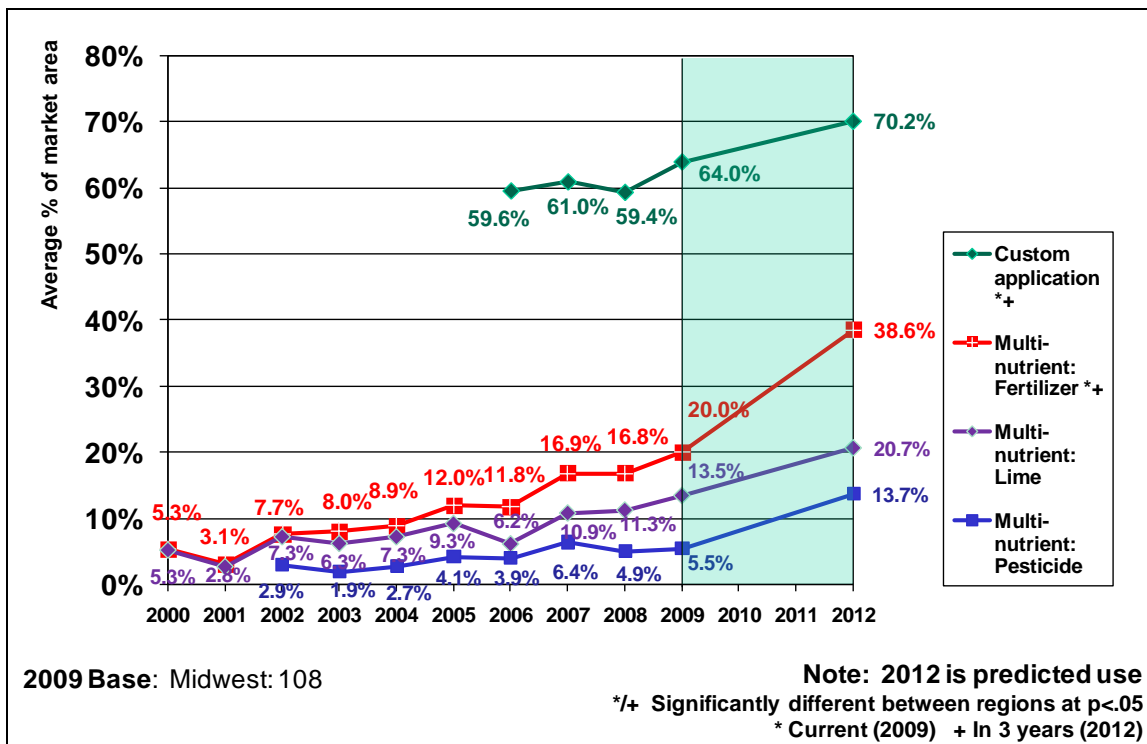
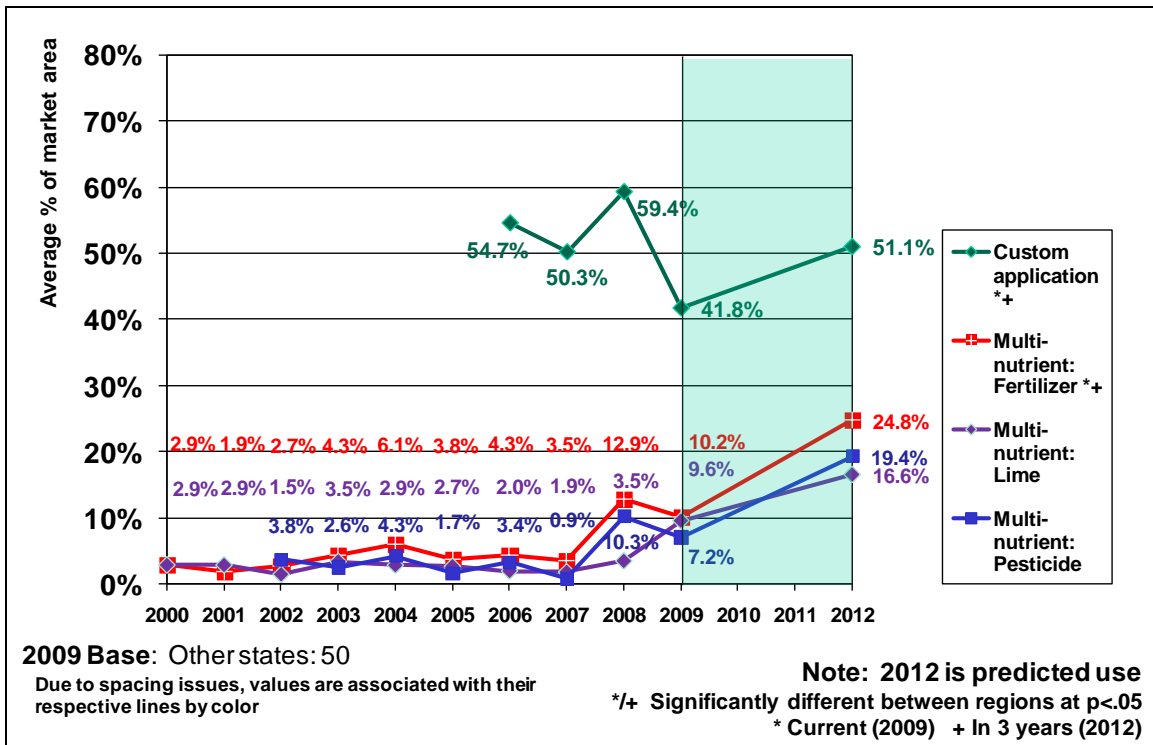


Figure 57. Estimated Market Area Using Multi Nutrient Controller-Driven Application in Other States



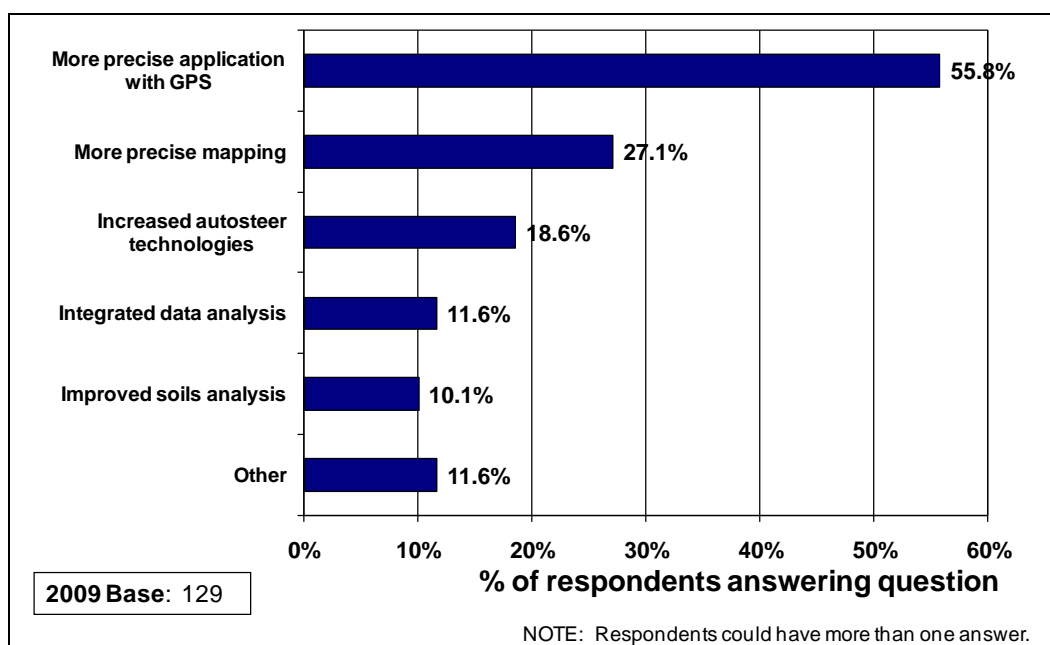
What's Expected of Precision Technology in the Future?

