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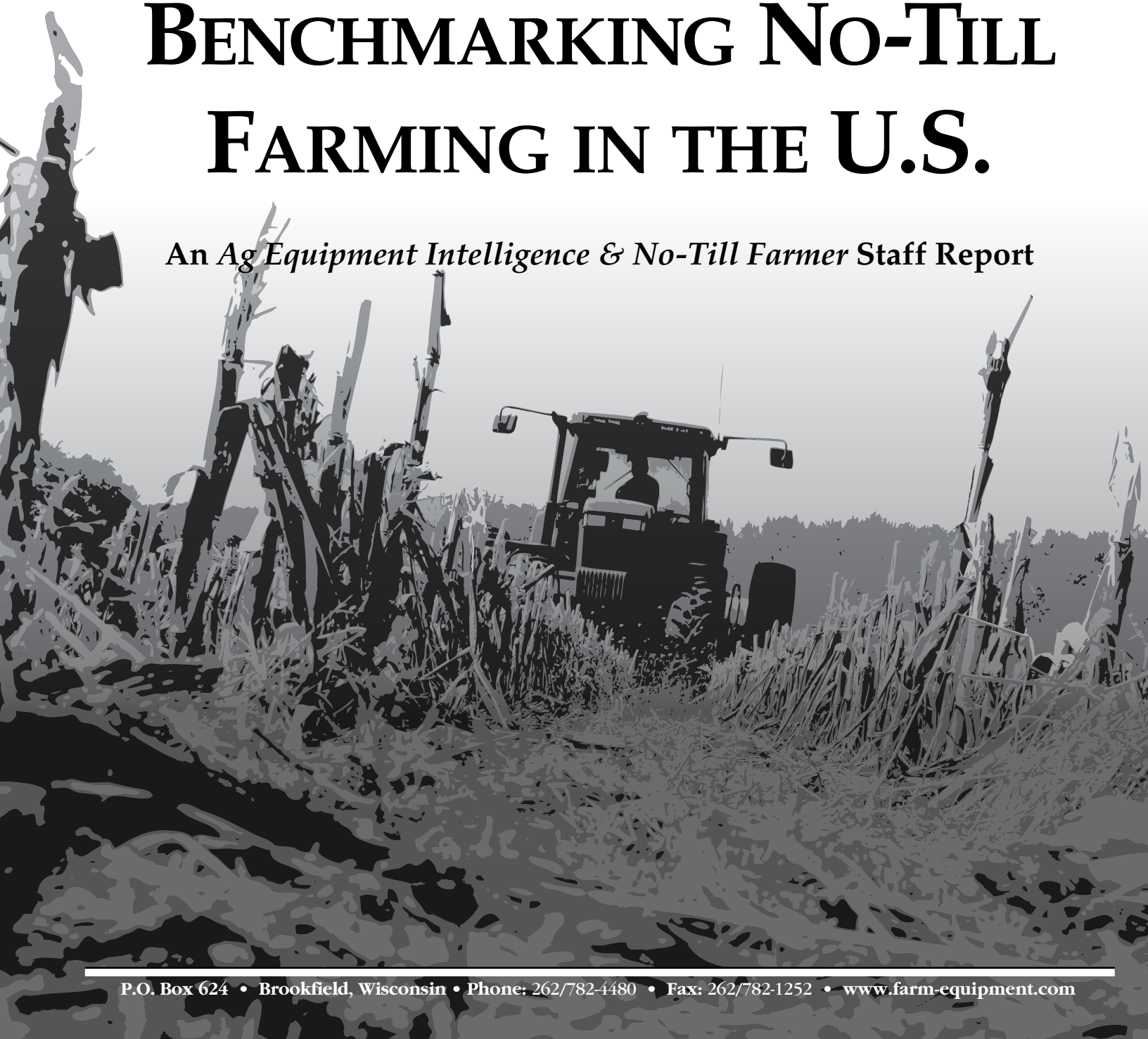
A Special Management Report From

Ag Equipment Intelligence

BENCHMARKING NO-TILL FARMING IN THE U.S.

An *Ag Equipment Intelligence & No-Till Farmer* Staff Report



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Benchmarking No-Till Farming in the U.S.— 2011 is available ONLY to *AEI* subscribers. U.S., Canada and Mexico print subscriptions are $349 per year. Save $50 by receiving *Ag Equipment Intelligence* each month via E-mail Internet access at only $299 per year. International print subscriptions are $449 per year.

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SECTION 1 — INTRODUCTION

Benchmarking No-Till Farming in the U.S.

No-till farming is a "growing practice," according to a recent report from the Economic Research Service (ERS) of the U.S. Department of Agriculture.

Approximately 35.5% of U.S. cropland (88 million acres) planted to eight major crops had no-tillage operations in 2009, according to the ERS researchers who analyzed 2000-2007 data from USDA's Agricultural Resource Management Survey (ARMS). The crops — barley, corn, cotton, oats, rice, sorghum, soybeans and wheat — constituted 94% of total planted U.S. acreage in 2009.

Their research also found:

• No-till increased for corn, cotton, soybeans and rice (four crops for which ARMS data are sufficient for researchers to calculate a trend) at a median rate of roughly 1.5% per year. Although no-till is generally increasing, it did not increase in all states for all crops in the study period (2000-07).

• Soybean farmers had the highest percentage of planted acres with no-till (45.3% in 2006; projected at almost 50% in 2009).

• No-till was practiced on 23.5% of corn acres in 2005 (projected at 29.5% in 2009). More acres are planted to corn than to any other field crop in the U.S.

• Cotton farmers practiced no-till on 20.7% of planted acres in 2007 (projected at 23.7% in 2009).

• Rice farmers had the lowest percentage of planted acres with no-till (11.8% in 2006; projected at 16.3% in 2009) among the major crops analyzed.

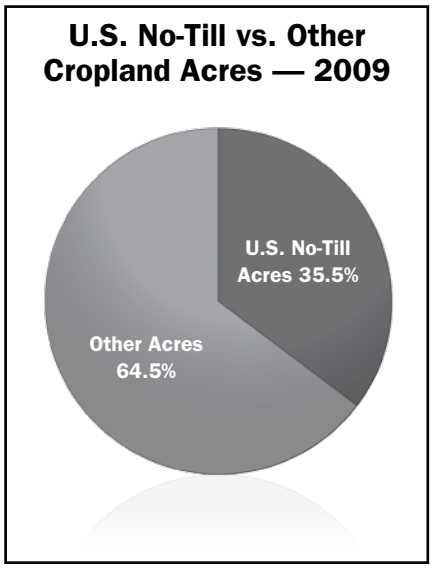
The Agricultural Resource Management Survey (ARMS) and the National Resources Inventory-Conservation Effects Assessment Project's (NRI-CEAP) Cropland Survey track the growth and usage of no-till farming on a scheduled basis. At the same time, little has been done to benchmark no-till in actual farming operations.

Benchmarking No-Till

Starting in 2009, *No-Till Farmer*, a sister publication to *Ag Equipment Intelligence* at Lessiter Publications, began conducting its annual "No-Till Practices" survey. Its most recent study in February 2011 garnered responses from 502 farmers across 26 states from the publication's paid circulation list.

The aim of the survey is to provide growers with meaningful operational benchmarks in the areas of cropping, land use, crop yield, seeding, crop protection, fertilizing and equipment data. It also produces quantitative information on no-till operating expenses and producer income.

In addition, the data resulting from the survey has also proven valuable to farm equipment manufacturers and companies that produce seed, fertilizer and crop protection products.



Economic Research Service researchers estimate that approximately 35.5% of U.S. cropland (88 million acres) planted to eight major crops had no-tillage operations in 2009. The crops — barley, corn, cotton, oats, rice, sorghum, soybeans and wheat — constituted 94% of total planted U.S. acreage in 2009.

For this special report, *Ag Equipment Intelligence* editors compiled three years of data from the "No-Till Practices" surveys. Darrell Bruggink, executive editor and publisher of *No-Till Farmer* and the *Conservation Tillage Guide* provided a year-by-year analysis of the data, much of which was previously published in the *Conservation Tillage Guide*.

Section 2 of this report provides a comparison of the three years of data. Sections 3, 4 and 5 break out the data for each year and analyze significant trends that emerged during each particular time period.

Defining No-Till Farming

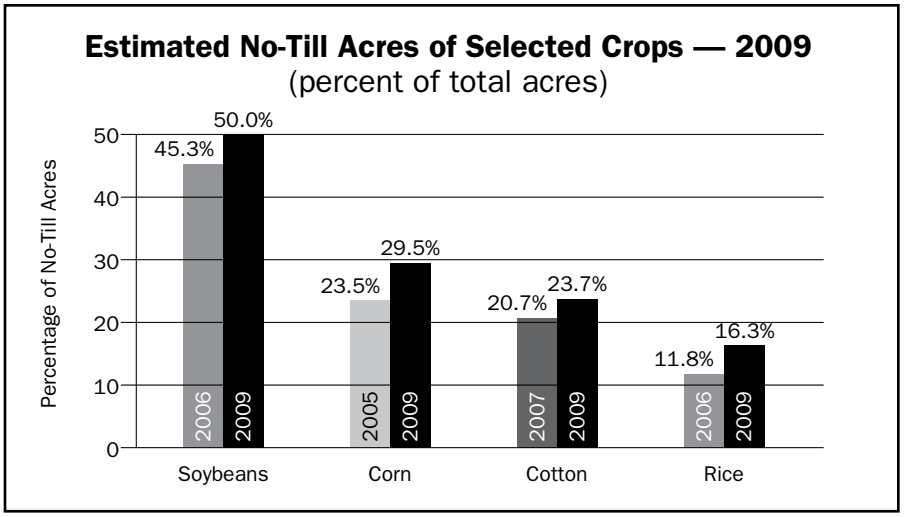
No-till farming is often included under the umbrella of conservation tillage, which covers a broad range of soil tillage systems. In no-till, a residue cover is left on the soil surface, substantially reducing the effects of soil erosion from wind and water. Besides no-till, other specific types of conservation tillage include minimum tillage, zone-tillage, ridge-till, mulch-till, reduced-till and strip-till.

With these approaches, the soil is left undisturbed from harvest to planting except for nutrient and chemical application. Weed control is accomplished primarily with herbicides, limited cultivation and with cover crops.

The Conservation Technology Information Center (CTIC)) specifies that 30% or more of crop residue must be left after planting to qualify as a conservation tillage system.

According to the USDA-NRCS report, Conservation Tillage and Crop Residue Management, "Reducing tillage operations improves soil surface properties, including improved soil aggregation accounting for increased infiltration and percolation; less compaction due to less usage of field

1 "No-Till Farming is a Growing Practice," John Horowitz, Robert Ebel, Kohei Ueda, Economic Research Service, U.S. Dept. of Agriculture, Economic Information Bulletin Number 70, November 2010



The Economic Research Service division of USDA estimates of no-till acreage planted to soybeans, corn, cotton and rice continues to grow as shown in this chart.

U.S. No-Tillers Operating Costs — 2008-2011*

	2010	2009	2008	3-Year Avg.	2011 (E)	2010 vs. 2011
Fuel	$16,872	$20,718	$26,236	$21,275	$19,410	+13.1%
Land rent	$62,600	$58,821	$61,183	$60,868	$69,801	+10.3%
Seed/Seed Treatments	$47,210	$49,439	$46,084	$47,577	$50,116	+5.7%
Pesticides	$29,203	$33,572	$34,095	$32,290	$31,000	+5.7%
Fertilizer	$58,896	$67,964	$75,936	$67,599	$66,183	+11.0%
Lime/Soil Conditioners	$ 8,468	$10,020	$11,752	$10,080	$7,381	–12.8%
Equipment	$65,957	$52,688	$63,693	$60,779	$58,300	–11.6%
Mach. Service	$13,305	$16,088	$18,467	$15,953	$13,571	+2.0%
Mach. Parts	$17,485	$17,318	$16,991	$17,265	$17,811	+1.8%
Precision Equipment	$ 7,980	$ 7,503	$ 7,957	$ 7,813	$8,352	+4.5%
Custom App./Hauling	$11,647	$12,360	$13,440	$12,482	$11,917	+2.3%
Labor	$28,533	$26,035	$29,105	$27,891	$31,173	+8.5%
Interest	$20,308	$22,324	$22,467	$21,699	$16,130	–20.2%
Total	**$388,464**	**$394,848**	**$427,404**	**$403,571**	**$401,145**	**+3.2%**

**Estimated for 2011*

On average, no-tillers are expecting to invest $401,145 in operational costs during this cropping season. If this forecast holds true, their overall costs will rise by 3.2% for the year.

implements; and more biological activity due to an increase in organic matter."

By leaving crop residue undisturbed for as long as possible, microbial and other biological activity in the soil feeds on the stalks, leaves and other crop residues. This increases organic matter, improves soil tilth and, ultimately, increases soil productivity, says the CTIC. Better soil retains more moisture for dry periods, yet the improved structure speeds natural infiltration in wet spots.

In addition, no-till reduces labor, equipment costs and fuel use, helping to increase producer profits. Conservation tillage is expected to increase rapidly over the next few years because of these reasons and its beneficial impact on the environment.

No-Till & The Environment

No-till farming has been mentioned prominently as a method for U.S. agriculture to help reduce greenhouse gases.

In general, the less the soil is disturbed, the more organic matter it retains. Organic matter consists of stored carbon that is therefore not available to contribute to global warming (in the form of carbon dioxide). In annual cropping systems, much of a field's organic matter exists in the form of residue from previous crops that is left on the field. Therefore, tillage is often discussed along with rotations and other practices that affect crop residues.

Many top scientists and other ag industry experts believe that tillage practices affect soil carbon, water pollution, energy and pesticide use. Therefore, data on tillage practices can be valuable for understanding its role in reaching climate and other environmental goals, say ERS researchers.

ERS Research. The development of the USDA-ERS report, "*No-Till Farming is a Growing Practice,*" addresses this issue "in order to help policymakers and other interested parties better understand U.S. tillage practices and, especially, those practices' potential contribution to climate-change efforts."

A complete copy of the report is available at www.notillfarmer.com or www.farm-equipment.com.

This report states that:

"Tillage — the plowing of land for weed and pest control and to prepare for seeding — has long been part of the cropland farming enterprise. A reduction in how often or how intensively the soil is tilled allows the soil to retain more organic matter, which stores or 'sequesters' carbon, which then is not available to contribute to global warming as carbon dioxide (CO2), a greenhouse gas. "The adoption of less intensive tillage practices on a large number of farms could sequester substantial amounts of carbon, allowing agriculture to contribute to U.S. efforts to reduce and control greenhouse gas emissions. Because of this potential role for tillage in U.S. climate-change policy, ERS researchers have compiled and analyzed available USDA data on tillage practices

by U.S. farmers.

"Because of the possible agricultural contributions, policymakers are considering ways to encourage farmers, ranchers and other rural landowners to pursue climate-friendly activities."

The report goes on to say, under cap-and-trade proposals, industrial sources of fossil fuels such as oil refiners and electricity generators would be required to submit permits for every ton of their direct or indirect emissions, and only a fixed number of permits would be made available. Based on current proposals, agricultural producers would likely not be required to submit these permits, but the policy could encourage agricultural contributions by awarding offset credits to farmers and ranchers who adopt management practices or land uses that are recognized as reducing greenhouse gas emissions or increasing carbon sequestration.

Farmer Incentives. If an agricultural activity such as no-till were eligible for these credits, farmers who voluntarily switch to no-till would receive credits that they could sell to industrial sources covered by the emission permit requirement. These offset credits would substitute for the emission permits that otherwise would be required for those sources under cap-and-trade.

An alternative policy to cap-and-trade would be to provide incentive payments to farmers to reduce tillage intensity, an approach similar to current USDA conservation programs such as the Environmental Quality Incentives Program. Under this approach, if no-till adoption were eligible for these incentive payments, farmers who voluntarily switch to no-till would receive an annual payment based on the rules of the program. The government would set eligibility rules and payment amounts, just as it does for other conservation programs.

For example, a Corn Belt farmer who shifted from conventional tillage to permanent no-till would receive credit for 0.64 metric tons of CO_2 per acre per year for 20 years if those practices met the eligibility requirements.

If credits sold for $15 per ton — a commonly cited price for the near future under previous cap-and-trade proposals — the farm would receive approximately $10 per acre of no-till adoption in this example. As a result, sales of offset credits could provide an additional source of income for the farm, minus the possible additional production costs under no-till.

Of course, at this point, these are only "proposals," but they do provide producers with other possibilities in their decision to implement or extend their conservation tillage operations.

For these reasons and others, *No-Till Farmer* has begun to compile a solid database of information on the best no-tillage practices, economics and operational trends. This data is presented in the remainder of this report.

Evaluation of 2010 Net Income & Operating Expenses

	Average Farm Acres	Average Increase In Net Income (Per Farm)	Average Increase In Net Income (Per Acre)	Average Operating Expenses (Per Farm)	Average Operating Expenses (Per Acre)	% Income Increase vs. Expenses
Total	**1,264**	**$29,295**	**$23.17**	**$388,464**	**$307.32**	**7.5%**
W. Corn Belt	1,140	$40,392	$35.43	$427,545	$375.04	9.4%
E. Corn Belt	1,082	$9,348	$8.64	$422,471	$390.45	2.2%
Great Lakes	736	$33,195	$45.10	$330,485	$449.02	10.0%
N. Plains	2,450	$63,998	$26.12	$658,008	$268.57	9.7%
S. Plains	2,332	$41,071	$17.61	$418,822	$179.60	9.8%
Northeast	488	$7,884	$16.16	$255,489	$523.54	3.1%
Appalachia	1,365	$23,243	$17.03	$351,675	$257.63	6.6%

Regionally in 2010, no-tillers in the Northern Plains states had the largest outlays in crop operating costs at $658,008. The lowest outlay was by no-tillers in the Northeast at $255,489.

Breakdown of 2010 Crop Operating Expenses by Region

(Average Total Expenses Per Farm Per Expense Category)

	All	WCB	ECB	GL	NP	SP	NE
Fuel	**$16,872**	$17,071	$18,959	$13,926	$33,157	$20,195	$15,717
Land Rent	**$62,600**	$57,512	$86,766	$46,650	$128,482	$40,281	$20,701
Seed/Seed Treatments	**$47,210**	$63,172	$54,873	$35,266	$79,269	$47,306	$25,517
Pesticides	**$29,203**	$29,138	$34,006	$18,748	$75,731	$51,254	$20,517
Fertilizer	**$58,896**	$64,439	$65,050	$56,048	$96,232	$68,715	$35,440
Lime/Soil Conditioners	**$8,468**	$8,524	$8,328	$8,515	———	$13,965	$4,132
Equipment	**$65,957**	$80,013	$46,621	$55,150	$108,308	$76,550	$51,516
Machinery Service	**$13,305**	$15,199	$11,364	$13,839	$21,463	$13,944	$9,264
Machinery Parts	**$17,485**	$20,194	$18,232	$15,753	$29,533	$21,077	$12,533
Precision Equipment	**$7,980**	$8,767	$8,922	$6,723	$9,789	$5,858	$7,060
Custom App./Hauling	**$11,647**	$13,542	$9,002	$8,365	$21,160	$21,423	$7,551
Labor	**$28,533**	$27,850	$41,122	$30,548	$28,554	$17,725	$27,960
Interest	**$20,308**	$30,648	$19,226	$20,954	$26,330	$20,529	$17,581
Totals	**$388,464**	**$427,545**	**$422,471**	**$330,485**	**$658,008**	**$418,822**	**$255,489**

Throughout the entire survey region, no-tillers, on average, invested $388,464 in crop operating expenses in 2010. The largest outlays came in equipment, land rent and fertilizer.

SECTION 2

U.S. No-Till Farming — 2009 to 2011

Starting in 2009, *No-Till Farmer* (*NTF),* the monthly newsletter from Lessiter Publications, has conducted a survey of its readers to establish operational benchmarks and provide them with additional data on no-till farming.

In Section 2 of this report, the data gathered in 2009, 2010 and 2011 is combined for comparison purposes and to highlight developing trends in no-till farming in the U.S.

An average of 20% of the 2,500 farmers who NTF surveyed responded in each of the 3 years the study was conducted, and 26 states were covered. In addition to pure no-till practices, this group of farmers may also employ strip-till and minimum-till farming practices on their acreage.

Operational Expenses

One of the major findings of NTF's survey involved rising operational expenses. No-till growers throughout seven agricultural regions in the U.S. anticipate that their operating expenses for the 2011 growing season will increase slightly more than 3% compared with the 2010 growing season.

These growers say their biggest rise in prices for 2011 will come in fuel, land rent and fertilizer. Operating expenses they expect to decline by the largest percentage include interest on loans, lime/soil conditioners and farm machinery.

On average, no-tillers are expecting to invest $401,145 in operational costs during this cropping season. If this forecast holds true, their overall costs will rise by 3.2% for the year vs. the 2010 cropping season. But it will be down by 6.1% compared to the average expenditure of $427,404 that no-tillers reported in 2009. Compared to the average of the last three years, costs in 2011 are forecast to be down less than 1%.

Rising Net Incomes

Respondents to the most current No-Till Practices survey have also seen a healthy rise in their net incomes over the past two years.

According to Darrell Bruggink, executive editor of *No-Till Farmer* and the *Conservation Tillage Guide*, no-tillers reported their 2010 net income rose by $29,295 per farm, or 7.5%. This compares with a 1.2% drop in net income in 2009.

On a per-acres basis, net income rose an average of $23.17, while operating expenses totaled $307.32 per acre on average.

Rising Costs

Along with the dramatic rise in grain prices producers have seen in the past 2 years, no-tillers responding to the most recent survey are also expecting to see hefty increases in many of the inputs and other usual costs all farmers incur.

The largest increases are expected to come in fuel (13.1%), fertilizers (11%) and in land rents (10.3%). Farm labor is also anticipated to rise by more than 8% in the year ahead.

At the same time, some increases will be offset as no-till farmers project that interest costs will drop significantly in 2011 (–20.2%) compared with what these farmers paid in 2010. These growers also say their overall costs for lime and other soil conditioners will also decrease (–12.8%). No-till farmers also expect spending cuts for farm machinery (–11% vs. 2010).

It's not clear if the no-tillers' reduced machinery investments in 2011 come as a result of cutting back in anticipation of higher input costs or because many farmers have already invested in upgrading their equipment in the past few years.

Regional Differences

Regionally in 2010, no-tillers in the Northern Plains states (Montana, North Dakota and South Dakota) had the largest outlays in crop operating costs at $658,008. The lowest outlay was by no-tillers in the Northeast at $255,489. This stands to reason, as the average acreage for no-tillers in the Northern Plains states was 2,450, while Northeast growers averaged just 488 acres.

Throughout the entire survey region, no-tillers spent on average $388,464 in crop operating expenses in 2010. The average acreage of all respondents in the 2011 survey was 1,264.

Background Data

What is your age?

	2011	2010	2009	3-Year Avg.
65 and over	25.1%	24.9%	22.8%	24.2%
55-64	30.7%	35.4%	30.4%	32.2%
45-54	26.3%	24.0%	25.6%	25.3%
35-44	11.6%	10.5%	14.7%	12.3%
25-34	6.0%	4.7%	6.5%	5.7%

More than half (56.4%) of no-till farmers in U.S. are 55 years old or older.

How many years have you no-tilled?

	2011	2010	2-Year Avg.
Never	1.2%	1.0%	1.1%
Less than 5	9.3%	8.3%	8.8%
5-15	39.2%	40.2%	39.7%
16-25	30.5%	32.0%	31.2%
More than 25	19.8%	18.5%	19.2%

On average, slightly over half (50.4%) of no-till farmers have been working with no-till practices for 16 or more years.

Cropping Data

Please enter your total cropping acres:

2011	1,264 acres/farm
2010	1,219 acres/farm
2009	1,269 acres/farm

What acreage group do you fall into?

	2011	2010	2009	3-Year Avg.
Under 250	16.0%	14.8%	16.4%	15.7%
250-499	19.5%	23.3%	18.7%	20.5%
500-999	25.1%	21.1%	23.7%	23.3%
1,000-1,749	21.0%	21.1%	19.2%	20.4%
1,750-2,499	6.1%	8.3%	9.5%	8.0%
2,500-4,999	9.3%	8.3%	10.1%	9.3%
5,000 or more	3.0%	3.1%	2.4%	2.8%

No-tillers, on average, are working slightly more than 1,260 acres in 2011 (top table). Nearly 82% of those participating in the *No-Till Farmer* survey farm 1,750 acres or less.

What crops do you raise?

	2011	2010	2009	3-Year Avg.
Corn	96.0%	90.9%	89.8%	93.1%
Soybeans	91.4%	83.2%	89.8%	88.1%
Small Grains	57.6%	57.9%	51.0%	55.5%
Forage	31.6%	33.3%	29.5%	31.5%
Sunflowers	5.0%	6.0%	3.8%	4.9%
Grain sorghum	8.2%	10.9%	10.6%	9.9%
Other	18.6%	19.1%	15.9%	17.9%

During the 3 years covered by the *NTF* surveys, an average of 93% of farmers reported planting corn on their no-till acres, while 88% planted soybeans.

How many acres do you grow of the following crops?
(acres/farm)

	2011	2010	2009
Corn	506	523	475
Soybeans	426	463	373
Small grains	364	269	243

Among survey respondents, corn was raised most often on no-till acres.

Land Use Data

What percentage of cropland do you:

	2011	2010	2009	3-Year Avg.
Own	42.3%	38.5%	42.7%	41.2%
Cash Rent	39.7%	42.9%	39.8%	40.8%
Share Crop	18.0%	18.6%	17.5%	18.0%

The percentage of acres owned compared to the acres that no-tiller rent is nearly identical at 41% each.

Please indicate the tillage practices you use:

	2011	2010	2009	3-Year Avg.
No-till	95.4%	97.3%	93.4%	95.4%
Strip-till	13.7%	17.4%	13.2%	14.8%
Vertical-tillage*	14.5%	NA	NA	14.5%
Moldboard plow	2.6%	4.7%	3.8%	3.7%
Minimum-tillage	35.7%	37.8%	30.4%	34.6%

** category added in 2011 survey*

When it comes to tillage practices, of all the farmers surveyed between 2009-11, more than 95% utilize no-till. Next on their list is minimum-till, which is utilized by nearly 35% of the farmers.

What percentage of your acreage is:

(Percentage of acreage of growers who use the practice on their farm)

	2011	2010	2009
No-tilled	82.4%	78.7%	80.6%
Strip-tilled	42.6%	43.8%	43.2%
Vertical tillage*	37.8%	NA	37.8%
Moldboard plow	23.6%	23.2%	23.4%
Minimum tillage	33.4%	38.5%	36.0%

** category added in 2011 survey*

In 2010 and 2011, the farmers surveyed indicated that a large majority of their acres (80.6%) was no-tilled, while more than 43% of their acres were strip-tilled.

Using 2010 as a base level, what percentage gain in tillage acreage do you expect to see in your area 3 years from now:

	2011	2010	2009	3-Year Avg.
No-Till				
None	17.7%	17.2%	14.6%	16.5%
1-10%	37.8%	39.3%	31.3%	36.1%
11-20%	24.7%	25.8%	25.9%	25.5%
21-40%	8.6%	11.2%	14.3%	11.4%
More than 40%	11.2%	6.5%	13.9%	10.5%
Strip-Till				
None	45.7%	37.5%	41.6%	41.6%
1-10%	34.9%	38.6%	32.0%	35.2%
11-20%	12.0%	15.6%	19.0%	15.5%
21-40%	6.0%	5.4%	5.1%	5.5%
More than 40%	1.4%	2,9%	2.3%	2.2%

Most no-till farmers surveyed (61.6%) expect no-till acreage to increase by 1-20% in the next 3 years. Slightly over half (50.7%) see strip-till acreage growing during the same period.

How many acres of the following crops do you no-till?

	No-till	Strip-till
Corn	403.8 acres	566.4 acres
Soybeans	396.3 acres	308.3 acres
Small grains	358.8 acres	NA
Forage	99.4 acres	87.5 acres
Grain sorghum	716.5 acres	880.0 acres
Sunflowers	626.6 acres	NA

Grain sorghum, sunflowers, corn and soybeans were the crops most often planted in no-till acres in 2011. Grain sorghum and corn dominated strip-till acreage.

Did you plant cover crops?

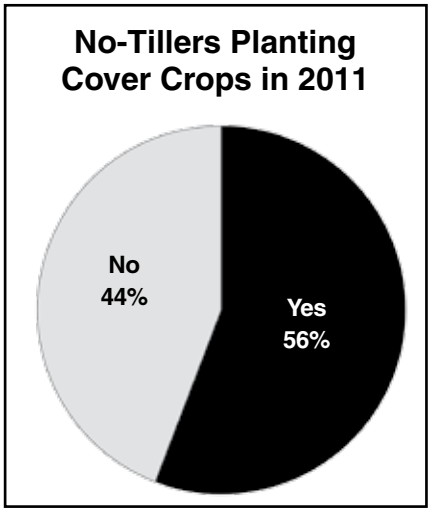
	2011	2010	2-Year Avg.
Yes	56%	40.1%	48.1%
No	44%	59.9%	52.0%

What cover crops did you plant?

	2011	2010	2009	3-Year Avg.
Cereal Rye	29%	27%	41%	32.3%
Small Grains*	18%	12%	6%	12.0%
Annual Ryegrass	17%	18%	19%	18.0%
Radishes	10%	14%	4%	9.3%
Others**	11%	13%	11%	11.7%
Peas	7%	6%	2%	5.0%
Clover	4%	7%	3%	4.7%

**includes wheat, oats, etc.*
***includes Hairy Vetch, Millet, Buckwheat*

Overall, nearly half (48.1%) of no-till farmers planted cover crops on 28% of the acres in 2010 and 2011 (middle table). About one-third (32.3%) of the respondents report using cereal rye as their main cover crop (bottom table).



More than half of no-till farmers planted cover crops in 2011, with cereal rye being the most popular.

Yield Data

What were your average per-bushel yields (bushels/acre) on no-tilled land, strip-till land and minimum-tilled land?

	2011	2010	2009	3-Year Avg.	USDA Est 2011-12
Corn					
No-Till	151	161	156	156	158.7
Strip-Till	171	175	166	171	
Min-Till	160	166	163	163	
Soybeans					
No-Till	49	50	45	48	43.4
Strip-Till	56	51	47	51	
Min-Till	49	47	46	47	
Double-Crop Beans					
No-Till	30	30	34	31	NA
Min-Till	30	37	28	32	
Spring Wheat					
No-Till	57	55	48	53	44.6
Min-Till	70	48	57	58	
Winter Wheat					
No-Till	61	67	62	63	NA
Min-Till	55	62	58	58	
Oats					
No-Till	77	74	73	75	60.5
Min-Till	70	64	33	56	
Grain sorghum					
No-Till	85	95	73	84	65.4
Sunflowers (lb./acre)					
No-Till	1,471	1,318	1,729	1,506	NA

This table provides a comparison for crop yields for selected crops for 2008, 2009 and 2010, and provides a 3-year average for each crop. The last column is the USDA's projected yield for each crop as of July 12, 2011, for the 2011-12 marketing year.

Equipment Data

What equipment do you own and use in your operation? (% of respondents)

	2011	2010	2009	3-Year Avg.
Drill	71.8%	69.4%	72.5%	71.2%
Planter	96.2%	92.1%	88.5%	92.3%
Strip-Till Rig	12.2%	15.9%	NA	14.1%
Fertilizer Applicator	39.2%	NA	NA	39.2%
Self-Propelled Sprayer	37.0%	27.4%	27.7%	30.7%
Pull-Type Sprayer	43.6%	38.9%	38.8%	40.4%
Combine	82.6%	70.7%	67.2%	73.5%
Forage Harvester	NA	13.4%	14.8%	14.1%

The equipment most often owned and used by no-till farmers in the survey included planters (92.3%), combines (73.5%) and drills (71.2%).

What planter attachments do you use?

	2011	2010	2009	3-Year Avg.
Closing Wheel	77.6%	66.0%	65.2%	69.6%
Seed Firmer	77.4%	64.5%	67.8%	69.9%
Row Cleaner	73.5%	67.1%	64.7%	68.4%
Coulter	53.0%	48.6%	49.0%	50.2%
2x2 Applicator	36.3%	25.7%	29.7%	30.6%
Down-Pressure System	36.1%	46.1%	39.3%	40.5%
Pop-Up Applicator	35.3%	25.1%	30.1%	30.2%
Nitrogen Applicator	24.6%	22.9%	25.0%	24.2%
Metering System	23.0%	45.2%	38.8%	35.7%

No-till farmers utilize a wide range of planter attachments. Nearly 70% of those surveyed used seed firmers, closing wheels and row cleaners.

What type of minimum-tillage tools are you using?

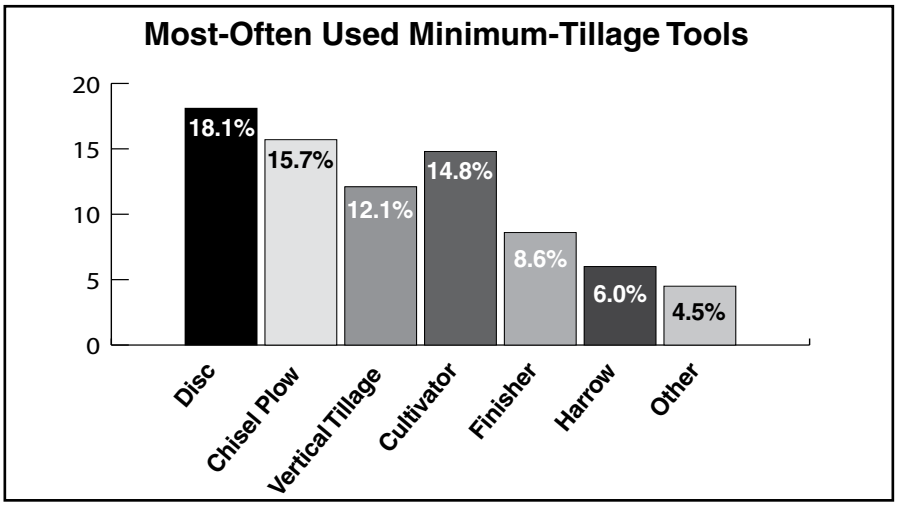
	2011	2010	2009	3-Year Avg.
Disc	17.5%	21.2%	15.7%	18.1%
Chisel Plow	15.7%	20.8%	10.7%	15.7%
Vertical Tillage	14.7%	13.6%	8.0%	12.1%
Cultivator	12.2%	18.3%	13.8%	14.8%
Finisher	8.4%	10.0%	7.3%	8.6%
Harrow	6.0%	NA	NA	6.0%
Other	3.8%	3.8%	6.0%	4.5%

Those farmers who practice minimum-tillage, most often use discs, chisel plows and field cultivators.

What equipment have you purchased or plan to purchase for the upcoming cropping season?

	2011	2010	2009
Tractor	16.1%	13.6%	12.4%
Planter	13.7%	13.6%	12.0%
Combine	10.4%	10.8%	10.2%
Self-Propelled Sprayer	6.6%	7.0%	5.3%
Drill	6.4%	5.3%	6.9%
Tillage Tools	4.0%	NA	NA
Pull-Type Sprayer	3.8%	6.6%	4.0%
Forage harvester	1.4%	0.2%	0.1%

Between 10% and 12% of the no-tillers surveyed plan to purchase a tractor, planter and/or a combine in 2011.



No-till farmers who utilize minimum-tillage tools most often employ discs, chisel plows and cultivators, usually to control crop residue build-up.

Which of the following technologies will you use in your cropping operation?

	2011	2010	2009
GPS Guidance — Lightbar	42.0%	39.3%	34.2%
Yield Monitor Data Analysis	37.1%	36.5%	31.7%
Field mapping	35.6%	34.8%	32.6%
GPS — Tractor Auto-Steer	34.1%	30.8%	29.9%
Variable-Rate Fertilizing	26.9%	24.8%	20.2%
Variable-Rate Seeding	13.7%	8.5%	9.3%
Satellite Aerial Imagery	8.4%	6.8%	4.0%
Soil Electrical Conductivity Mapping	2.8%	3.0%	1.6%
Variable-Rate Pesticide Application	2.8%	2.8%	2.2%
Electronic Fertilizer Application	2.8%	2.1%	2.2%
GPS — Implement Auto-Steer	2.6%	3.8%	2.2%
Remote Sensing	1.0%	0.6%	1.1%
Electronic Weed Control	0.4%	0.2%	0.5%

Between 2009 and 2011, no-till farmers increased their use of precision agriculture equipment and systems.

What tasks do you outsource?

	2011	2010	2009	3-Year Avg.
Fertilizing	33.5%	34.4%	29.7%	32.5%
Spraying	29.2%	30.1%	27.0%	28.8%
Harvesting	13.3%	11.5%	14.8%	13.2%
Planting	4.4%	4.9%	5.3%	4.9%

During 2009, '10 and '11, no-till farmers increased their use of outside sources for at least a portion of their fertilizing and spraying operations. They reduced outsourcing of harvesting and planting operations during that same time period.

Seeding Data

What brand of corn planter do you use?

	2011	2010	2-Year Avg.
John Deere	54.7%	54.6%	54.7%
Kinze	21.6%	18.7%	20.2%
Case IH	11.2%	10.4%	10.8%
AGCO/White	9.6%	11.9%	10.8%
Others	2.9%	2.6%	2.8%

John Deere easily surpassed all other popular brands of planters used by no-tillers in both 2010 and 2011.

What number of rows do you have on your planter?

	2011	2010	2009	3-Year Avg.
6 Rows	30.7%	25.4%	27.8%	28.0%
8 Rows	9.8%	12.3%	13.5%	11.9%
12 Rows	30.1%	29.7%	24.6%	28.1%
16 Rows	16.0%	16.6%	15.4%	16.0%
24 Rows	6.1%	3.4%	5.0%	4.8%
Other	9.2%	12.5%	13.7%	11.8%

Six- and 12-row planters were most often used by no-till farmers between 2009-11.

What row width (inches) do you use?

	2011	2010	2009	3-Year Avg.
15 inches	4.3%	4.8%	4.9%	4.7%
20 inches	2.9%	1.7%	3.2%	2.6%
22 inches	0.4%	0.6%	NA	0.5%
30 inches	87.8%	82.5%	79.5%	83.3%
36 inches	4.1%	5.2%	7.0%	5.4%
Other	2.9%	5.2%	5.3%	4.5%

More than 83% of no-till farmers planted 30-inch crop rows, which easily surpassed all other row widths utilized by this group.

Do you plant twin rows?

Yes	1.1%
No	98.9%

According to *No-Till Farmer's* 2011 survey, twin-row planting is not widely utilized by no-till farmers.

What is your corn planting population?

2011	30,535
2010	30,129
2009	29,315

Corn seed populations have gradually risen during the past 3 years.

What corn hybrids and seed brands will you plant in 2011?

	Corn Hybrids	Corn Seed	
Roundup Ready	83.2%	Pioneer	47.3%
Conventional	27.3%	DeKalb	36.7%
LibertyLink	25.2%	Syngenta Seeds	15.8%
CRW Trait	52.1%	Mycogen Seeds	6.8%
ECB Trait	51.1%	1 other seed brand	32.6%
Other	2.7%	2 or more other seed brands	22.2%

Roundup Ready corn hybrids and Pioneer corn seed were most often utilized by U.S. no-till farmers in 2011.

What equipment do you use to seed soybeans:

	2011	2010	2009	3-Year Avg.
Planter	46.2%	49.3%	49.5%	48.3%
Drill	34.1%	50.7%	50.5%	45.1%
Both	19.7%	NA	NA	19.7%

During the past 3 years, no-tillers have almost evenly split their soybean seeding equipment between planters and drills.

What brand planter or drill do you use for soybeans?

	2011	2010	2-Year Avg.
John Deere	47.0%	51.6%	49.3%
Kinze	17.2%	13.2%	15.2%
Great Plains	12.3%	10.3%	11.3%
Case IH	7.5%	9.9%	8.7%
Sunflower	2.6%	2.5%	2.6%
Other	13.4%	12.6%	13.0%

John Deere planters and/or drills are the most-often used brand for planting soybeans.

What is the width (feet) of the drill that you use?

	2011	2010	2009	3-Year Avg.
10 feet	15.4%	8.5%	9.2%	11.0%
15 feet	44.2%	44.3%	50.7%	46.4%
20 feet	6.0%	14.1%	14.1%	11.5%
Other	34.5%	33.1%	26.1%	31.2%

Overall, no-tillers most often utilize 15-foot wide drills for seeding soybeans.

What is the soybean seeding rate you use with your drill?

2011	168,585
2010	167,024
2009	169,185

Soybean seeding rates have remained essentially static during the past 3 years.

If you use a planter for soybeans, what is your row spacing?

	2011	2010	2009	3-Year Avg.
15 inches	44.9%	43.5%	46.6%	45.0%
20 inches	4.8%	3.7%	5.4%	4.6%
30 inches	43.3%	41.0%	35.7%	40.0%
Other	7.0%	11.8%	12.3%	10.4%

Nearly all no-till soybeans are planted in either 15- or 30-inch rows.

What is your soybean seeding rate with the planter?

2011	148,205
2010	150,954
2009	152,171

Soybean seeds per acre have trended slightly downward during the past 3 years.

What soybean varieties and brands will you plant in 2011?

	Soybean Varieties	Soybean Brands	
Roundup Ready	95.1%	Pioneer	45.8%
Conventional	8.8%	Asgrow	28.9%
LibertyLink	8.2%	Syngenta Seeds	18.3%
Other	1.3%	Mycogen Seeds	3.5%
		1 other seed brand	35.7%
		2 or more other seed brands	18.7%

When it comes to soybean varieties, Roundup Ready clearly dominates, while Pioneer is the soybean brand most often used by U.S. no-till farmers.

Corn Fertilization Practices

When did you or will you make nitrogen applications for the upcoming corn crop?

	2011	2010	2-Year Avg.
Fall	15.2%	12.7%	14.0%
Spring pre-plant	38.5%	39.7%	39.1%
At-plant	61.9%	52.9%	57.4%
Sidedress	58.1%	55.2%	56.7%
Foliar	9.6%	9.8%	9.7%

Nitrogen application for corn is most often done during planting or as a sidedress operation.

What forms of nitrogen will you use for the upcoming corn crop?

	2011	2010	2-Year Avg.
28%	50.0%	46.7%	48.4%
32%	28.9%	25.7%	27.3%
Anhydrous Ammonia	23.2%	25.1%	24.2%
Urea	22.8%	18.0%	20.4%
Ammonium Sulfate	20.9%	19.5%	20.2%
Ammonium Nitrate	5.1%	5.7%	5.4%

Nearly half of nitrogen applied to corn is a 28% blend.

How much nitrogen do you plan to apply vs. your targeted yields for corn?

	2011	2010	2-Year Avg.
Less than 0.8 lb./bu.	13.4%	16.9%	15.2%
0.8-0.99 lb./bu.	45.3%	41.7%	43.5%
1.0-1.2 lb./bu.	38.8%	39.0%	38.9%
More than 1.2 lb./bu.	2.6%	2.4%	2.5%

No-till farmers most often apply between 0.8-1.2 pounds of nitrogen per bushel of corn harvested.

If you're raising cover crops ahead of corn, how much nitrogen do you expect to obtain from cover crops?

	2011	2010	2-Year Avg.
Less than 40 lb./acre	67.4%	70.9%	69.2%
40-80 lb./acre	28.5%	27.2%	27.9%
81-120 lb./acre	3.2%	2.0%	2.6%
More than 120 lb./acre	0.9%	0.0%	0.9%

Overall, no-tillers who plant cover crops expect to gain less than 40 pounds per acres of nitrogen.

When did you or will you make phosphorus applications for the upcoming corn crop?