In 2008, participants were asked what they saw for Precision 2.0. This year, we asked a similar question to find out how answers would change as a result of the economic downturn in the general economy. The question asked was:

- *As you look at the current and future precision situation in your local market, what emerging precision technologies have the potential to impact your business most substantially?*

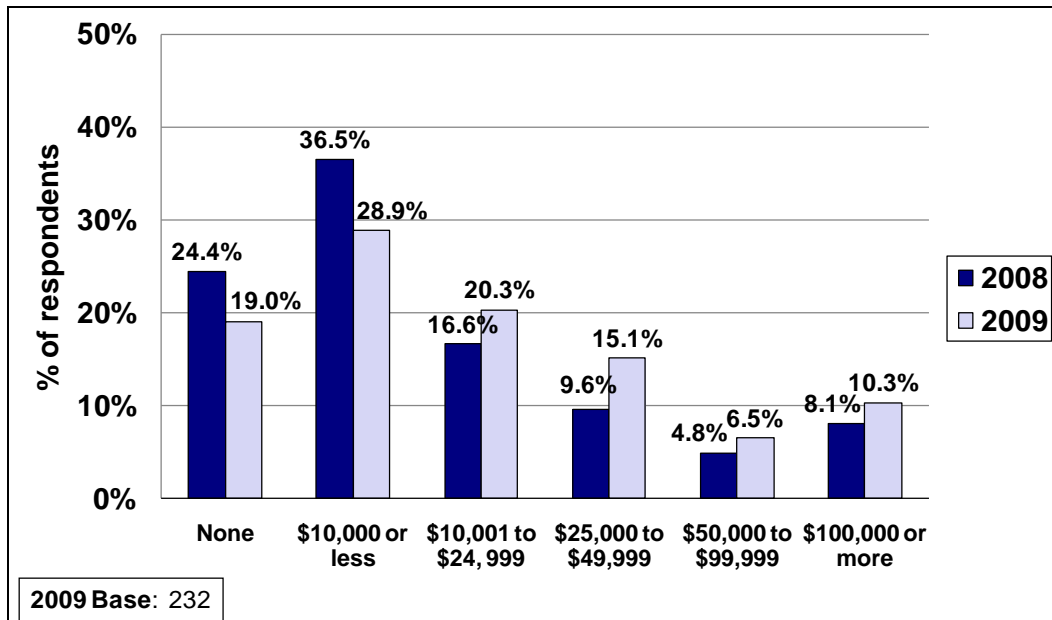
The responses to the open-ended question are summarized in Figure 58. The most common answer about what emerging technology would have the most impact on dealerships was more precise application with GPS (56 percent of respondents), followed by more precise mapping technologies (27 percent of respondents). Respondents were also expecting an impact from increased autosteer technologies (19 percent) and integrated data analysis (for example, harvest data that would be collected and integrated with application programs) (12 percent).

Figure 58. Emerging Precision Technologies That Will Have an Impact on Business



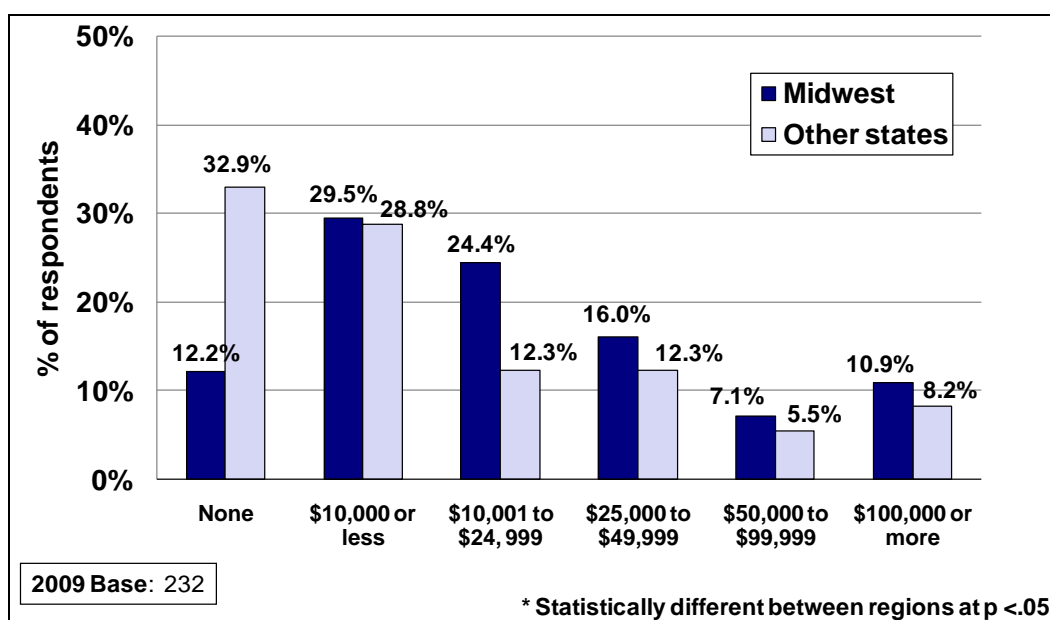
Plans for investing in precision technology were greater in 2009 than in 2008. When asked how much they expected to invest in precision technology in 2009, 81 percent of the responding dealerships expected to invest some money in precision technology (Figure 59), up from 76 percent in 2008. One in ten responding dealerships expected to invest \$100,000 or more in 2009, with another 20 percent expecting to invest \$25,000 up to \$100,000. Considering this survey was completed in January 2009 when the general economy was not looking very strong, this suggests that precision technology has become such an integral part of the agricultural dealer’s business that investment in this area is a priority, even in highly uncertain economic times.

Figure 59. Expected Investment in Precision Technology in 2009



As might be expected, the investment in precision technology was much different by region. Though 88 percent of the agricultural dealers in the Midwest expected to invest in precision technology in 2009, only 67 percent of those in other states expected to invest anything in precision technology this year (Figure 60).

Figure 60. Expected Investment in Precision Technology by Region



Barriers to Growth and Expansion in Precision Agriculture

Survey respondents were also asked to rate a series of potential barriers (customer focused, dealer focused, and technology focused) as to how much of a limitation they were to the growth and expansion of precision agriculture. Figure 61, Figure 64 and Figure 67 show the percentage of respondents who agreed (rated 4 or 5 out of 5, where 5 is strongly agree and 1 is strongly disagree) or disagreed (rated 1 or 2 out of 5) with each customer, dealer, and technology barrier listed. A similar list of potential barriers was explored in the 2004 and 2008 *CropLife/Purdue Precision Surveys*. Figure 62, Figure 65, and Figure 68 compare results from 2009 to those of 2008 and 2004, focusing on the percentage of respondents who agreed or strongly agreed with each statement. In many cases there were statistical differences between the ratings in the Midwest and other states. Those differences are shown in the remaining charts in this section.

Customer Barriers

The pressure of the economy showed in dealers' strong agreement that farm income pressure limited use of precision services (Figure 61) with half of the dealers agreeing or strongly agreeing that farm income was a limiting factor, up from 34 percent in 2008. Even though farm income was perceived to be a bigger barrier to precision technology use in 2009 than in 2008, it was still significantly less of a barrier than it was in 2004 when 72 percent of the dealers agreed it was a limitation (Figure 62).

Respondents were evenly split on whether or not they felt that cost of precision services to the farmer was greater than the benefit the farmer received (30 percent disagreeing, 39 percent neutral and 31 percent agreeing) (Figure 61). This was similar to 2008. However, in 2004, 53 percent agreed or strongly agreed that the grower costs were greater than the benefits.