	2011	2010	2-Year Avg.
Fall	38.7%	28.9%	33.8%
Spring pre-plant	32.2%	32.7%	32.5%
At-plant	56.2%	46.9%	51.6%
Sidedress	2.9%	1.9%	2.4%
Foliar	4.0%	2.8%	3.4%

A little more than half of no-tillers apply phosphorus to corn at planting, but spring pre-plant and fall applications are also popular.

When did you or will you make potassium applications for the upcoming corn crop?

	2011	2010	2-Year Avg.
Fall	43.8%	29.9%	36.9%
Spring pre-plant	39.7%	39.3%	39.5%
At-plant	37.3%	30.8%	34.1%
Sidedress	3.6%	2.8%	3.2%
Foliar	4.5%	3.8%	4.2%

No-till farmers apply potassium to their corn crop at various times with the most prevalent being in the spring prior to planting.

Will you apply any of the following fertilizers for the upcoming soybean crop?

	2011	2010	2-Year Avg.
Nitrogen	30.4%	21.7%	26.1%
Phosphorus	72.0%	49.7%	60.9%
Potassium	79.6%	50.1%	64.9%
Micronutrients	50.0%	28.5%	39.3%

Potassium and phosphorous are the fertilizers most often used by no-tillers for soybeans.

When will you apply fertilizer for the upcoming soybean crop?

	2011	2010	2-Year Avg.
Fall	35.6%	18.3%	27.0%
Spring pre-plant	46.5%	33.3%	40.0%
At-plant	25.0%	16.6%	20.8%
Sidedress	1.9%	0.8%	1.4%
Foliar	22.9%	15.7%	19.3%

No-till soybean growers most often fertilize in the spring prior to planting.

Will you use inoculants for your soybeans?

	2011	2010	2-Year Avg.
Yes	66.2%	71.6%	68.9%
No	33.8%	28.4%	31.1%

Two-thirds of no-till producers utilize inoculants with soybeans.

General Fertilization Practices

Did you apply lime last year?

Yes	53.8%
No	46.2%

More than half of no-till farmers used lime on their soil in the past year.

If you applied lime last year, what type did you apply?

	2011	2010	2-Year Avg.
Dolomitic	46.7%	37.9%	42.3%
Calcitic	50.0%	52.2%	51.1%
Other	11.9%	9.8%	10.9%

Calcitic lime is most often utilized by no-till growers.

What micronutrients did you apply to your cropping acreage last year?

	2011	2010	2009	3-Year Avg.
Sulfur	60.4%	52.4%	44.4%	52.4%
Zinc	53.2%	48.4%	45.4%	49.0%
Boron	29.1%	25.3%	17.9%	24.1%
Magnesium	21.3%	17.4%	14.4%	17.7%
Calcium	17.5%	13.6%	12.8%	14.7%
Copper	11.8%	9.6%	5.1%	8.8%
Molybdenum	7.0%	5.9%	4.0%	5.6%
Iron	6.2%	7.0%	3.6%	5.6%
Chloride	4.2%	3.3%	1.5%	3.0%

No-till farmers utilized a wide variety of micronutrients in the cropping practices, with sulfur and zinc used most often.

Did you apply gypsum last year?

	2011	2010	2009	3-Year Avg.
Yes	13.7%	9.9%	4.9%	9.5%
No	86.3%	90.1%	95.1%	90.5%

Less than 10% of no-till growers regularly use lime on their fields.

Did you apply manure last year?

	2011	2010	2009	3-Year Avg.
Yes	33.1%	52.2%	39.5%	41.6%
No	66.9%	47.8%	60.5%	58.4%

During the past 3 year, nearly 42% of no-tillers applied manure to some of their fields.

What manure source did you apply last year?

(percentage of growers who said they applied manure)

	2011	2010	2009	3-Year Avg.
Cattle	64.9%	59.7%	68.7%	64.4%
Hogs	19.0%	19.2%	21.7%	20.0%
Poultry	27.0%	16.7%	30.9%	24.9%

Cattle manure is used most often by no-till farmers.

When did you apply manure?

	2011	2010	2009	3-Year Avg.
Late summer/fall	68.4%	38.7%	73.3%	60.1%
Winter	40.8%	29.7%	47.5%	39.3%
Spring	56.9%	31.6%	64.1%	50.9%

When no-till farmers use manure, they usually apply it in the late summer or fall.

Into what did you apply manure?

	2011	2010	2009	3-Year Avg.
Residue	85.6%	70.6%	87.1%	81.1%
Cover crop	35.1%	23.3%	35.5%	31.3%
Tilled field	4.6%	6.1%	11.1%	7.3%

Manure is usually applied into no-till residue.

How did you apply manure?

	2011	2010	2009	3-Year Avg.
Broadcast	92.5%	85.7%	92.6%	90.3%
Injection	13.9%	14.3%	16.1%	14.8%

No-till growers far and away broadcast their manure applications vs. the injection method.

Operating Expenses

What do you estimate were your total operating expenses last year?

Yes	53.8%
No	46.2%

No-till farmers report that their overall operating expenses rose by slightly over 10% in 2011 compared with 2009.

How much do you estimate your entire farming operation spent for the following:

	2011	2010	2009	3-Year Avg.	Estimated 2011 Costs
Fuel	$16,872	$20,718	$26,236	$21,275	$19,410
Land rent	$62,600	$58,821	$61,183	$60,868	$69,801
Seed/Seed Treatments	$47,210	$49,436	$46,084	$31,840	$50,116
Pesticides	$29,203	$33,572	$34,095	$32,290	$31,000
Fertilizer	$58,896	$67,964	$75,936	$67,599	$66,183
Lime/Soil Conditioners	$ 8,468	$10,020	$11,752	$10,080	$ 7,381
Equipment	$65,957	$52,688	$63,693	$60,779	$58,300
Machinery Service	$13,305	$16,088	$18,467	$15,953	$13,571
Machinery Parts	$17,485	$17,318	$16,991	$17,265	$17,811
Precision Equipment	$ 7,980	$ 7,502	$ 7,957	$ 7,502	$ 8,352
Custom App./Hauling	$11,647	$12,360	$13,440	$12,482	$11,917
Labor	$28,533	$26,034	$29,105	$27,891	$31,173
Interest	$20,308	$22,324	$22,465	$21,699	$16,130
Total	$388,464	$391,845	$427,404	$387,523	$401,145

On average, U.S. no-till farmers estimate their operating costs to be nearly $400,000 during 2009-11. Their biggest cost include land rent, equipment and fertilizer.

Farm Income

What was your percent income net gain/loss for 2010 vs. 2009?

+ 7.5%

What was the amount of that net increase/ decrease in net income?

2011	+ $29,295
2010	+ $ 4,831
2009	+ $62,125

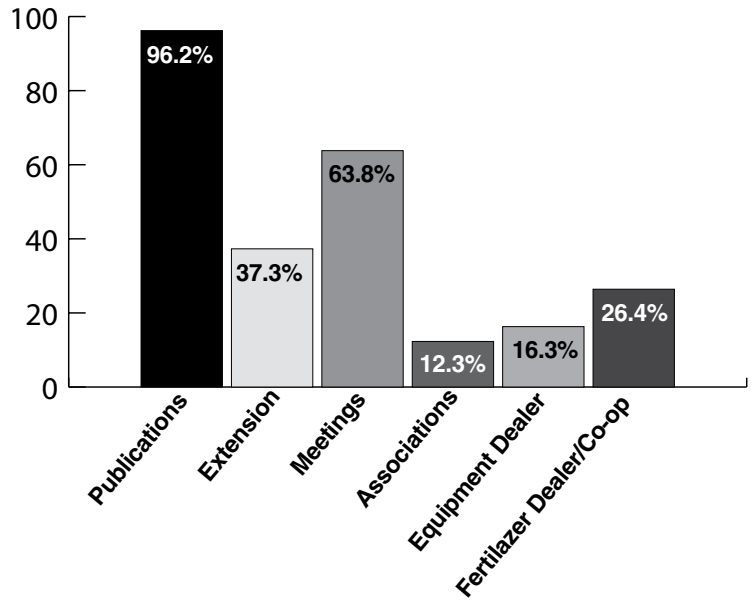
No-till grower net income has varied dramatically during the past 3 years.

Education & Training

From what sources do you get no-till information?

	2011	2010	2-Year Avg.
Publications	97.8%	94.5%	96.2%
Extension	37.3%	37.2%	37.3%
Meetings	63.1%	64.5%	63.8%
Associations	13.1%	11.5%	12.3%
Equipment Dealer	14.3%	18.3%	16.3%
Fertilizer Dealer/Co-op	23.5%	29.3%	26.4%

From what sources do you get no-till information?



No-till farmers rely most on ag publications and meetings as their major sources of information on no-till farming practices.

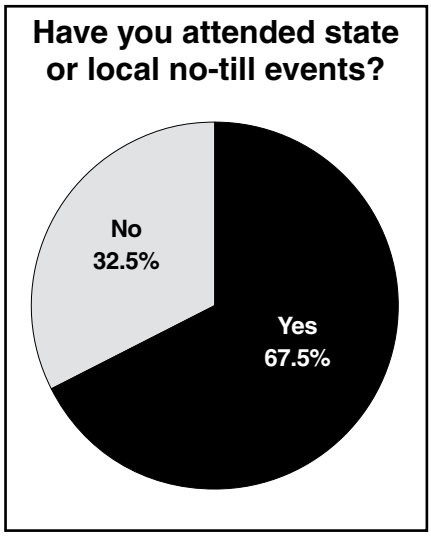
Have you ever attended the National No-Tillage Conference?

	2011	2010	2009	3-Year Avg.
Yes	27.1%	26.5%	22.8%	25.5%
No	72.9%	73.5%	77.2%	74.5%

More than one-quarter of no-till farmers have attended one or more National No-Till Conferences.

Have you attended state or local no-till events?

	2011	2010	2009	3-Year Avg.
Yes	66.7%	65.7%	70.0%	67.5%
No	33.3%	34.3%	30.0%	32.5%



About two-thirds of survey respondents report that they've attended state or local no-till events.

SECTION 3 — 2010

Net Income Climbs For Most No-Tillers

Despite less-than-stellar yields overall in the Corn Belt, higher grain prices and expenses that were kept in check helped many growers to encouraging profits in 2010.

By Darrell Brugginк, Executive Editor

While the majority of U.S. industries are slumbering or showing modest signals of a possible recovery, U.S. agriculture really hummed in 2010.

That's not to say there weren't challenges.

Dry summertime conditions in the East dinged many no-tillers' yields in states like Ohio and Indiana, while wet conditions in the Mississippi River region may have held back some crop growth. However, many no-tillers in the Upper Midwest saw record production.

Regardless, some poor crop performances around the world, coupled with less-than-expected U.S. crop production, caused grain prices to soar.

Farmers who hadn't locked in prices when the market was soft won big time, as well as those who didn't hope to cash in during 2011.

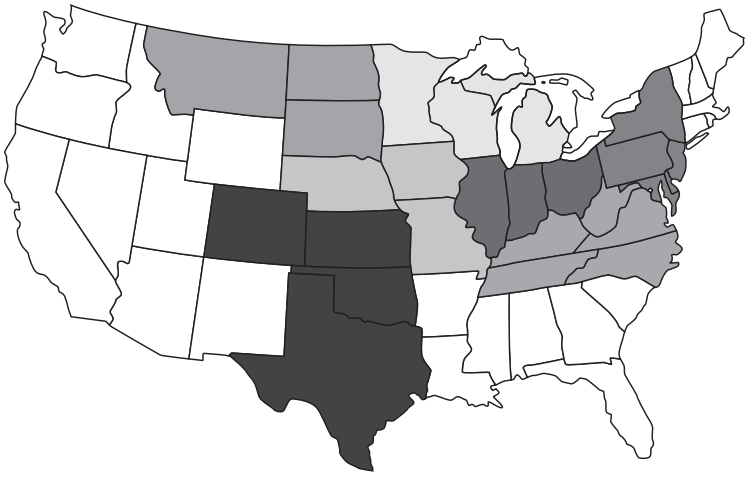
In 2009, no-tillers told us their net incomes dropped by 1.2%, but the 502 respondents to our comprehensive *No-Till Practices Survey* say their 2010 net incomes increased by $29,295 per farm, or 7.5%.

That doesn't quite rival 2008, when net profits rose by $62,125 per farm, but it was a nice improvement from a ho-hum 2009.

Among the seven regions in the U.S. that we surveyed, no-tillers in the Great Plains, which comprises Michigan, Minnesota and Wisconsin, reported a 10% increase in net profitability, making them the leading region for the second straight year.

Other regions weren't far behind, including the Southern Plains with a 9.8% increase in net income, the

No-Till Practices Survey Regions



- **Eastern Corn Belt (ECB) —** Illinois, Indiana, Ohio
- **Western Corn Belt (WCB) —** Iowa, Nebraska, Missouri
- **Great Lakes (GL) —** Michigan, Wisconsin, Minnesota
- **Southern Plains (SP) —** Kansas, Colorado, Oklahoma, Texas
- **Northern Plains (NP) —** South Dakota, North Dakota, Montana
- **Northeast (NE) —** New York, Pennsylvania, Maryland, Delaware, New Jersey
- **Appalachia (AP) —** Kentucky, Tennessee, West Virginia, Virginia, North Carolina

Table 1. Evaluation of 2010 Net Income & Operating Expenses

	Average Farm Acres	Average Increase In Net Income (Per Farm)	Average Increase In Net Income (Per Acre)	Average Operating Expenses (Per Farm)	Average Operating Expenses (Per Acre)	Income Increase Vs. Expenses
Total	**1,264**	**$29,295**	**$23.17**	**$388,464**	**$307.32**	**7.5%**
W. Corn Belt	1,140	$40,392	$35.43	$427,545	$375.04	9.4%
E. Corn Belt	1,082	$9,348	$8.64	$422,471	$390.45	2.2%
Great Lakes	736	$33,195	$45.10	$330,485	$449.02	10.0%
N. Plains	2,450	$63,998	$26.12	$658,008	$268.57	9.7%
S. Plains	2,332	$41,071	$17.61	$418,822	$179.60	9.8%
Northeast	488	$7,884	$16.16	$255,489	$523.54	3.1%
Appalachia	1,365	$23,243	$17.03	$351,675	$257.63	6.6%

Northern Plains at 9.7% and the Western Corn Belt at 9.4%.

The Eastern Corn Belt saw the smallest increase in net income at 2.2%, while the Northeast finished at 3.1% and the Appalachian region registered 6.6%.

This summary of net profitability is just one of many significant conclusions drawn from this exclusive survey — the third in what we will conduct annually for the Spring Buyer's Directory issue of *No-Till Farmer's Conservation Tillage Guide*.

A 66-question survey was mailed at random in early February to 2,500 *No-Till Farmer* subscribers from 26 states. ***(See adjacent map).***

Just over 20% completed and returned the survey.

This ag industry survey of growers practicing no-till, strip-till and other conservation-tillage practices is the only survey of its kind in the U.S.

Operating Expenses Drop Slightly

The average farm size of this year's respondents was 1,264 acres, up slightly from the 1,219-acre farm average from last year's survey.

While the soft overall U.S. economy helped keep expenses in check, many farmers hit pay dirt when grain prices started climbing upward as the crops matured.

(Table 1 provides an evaluation of 2010 net income and operating expenses.) Average farm operating expenses in 2009 totaled $394,848 per farm, but that was trimmed to $388,464 in 2010, representing a decline of 1.6%.

This decline in operating expenses for 2010 is similar to what last year's survey respondents anticipated would happen, although they expected to see average farm operating expenses even lower at $380,713.

On a per-acre basis, operating expenses fell from $323.91 per acre in 2009 to $307.32 last year.

For 2011, no-tillers anticipate operating expenses will increase to $401,145, which would represent an increase of $12,681, or 3.3%.

(See Table 2 for a breakdown of operating expenses by category, including an estimate for 2011.) The 2010 operating expenses are actual numbers provided by survey respondents, while the 2011 operating expenses are estimates provided by this year's survey respondents.

They expect a number of big-ticket items to cost even more in 2011, including:

- Fuel from $16,872 per farm to $19,410, a 15% increase.
- Land rent from $62,600 to $69,801, an 11.5% increase.
- Seed/seed treatments from $47,210 to $50,116, a 6.2% increase.
- Fertilizer from $58,896 to $66,183,

Table 2. National Breakdown of Crop Operating Expenses (2009-11)

(Average Total Expenses Per Farm Per Expense Category)

	2009	2010	2011
Fuel	$20,718	$16,872	$19,410
Land Rent	$58,821	$62,600	$69,801
Seed/Seed Treatments	$49,437	$47,210	$50,116
Pesticides	$33,572	$29,203	$31,000
Fertilizer	$67,964	$58,896	$66,183
Lime/Soil Conditioners	$10,020	$8,468	$7,381
Equipment	$52,688	$65,957	$58,300
Machinery Service	$16,088	$13,305	$13,571
Machinery Parts	$17,318	$17,485	$17,811
Precision Equipment	$7,503	$7,980	$8,352
Custom App./Hauling	$12,360	$11,647	$11,917
Labor	$26,035	$28,533	$31,173
Interest	$22,324	$20,308	$16,130
Totals	**$394,848**	**$388,464**	**$401,145**

Table 3. Breakdown of 2010 Crop Operating Expenses by Region

(Average Total Expenses Per Farm Per Expense Category)

	All	WCB	ECB	GL	NP	SP	NE
Fuel	**$16,872**	$17,071	$18,959	$13,926	$33,157	$20,195	$15,717
Land Rent	**$62,600**	$57,512	$86,766	$46,650	$128,482	$40,281	$20,701
Seed/Seed Treatments	**$47,210**	$63,172	$54,873	$35,266	$79,269	$47,306	$25,517
Pesticides	**$29,203**	$29,138	$34,006	$18,748	$75,731	$51,254	$20,517
Fertilizer	**$58,896**	$64,439	$65,050	$56,048	$96,232	$68,715	$35,440
Lime/Soil Conditioners	**$8,468**	$8,524	$8,328	$8,515	----------	$13,965	$4,132
Equipment	**$65,957**	$80,013	$46,621	$55,150	$108,308	$76,550	$51,516
Machinery Service	**$13,305**	$15,199	$11,364	$13,839	$21,463	$13,944	$9,264
Machinery Parts	**$17,485**	$20,194	$18,232	$15,753	$29,533	$21,077	$12,533
Precision Equipment	**$7,980**	$8,767	$8,922	$6,723	$9,789	$5,858	$7,060
Custom App./Hauling	**$11,647**	$13,542	$9,002	$8,365	$21,160	$21,423	$7,551
Labor	**$28,533**	$27,850	$41,122	$30,548	$28,554	$17,725	$27,960
Interest	**$20,308**	$30,648	$19,226	$20,954	$26,330	$20,529	$17,581
Totals	**$388,464**	**$427,545**	**$422,471**	**$330,485**	**$658,008**	**$418,822**	**$255,489**

a 12.4% increase.

One area where no-tillers anticipate a decline in costs for 2011 is equipment purchases.

In fact, last year's average farm purchases of $65,957 well exceeded no-tiller's estimates of $44,151 for 2010, an indication that farmers took advantage of a profitable year to upgrade their equipment inventory.

For 2011, no-tillers still expect to be fairly aggressive on equipment purchases at $58,300 per farm, but if that estimate holds accurate, that would indicate a decline of 13.1%.

(In Table 3, we've broken down operating expenses by region so you can compare your operation to the average farm in your area. A line-item breakout of Appalachia was not available because the sample size was not big enough.)

Great Lakes: The Big Winner

Overall, no-tillers told us they improved their net income in 2010 vs. 2009 by $29,295 per farm, for an average return of $11.59 per acre.

This was a major improvement over 2009, when the average net income dropped by nearly $5,000 per farm, or $3.96 per acre.

According to the survey, the big winner was the Great Lakes region, which, for the first time in several years, saw nearly ideal growing conditions over most of the region. Southern Michigan may have been the only exception.

The Great Lakes improved net profitability by $45.10 per acre, or an average of $33,195 per farm, even though their average operating expenses were the second highest in the U.S. at $449.02 per farm.

Here's how the rest of the regions fared:

Western Corn Belt — Net income improved $35.43 per acre vs. average operating expenses of $375.04 per acre.

Northern Plains — Net income improved $26.12 per acre vs. average operating expenses of $268.57 per acre.

Southern Plains — Net income improved $17.61 per acre vs. average operating expenses of $179.60 per acre.

Appalachia — Net income improved $17.03 per acre vs. average operating expenses of $257.63 per acre.

Northeast — Net income improved $16.16 per acre vs. average operating expenses of $523.54 per acre.

Eastern Corn Belt — Net income improved $8.64 per acre vs. average operating expenses of $390.45 per acre.

No-Till Gains In Acreage

Of the 502 survey respondents, 96% practice no-till to some extent, while 14% strip-till, 15% conduct vertical tillage, 36% minimum-till and 3% still use a moldboard plow.

These percentages are similar to a year ago and suggest that there are a sizeable number of *No-Till Farmer* readers who continue to diversify their tillage practices.

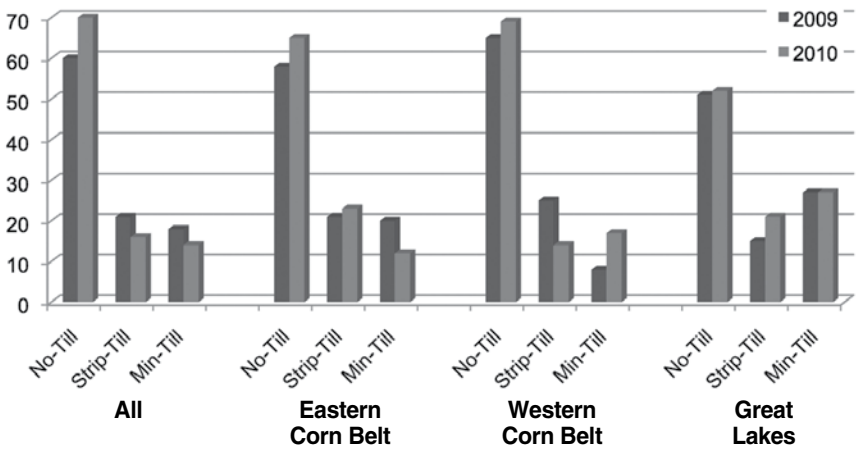
(Table 4 breaks down the tillage practices of No-Till Farmer readers by crop.)

One of the more interesting com-

Table 4. Tillage Systems Used To Raise 2010 Crops

	Corn	Soybeans	Grains
No-Till	70%	89%	88%
Strip-Till	16%	3%	----------
Minimum-Till	14%	8%	12%

Figure 1. What Tillage Practice Do You Use To Raise Corn?



parisons occurs with corn, where 70% of the acreage was no-tilled in 2010. Another 16% was strip-tilled and 14% was minimum tillage.

When you compare that to 2009, it suggests that farmers were converting more corn acres to no-till.

The percentage of no-tilled corn acres increased from 61% to 70%, while the percentage of strip-tilled corn acres decreased from 21% to 16%. Minimum-tilled corn acres also fell from 18% to 14%.

No-tilled soybean acreage remains strong at 89%.

Like corn, no-tilled small grains acreage also bounced back. After declining from 90% to 83% in 2009, the percentage of small grains acreage in no-till returned to 88.5%.

(Figure 1 on page 20 looks at the tillage practices used in corn among the top three corn-growing regions — The eastern and western Corn Belts and Great Lakes. It also shows the shift in tillage practices from 2008 to 2010.)

Some notable differences include minimum-tillage corn acreage declining in the Eastern Corn Belt from 20% to 12%, while no-till corn acres jumped from 58% to 65%.

Strip-tilled corn acres in the Western Corn Belt dipped from 26% to 14%, while minimum-tillage acreage rose from 8% to 17%.

Strip-tilled acres did see an increase in the Great Lakes region from 16% to 21%.

No-Till, Strip-Till Growth

We also asked survey respondents to tell us how much growth they anticipate will occur in no-till and strip-till acreage in their area over the next 4 years.

There was more anticipation for no-till growth, with 82% expecting some degree of growth, as opposed to just 54% for strip-till.

When it comes to no-till acres, 63% expect to see an increase of up to 20% in their area over the next 4 years. ***(See Table 5.)*** Another 19% expect no-till acres will increase by 21% or more in the next 4 years. These national numbers are in line with last year's estimates for no-till growth.

The Southern Plains is by far the most bullish on no-till, with 91% expecting growth in no-till acres in the next 4 years. The Great Lakes follows closely at 88%.

Despite the fact that 46% of survey respondents don't believe they will see any growth of strip-till in the next 4 years (up from 39% a year ago), 35% believe strip-till acreage will grow by up to 10% within the next 4 years. ***(See Table 6.)***

The Southern Plains leads the way with growth expectations of some degree at 75%, while only 25% in Appalachia and 33% in the Northeast anticipate any growth in strip-till.

Strip-Till Yields Lead

So what type of yields are growers experiencing? As some of the reported estimates indicate, 2010 was a tough year for corn growers with yields declining.

Overall, no-tillers averaged corn yields of 151 bushels per acre, a 10-bushel decrease over the previous year. ***(See Table 7 for average corn yields by tillage system.)*** While strip-tillers fared better, their average of 171 bushels per acre was a 4-bush-

Table 5. The Percentage Gain In No-Till Acreage You Expect To See in Your Area by 2013

	None	1-10%	11-20%	21-40%	More than 40%
All	**18%**	**38%**	**25%**	**8%**	**11%**
ECB	23%	43%	17%	6%	11%
WCB	16%	38%	31%	7%	8%
GL	12%	44%	21%	11%	12%
NP	26%	22%	30%	9%	13%
SP	9%	21%	38%	17%	15%
NE	18%	37%	32%	7%	6%
AP	25%	50%	6%	6%	13%

Table 6. The Percentage Gain in Strip-Till Acreage You Expect To See in Your Area by 2013

	None	1-10%	11-20%	21-40%	More than 40%
All	**46%**	**35%**	**12%**	**6%**	**1%**
ECB	41%	42%	13%	3%	1%
WCB	43%	29%	18%	8%	2%
GL	43%	36%	10%	9%	2%
NP	47%	35%	12%	6%	0%
SP	25%	53%	10%	9%	3%
NE	67%	17%	11%	5%	0%
AP	75%	25%	0%	0%	0%

Table 7. Average Per-Bushel Yields For Corn

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**151**	165	162	159	129	104	148	135
Strip-Till	**171**	176	175	169	159	212	156	—
Minimum-Till	**160**	164	161	163	150	—	139	188

Table 8. Average Per-Bushel Yields For Soybeans?

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**49**	55	52	50	36	34	50	45
Minimum-Till	**49**	53	49	49	—	—	47	44

el decline over 2009. Minimum-tillage corn growers saw their yields decline 6 bushels per acre from 166 to 160 bushels per acre.

Since it can be expected that yields vary by region, we've broken down the data by examining average yields based upon tillage methods within each region. Just as in last year's survey, some forms of tillage did improve overall yields for corn.

Strip-till saw the highest corn yields across all regions, with the Western Corn Belt averaging 176 bushels per acre, followed by the Eastern Corn Belt (175) and the Great Lakes (169).

While minimum-tilled corn yields were nationally higher than no-till at 160 bushels per acre to 151, no-till was the clear winner in the Northeast at 148 vs. 139. No-till edged out 1-bushel wins in the Western Corn Belt (165 to 164) and Eastern Corn Belt (162 to 161).

No-till soybean yields saw a minimal decline in yield from 50 bushels per acre in 2009 to 49 bushels per acre. ***(See Table 8 for average soybean yields by tillage system.)*** That was the same yield for minimum-tilled soybeans, which actually improved by 2 bushels per acre from the 47-bushel-per-acre mark in 2009.

While it's a smaller universe of acreage, strip-tilled soybeans averaged 56 bushels per acre.

Finally, in small grains, there was a split decision between no-tilled and minimum-tilled yields.

With winter wheat, no-till outperformed minimum-till yields by margins of 61 to 55 bushels per acre. But with spring wheat, minimum till averaged 70 bushels an acre, while no-till hit 61.

The Top No-Till Corn Yielders

Another way to break down this data is to look at the attributes of no-tillers who finished in the top one-third for yield to see if there are some characteristics that stand out among the group. ***(See Table 9 for details.)***

No-tillers who finished in the top third for yield averaged 188.9 bushels per acre.

This group also had success growing soybeans, with an average yield of 57.3 bushels per acre.

Here are some of the trend lines among these high-yielding corn growers:

- They averaged 1,255 acres — just 9 acres below the average. Their total operating expenses averaged $355,897, about 9% below the national average of $388,464. That put their per-acre operating costs at $283.58 per acre, with the national average at $307.32 per acre.
- While the average *No-Till Farmer* reader saw net income improve by nearly $30,000, or 7.5% vs. operating expenses, these top-third corn yielders saw a bigger increase of net income at $38,746, or 10.9% vs. operating costs. That's an increase in net income of $30.87 per acre over 2009.
- This was a slightly more veteran group of farmers, with 29% age 65 or older vs. the national average of 25%. This 4-percentage-point shift came out of the age 46 to 55 group, which had 22% of the growers vs. the national average of 26%.
- This high-yielding group also owns more land than the average no-tiller (45% to 42%) and rents a lower percentage of land (36% to 40%).
- As we saw in last year's survey, this group uses cover crops less than the average farmer. While 56% overall used cover crops in 2010-11, 51% of the high-yielders used cover crops. Some 28% of the cover-crop acreage planted by this group was annual ryegrass, well ahead of the 17% average.
- This high-yielding group puts a high priority on variable-rate application. Some 41% used variable-rate fertilization, well ahead of the national average of 35%. Meanwhile, 24% used variable-rate seeding vs. the national average of 18%.
- When it came to planter attachments, more used row cleaners (80% to 74%); pop-up applicators (41% to 35%); metering systems (29% to 23%); and down-pressure systems (43% to 36%) than the average no-tiller.
- They planted 32,092 seeds per acre vs. 30,535 nationally. They used Roundup Ready hybrids slightly more than the average no-tiller at 87% vs. the national average of 83% and LibertyLink at 28% vs. 25%.
- While their nitrogen application tends to be in line with the average no-tiller, these high yielders utilize foliar nitrogen applications more with 15% to 10%. They also use less applied nitrogen than the average no-tiller, with 65% applying less than 1 pound per targeted bushel of corn vs. the national average of 58%.
- Some 33% of the high-yielding growers have attended the National No-Tillage Conference, which is 6 points higher than the national average. Another 71% say they have attended state or local no-till meetings, which is ahead of the 67% average.

The Top No-Till Soybean Yielders

In a review of the top one-third soybean yielders, their no-till soybean yields averaged 60 bushels per acre. When it came to growing corn, this same group of no-tillers averaged 178.5 bushels per acre.

Here are some other observations about this group:

- They averaged 1,000 total cropping acres vs. the survey average of 1,264 acres. Their total operating expenses averaged $351,018, just fewer than 10% below the national average of $388,464. That put their total per-acre operating costs at $351.02 per acre, well above the national average at $307.32 per acre.
- While the average *No-Till Farmer* reader saw net income improve by about $29,295 last year, or 7.5% vs. operating expenses, these top-third soybean yielders say their net incomes increased by $41,638, or 11.9% vs. operating costs.
- Their use of cover crops at 53% was slightly behind the national average of 56%. Where they used cover crops, 39% was raised as cereal rye, which topped the

national average of 29%.

- The top-third soybean yielders overwhelmingly used planters to seed soybeans at 59% vs. the national average of 46%. Only 25% used a drill vs. the nationwide average of 34%, while the remaining 29% used both a planter and a drill in their operation.
- Those who drilled soybeans used a rate of 172,021 per acre vs. the average of 168,585. However, those who used a planter seeded at a rate of 149,848, which is slightly up from the national average of 148,205.

Land Use, Farm Size

The average farm size among *No-Till Farmer* readers bounced back toward 2008 levels. At 1,264 acres, the 2010 average farm size was just 5 acres behind the 2008 level of 1,269 and up from the 1,219 average of 2009. ***(Figure 2 offers a look at the average farm size by acreage for each region.)***

This year's survey also revealed a return to 2008 levels for the amount of farmland owned and rented. Owned farmland came in at 42.3% after falling to 38.5% in 2009 from 2008 levels of 42.7%.

Meanwhile, rented land dropped from 42.9% in 2009 to 39.7% in 2010, after registering at 39.8% in 2008. Share-cropped farmland dropped slightly from 18.6% to 18%.

On a regional basis ***(Table 10)***, the percentage of owned farmland was pretty close to the national average with the exception of Appalachia, where growers own just 27% of their farmland. Northern Plains' farmers own the highest percentage of farmland at 51%.

The percentage of rented acres was quite high in the Northeast (56%), Appalachia (53%) and the Great Lakes (52%).

The Southern Plains had the highest percentage of share-cropped acres at 36%. Both the western and eastern Corn Belts saw a substantial decrease in percentage of shared-cropped acreage. The West dropped from 26% to 18%, while the East fell from 19% to 15%.

Table 9. Net Income Increase and Operating Expenses of the Top-Third Yielding Corn and Soybeans Growers

	Average Farm Acres (Per Farm)	Average Increase In Net Income	Average Increase In Net Income (Per Acre)	Average Operating Expenses	Average Operating Expenses (Per Acre)	Income Increase Vs. Expenses
All	**1,264**	**$29,295**	**$11.59**	**$388,464**	**$307.32**	**7.5%**
Corn	**1,255**	$38,746	$30.87	$355,897	$283.58	10.9%
Soybeans	**1,000**	$41,638	$41.64	$351,018	$351.02	11.9%

Figure 2. Average Acres Cropped by Region

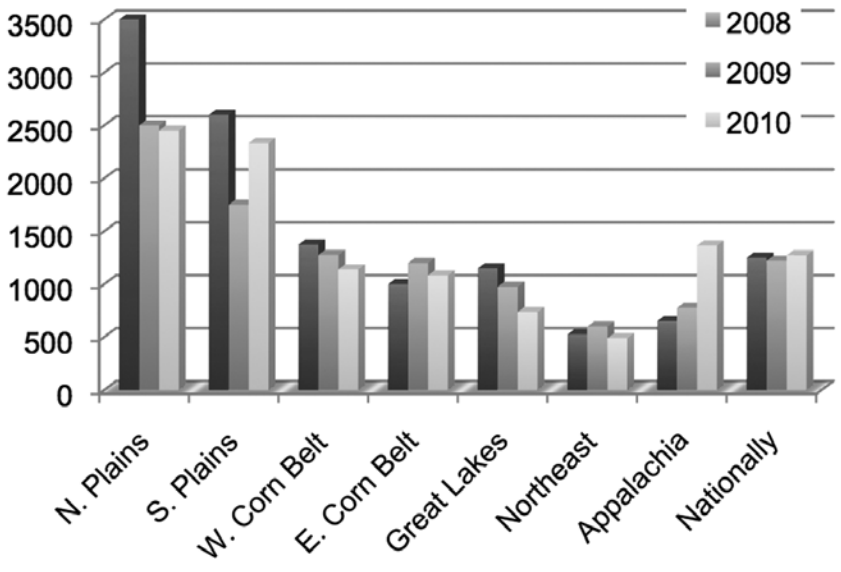


Table 10. Owned, Rented or Share-Cropped Acreage

(Percentage of Total Acreage Within Each Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Own	**42.3%**	44.0%	41.1%	44.4%	51.2%	37.2%	43.5%	26.9%
Cash Rent	**39.7%**	38.4%	44.2%	51.7%	40.3%	26.4%	56.2%	52.7%
Share Crop	**18.0%**	17.6%	14.7%	3.9%	8.5%	36.4%	0.3%	20.4%

Figure 3. What Crops Do You Grow?

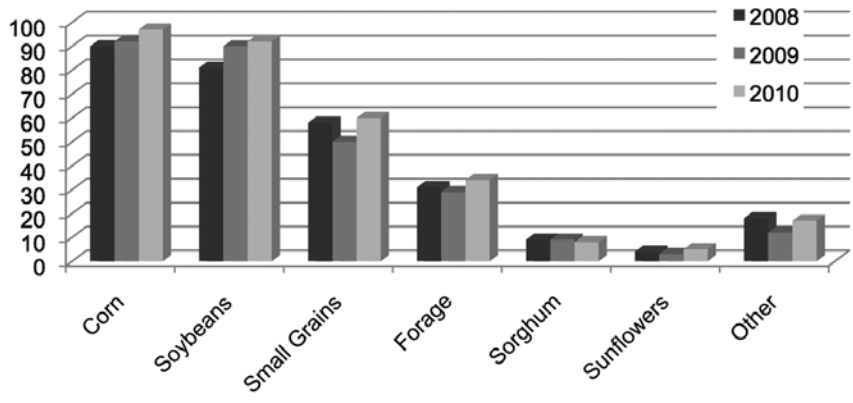


Table 12. By Percentage of Your Total Cropping Acres, How Many Acres of the Following Crops Do You Grow?

	All	WCB	ECB	GL	NP	SP	NE	AP
Corn	**40%**	50%	47%	47%	28%	23%	45%	41%
Soybeans	**31%**	40%	44%	38%	24%	12%	28%	41%
Small Grains	**17%**	5%	7%	8%	31%	34%	9%	15%
Forage	**2%**	3%	1%	5%	2%	1%	13%	2%
Sorghum	**5%**	1%	0%	0%	0%	20%	0%	0%
Sunflowers	**2%**	0%	0%	0%	5%	3%	0%	0%
Other	**3%**	1%	1%	2%	10%	7%	5%	1%

Figure 4. How Much Nitrogen Do You Plan to Apply Vs. Your Targeted Corn Yield?

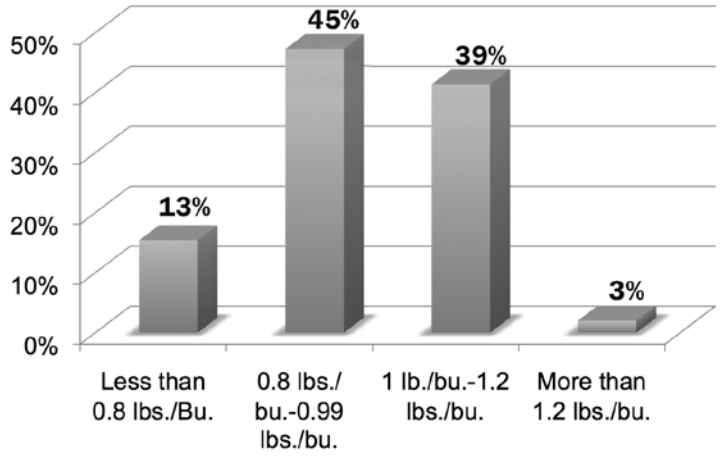
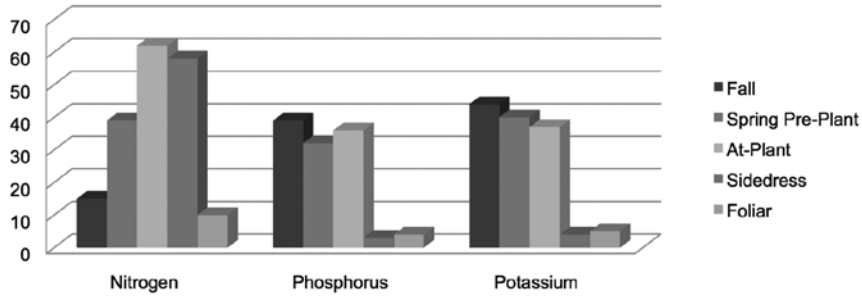


Figure 5. When Will You Make Fertilizer Applications for Your 2010 Corn Crop?



What No-Tillers Grow

No-Till Farmer readers became a little more diversified in the crops they grew in 2010, as the percentage of corn, soybean and small grains planted within their operations all increased over 2009.

Regarding crops grown by survey respondents, 96% raised corn (up from 92% in 2009); 91% raised soybeans (up from 90% in 2009); and 60% grew small grains (a substantial 9% increase over 2009). ***(See Figure 3 for breakdown of crops grown by survey respondents.)***

Corn accounts for 40% of the acreage of our survey respondents, showing no change from 2009. ***(See Table 12.)*** Meanwhile, soybeans appeared to decline at the expense of small grains. The percentage of acreage put into soybeans fell from 35% to 31%, while small grains increased from 11% to 17%.

Among some of the notable changes in crop production by region from 2009 to 2010:

- Small-grains acreage rebounded in the Plains States — from 22% to 31% of the acreage in the Northern Plains and 29% to 34% in the Southern Plains. Both saw big declines in soybean acreage, including from 37% to 24% in the Northern Plains and 18% to 12% in the Southern Plains.
- Corn acres took a modest increase in the Southern Plains, from 17% to 23%, and in the Northeast from 40% to 45%. Corn acreage dropped from 50% to 47% in the Eastern Corn Belt.
- Soybeans did increase in the Northeast region from 24% to 28% of the acreage.

Fertilizer For Corn

Among the questions we asked, regarding the fertilizer practices of *No-Till Farmer* readers, dealt with how much nitrogen they planned to apply based on corn yield goals. ***(See Figure 4.)***

There was a slight shift upward in fertilizer rates from growers applying less than 0.8 pounds of nitrogen per acre vs. those in the 0.8-to-0.99-pound-per-acre rate.

Some 45% of respondents will apply nitrogen at 0.8 to 0.99 pounds vs. their targeted corn yield goal. That just narrowly edged out the 39% of growers who will apply nitrogen at 1 to 1.2 pounds per bushel of corn. More than 13% of no-tillers will apply less than 0.8 pounds of nitrogen per bushel of corn.

One trend we noticed with corn fertility is that more growers are making fertilizer applications with their planter. ***(Figure 5 shows the fertilizer application timing of corn growers for the 2010 crop.)***

When it comes to timing of nitrogen applications, 62% will apply at-plant, up from 53% last year. Sidedress nitrogen will be applied by 58% (up 3%), while 39% will apply spring pre-plant; 15% fall; and 10% foliar.

At-plant applications of phosphorus are also on the increase, with 56% applying with the planter ahead of the 2011 crop compared to 47% a year ago. Fall applications were also up substantially at 39% vs. 29% in 2010. Meanwhile, spring pre-plant

held steady at 32%.

Potassium applications took a substantial jump this past fall with 44% of *No-Till Farmer* corn growers making applications vs. 30% the prior year. At-plant applications will also increase from 31% to 37%, while spring preplant will remain steady at 40%.

Fertilizer For Soybeans

While only half of soybean growers applied phosphorus and potassium ahead of the 2010 crop, those numbers will increase substantially to 80% for potassium and 72% for phosphorus ahead of the 2011 crop. ***(See Figure 6.)***

Another 50% will apply micronutrients and 30% will apply nitrogen. These are all increases and suggest that no-tillers are paying closer attention to fertility levels for soybeans.

Finally, we asked soybean growers whether they planned to use inoculants ***(Figure 7).*** Nearly two-thirds, or 66%, said they would purchase an inoculant package.

Measuring Micronutrients

Data suggests that no-tillers are paying closer attention to micronutrients in their fertility package. The majority of micronutrients listed in our survey will see increased applications ahead of the 2011 crop.

Nationally, sulfur and zinc applications will be made by more than half of *No-Till Farmer* readers in 2011. Sulfur will be applied by 60% of readers (52% in 2010); zinc by 53% (48% in 2010); boron at 29% (25% in 2010); magnesium at 21% (25% in 2010); and calcium at 18% (14% in 2010). ***(See Figure 8 for micronutrient applications.)***

Gypsum applications continue to show steady growth year after year ***(Figure 9)***. In 2008, just 5% of respondents applied gypsum. That increased to 10% in 2009. Ahead of the 2011 crop, gypsum has been applied by 14% of *No-Till Farmer* readers.

Manure Use

Overall, manure usage saw a decline among no-tillers. While some 31% of survey respondents applied cattle manure last year, that number was just 23% in this year's survey.