Compared to farm income and costs vs. benefits, there was less agreement about the other barriers to growth in precision technology adoption. Half of the dealers responding felt that precision technology was not limited in their area by soil type or topography and 55 percent disagreed that all their customers who could benefit from precision technology were using it.

Figure 61. Customer Issues that Create a Barrier to Expansion/Growth in Precision Agriculture

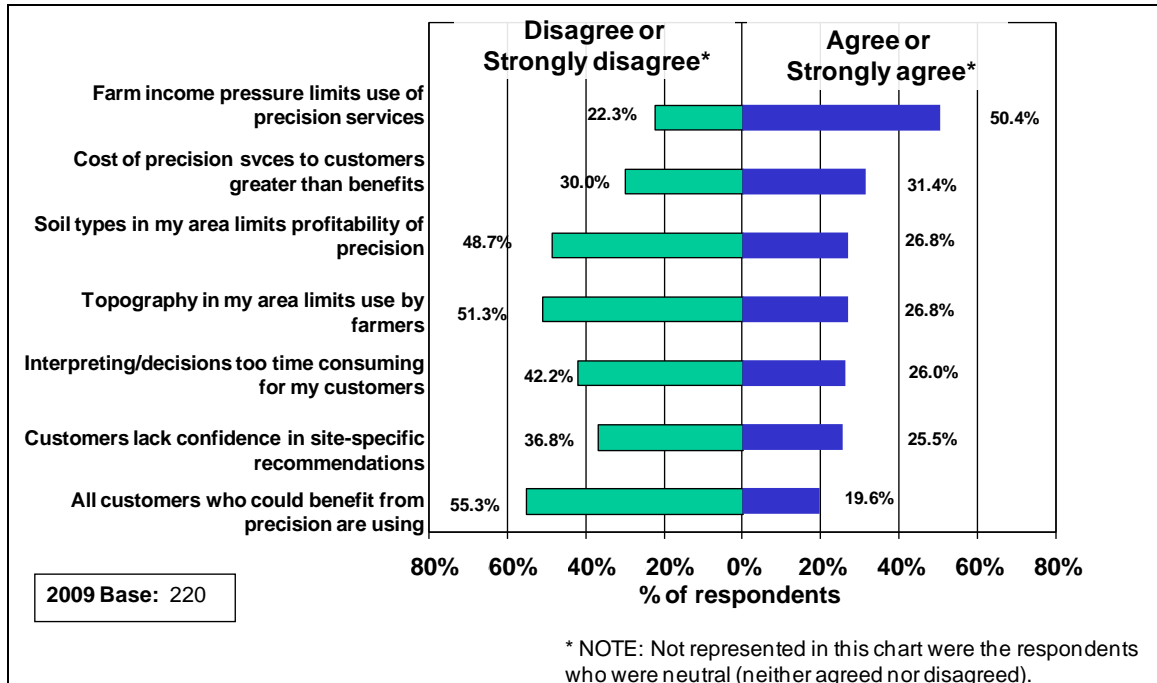
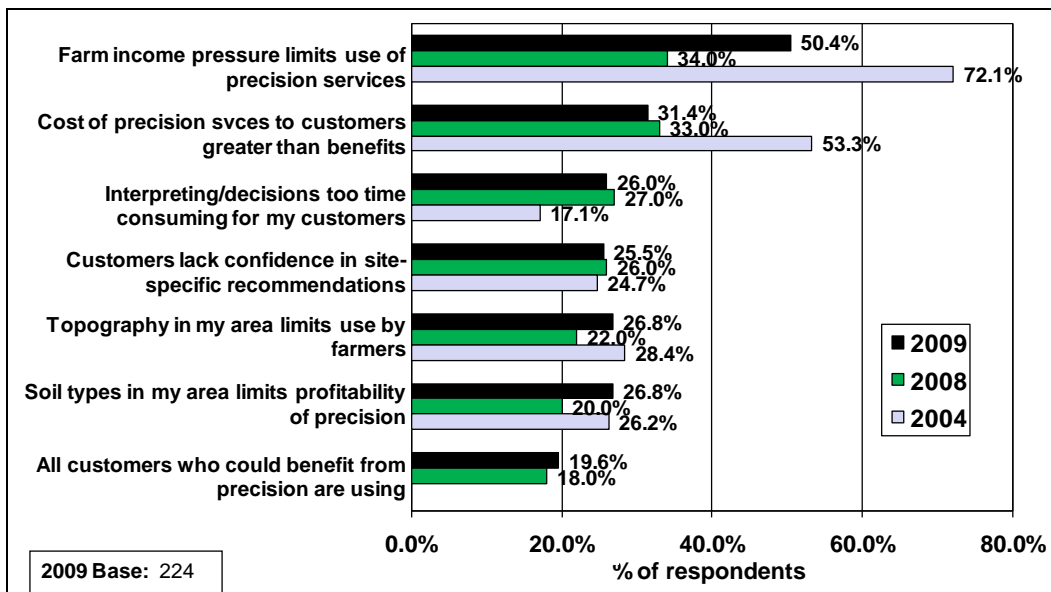
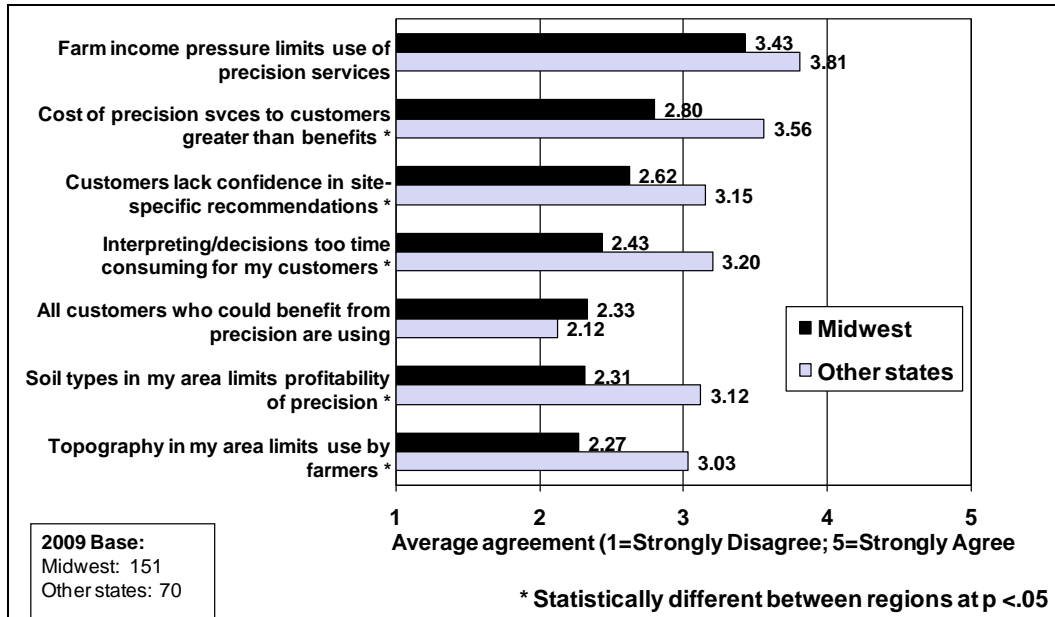


Figure 62. Percent of Respondents who Agree/Strongly Agree that Customer Issues Create a Barrier to Expansion/Growth in Precision Agriculture



Most of the customer issues were rated a greater barrier in non-Midwestern states than in the Midwest (Figure 63). This reflects the higher use of precision technologies in general in the Midwest. Within the Midwest, there were no significant differences in responses from different organizational types.

Figure 63. Customer Issues Creating a Barrier to Growth in Precision Agriculture by Region



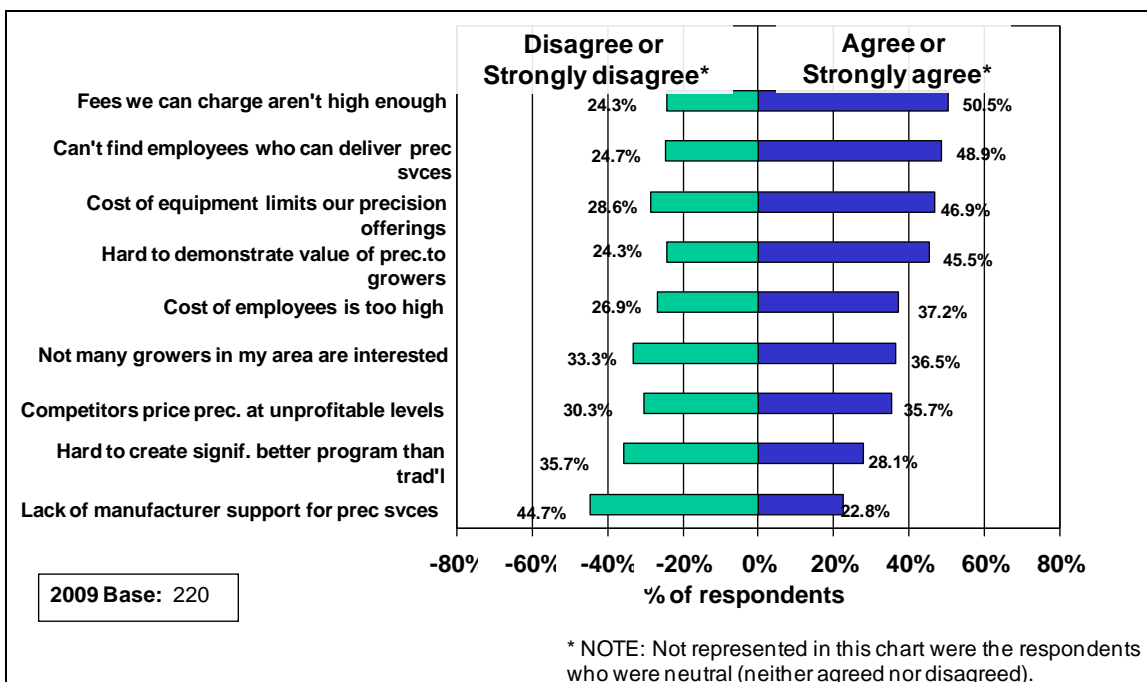
Dealer Barriers

When looking at issues that are creating barriers for dealers to adopt more precision technologies, half of the respondents (51 percent) (Figure 64) said that they just weren't able to charge high enough fees to make precision services profitable, down from 57 percent in 2008 (Figure 65). Almost as many (49 percent) agreed or strongly agreed that they had a challenge finding employees who could deliver precision services, which is similar to the response in 2008. Equipment costs were seen to be a barrier to precision growth by 47 percent of the respondents and a similar number said they felt that it was too difficult to demonstrate the value of precision technologies to growers (46 percent). Thirty-seven percent agreed or strongly agreed that the cost of employees was too high. For all of these issues, approximately a quarter of the respondents disagreed or strongly disagreed that the issue was a barrier to expansion.

The respondents were more evenly split (approximately a third disagreed, a third agreed, and a third were neutral) that not many growers in their area were interested in precision agriculture services and that competitors in their market area price precision services at unprofitable levels.

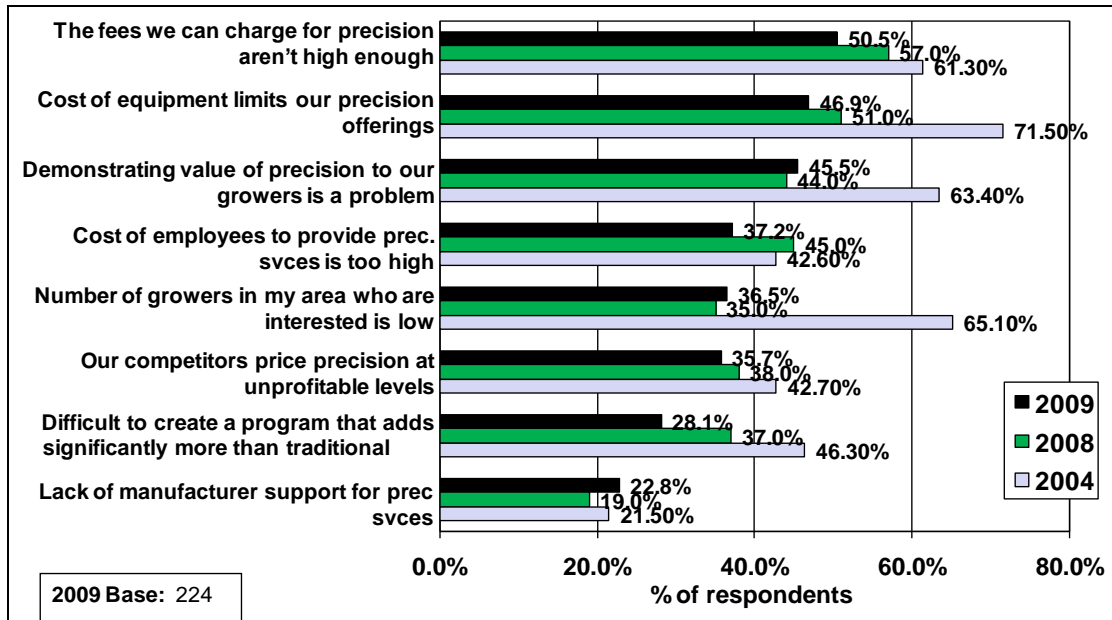
The most disagreement occurred with the issue that a lack of manufacturer support for precision services limits their ability to provide such services (disagreed with by 45 percent while only 23 percent agreed).

Figure 64. Dealer Issues that Create a Barrier to Expansion/Growth in Precision Agriculture



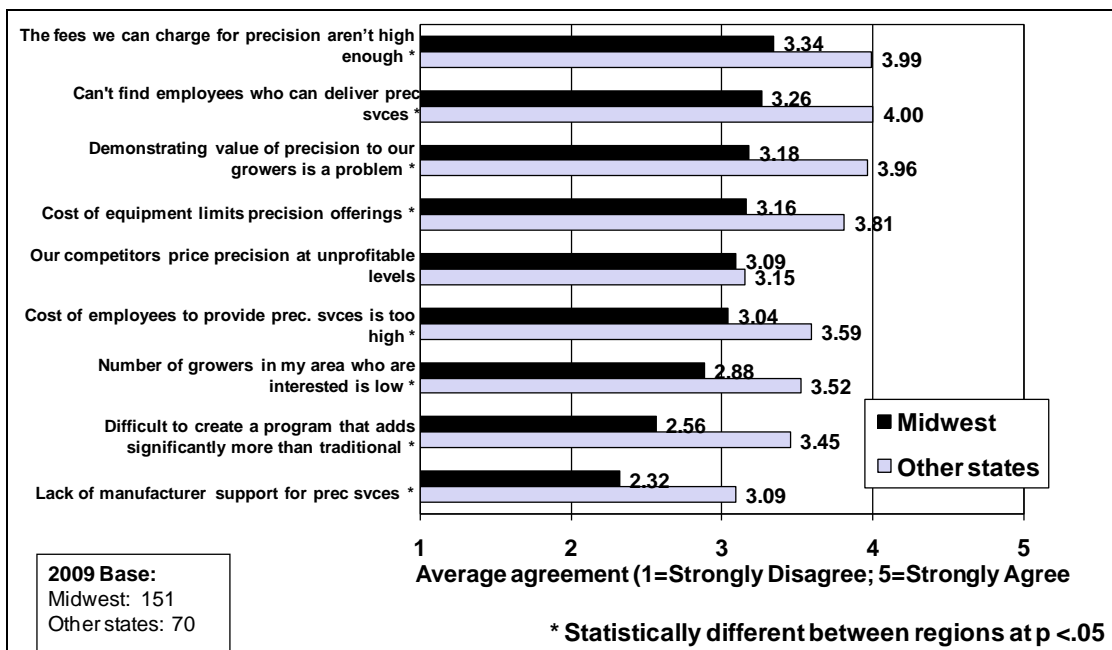
Compared to 2008, several of these issues have declined in perceived importance (Figure 65). In 2008, 57 percent of the respondents agreed or strongly agreed that the fees they could charge for precision services weren't high enough to be profitable compared to only 50 percent of the respondents in 2009. Cost of equipment was thought to be a limitation for 51 percent of respondents in 2008 but it dropped to 47 percent of respondents in 2009. Another big drop was in the opinion that the cost of employees to provide precision services was too high, from 45 percent of respondents agreeing that it was a limitation in 2008 to 37 percent in 2009. And, along similar cost-associated topics, in 2008 over a third of the respondents (37 percent) agreed or strongly agreed that it was difficult to create a program that added significantly more than a traditional program but only 28 percent agreed or strongly agreed with that in 2009. Opinions on most of the other issues were similar both years as precision technology becomes more integrated into the business.