Hog manure usage declined from 10% to 7%. Poultry manure, however, did remain level at 9%.

Of those who apply manure, 68% apply it in the late summer or fall, 41% apply in the winter and 57% apply it in the spring.

Some 35% of manure users applied it into a cover crop, with 86% spreading it into no-till residue. Just 5% said they applied it to a tilled field.

Broadcast manure was the most popular approach at 92.5%, while just 14% of manure users applied it via injection.

Figure 6. What Fertilizers Will You Apply for the 2010 Soybean Crop?

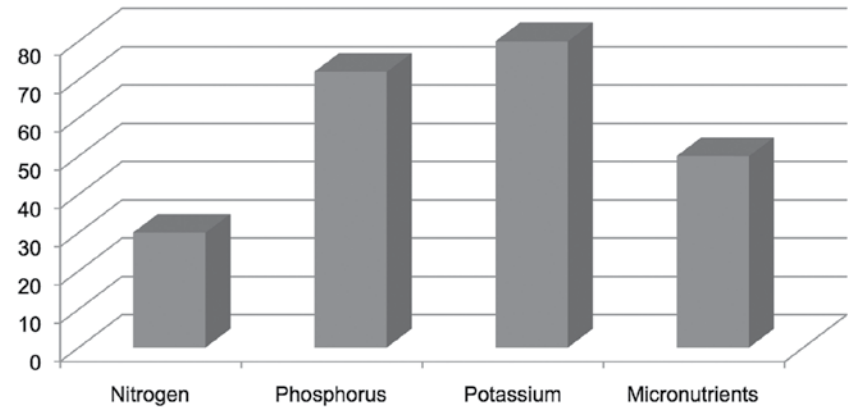


Figure 7. Will You Inoculate Soybeans?

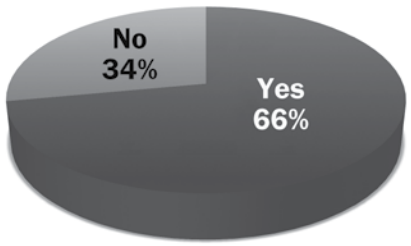


Figure 8. What Micronutrients Did You Apply in 2010?

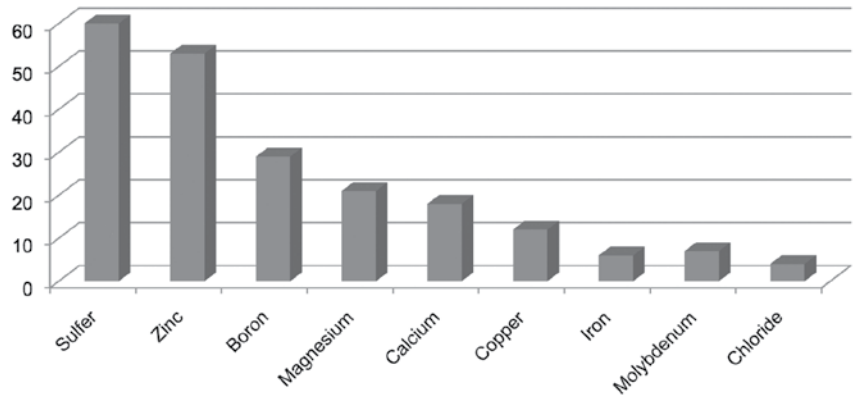


Figure 9. Did You Apply Gypsum?

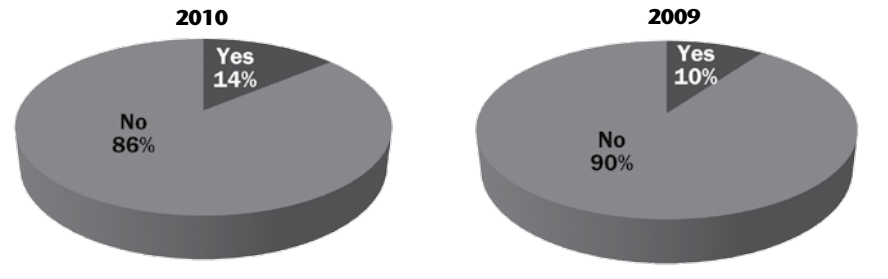


Table 13. What Equipment Do You Own and Use on Your Farm?

Drill	Planter	Chisel Plow	Strip-Till Rig	Combine	S-P Sprayer	P-T Sprayer	Forage Havrester
72%	96%	15%	12%	83%	37%	44%	39%

Equipment Selection

So, what are no-tillers buying for equipment ahead of the 2011 production season? Tractors lead the way at 16% of survey respondents, with planters at 14%, sprayers at 11% and harvesters at 10%.

When it comes to the equipment that *No-Till Farmer* readers own and utilize, 96% operate their own planter, 83% own a combine (up from 72% in 2010), and 72% own a drill.

Sprayers are also quite popular among no-tillers, with 44% owning a pull-type model and 37% operating a self-propelled sprayer. ***(See Table 13.)***

John Deere remains the top brand of corn planter owned at 55% (unchanged from 2010), followed by Kinze (22%), Case IH (11%) and AGCO/White (10%). ***(See Figure 10.)***

When it came to planters or drills used for soybeans ***(Figure 11)***, John Deere led at 54%, followed by Kinze (17%), Great Plains (12%) and Case IH (8% each).

Six-row units at 31% were the most popular corn planters just barely ahead of 12-row planters at 30%. Nearly 89% of the corn is planted in 30-inch rows.

When it comes to planter attachments, closing wheels (78%), seed firmers (77%) and row cleaners (74%) were used by about three-fourths of planter operators, while coulters (53%) were used by just more than half of those surveyed. ***(See Table 14.)***

Minimum-tillage tools are still found on a fair number of *No-Till Farmer* readers' farms, with 18% using a disc; 16% chisel plows; 15% vertical-tillage tools; and 12% cultivators.

Precision Adoption

Many *No-Till Farmer* readers indicated they use precision technology widely on their farm, with adoption seeing a slight increase in nearly all categories over the previous year.

They include GPS guidance with lightbars by 42% of respondents and GPS tractor auto-steer by 34%.

Some other notable adopted precision practices include yield monitor data analysis (37%), field mapping (36%) and variable-rate fertilizing (27%).

Seeding Rates

We also asked *No-Till Farmer* readers about their seeding rates. For corn, the average planting population is 30,535 seeds per acre, which is slightly up from 30,130 seeds the previous season.

For seeding soybeans, 46% of respondents use a planter and 34% use a drill. Another 20% said they used both a planter and a drill to seed soybeans. ***(See Figure 12.)***

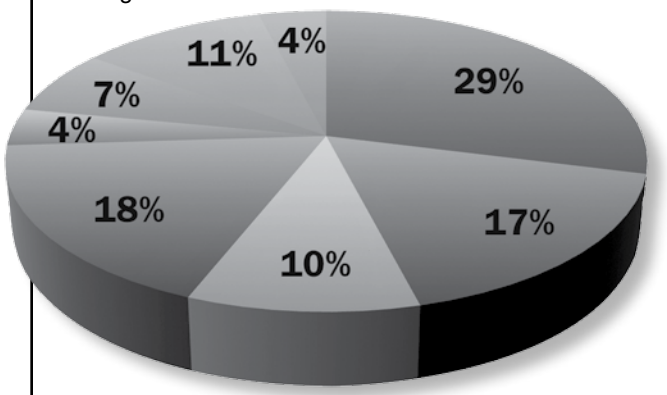
Nationally, drill operators used an average seeding rate of 168,585 seeds per acre, compared to 167,024 seeds the previous year. Those who used a planter reduced their seed-

Cover Crop Usage Soars in 2010

Cover crops continue to draw strong interest from no-tillers. Last year, no-tillers took advantage of dry conditions and an early harvest to plant cover crops, as evidenced by the No-Till Practices Survey data.

Just over 56% of respondents planted cover crops in 2010. That's well ahead of the 40% who did so in 2009, when a wet fall and difficult harvest likely led to a major reduction in cover-crop usage. When we first surveyed readers in 2008, 49% used cover crops.

Cereal rye remains the most-used cover crop at 29% of acreage, slightly up from 27% the prior year. Small grains were next at 18% of acreage, with annual ryegrass next at 17%. Radishes also saw double-digit acreage use at 10%.



Cover Crops Raised In 2009-10 By Percentage Of Total Acres

Percentage Of Growers Who Planted Cover Crops

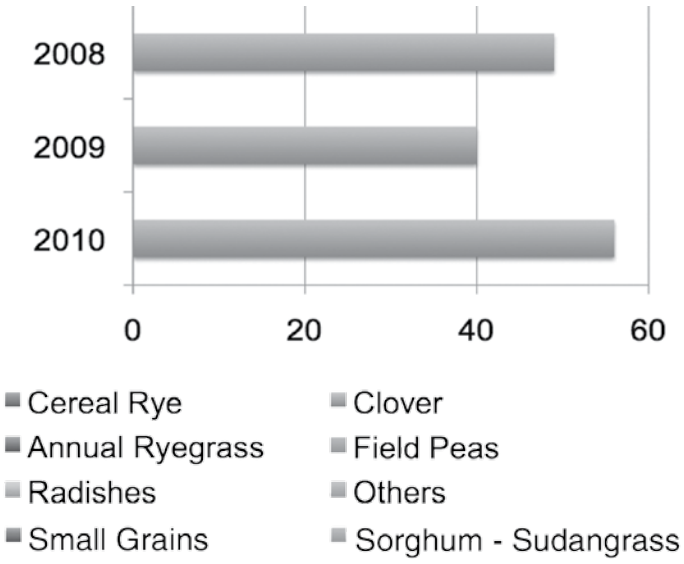


Figure 10. What Brand Corn Planter Do You Use?

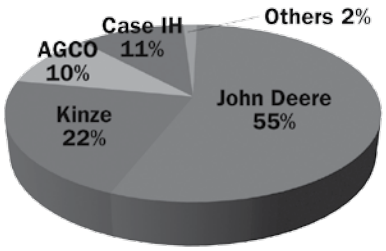


Figure 11. What Brand Planter or Drill Do You Use For Soybeans?

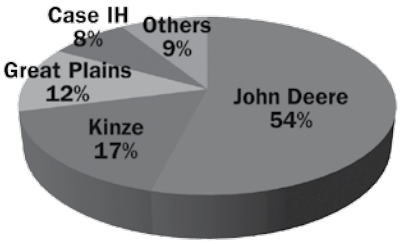


Figure 12. Do You Use a Planter or Drill For Soybeans?

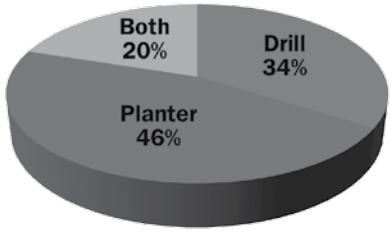


Table 14. What Attachments Do You Use on Your Planter?

Coulter	Row Cleaners	Closing Wheels	Seed Firmers	Pop-Up Applicator	2x2 Applicaton	Nitrogen Applicator	Metering System	Down-Pressure System
53%	74%	78%	77%	35%	36%	25%	23%	36%

ing rate by 20,000 seeds, or 12%, to 148,205 seeds per acre. This compared to 150,954 the previous year. ***(See Figure 13.)***

Seed Purchases

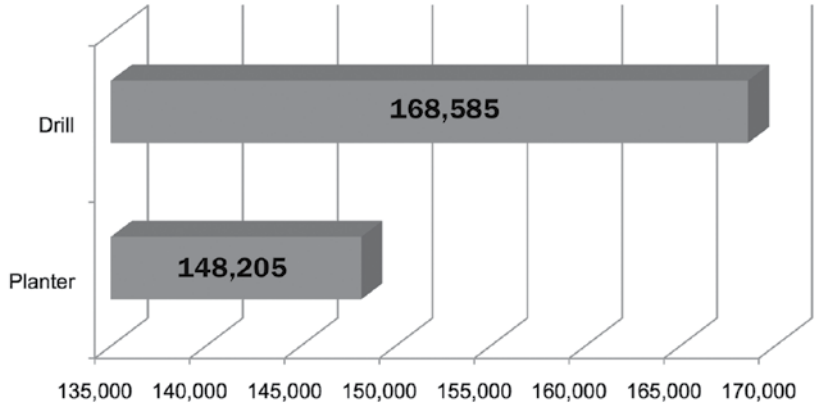
A new question for the 2011 survey asked *No-Till Farmer* readers about the brand and type of seed they purchased for the upcoming production season.

When it came to seed corn, 47% of our readers say they are choosing Pioneer, with DeKalb at 37%, Syngenta Seeds at 16% and Mycogen Seeds at 7%. Nearly 33% of respondents say they will choose one other seed brand, while 22% say they will select at least two or more other seed brands.

Some 83% of respondents said they would use Roundup Ready corn hybrids on their farm this year, compared to 27% conventional and 25% LibertyLink. Some 52% will purchase the corn rootworm trait and 51% will buy a hybrid with European corn borer protection.

Pioneer leads the way with soybean variety purchases at 45% of respondents. Asgrow will be purchased by 29%, Syngenta Seeds at 18% and Mycogen Seeds at 4%. One other seed variety will be utilized by 36% of growers, with 19% of growers using two or more other seed brands.

Figure 13. What is Your Soybean Seeding Rate?

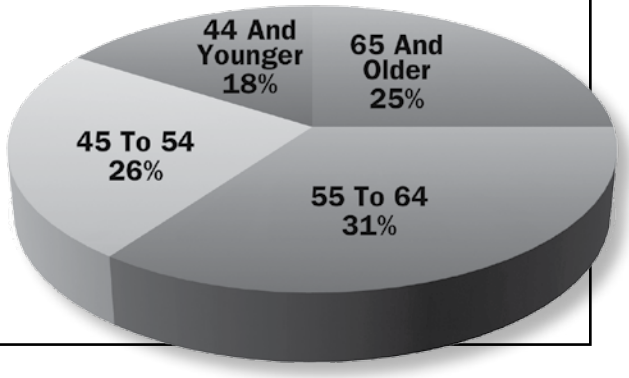


No-Till Farmer Readers a Little Younger in 2010

Call them mature or veterans of their profession, if you'd like, but 82% of *No-Till Farmer* readers are 45 years old or older. This is slightly lower than last year's survey when 84% of respondents fit those criteria.

The 55-to-64 age bracket once again contains the most farmers at 31%, down from 35% a year ago. Some 25% of our readers in this survey were 65 or older, while 26% were between the ages of 45 and 54. That leaves just 18% of respondents under the age of 45.

Age Of *No-Till Farmer* Readers



SECTION 4 — 2009

Not A Bad Year For No-Tillers… All Things Considered

While 2009 brought a decrease in net farm income, No-Till Farmer readers weathered a year where grain prices dropped dramatically.

By Darrell Brugginк, Executive Editor

You don't need a reminder of the current economic conditions.

While unemployment ran about 10% through much of 2010 — some economists say the actual number was more like 17% — results from our 2nd annual No-Till Practices Survey of *No-Till Farmer* readers suggest that the ag industry is a light in an otherwise dark place.

That's not to say that farm profits are anywhere near as good as they were prior to 2009. In fact, 471 respondents to our comprehensive survey report that they saw an overall decrease in their net incomes of $4,831 per farm, or a drop of 1.2% over the previous year. In 2008, net profits rose by $62,125 per farm, or 13%.

Among the seven regions in the United States we surveyed, only one region reported an increase in net profitability over the previous year.

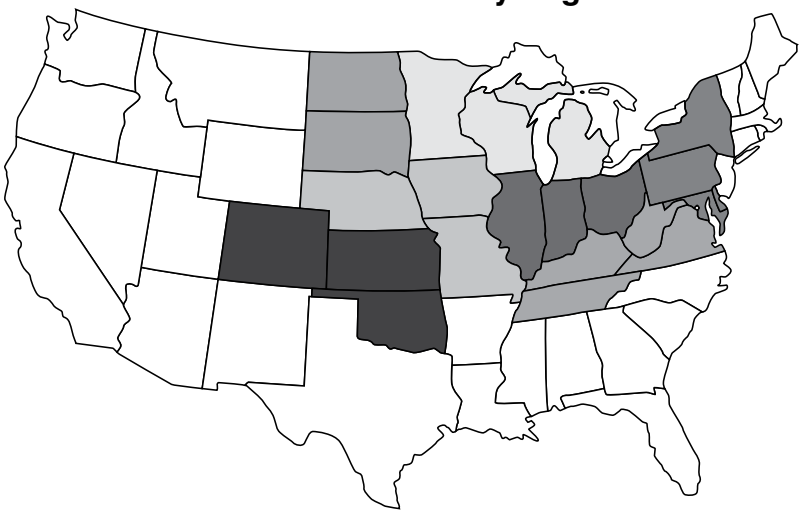
Farmers in the Southern Plains, which comprises Kansas, Oklahoma and Colorado, reported a 7.7% increase in net profitability. This is likely due to the fact many growers in that region saw drought conditions relent with some abundant moisture that led to higher crop yields.

This summary of net profitability is just one of many significant conclusions drawn from this exclusive ag industry survey — the second in an annual report for the Spring Buyer's Directory issue of *No-Till Farmer*'s *Conservation Tillage Guide*.

A 4-page survey was mailed at random in early February to 2,500 subscribers from 22 states around the Midwest and bordering states (See adjacent map.) Nearly 19% completed and returned the survey.

This survey of growers practicing no-till, strip-till and other conservation-tillage practices is the only one of its kind in the United States.

No-Till Practices Survey Regions



- **Eastern Corn Belt (ECB)** — Illinois, Indiana, Ohio
- **Western Corn Belt (WCB)** — Iowa, Nebraska, Missouri
- **Great Lakes (GL)** — Michigan, Wisconsin, Minnesota
- **Southern Plains (SP)** — Kansas, Colorado, Oklahoma
- **Northern Plains (NP)** — South Dakota, North Dakota
- **Northeast (NE)** — New York, Pennsylvania, Maryland, Delaware
- **Appalachia (AP)** — Kentucky, Tennessee, West Virginia, Virginia

Net Income Increase and Total Operating Expenses of the Top Third Yielding Corn, Soybeans and Wheat Growers.

	Average Farm Acres	Average Increase In Net Income (Per Farm)	Average Increase In Net Income (Per Acre)	Average Operating Expenses (Per Farm)	Average Operating Expenses (Per Acre)	Income Increase Vs. Expenses
Total	**1,219**	**($4,831)**	**($3.96)**	**$394,848**	**$323.91**	**-1.2%**
W. Corn Belt	1,166	($1,579)	($1.35)	$405,968	$348.17	-0.3%
E. Corn Belt	1,203	($19,525)	($16.23)	$470,937	$391.47	-4.1%
Great Lakes	960	($2,911)	($3.03)	$273,676	$285.08	-1.0%
N. Plains	2,482	($1,272)	($0.51)	$650,433	$262.05	-0.2%
S. Plains	1,786	$33,634	$18.83	$378,681	$212.03	7.7%
Northeast	679	($9,453)	($13.92)	$308,930	$454.98	-3.1%
Appalachia	781	($5,298)	($6.78)	$323,521	$414.24	-1.6%

Operating Expenses Down

The average farm size of this year's respondents was 1,219 acres, down slightly from the 1,269 acre farm average from last year's survey. It's clear that as grain prices began to drop in 2009, no-tillers took steps on the expense side to cushion an expected drop in net income.

(Table 1 provides an evaluation of 2009 net income and operating expenses.)

While the average farm operating expense in 2008 totaled $427,407 per farm, that number was trimmed to $394,848 in 2009. That represents a decline in operating expenses of $32,559, or nearly 8%.

On a per-acre basis, operating expenses fell from $336.81 per acre in 2008 to $323.91 last year, a drop of $12.90 per acre, or 4%.

This decline for 2009 falls in line with what last year's survey respondents expected would happen, and reflects substantially lower diesel fuel and fertilizer prices vs. 2008 prices.

What do no-tillers anticipate will happen to their operating expenses in 2010? They expect to trim them by another $14,000 on average to $312.32 per acre, or down another 3.5%.

They expect their total fertilizer bill to drop from an average of $67,964 per farm in 2009 to $59,700 in 2010 (12% decline).

Equipment purchases are another expected area of decline from $52,688 in 2009 to $44,151, or a decline of 16%.

"Gypsum use increased from 5% to 10% in 2009..."

However, land rent appears to be the category where no-tillers expect costs to rise the most, from $58,821 per farm in 2009 to $64,661 in 2010 (10% increase).

(Table 2 provides a comparison of crop operating expenses. The 2008-09 operating expenses are actual numbers provided by survey respondents, while the 2010 operating expenses are estimates provided by this year's survey respondents.)

Regional Breakdown

(In Table 3, we've broken down survey results by region so you can compare your operation to the average farm in your area.)

While the average net income fell nearly $5,000 per farm, the Southern Plains was the lone region to experience an increase in net income of $33,534 per farm, or 7.7%.

From data provided, net income seemed to decline the further east you traveled.

Table 2. National Breakdown of Crop Operating Expenses (2008-10)

(Average Total Expenses Per Farm Per Expense Category)

	2008	2009	2010
Fuel	$26,236	$20,718	$19,671
Land Rent	$61,183	$58,821	$64,661
Seed/Seed Treatments	$46,084	$49,437	$52,250
Pesticides	$34,096	$33,572	$30,909
Fertilizer	$75,936	$67,964	$59,700
Lime/Soil Conditioners	$11,752	$10,020	$8,462
Equipment	$63,693	$52,688	$44,151
Machinery Service	$18,467	$16,088	$14,771
Machinery Parts	$16,991	$17,318	$17,660
Precision Equipment	$7,957	$7,503	$6,619
Custom App./Hauling	$13,440	$12,360	$10,187
Labor	$29,105	$26,035	$27,709
Interest	$22,467	$22,324	$23,963
Totals	**$427,407**	**$394,848**	**$380,713**

Table 3. Breakdown of 2009 Crop Operating Expenses by Region

(Average Total Expenses Per Farm Per Expense Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Fuel	**$20,718**	$16,000	$22,844	$12,269	$40,253	$29,348	$21,571	$20,187
Land Rent	**$58,821**	$75,169	$80,974	$40,713	$85,116	$41,373	$22,226	$17,772
Seed/Seed Treatments	**$49,437**	$47,378	$63,204	$34,397	$74,773	$42,591	$30,770	$80,003
Pesticides	**$33,572**	$39,310	$39,375	$20,543	$72,800	$26,975	$20,963	$23,208
Fertilizer	**$67,964**	$58,914	$89,105	$53,177	$92,136	$52,373	$49,623	$94,073
Lime/Soil Conditioners	**$10,020**	$6,904	$14,096	$7,071	$2,500	$21,050	$4,685	$6,667
Equipment	**$52,688**	$62,599	$51,133	$30,376	$127,111	$53,514	$56,343	$19,048
Machinery Service	**$16,088**	$15,401	$19,438	$9,679	$19,200	$18,717	$12,881	$8,025
Machinery Parts	**$17,318**	$15,873	$20,136	$10,204	$36,611	$15,827	$19,200	$21,979
Precision Equipment	**$7,503**	$7,587	$7,843	$7,423	$8,000	$10,750	$5,129	$1,267
Custom App./Hauling	**$12,360**	$9,283	$9,592	$11,365	$14,722	$28,478	$7,385	$4,779
Labor	**$26,035**	$25,538	$30,493	$20,403	$33,611	$18,359	$36,345	$15,567
Interest	**$22,324**	$26,012	$22,704	$16,056	$43,599	$19,328	$21,810	$10,947
Totals	**$394,848**	**$405,968**	**$470,934**	**$273,676**	**$650,432**	**$378.683**	**$308,931**	**$323,522**

The Eastern Corn Belt saw the biggest decrease in net income at $19,525 per farm, or a 4.1% decrease. The Northeast wasn't too far behind with a decline of $9,543 per farm, or 3.1%.

When you break down operating expenses on a per-acre basis, the Southern Plains averaged just $212.03 per acre. However, the Northeast ($454.98) and Appalachia ($414.24) had the highest per-acre averages for operating expenses.

Table 4. Tillage Systems Used to Raise 2009 Crops

	Corn	Soybeans	Grains	Forage	Sorghum	Sunflowers	Other
No-Till	61%	89%	83%	75%	92%	90%	69%
Strip-Till	21%	4%	1%	1%	3%	5%	9%
Minimum-Till	18%	7%	16%	24%	5%	5%	22%

Figure 1. What Tillage Practice Do You Use to Raise Corn?

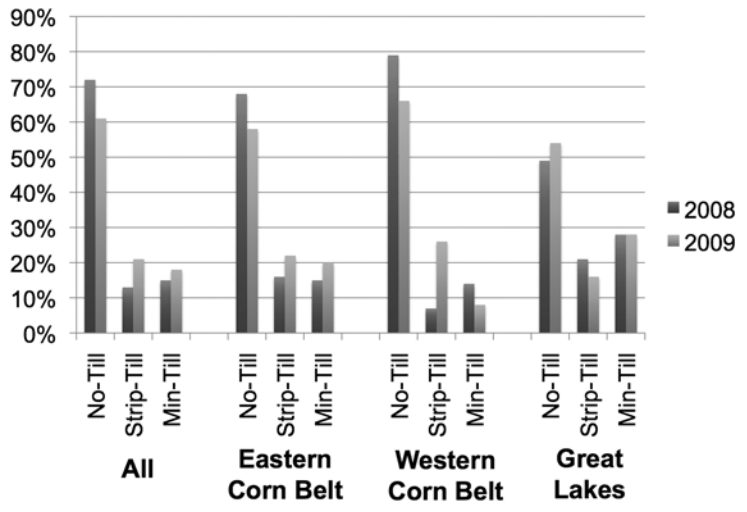


Table 5. The Percentage Gain in No-Till Acreage You Expect to See in Your Area By 2013

	None	1-10%	11-20%	21-40%	More than 40%
All	**17%**	**39 %**	**26%**	**11%**	**7%**
ECB	16%	42%	20%	17%	5%
WCB	13%	47%	25%	8%	7%
GL	24%	38%	26%	6%	6%
NP	28%	22%	22%	22%	6%
SP	8%	37%	41%	8%	6%
NE	20%	31%	31%	7%	11%
AP	28%	28%	27%	6%	11%

Table 6. The Percentage Gain in Strip-Till Acreage You Expect To See in Your Area by 2013

	None	1-10%	11-20%	21-40%	More than 40%
All	**37%**	**39%**	**16%**	**5%**	**3%**
ECB	26%	44%	21%	5%	4%
WCB	49%	30%	12%	6%	3%
GL	31%	46%	19%	0%	4%
NP	29%	41%	12%	18%	0%
SP	33%	54%	8%	5%	0%
NE	61%	12%	18%	9%	0%
AP	67%	22%	0%	0%	11%

Tillage Practices

Of the 471 survey respondents, 97% practice no-till to some extent, but 17% strip-till, 38% minimum-till and 5% still use a moldboard plow. Interestingly, all of the percentages in these categories were higher than a year ago, suggesting that *No-Till Farmer* readers are "diversifying" their tillage practices.

(Table 4 breaks down the tillage practices of No-Till Farmer readers by crop.)

One of the more interesting comparisons occurs with corn, where 61% of respondents say they no-tilled last year. Another 21% strip-tilled and 18% used minimum tillage.

When you compare that to 2008, you find that the percentage of no-tilled corn acres fell from 72% to 61%, while the percentage of strip-tilled corn acres increased from 13% to 21%.

Minimum-tilled corn acres grew slightly from 15% to 18%.

No-tilled small grains also declined from 90% to 83%, while minimum tillage increased from 11% to 16%.

There was no noticeable shift in tillage practices used for soybeans.

(Figure 1 takes a look at the tillage practices used in corn among the top three corn-growing regions — The eastern and western Corn Belts and the Great Lakes. It also shows the shift in tillage practices from 2008 to 2009.)

The percentage of strip-tilled corn has increased substantially among Western Corn Belt readers of *No-Till Farmer* from 7% in 2008 to 26% in 2009. Both no-till and minimum-tilled acres saw declines. Meanwhile, in the Eastern Corn Belt, both strip-tilled and minimum-tilled corn acres increased at the expense of no-till acres.

Only in the Great Lakes did no-till corn acres increase from 49% in 2008 to 54% in 2009. That growth appeared

to come at the expense of strip-till.

No-Till, Strip-Till Growth

We also asked survey respondents to tell us how much growth they anticipate will occur in no-till and strip-till acreage in their area over the next 4 years. When it comes to no-till acres, 65% expect to see an increase of up to 20% in their area over the next 4 years. ***(See Table 5.)***

The Southern Plains is by far the most bullish on no-till, with 78% expecting up to a 20% increase in no-till acres in the next 4 years. The Western Corn Belt follows closely at 72%. In addition, 22% of no-tillers in the Northern Plains expect to see a 21% to 40% growth in no-till by 2013.

Nationally, 18% expect no-till acres will increase by 21% or more in the next 4 years, while 17% expect no growth.

Despite the fact 37% of respondents don't believe they will see any growth of strip-till in the next 4 years, 39% believe strip-till acreage will grow by up to 10% during that time. ***(See Table 6 on Page 32.)*** Another 16% expect 11% to 20% growth by 2013.

Some 65% of Eastern Corn Belt and Great Lakes respondents expect strip-till acreage to grow by up to 20% in the next 4 years. Meanwhile, 54% of Southern Plains respondents expect strip-till acres to grow by up to 10% by 2013 in their area.

It's All In The Yield

So what type of yields are growers experiencing? Since it can be expected that yields vary by region, we've broken down the data by examining average yields based upon tillage methods within each region. Just as in last year's survey, some form of tillage did improve overall yields for corn.

Overall, no-tillers averaged corn yields of 161 bushels per acre, which was a 5-bushel increase over the previous year. ***(See Table 7 for average corn yields by tillage system.)***

However, strip-tillers say they averaged 175 bushels per acre, a 9-bushel increase over 2008, while minimum-tillage growers averaged 166 bushels per acre, a 3-bushel increase.

While most regions followed this trend line, Northeast respondents realized their best yields from no-till was at 164 bushels per acre vs. 150 for both strip-till and minimum-till.

In Appalachia, no-tillers averaged 160 bushels per acre compared with 143 for minimum-tilled corn. There were no strip-tillers who provided an average yield.

"Just because your yields are higher doesn't mean you will be more profitable..."

No-tilled soybeans averaged 50 bushels per acre compared to 45 bushels per acre a year ago. ***(See Table 8 for average soybean yields by tillage system.)***

They trailed strip-tilled soybeans by just 1 bushel (51 bushels per acre) and beat minimum-tilled soybeans, which averaged 47 bushels per acre.

Finally, in small grains, no-till outperformed minimum-till yields by margins of 55 to 48 bushels per acre for spring wheat, 67 to 62 bushels per acre for winter wheat and 74 to 64 bushels per acre for oats.

The Top Corn Yielders

Another way to break down this exclusive data is to look at the attributes of the farms that finished in the top one-third for yield. ***(See Table 9 for details.)***

When we did that, we actually saw that no-tillers among the top one-third averaged 169 bushels per acre and minimum-tilled corn only averaged 165 bushels per acre.

However, those readers strip-tilling who fell in the top one-third for yield averaged 183 bushels per acre.

Here are some trend lines among these high-yielding corn growers:

- They averaged 1,345 acres vs. the survey average of 1,219 acres.
- Since their acreage was higher, it's logical that their total operating costs of $473,436 were also higher than the average of $394,848. However, they anticipate reducing their operating costs in 2010 to $444,742.

Table 7. Average Per-Bushel Yields For Corn

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**161**	175	169	149	151	131	164	160
Strip-Till	**175**	188	180	172	183	149	150	—
Minimum-Till	**166**	182	173	150	163	138	150	143

Table 8. Average Per-Bushel Yields For Soybeans?

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**50**	55	51	42	41	49	53	49
Minimum-Till	**47**	54	50	40	45	60	40	45

Table 9. Net Income Increase and Operating Expenses of the Top-Third Yielding Corn and Soybeans Growers

	Average Farm Acres (Per Farm)	Average Increase In Net Income	Average Increase In Net Income (Per Acre)	Average Operating Expenses	Average Operating Expenses (Per Acre)	Income Increase Vs. Expenses
All	**1,219**	**($4,831)**	**($3.96)**	**$394,848**	**$336.81**	**-1.2%**
Corn	**1,345**	($19,033)	($14.15)	$473,436	$352.00	-4.0%
Soybeans	**1,248**	($3,277)	($2.63)	$477,137	$382.32	-0.6%

Figure 2. Average Acres Cropped by Region

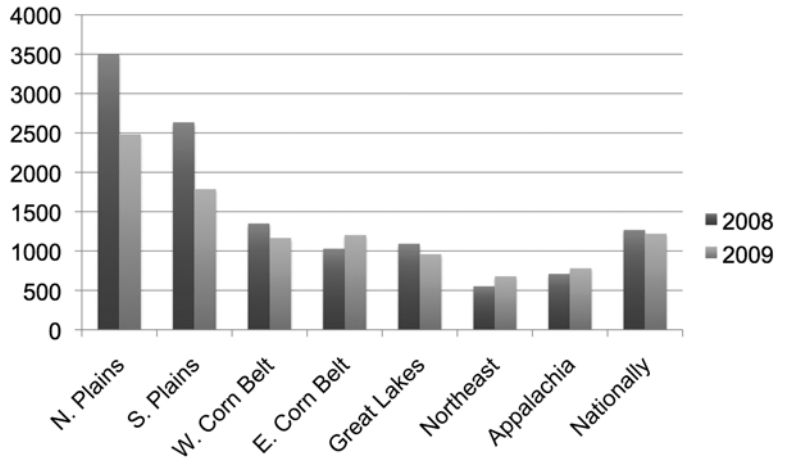


Table 10. Owned, Rented or Share-Cropped Acreage

(Percentage of Growers Within Each Category)

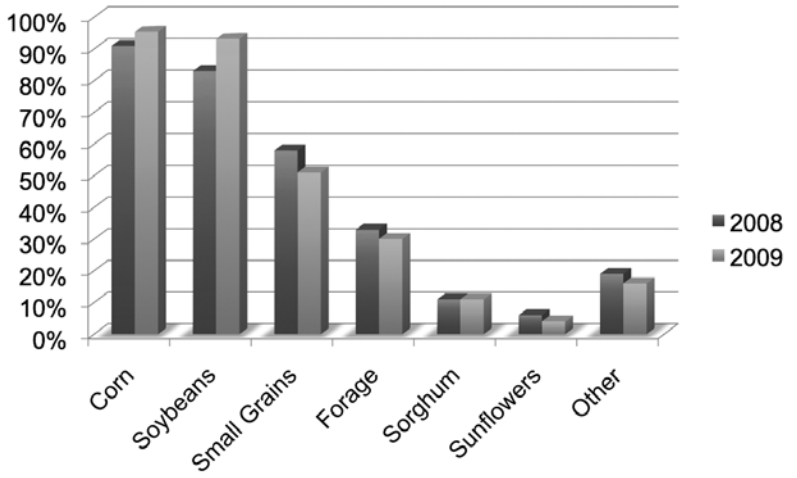
	All	WCB	ECB	GL	NP	SP	NE	AP
Own	**38.5%**	39.0%	36.8%	40.8%	39.2%	39.1%	38.8%	27.8%
Cash Rent	**42.9%**	35.4%	43.9%	56.3%	55.4%	30.8%	59.2%	40.6%
Share Crop	**18.6%**	25.6%	19.3%	2.9%	5.4%	30.1%	2.0%	32.6%

Table 11. How Many Acres Do You Crop?

(Percentage Of Growers Within Each Acreage Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Under 250	**14.8%**	10.8%	13.4%	17.8%	0%	5.9%	36.7%	21.1%
250-499	**23.3%**	21.7%	21.6%	35.6%	0%	17.6%	26.5%	36.7%
500 to 999	**21.1%**	22.9%	21.6%	26.0%	15.8%	13.7%	18.4%	21.1%
1,000-1,749	**21.1%**	25.3%	22.3%	13.7%	31.6%	29.5%	10.2%	15.8%
1,750-2,499	**8.3%**	8.4%	9.6%	5.5%	15.8%	13.7%	4.2%	0%
2,500-4,999	**8.3%**	7.2%	8.3%	1.4%	31.6%	11.8%	2.0%	5.3%
5000 Plus	**3.1%**	3.7%	3.2%	0%	5.3%	7.8%	2.0%	0%

Figure 3. What Crops Do You Grow?



- While the average *No-Till Farmer* reader saw net income decline by about $5,000 last year, or 1% vs. operating expenses, these top-third corn yielders saw a bigger drop of net income at $19,033, or a 4% decline vs. operating costs. That's a drop in net income of $14.15 per acre over 2008 vs. the national average of $4 less per acre.
- They use more tillage with corn than the average *No-Till Farmer* reader. No-till was used on 49% of the acres (61% overall) vs. 25% for strip-till (21% overall) and 26% for minimum tillage (18% overall).
- The combination of the larger decline in net income and the fact this group uses more tillage than the average *No-Till Farmer* reader suggests that just because your yields are higher doesn't mean you will be more profitable.Tillage passes add cost to the bottom line.
- Only 33% in this group used cover crops vs. 40% nationwide; among those using cover crops, nearly 22% of the acres were planted to tillage radish vs. a national average of 14%, while 25% of the cover-crop acreage was in oats vs. 12% nationally.
- They used more precision technology than the average reader, including 48% for yield monitor data analysis (vs. 37% overall); 46% yield mapping (vs. 35%); 42% GPS guidance lightbar (vs. 39%); 34% GPS tractor auto-steer (vs. 31%) and 27% for variable-rate fertilizing (vs. 25%).
- When it came to planter attachments, more used a coulter (55% to 49%); row cleaners (71% to 67%); metering system (53% to 45%); and a down-pressure system (53% to 46%).
- As represented by a higher percentage of minimum-tilled acres, they used more field cultivators (32% to 18%); discs (37% to 21%); soil finishers (19% to 10%); vertical-tillage implements (25% to 14%); and chisel plows (38% to 21%).
- They planted 31,162 seeds per acre vs. 30,130 nationally; and finished with stand counts of 28,898 seeds vs. 28,736 nationally.
- They tend to split their nitrogen

applications more than the average reader, with higher percentages of sidedress, at-plant and spring pre-plant applications. They also diversify the forms of nitrogen they use, with applications of more 28%, 32%, ammonium sulfate and anhydrous ammonia than the average reader. However, urea use is slightly lower than the average.

- More top corn growers applied manure, including 37% to 31% for cattle manure and 13% to 10% for hog manure.
- They made a higher percentage of fall and at-plant applications of phosphorus. They also made a higher percentage of fall and foliar applications of potassium.

The Top Soybean Yielders

In a review of the top one-third of the soybean yielders, their no-till soybean yields of 55 bushels per acre outyielded minimum tillage (48 bushels per acre) by 7 bushels per acre. Strip-tilled soybeans also averaged 55 bushels per acre.

Here are some other observations about this group:

- They averaged 1,248 acres vs. the survey average of 1,219 acres.
- Since their acreage was higher, it stands to reason that their total operating costs of $477,137 were also higher than the average of $394,848. They also anticipate reducing operating costs in 2010 to $443,824.
- While the average *No-Till Farmer* reader saw net income decline by about $5,000 last year, or 1% vs. operating expenses, these top-third soybean yielders only saw a drop in net income of $3,277, or a 0.6% decline vs. operating costs. That's a drop in net income of $2.63 per acre over 2008 vs. the national average of $4 less per acre.
- While this group may not have increased its net income over 2008, they did well to increase yields and maximize the return on their costs.
- Use of cover crops at 38% was more in line with the national average of 40%. Their use of cereal rye at 21% was less than the national average of 27%, while oats as a cover crop was used by 18% vs. 12% nationally.
- Similar to the corn growers, they had a higher adoption rate of precision-tillage tools than the average *No-Till Farmer* reader — GPS lightbars at 44% to 39%; tractor auto-steer at 34% to 31%; yield monitor data analysis at 44% to 37%; and field mapping at 41% to 35%.
- Nearly 54% use a planter to seed soybeans vs. the average of 51%. Those who drill soybeans use a rate of 159,325 vs. 167,024 nationally. However, those who use a planter seed at a rate of 154,993, which is slightly up from the national average of 150,954.
- A higher percentage of the high-yielding one-third of growers will apply phosphorus (63% to 50%) and potassium (60% to 50%) than the average reader. They also tend to make more fall (26% to 18%) and spring pre-plant (39% to 33%), and less at-plant (11% to 17%) applications of fertilizer than the average reader.

Table 12. By Percentage of Your Total Cropping Acres, How Many Acres of the Following Crops Do You Grow?

	All	WCB	ECB	GL	NP	SP	NE	AP
Corn	**40%**	49%	50%	46%	31%	17%	40%	40%
Soybeans	**35%**	41%	42%	37%	37%	18%	24%	40%
Small Grains	**11%**	5%	6%	6%	22%	29%	7%	14%
Forage	**3%**	2%	1%	8%	4%	2%	16%	2%
Sorghum	**4%**	1%	0%	0%	0%	21%	0%	0%
Sunflowers	**1%**	1%	0%	0%	2%	2%	0%	0%
Other	**6%**	1%	1%	3%	4%	11%	13%	4%

Land Use, Farm Size

(Figure 2 offers a look at the average farm size by acreage for each region.)

While average farm size dropped by just 50 acres per farm from the 2008 survey, the Southern Plains, Northern Plains, Western Corn Belt and Great Lakes saw considerable declines in average acreage by 32%, 29%, 14% and 12%, respectively. Meanwhile, the average farm size in the Northeast and Eastern Corn Belt grew by 22% and 14%, respectively.

This year's survey revealed a shift in the amount of farmland owned and rented. Owned farmland fell from 42.7% to 38.5%, while rented land increased from 39.8% to 42.9%.

Share-cropped farmland increased slightly from 17.5% to 18.6%.

On a regional basis ***(Table 10),*** the percentage of owned farmland was pretty close to the national average with the exception of Appalachia, where growers own just 28% of their farmland. Only the Southern Plains and Western Corn Belt farmers owned a higher percentage of farmland.

But the percentage of rented acres was quite high in the Northeast (59.2%), the Great Lakes (56.3%) and the Northern Plains (55.4%).

Regarding share-cropped acres, the Western Corn Belt saw a substantial increase from 15.5% in 2008 to 25.6% in 2009. Appalachia has the highest percentage of share-cropped acres at 32.6%, with the Southern Plains a close second at 30.1%.

(Review Table 11 to compare where the size of your farm fits among your colleagues in your region.)

What They Grow

Regarding the crops raised by survey respondents, 92% raise corn and 90% raise soybeans. ***(See Figure 3 for breakdown of crops grown by survey respondents.)***

Interestingly enough, the percentage of soybean growers increased from 83% in 2008, which came somewhat at the expense of small grains with a decline in growers from 58% to 51%.

Corn accounts for 40% of the acreage of our survey respondents, up slightly from 37% in 2008.

Soybeans increased from 29% to

Figure 4. How Much Nitrogen Do You Plan to Apply Vs. Your Targeted Corn Yield?

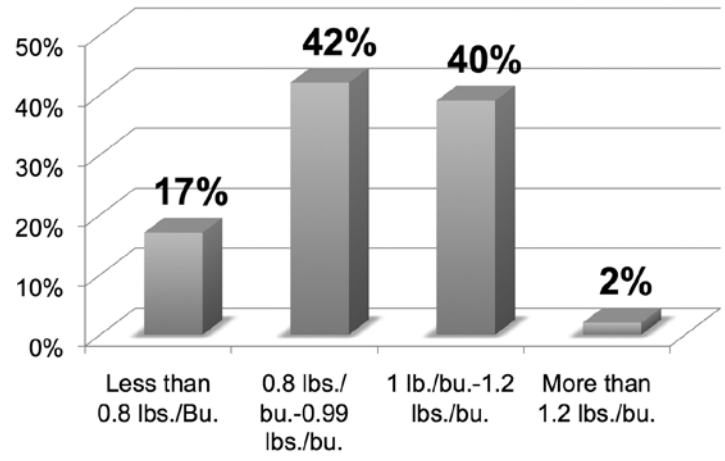


Figure 5. When Will You Make Fertilizer Applications For Your 2010 Corn Crop?