Figure 65. Percent of Respondents who Agree/Strongly Agree that Dealer Issues Create a Barrier to Expansion/Growth in Precision Agriculture



Almost all of the dealer issues explored were perceived to be more significant barriers in non-Midwestern states than in Midwestern states (Figure 66). Only competitive pricing was not significantly different between the 2 regions. The top 3 barriers for each area, though, were the same: fees weren't high enough, finding employees was a problem, and demonstrating value of precision services to growers was a problem.

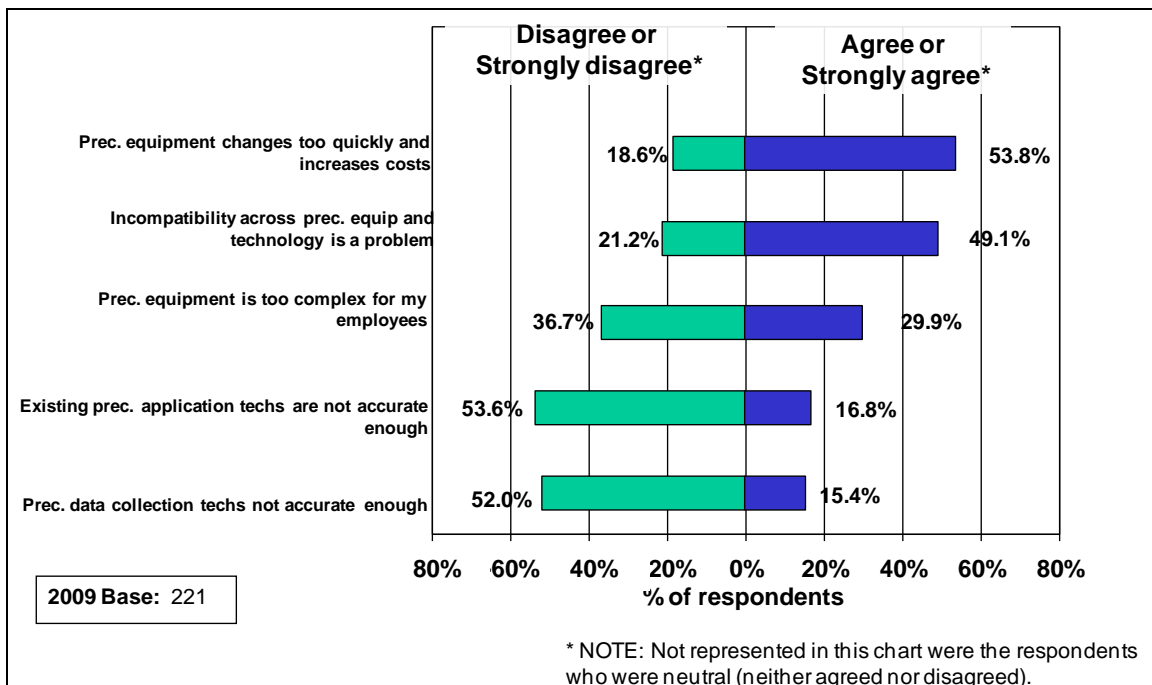
Figure 66. Dealer Issues that Create a Barrier to Expansion/Growth in Precision Agriculture by Region



Technology Barriers

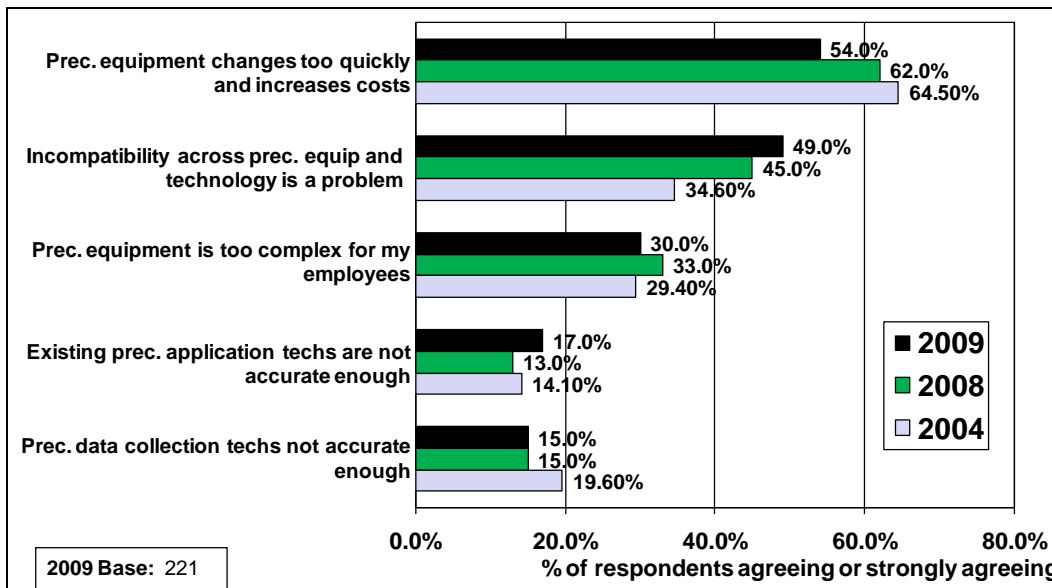
The biggest technology issue that was perceived to be preventing expansion of precision agriculture is a common characteristic of technology overall. Over half of the respondents (54 percent) agreed that precision equipment changes too quickly and increases the costs of offering precision services (Figure 67). Almost half of the respondents (49 percent) said that incompatibility across precision equipment and technology was a problem. Respondents were fairly split about the complexity of the equipment with 37 percent who did not believe that precision equipment was too complex for employees, 30 percent believing that it was too complex, and the remaining 33 percent were neutral on the issue. Overall, there was not a lot of agreement that accuracy was a problem (in either the data collection technologies or the precision application technologies).

Figure 67. Technology Issues that Create a Barrier to Expansion/Growth in Precision Agriculture



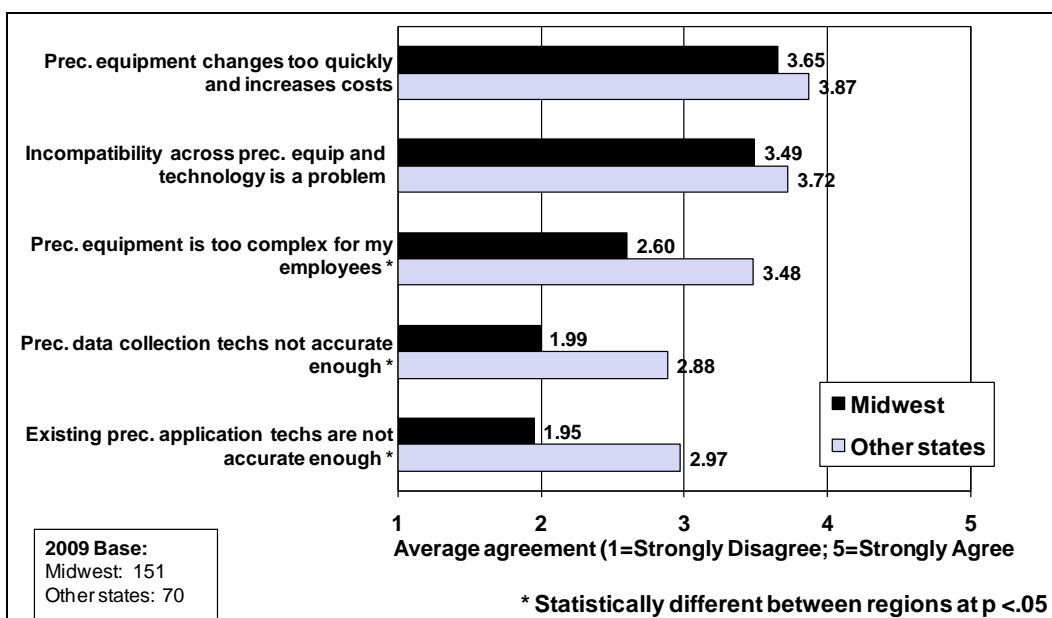
In comparing 2008 to 2009, the overall rankings of the technology issues were about the same (Figure 68), though some of the percentages were different. In both years, the biggest technology barrier was thought to be rapid equipment changes which increased cost. However, 62 percent of the respondents agreed with this in 2008, compared to only 54 percent in 2009. Incompatibilities between precision equipment and other technologies increased in importance as a perceived barrier with 45 percent of respondents agreeing or strongly agreeing it was a barrier in 2008 compared to 49 percent in 2009. The other potential barriers were rated approximately the same in 2004, 2008, and 2009.

Figure 68. Percent of Respondents who Agree/Strongly Agree that Technology Issues Create a Barrier to Expansion/Growth in Precision Agriculture



In comparing technology barriers, overall there were fewer differences between the Midwest responses and the non-Midwestern responses than for customer and dealer barriers (Figure 69). Midwestern respondents believed less strongly than non-Midwestern respondents that complex precision equipment and the accuracy of data collection and precision application technologies were barriers to the growth of precision technology in their areas. There were no significant differences between organizational types within the Midwest.

Figure 69. Technology Issues that Create a Barrier to Precision Technology by Region



Retailer-Manufacturer Roles

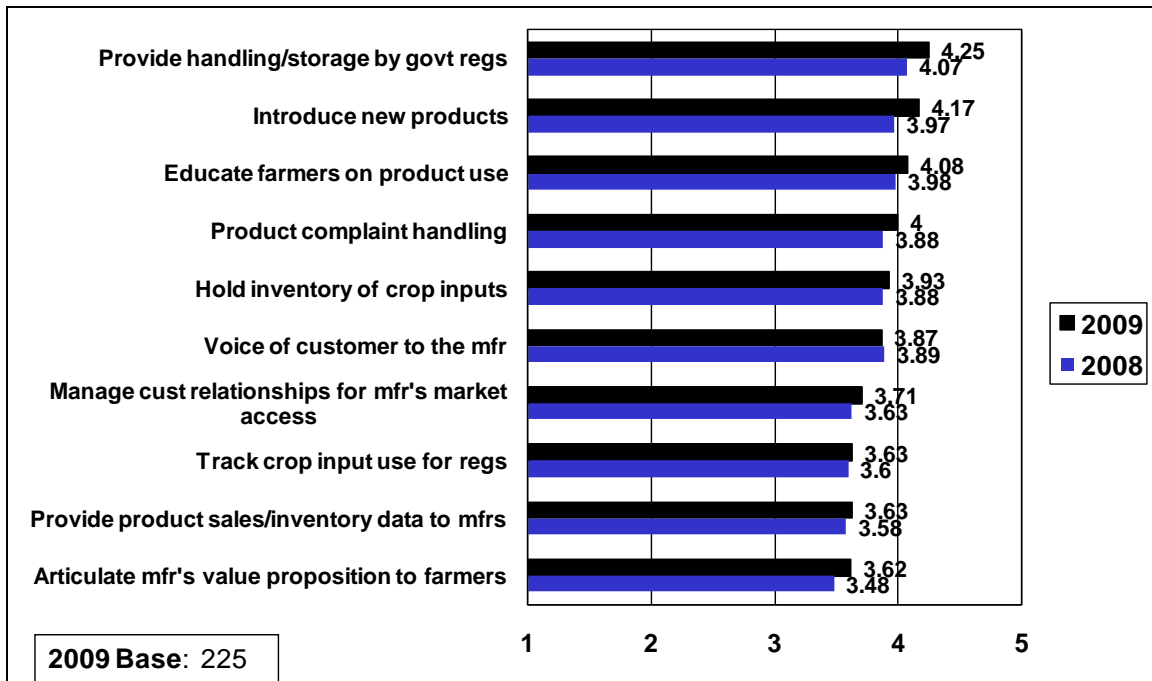
One other issue explored again in this year’s precision survey was the role retailers play in the relationship with manufacturers and producers of fertilizer, crop protection chemicals and seed. Given a list of roles, respondents were asked to rate how important they currently saw that role and then indicate whether they thought it would become more or less important in the next 2 to 3 years. This is the same list as was provided in the 2008 survey, and there were not a lot of changes from 2008 to 2009.

Of the roles reviewed, the one rated highest in importance was to provide handling/storage for the manufacturers in compliance with government regulations (rated an average of 4.25 out of 5 where 5 was “a very important role” and 1 was “not important”) (Figure 70). Introducing new products to the market on behalf of the manufacturer/producer was the second highest rated role, followed closely by educating farmers on products and product usage (rated 4.17 and 4.08, respectively).

Respondents saw their role of handling product complaints as being important (4.00 out of 5) as well as holding inventory for the manufacturer/producer (both 3.93 out of 5).