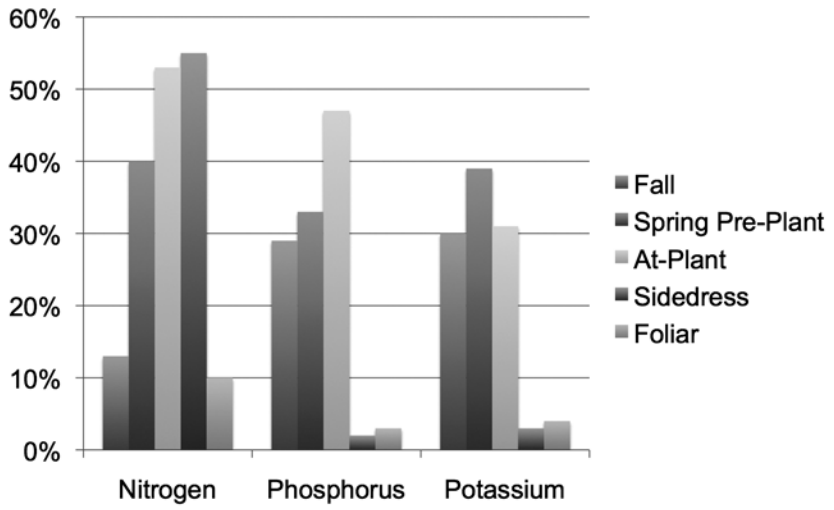
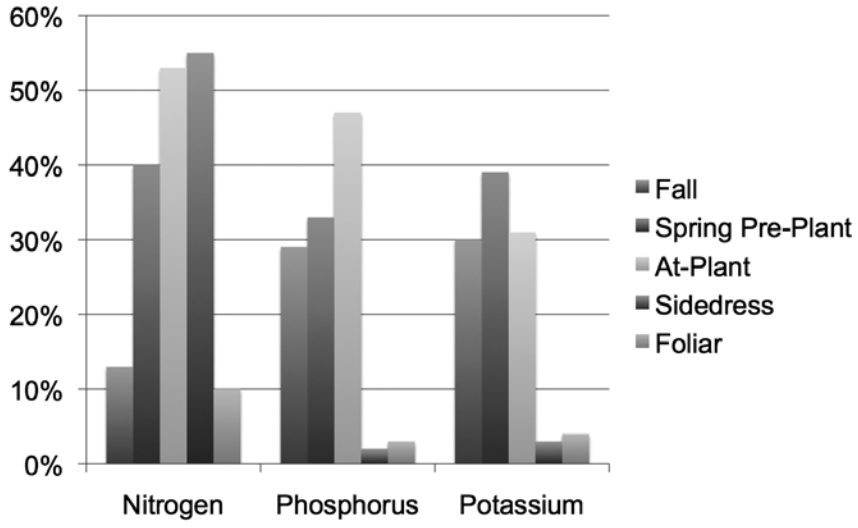


Figure 6. What Fertilizers Will You Apply For The 2010 Soybean Crop?



35% of the acreage, while small grains fell from 19% to 11%.

Among some of the notable changes in crop production by region ***(Table 12)***:

- The percentage of corn and soybean acres increased among Northern Plains' readers of *No-Till Farmer* — from 16% to 31% for corn and 14% to 37% for beans. Small grains dipped from 50% of the acreage to 22%.
- While the percentage of corn acres in the Northeast fell from 56% to 40%, forages increased from 8% to 16%.
- Soybeans jumped from 8% to 18% in the Southern Plains, while small grains slid from 36% to 29%.

Fertilizer For Corn

Among the questions we asked regarding the fertilizer practices of *No-Till Farmer* readers was a new question about how much nitrogen they planned to apply based on corn yield goals. ***(See Figure 4.)***

We found 42% of respondents will apply nitrogen at 0.8 to 0.99 pounds vs. their targeted corn yield goal. That just narrowly edged out the 39% of growers who will apply nitrogen at 1 to 1.2 pounds per bushel of corn.

Nearly 17% of no-tillers will apply less than 0.8 pounds of nitrogen per bushel of corn.

(Figure 5 on Page 28 shows the fertilizer application timing of corn growers for the 2010 crop.)

When it comes to nitrogen applications, 55% will sidedress nitrogen and 53% will apply at-plant nitrogen.

Another 40% will apply nitrogen pre-plant in the spring.

There were some differences regionally. Spring pre-plant was the top choice in the Western Corn Belt, followed by sidedress and at-plant applications.

At-plant was the No. 1 method for nitrogen applications among Great Lakes and Northeast respondents, followed by sidedress and spring pre-plant.

Southern and Northern Plains growers choose spring pre-plant, followed by at-plant and sidedressing.

For phosphorus applications, at-plant is preferred by 47% of survey

respondents, while 33% apply spring pre-plant and 29% apply in the fall.

Western Corn Belt growers planned to utilize spring pre-plant as their top timing for phosphorus applications, followed by fall and at-plant applications.

However, Eastern Corn Belt growers made fall applications their top timing, followed by at-plant and spring pre-plant.

For potassium, spring pre-plant was the preferred method nationally at 39%, followed by at-plant (31%) and fall (30%).

On a regional level, fall was the preferred potassium application time of Eastern Corn Belt growers.

However, Great Lakes, Southern and Northern Plains and Appalachian no-tillers cited at-plant as their top choice.

Fertilizer For Soybeans

Half of the growers surveyed indicated they will apply phosphorus and potassium to the 2010 soybean crop. ***(See Figure 6)*** Another 29% will apply micronutrients and 22% will apply nitrogen.

Spring pre-plant will be the No. 1 timing for fertilizer applications in soybeans, approximately double those of fall, at-plant and foliar applications.

"Interestingly, data suggests that No-Till Farmer readers are "diversifying" their tillage practices..."

Finally, we asked soybean growers whether they planned to use inoculants. ***(Figure 7.)*** Nearly three-quarters (72%) said they would use them.

The Southern Plains and Northeast led the way in the use of inoculants at 95%, followed by the Great Lakes at 89% and the Northern Plains at 82%; only 55% of Eastern Corn Belt growers said they would use an inoculant.

Measuring Micronutrients

Nationally, sulfur and zinc applications were popular with *No-Till Farmer* readers last year, with 52% applying sulfur and 48% applying zinc.

Boron was next at 25% with magnesium (17%) and calcium (14%) close behind. ***(See Figure 8 for micronutrient applications.)***

Among Northern Plains' respondents, 74% applied zinc and 68% sulfur. Great Lakes' growers showed high micronutrient adoption across the board with use rates of 70% for sulfur, 63% for zinc, 46% for boron, 30% for magnesium and 18% for calcium.

Gypsum applications were on the rise. ***(See Figure 9)***. In 2008, just 5% of respondents applied gypsum. That increased to 10% in 2009.

Figure 7. Will You Inoculate Soybeans?

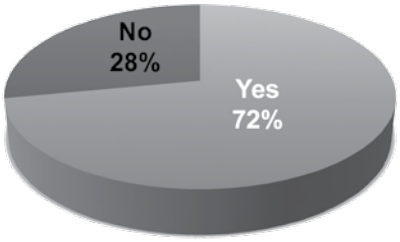


Figure 8. What Micronutrients Did You Apply in '09?

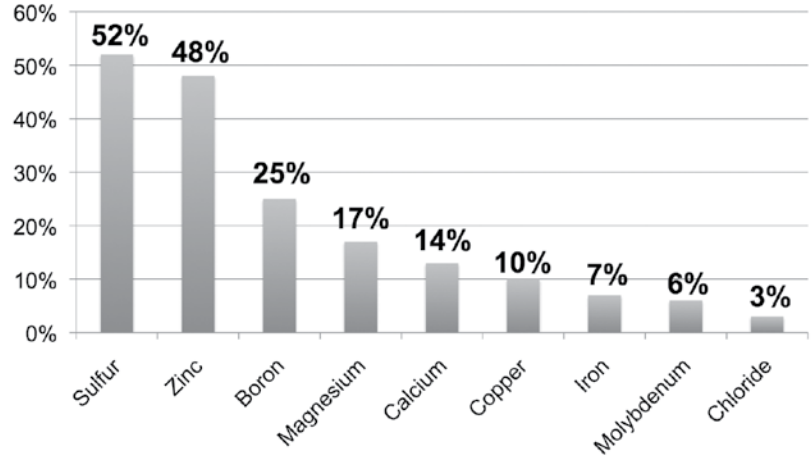


Figure 9. Did You Apply Gypsum?

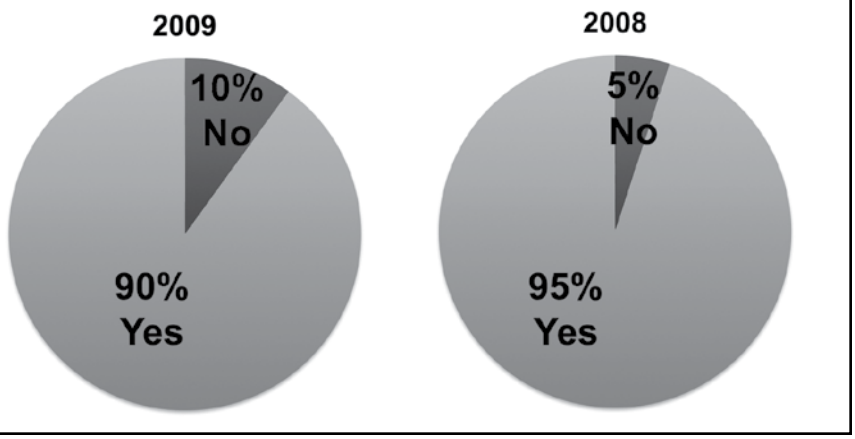


Figure 10. What Brand Corn Planter Do You Use?

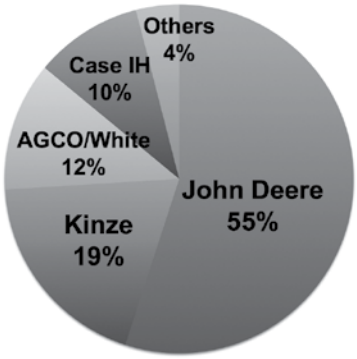


Table 13. What Equipment Do You Own and Use On Your Farm?

Drill	Planter	Chisel Plow	Strip-Till Rig	Combine	S-P Sprayer	P-T Sprayer	Forage Havrester
69%	92%	24%	16%	71%	27%	39%	13%

Table 14. What Attachments Do You Use On Your Planter?

Coulter	Row Cleaners	Closing Wheels	Seed Firmers	Pop-Up Applicator	2x2 Applicaton	Nitrogen Applicator	Metering System	Down-Pressure System
49%	67%	66%	65%	25%	26%	23%	45%	46%

Figure 11. Do You Use A Planter or Drill For Soybeans?

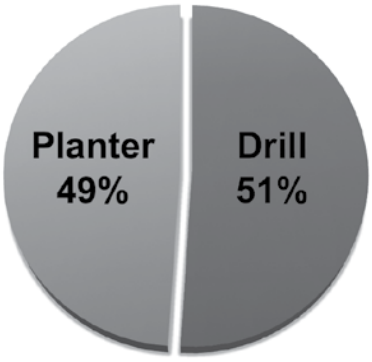
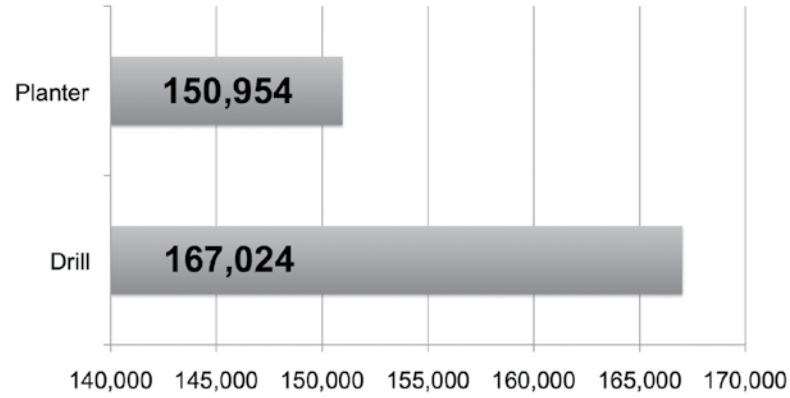


Figure 12. What Is Your Soybean Seeding Rate?



Manure Use

The use of manure by no-tillers did not see substantial changes in 2009.

Some 31% of survey respondents applied cattle manure last year compared to 27% in 2008; 10% used hog manure, up slightly from 8.5% in 2008.

Poultry manure, however, saw a drop in use from 12% to 9% last year.

Equipment Selection

Tractors, planters and sprayers were the three leading equipment purchases for the 2010 cropping season by 14% of respondents each. Another 11% planned to buy a combine.

When it comes to the equipment that *No-Till Farmer* readers own and utilize, 92% operate their own planter, 71% own a combine, 69% own a drill and 66% operate a sprayer. ***(See Table 13.)***

Following are some deviations from the national statistics by region:

Western Corn Belt — Only 45% own a drill.

Eastern Corn Belt — Nearly 96% own their own planter.

Great Lakes — 76% of no-tillers own their own sprayer, 96% own a planter and 76% own a drill.

Southern Plains — 89% of respondents own a drill.

Northern Plains — 26% own a strip-till rig, which beats the national average of 17%.

Appalachia — 74% of no-tillers own and operate a sprayer and 79% own and operate a combine.

John Deere was the top brand of corn planter owned at 55%, followed by Kinze (19%),White (12%) and Case IH (10%). ***(See Figure 10.)***

When it came to soybean planters or drills, John Deere led at 52% followed by Kinze (13%), and Great Plains and Case IH (10% each).

At 30%, 12-row planters were tops followed by six-row units (25%).

Nearly 83% of the corn is planted in 30-inch rows. A 15-foot drill was used by 44% of respondents.

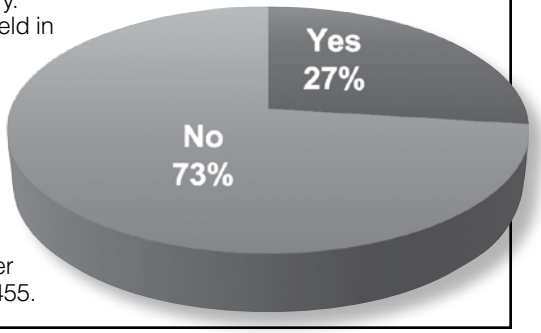
Row cleaners (67%), closing wheels (66%) and seed firmers (65%) were used by two-thirds of the

27% Have Attended The NNTC

Just more than a quarter of *No-Till Farmer* readers have attended the National No-Tillage Conference, which annually provides no-tillers with 4 days of highly intensive no-till and strip-till learning opportunities from the most knowledgeable speakers in the agricultural industry.

The 19th annual event will be held in Cincinnati, Ohio, from Jan. 12-15, 2011, at the Hilton in downtown Cincinnati. Until June 30, you can get our lowest available rate at $219, plus only $189 for additional farm or family members. This is a $30 savings off the regular rate.

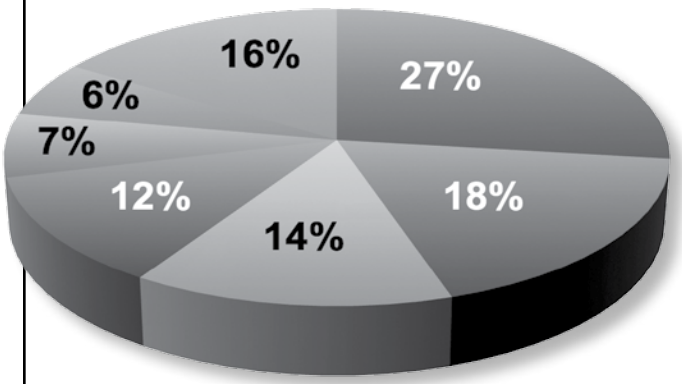
Visit *www.NoTillConference.com* for more details and to register online, or call toll-free (866) 839-8455.



Cover Crop Usage Declines in 2009-10

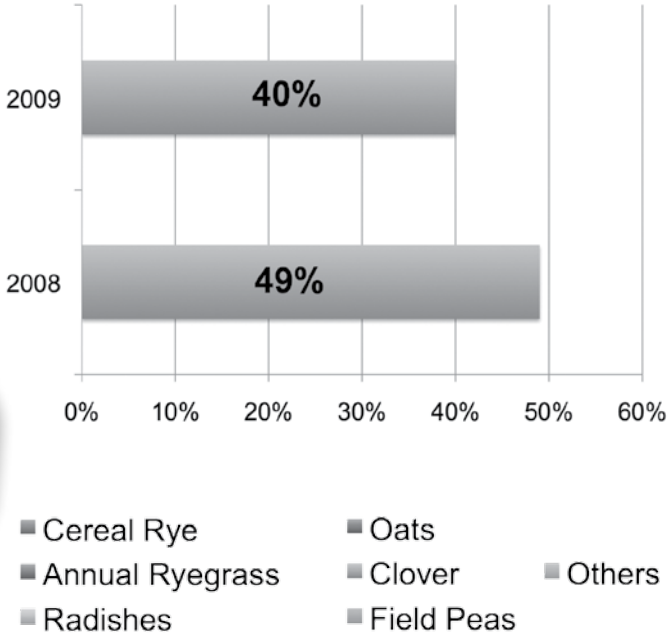
While cover crops continue to draw strong interest from no-tillers, last year's wet fall and difficult harvest likely led to a reduction in cover crop usage. While 49% of *No-Till Farmer* readers used cover crops on a percentage of their acres in 2008-09, only 40% did so in 2009-10.

Cereal rye remains the most-used cover crop at 27% of acreage, but that was down from 41% last year. Annual ryegrass was next at 18% and radish followed at 14%, which was up from 4% the previous year.



Cover Crops Raised In 2009-10 By Percentage Of Total Acres

Percentage Of Growers Who Planted Cover Crops



respondents, while coulters (49%) were used by just less than half of those surveyed. ***(See Table 14.)***

Minimum-tillage tools are still found on *No-Till Farmer* reader's farms, with 21% using both discs and chisel plows and 18% using field cultivators. Another 14% use some type of vertical-tillage tool.

Precision Adoption

Many *No-Till Farmer* readers use precision technology on their farm, including GPS guidance with lightbars by 39% and GPS tractor autosteer by 31%. It turns out that 10% are using both technologies.

Some other notable adopted precision practices include yield monitor data analysis (37%), field mapping (35%) and variable-rate fertilizing (25%).

Seeding Rates

We also asked *No-Till Farmer* readers about their seeding rates. For corn, the average planting population is 30,130 seeds per acre with a final stand average of 28,736.

Seeding rates ranged from 32,877 in the Great Lakes to 23,158 in the Southern Plains.

For soybeans, 51% of respondents used a no-till drill, while 49% planted soybeans. ***(See Figure 11.)*** Two-thirds (67%) of Western Corn Belt soybean growers use a planter, while 65% of Northern Plains' soybean growers use a drill.

Nationally, drill operators used an average seeding rate of 167,024 seeds per acre compared to 150,954 for planter operators. ***(See Figure 12.)***

No-Till Farmer Readers Get A Little Older

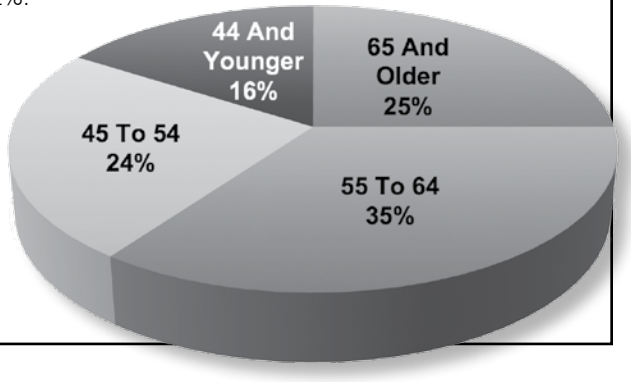
Call them mature and experienced, if you'd like, but 84% of *No-Till Farmer* readers are 45 years old or older. This is slightly higher than last year's survey when 79% of respondents fit that criteria.

The 55-to-64 age bracket once again contains the most farmers at 35%, up from 30% a year ago. Nearly 25% of our readers in this survey were 65 or older, while 24% were between the ages of 45 and 54. That leaves just 16% of respondents under the age of 45.

Nearly 90% of Eastern Corn Belt farmers were age 45 or higher, while the Northern Plains showed just 68% of respondents in that age group.

The 55-to-64 age group had the highest percentage of farmers in five of the seven regions surveyed. However, the largest age group in the Southern Plains was 65 or older at 35%, while the 45-to-54 age bracket had the most growers in the Northern Plains at 32%.

Age Of *No-Till Farmer* Readers



SECTION 5 — 2008

No-Tillers, Strip-Tillers Came Out Money Ahead in 2008

Despite high input costs, No-Till Farmer readers realized an increase in net income of 13% against their total crop operating expenses.

By Darrell Brugginк, Managing Editor/Publisher

While many industries saw an economic downturn in the latter half of 2008, the average farmer practicing conservation tillage finished with a solid year.

Even in the face of higher input costs for items like diesel fuel, fertilizer and seed, the average U.S. farmer saw an increase in their net income by $62,125 in 2008 vs. 2007.

That's just one of the many significant conclusions drawn from results tabulated out of the recent No-Till Practices Survey that was conducted at the start of 2009.