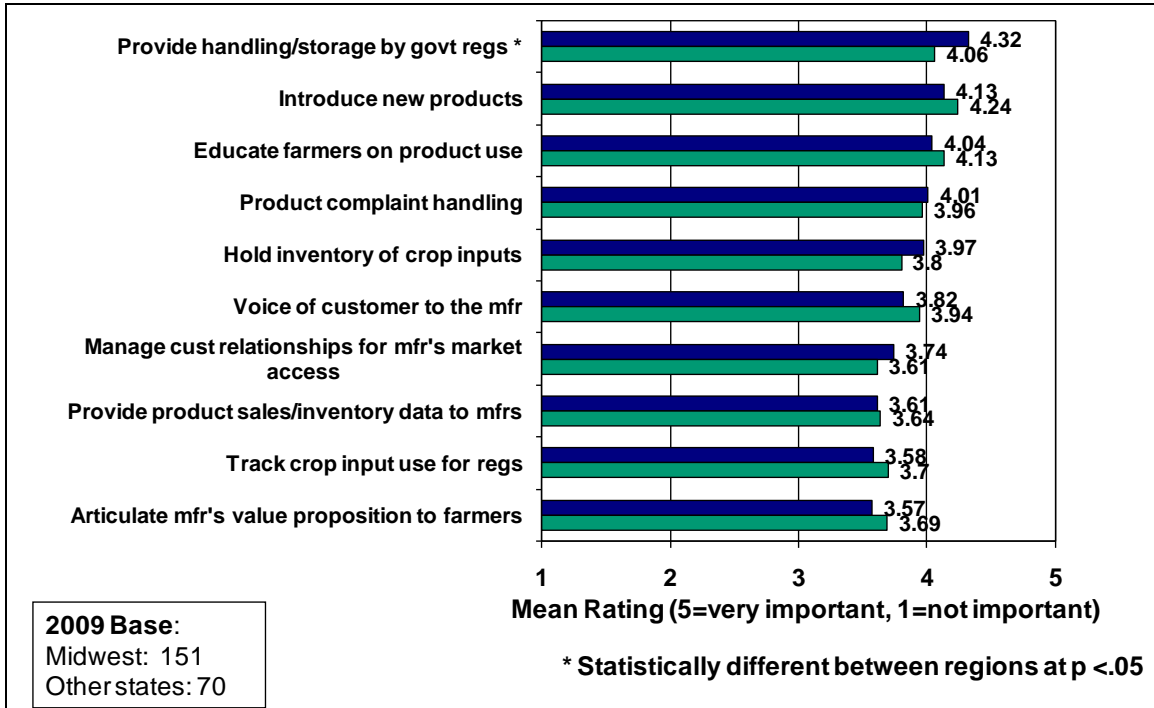
Lower on the list were being a voice of the customer back to the manufacturer, managing customer relationships to give the manufacturer broad market access, tracking crop input use for regulatory purposes and providing product sales/inventory data to manufacturers. Lowest on the list (though still rated 3.62 out of 5) was the importance of the role of the retailer in articulating the manufacturer’s value proposition to farmers.

Figure 70. Importance of Different Aspects of the Retailer-Manufacturer Role



Unlike 2008, the importance of different retailer-manufacturer roles did not vary much by region in 2009. Providing handling/storage to be compliant with government regulations was the only role significantly different between the Midwest and other states (Figure 71) where respondents in the Midwest rated the role significantly more important than did respondents in other states. These ratings did not vary by organizational type within the Midwest.

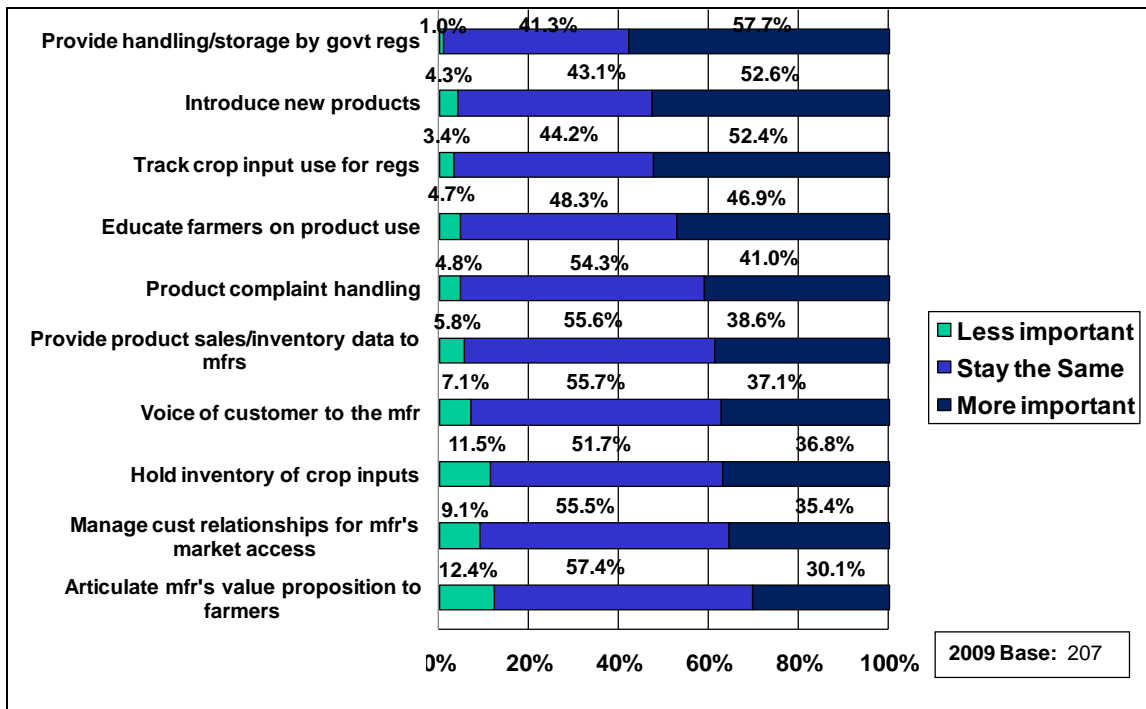
Figure 71. Importance of Different Aspects of the Retailer-Manufacturer Role by Region



When asked how they saw these roles changing in the next 2 to 3 years, the biggest increase in importance expected was in providing handling/storage in compliance with government regulations, introducing new products and tracking crop input use for regulations (all three expected to increase in importance by over half the respondents) (Figure 72). Four out of 10 of the respondents expected educating farmers on product use and handling product complaints would become more important in the next 2 to 3 years.

There were no significant differences in changes expected by region or by organizational types within the Midwest.

Figure 72. Change Expected in the Next 2 to 3 Years with Dealers' Relationship with Manufacturers



Summary

Though the economic downturn in the general economy has dominated media attention over the past year, the effects do not seem to be impacting agricultural farm dealerships' current use and future plans for precision technology. Demand for precision services is expected to continue to grow slowly, with the most growth continuing to be in the GPS guidance with auto control/auto steer. As the technology improves, dealerships appear willing to invest more into technologies to improve accuracy and data collection/use in their businesses, and to use the technology to enhance the service they provide growers

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*Play a part in agricultural history! Please fill out and return this brief survey in the enclosed pre-addressed, postage-paid envelope, and send to: **CropLife**, 37733 Euclid Ave., Willoughby, OH 44094; Fax: 440-942-0662. PLEASE RETURN BY FEBRUARY 26, 2009.*

1. Your primary responsibility: [check one]
 - Owner/general manager/location manager
 - Departmental manager
 - Precision manager
 - Application manager
 - Technical consultant/agronomist
 - Sales/sales management
 - Other: _____ (Please specify)

2. Are you a: [check one]
 - Cooperative
 - Independent dealership
 - Part of a national or regional (multi-state) chain of retail dealerships (not a cooperative)
 - Other: _____ (Please specify)

3. What were the **total annual retail sales** (in dollars) of agronomic products and services (fertilizer, chemicals, seed, services) **at this location** in 2008?
 - Under \$1,000,000
 - \$1,000,000 - under \$2,000,000
 - \$2,000,000 - under \$3,000,000
 - \$3,000,000 - under \$5,000,000
 - \$5,000,000 or more

4. How many total retail outlets does **your company** own or manage? [check one]
 - None
 - 1
 - 2-5
 - 6-15
 - 16-25
 - More than 25

5. In a typical year how many total acres do you custom apply **at your location** (fertilizer, chemicals, seeding – total acres including multiple applications)? [check one]
 - None >go to Question 9
 - Under 10,000 acres
 - 10,001 to 25,000 acres
 - 25,001 to 50,000 acres
 - over 50,000 acres

6. In 2008, approximately what proportion of your total fertilizer sales were custom applied? _____%

7. In 2008, approximately what proportion of your total herbicide/pesticide sales were custom applied? _____%

8. In 2008, approximately what proportion of your total custom application (total acres, all products) used:
 - GPS guidance systems with manual control (light bar)? _____% “0” if None
 - GPS guidance systems with automatic control (autosteer)? _____% “0” if None

9. Do you offer soil sampling — traditional, following a grid pattern and/or by soil type? (check all that apply)
 - Traditional
 - Grid pattern — Grid size most commonly used?
 - < 1 acre
 - 1 ac. - 2.49 ac.
 - 2.5 ac.
 - 2.51 ac. - 5 ac.
 - Other: _____
 - Soil type
 - By zone other than soil type
 - Don't offer soil sampling
 - Other: _____

10. In which of the following ways does your dealership use precision technology? (check all that apply)

- Precision agronomic services for customers (such as soil sampling with GPS, GIS field mapping, etc.)
- GPS guidance systems with manual control (**light bar**) for fertilizer/chemical application
- GPS guidance systems with automatic control (**autosteer**) for fertilizer/chemical application
- Satellite/aerial imagery for internal dealership purposes
- Soil electrical conductivity mapping
- Field mapping with GIS to document work for billing/insurance/legal purposes
- Telemetry to send field information to home office from field
- GPS to manage vehicle logistics, tracking location of vehicles, and guiding vehicles to next site
- Soil sensors for mapping, mounted on a pick-up, applicator, or tractor (example: pH soil sensor, chlorophyll/greenness sensor)
- On-the-go sensors (Crop Circle, Greenseeker, Yara N-Sensor, etc.)
- Don't use precision technology**

11. Which "site-specific" ("precision") services/products will you offer in the following time periods?

Service	By Fall 2009	Offer by 2012	Never/ Don't Know	Don't offer now but did
Field mapping (with GIS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controller-driven (GPS), single nutrient variable rate application				
Fertilizer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controller-driven (GPS), multiple nutrient variable rate application				
Fertilizer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yield monitor sales/support/rental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yield monitor data analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variable seeding rates with GPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Satellite/aerial imagery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil sampling with GPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. For the following services **that you offer**, currently how profitable is each specific service for your dealership?

	I am not close to breaking even	I am just covering variable costs (See NOTE)	I am covering both variable and fixed costs	I am generating a profit	Don't know	Don't offer
Custom application (Not-precision)	1	2	3	4	5	6
Data analysis for yield monitors	1	2	3	4	5	6
Variable seeding rates with GPS	1	2	3	4	5	6
Satellite/aerial imagery	1	2	3	4	5	6
Soil sampling with GPS	1	2	3	4	5	6
Total precision program, all components	1	2	3	4	5	6
Controller-driven (GPS) single nutrient variable rate application	1	2	3	4	5	6
Controller-driven (GPS), multiple nutrient variable rate application	1	2	3	4	5	6

NOTE: Variable Costs are the costs of actually performing the service — costs increase or decrease with how much business you do (fuel, supplies, etc.) Fixed Costs are the costs of making the service available (depreciation on equipment, computers, labor, training, etc.)

13. Please answer the following question *whether or not* you offer any precision services.

Approximately what percentage of the **total acreage in your market area** (all growers, not just your current customers) is currently using the following site-specific agricultural practices? Approximately what percentage of the total acreage will be using these practices in three years (the year 2012)?

Practice	Currently	3 years from now (2012)
Custom application of any type	_____ %	_____ %
Field mapping (with GIS)	_____ %	_____ %
Controller-driven (GPS), single nutrient variable rate application		
Fertilizer	_____ %	_____ %
Lime	_____ %	_____ %
Chemicals	_____ %	_____ %

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% of market acres (fill in blank with a percentage; indicate 0 if none)

Practice	Currently	3 years from now (2012)
Controller-driven (GPS), multiple nutrient variable rate application		
Fertilizer	_____ %	_____ %
Lime	_____ %	_____ %
Chemicals	_____ %	_____ %
GPS guidance systems with manual control (light bar) for field operations (tillage, planting, etc.)	_____ %	_____ %
GPS guidance systems with automatic control (autosteer) for field operations (tillage, planting, etc.)	_____ %	_____ %
Yield monitor without GPS	_____ %	_____ %
Yield monitor with GPS	_____ %	_____ %
Variable seeding rates with GPS	_____ %	_____ %
Satellite/aerial imagery	_____ %	_____ %
Soil sampling with GPS	_____ %	_____ %

14. In many areas, the adoption of precision agriculture has stabilized in the past few years or the growth has at least slowed down. As you think about the potential for precision agriculture in your market area, what are the primary barriers preventing more farmers from adopting or expanding their use of precision agricultural services and/or preventing you from offering more precision services?

Please rate the following statements on a scale from 1 (strongly disagree) to 5 (strongly agree).

Customer Issues	1	2	3	4	5
The cost of precision services to my customers is greater than the benefits many receive					
My farmers are interested in precision services, but pressure on farm income in my area limits their actual use of precision services					
The topography (i.e., rolling ground, etc.) in my area limits use of precision services by farmers					
Soil types in my area limit the profitability of precision agricultural practices for my customers					
Interpreting and making decisions with precision agricultural information takes too much of my customer's time					
Customers lack confidence in the agronomic recommendations made based on site-specific data (e.g., yield maps, GPS soil sampling, remote sensing)					
All customers who can profit from precision services in my market are already using them					
Dealer Issues	1	2	3	4	5
The cost of the equipment required to provide precision services limits our precision offerings					
The cost of the employees who can provide precision services is too high for precision agriculture to be profitable					
Finding employees who can deliver precision agricultural services limits our ability to provide these services					
The fees we can charge in our market for precision services are not high enough to make precision services profitable					
The number of growers in my market who are interested in precision agricultural services is limited					
Lack of manufacturer support for precision services limits our ability to provide such services					
Creating a precision program that adds significantly more value for the grower than a traditional agronomic program is difficult for us					
Demonstrating the value of precision services to our growers is a challenge					
Our competitors price precision agricultural services at levels that are not profitable for us					
Technology Issues	1	2	3	4	5
The equipment needed to provide precision services changes quickly, increasing my costs of offering precision services					
The existing precision data collection technologies are not accurate enough to create value for my farmers					
The existing precision application technologies are not accurate enough to create value for my market					
The equipment required to deliver precision services is too complex for many of my employees to use					
Incompatibilities across types of precision equipment and technology (different data formats, inability to share information) limit my ability to offer precision services					

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15. How much will your location be investing in precision/site-specific technology during 2009?
- None

 \$25,000 - \$49,999
 \$1 - \$10,000

 \$50,000-\$99,999
 \$10,001-\$24,999

 More than \$100,000
16. As you look at the current and future precision situation in your local market, what emerging precision technologies have the potential to impact your business most substantially?

17. As a retailer, you play a number of very important roles for manufacturers/producers or fertilizer, chemicals, and seed. A number of these roles are presented below.

For each, rate the importance of your role to manufacturers currently on a scale of 1 (not an important role) to 5 (very important role). In addition, as you think about the next 2-3 years, do you see each role becoming more or less important? (Circle the response)

Dealer Role	Current Importance					In 3 years, this role will be		
	1	2	3	4	5	Less	Same	More
Hold inventory of crop inputs								
Educate farmers on proper use of products for manufacturer								
Introduce new products to the market								
Articulate the manufacturers' value proposition to farmers								
Provide product compliant handling/troubleshooting								
Serve as the voice of the customer to manufacturers								
Track crop input use for regulatory purposes								
Provide handling and storage of products in compliance with government regulations								
Manage customer relationships to give the manufacturer broad market access								
Provide manufacturers with data on product sales, inventory levels, etc.								

18. What is the two-letter abbreviation for the state your location is situated in? _____
19. What is your ZIP code? _____

Thank you for your cooperation! PLEASE SEND YOUR COMPLETED SURVEY TO:
CropLife, 37733 Euclid Ave., Willoughby, OH 44094, Fax: 440-942-0662.

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