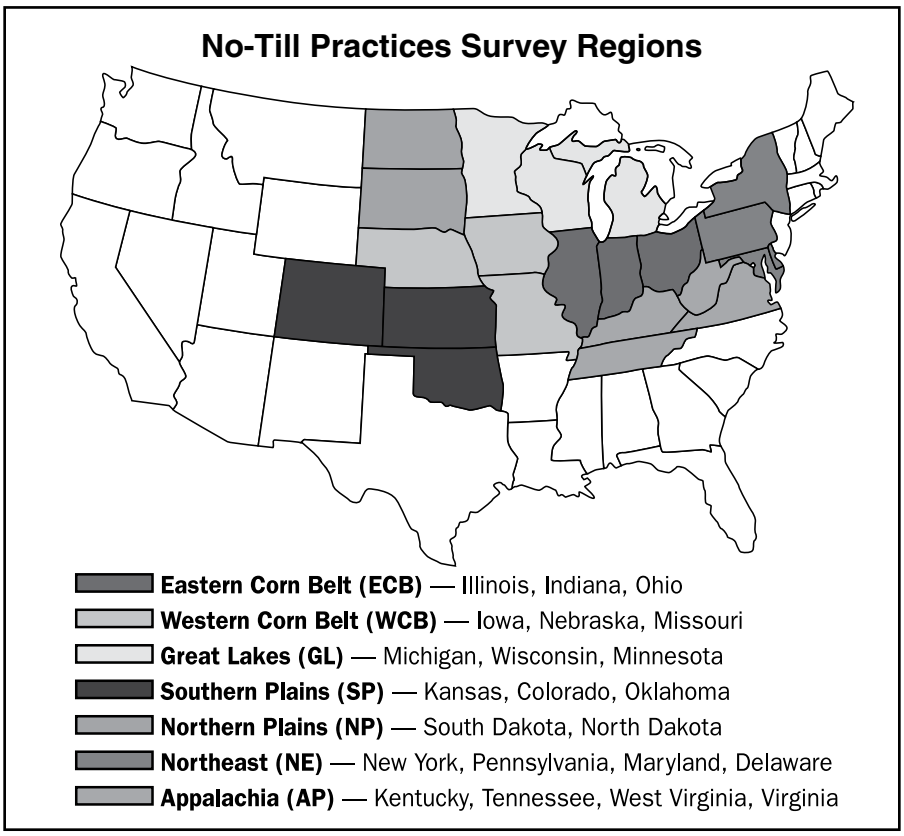
This exclusive ag industry survey — the first in what we plan to conduct annually for the Spring Buyer's Directory issue of *Conservation Tillage Product Guide* — is drawn from a random sample of *No-Till Farmer* subscribers from 22 states around the Midwest and bordering regions.

A 4-page survey was mailed in early February to 2,500 subscribers and 549 responded, representing a return rate of 22%.

This ag industry survey of growers practicing no-till, strip-till and other conservation-tillage practices is the only one of its kind in the United States.

Thanks to high grain prices, farmers were able to offset high input costs that led to average total operating expenses of $427,407 in 2008.

Considering the average farm size of our 549 respondents was 1,269 acres, the average increase in net income in 2008 vs. 2007 was $48.96 per acre against total crop operating expenses on average of $336.81 per acre.



Evaluation of 2008 Net Income and Operating Expenses

	Average Farm Acres	Average Increase In Net Income (Per Farm)	Average Increase In Net Income (Per Acre)	Average Operating Expenses (Per Farm)	Average Operating Expenses (Per Acre)	% Income Increase Vs. Expenses
Total	**1,269**	**$62,125**	**$48.96**	**$427,407**	**$336.81**	**13%**
W. Corn Belt	1,351	$84,630	$62.64	$468,034	$346.44	15%
E. Corn Belt	1,031	$54,436	$52.80	$450,943	$437.38	11%
Great Lakes	1,093	$57,956	$53.02	$322,105	$294.70	15%
N. Plains	3,498	$144,875	$41.42	$776,118	$221.87	16%
S. Plains	2,634	$52,096	$19.79	$505,798	$192.03	9%
Northeast	553	$29,751	$53.80	$303,132	$548.16	9%
Appalachia	711	$19,490	$25.28	$258,463	$363.52	7%

Table 1. This table shows the average overall net increase in farm income in 2008 vs. 2007 and the average net increase per acre; the average total farm cropping operating expenses vs. the average per-acre expenses; and finally shows the percentage of that net increase in income to total operating expenses.

As a result, growers on average increased their net income by 12.7% of their total crop operating expenses.

While the bad news for 2009 is that grain prices have fallen well off mid-'08 highs, growers expect some softening of expenses in 2009, including 17% declines for diesel fuel and slightly lower land rents and fertilizer expenses.

However, they expect their seed costs to increase on average by 24% in 2009.

Region, Acreage Makes A Difference

Differences in the financial outcomes of farms in 2008 could clearly be seen when you broke out the data based on location. ***(See Table 1.)***

Therefore, we broke down survey results by regions ***(see map above)*** so you could compare your operation to the average farm in your region.

While the average increase in net income from 2007 to 2008 among all respondents was $62,125, farmers in the Northern Plains saw the largest total increase in net income at $144,875 on average. Meanwhile, Appalachian growers saw an increase in net income of only $19,490 over the previous year.

Variability by region was also considerable for total crop operating expenses.

While the average among all 549 respondents was $427,407, the region that saw the greatest gain in net income — the Northern Plains — also had the highest total operating expenses at $776,118.

Meanwhile,Appalachia came in at just $258,463.

Digging into the numbers further, the higher increases seen in the Northern Plains, in both increased net income and total crop operating expenses, can partly be attributed to the fact the average acreage of a Northern Plains farm at 3,498 is much larger than most of the regions.

Only the Southern Plains comes close at 2,634 acres. ***(See Figure 1 for acreage breakout by region.)*** Meanwhile, the average farm in the Northeast is just 553 acres.

If you break down these economic numbers on a per-acre basis, you find that the Northeastern farmer enjoyed a greater increase in net income ($53.80 per acre) than the Northern Plains grower ($41.42 per acre).

This occurred despite the fact that a Northeastern farmer's crop operating expenses per acre ($548.16) was nearly 2.5 times more than that of the Northern Plains farmer ($221.87 per acre).

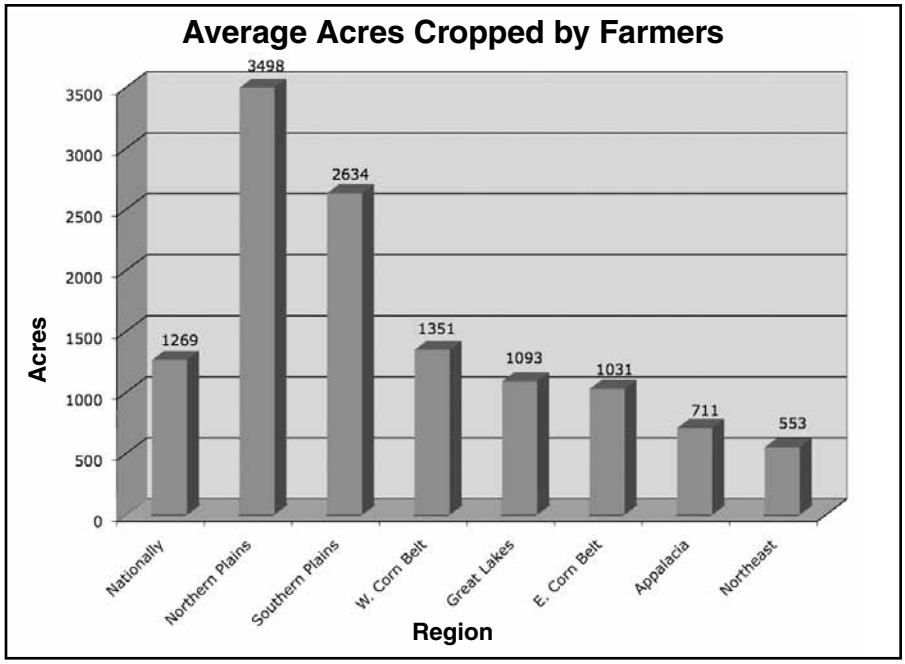


Figure 1. The average acres farmed nationally and in each region.

Breakdown of 2008 Crop Operating Expenses

(Average Total Expenses Per Farm Per Expense Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Fuel	**$26,236**	$28,200	$22,540	$18,271	$85,872	$27,465	$19,206	$30,497
Land Rent	**$61,183**	$74,974	$70,231	$62,070	$91,595	$66,775	$25,271	$12,831
Seed/Seed Treatments	**$46,084**	$59,804	$50,297	$39,794	$79,472	$34,215	$28,154	$15,745
Pesticides	**$34,096**	$38,388	$30,509	$26,774	$81,093	$44,468	$30,676	$19,789
Fertilizer	**$75,936**	$78,142	$94,302	$55,160	$149,201	$81,015	$43,738	$29,394
Lime/Soil Conditioners	**$11,752**	$11,425	$19,640	$4,548	$0	$15,000	$7,366	$5,043
Equipment	**$63,693**	$71,576	$53,364	$34,998	$124,085	$92,791	$51,719	$78,613
Machinery Service	**$18,467**	$22,928	$14,506	$11,631	$32,450	$24,665	$17,069	$9,500
Machinery Parts	**$16,991**	$17,540	$19,301	$8,028	$44,005	$21,018	$11,435	$9,343
Precision Equipment	**$7,957**	$8,444	$7,431	$6,935	$7,657	$10,738	$6,445	$0
Custom App./Hauling	**$13,440**	$14,648	$13,397	$9,382	$13,957	$31,620	$7,475	$4,054
Labor	**$29,105**	$25,260	$34,190	$18,617	$32,483	$31,817	$35,450	$33,094
Interest	**$22,467**	$21,704	$21,235	$25,896	$34,248	$24,211	$19,128	$10,560

Table 2. Here is the breakdown of individual line item operating costs both nationally and regionally.

Finally, if you look at which regions were most efficient at increasing their net income vs. their total crop operating expenses, the Northern Plains, the Western Corn Belt and the Great Lakes led with an increase in net income that was 16%, 15% and 15%, respectively, of their total crop operating expenses for 2008.

Meanwhile, the Appalachian region came in at just 7%.

Table 2 offers a breakdown of the average operating expenses nationally vs. each of the regions.

Land Use, Farm Size

When it comes to the land that farmers earn their living from, the number of owned acres to rented acres is nearly identical. ***(See Table 3.)*** Just less than 43% of the farmed acreage is owned, while nearly 40% is rented. Another 17.5% is share-cropped.

Not only do Northern Plains' growers farm the most ground, but they also farm on the highest percentage of owned acres at 60%.

However, in the Great Lakes and Northeast, those region's farmers rent a much higher percentage of their cropland at 61% and 57%, respectively.

The highest percentage of share-cropped acres by far is in the Southern Plains at 37%.

The size of a grower's farm varies considerably by region. ***(See Table 4.)*** The Northern Plains led in farms with more than 5,000 acres with 21% of respondents. In fact, 96% of growers in that region had farm acreage of 1,000 acres or more.

The Southern Plains saw 35% of its respondents with farm acreage between 2,500 and 4,999 acres.

On the other end of the spectrum, 42% of the farms in the Northeast were less than 250 acres in size and 89% had less than 1,000 acres. Appalachia placed 41% of its farms in the 250 to 499 acre range.

The Great Lakes and Eastern Corn Belt saw a fairly even split in farms ranging from 250 to 1,799 acres. The Great Lakes saw 73% of its farms in that range and the Eastern Corn Belt came in at 66%.

The Western Corn Belt saw nearly half of its acreage in farm sizes of 500 to 1,799 acres at 49%.

Owned, Rented or Share-Cropped Acreage On Average

(Percentage of Growers Within Each Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Own	**42.7%**	46.1%	35.0%	36.2%	60.3%	40.3%	41.3%	39.7%
Cash Rent	**39.8%**	38.4%	40.3%	60.5%	36.4%	23.1%	56.6%	35.5%
Share Crop	**17.5%**	15.5%	24.7%	3.3%	3.3%	36.6%	2.1%	24.8%

Table 3. The percentage of crop acreage that's owned, rented or share-cropped.

How Many Acres Do You Crop?

(Percentage Of Growers Within Each Acreage Category)

	All	WCB	ECB	GL	NP	SP	NE	AP
Under 250	**16.4%**	11.1%	16.7%	12.0%	0%	0%	41.9%	23.5%
250-499	**18.7%**	13.5%	20.7%	28.0%	0%	4.3%	21.6%	41.2%
500 to 999	**23.7%**	28.6%	24.7%	21.3%	4.2%	13.0%	25.7%	23.5%
1,000-1,749	**19.1%**	20.6%	21.3%	24.0%	25%	28.3%	5.4%	0%
1,750-2,499	**9.5%**	11.9%	8.0%	9.3%	29.2%	15.2%	2.7%	5.9%
2,500-4,999	**10.1%**	12.7%	8.0%	2.7%	20.8%	34.8%	1.4%	5.9%
5000 Plus	**2.4%**	1.6%	0.7%	2.7%	20.8%	4.3%	1.4%	0%

Table 4. Here are percentage of farms that fit in specified acreage categories both nationally (All category) and across individual regions.

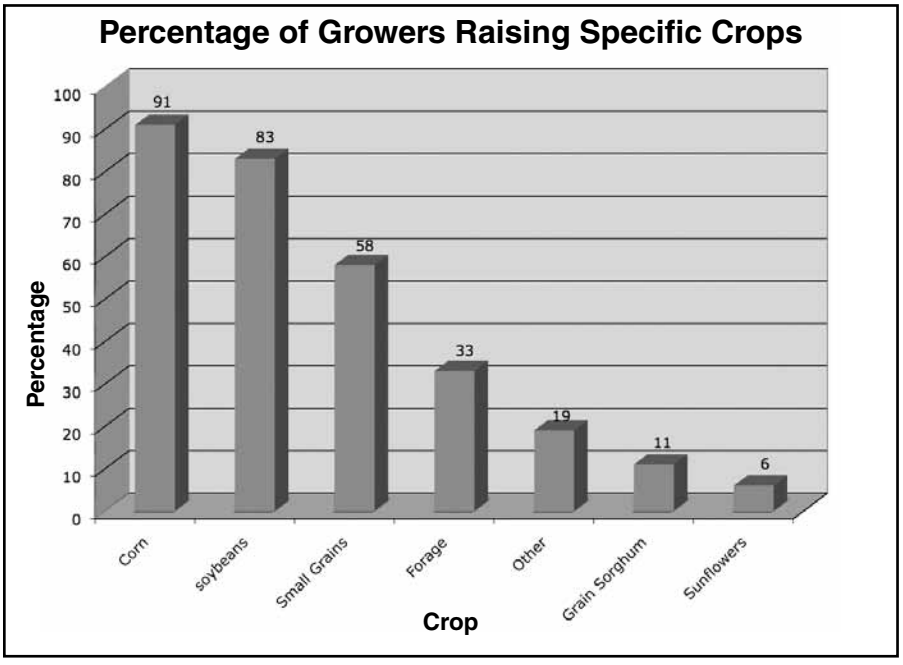


Figure 2. Here's the percentage of growers that say they raise the indicated crops.

What They Grow

Regarding crops grown ***(Figure 2)***, 91% of respondents say they raise corn and 83% grow soybeans. Small grains were grown by more than half of those, coming in at 58%. Forage crops were raised by 33%.

Table 5 shows a percentage of the crop acreage raised vs. total acreage for each region.

Overall, 37% of the acreage in the survey is grown for corn, with soybeans at 29%. Small grains represent 19% of the acreage.

The Northeast led the way for the highest percentage of acreage grown to corn at 56% likely due to the number of dairy and other livestock farms in the region.

The Western and Eastern Corn Belts, Great Lakes and Appalachian regions were all above average for the

percentage of acreage grown in corn and soybeans.

To no surprise, both the Northern and Southern Plains put most of its acreage in small grains at 50% and 36%, respectively. Forage acreage was above the average in the Northeast and Appalachia.

Grain sorghum was 22% of the acreage in the Southern Plains, while sunflowers captured 7% of the acreage in the Northern Plains.

Tillage Practices

Of the 549 respondents to the No-Till Practices Survey, more than 93% practice no-till on their farm.

Some type of one-pass tillage is practiced by more than 30% of respondents, while another 13% practice strip-till, predominantly used only on corn acreage.

Just fewer than 4% say they practice moldboard plowing.

No-till is practiced by more than 90% of growers in all 7 regions.

When asked to estimate the percentage of no-till growth in their area during the next 4 years ***(Table 6),*** only 15% said they did not expect any further growth.

However, 37% said they expect up to 10% acreage growth, with another 21% expecting 11% to 20% growth.

Strip-till appears to be gaining momentum with 17% of both Southern Plains and Great Lakes growers and 16% of Eastern Corn Belt growers currently using the practice.

While 42% said they did not expect any growth in strip-till in their area, there were some similarities on growth potential between strip-till and its no-till cousin.

Some 35% of respondents ***(Table 7)*** expect up to 10% acreage growth in strip-till during the next 4 years and 23% anticipate 11% to 20% acreage growth.

Current one-pass tillage usage shows some wider use variances by region.

For example, 44% of growers in the Great Lakes say they practice some type of one-pass tillage other than strip-till. The Eastern Corn Belt was also above the average at 36%.

But Northern Plains' survey respondents said they were not using one-pass tillage at all, while the Southern Plains was at 20% and Appalachia was at 21%.

Where are we most likely to see growth in no-till?

The percentage of all respondents who anticipate up to 20% growth in no-till acreage was 57%. The Northern Plains and Eastern Corn Belt exceeded that level at 63%.

Nationally, 28% said they anticipate no-till acreage growth of 21% or more. The most optimistic regions were the Southern Plains (34%), Appalachia (31%) and the Northeast (30%).

Where might we see the most growth in strip-till acreage?

While 51% of all respondents say they anticipate strip-till acreage to grow up to 20% in the next 4 years, the Northern Plains at 59% and Great Lakes at 58% led the pack.

Nationally, only 7% said they expect strip-till acres to grow by 21%

By Percentage of Your Total Cropping Acres, How Many Acres of the Following Crops Do You Grow?

	All	WCB	ECB	GL	NP	SP	NE	AP
Corn	**37%**	45%	45%	43%	16%	19%	56%	39%
Soybeans	**29%**	34%	45%	38%	14%	8%	20%	38%
Small Grains	**19%**	12%	7%	12%	50%	36%	9%	13%
Forage	**4%**	5%	2%	4%	4%	3%	8%	7%
Sorghum	**4%**	1%	0%	0%	1%	22%	0%	1%
Sunflowers	**2%**	0%	0%	1%	7%	2%	0%	0%
Other	**5%**	3%	1%	2%	8%	10%	7%	2%

Table 5. Here's the percentage of total cropping acres raised for a specific crop both nationally ("All" category) and in each individual region.

The Percentage Gain in No-Till Acreage You Expect to See in Your Area by 2012.

	None	1-10%	11-20%	21-40%	More than 40%
All	**15%**	**31%**	**26%**	**14%**	**14%**
ECB	10%	35%	28%	14%	13%
WCB	20%	33%	22%	13%	12%
GL	16%	37%	21%	13%	13%
NP	12%	42%	21%	4%	21%
SP	14%	25%	27%	18%	16%
NE	12%	21%	37%	19%	11%
AP	19%	44%	6%	19%	12%

Table 6. Growers nationally and by region told us the percentage of acreage growth they expect to see for no-till in their area during the next several years.

The Percentage Gain in Strip-Till Acreage You Expect to See in Your Area by 2012.

	None	1-10%	11-20%	21-40%	More than 40%
All	**42%**	**32%**	**19%**	**5%**	**2%**
ECB	39%	35%	18%	6%	2%
WCB	41%	31%	22%	6%	0%
GL	33%	35%	23%	4%	5%
NP	41%	41%	18%	0%	0%
SP	33%	30%	21%	7%	9%
NE	57%	29%	8%	4%	2%
AP	70%	15%	15%	0%	0%

Table 7. Growers nationally and by region told us the percentage of acreage growth they expect to see for strip-till in their area during the next several years.

or more during the next 4 years.

The Southern Plains was well ahead of the curve at 16% with the Great Lakes next at 9%.

And how about the growth of one-pass tillage methods?

Some 51% of Southern Plains growers say they anticipate an increase of up to 20% more acres in one-pass tillage in the next 4 years. This compares to just 36% nationally.

The Great Lakes and Eastern Corn Belt sees acreage increases of 21% or more in one-pass tillage at 25% and 23%, respectively, above the national average of 17%.

Fertilizer Practices

We also asked growers to tell us when they make fertilizer applications.

For nitrogen, phosphorus and potassium, we gave growers five application timings to choose from — fall, pre-plant, at-plant, sidedress and foliar.

It's important to note that not all growers made applications of phosphorus or potassium in 2008.

At-plant applications of nitrogen and phosphorus were most popular among growers with 54% applying nitrogen and 40% making phosphorus applications at-plant.

For nitrogen, 40% apply sidedress, 31% pre-plant and 23% in the fall. Only 5% make foliar applications of nitrogen.

Fall applications of phosphorus were made by 23% of growers and pre-plant applications were made by 15%.

When it comes to potassium, 24% applied in the fall, 17% at-plant and 16% pre-plant.

Only 41% of growers surveyed made applications of lime, with 52% of those calcitic, 38% dolomitic and 10% indicating another source of lime.

Among other nutrients, 45% and 44% of growers applied zinc and calcium, respectively.

Boron was applied by 18%, magnesium by 14% and calcium by 13%.

Only 5% of growers applied gypsum.

Some 40% of respondents said they applied manure as a source of fertilizer.

Of that total, 69% used cattle manure, 31% poultry and 22% hog manure. Another 7% said they used some other source of manure.

Of those who applied manure, 93% broadcasted it and 16% injected it. Most applied it in the fall (73%), with 64% in spring and 48% in winter.

Some 87% applied manure into residue, 36% applied it into a cover crop and 11% applied it into a tilled field.

All About Yield

So what type of yields are growers experiencing? Since it can be expected that yields will vary by region, we thought we'd break down the data by examining average yields based upon tillage methods used within each region.

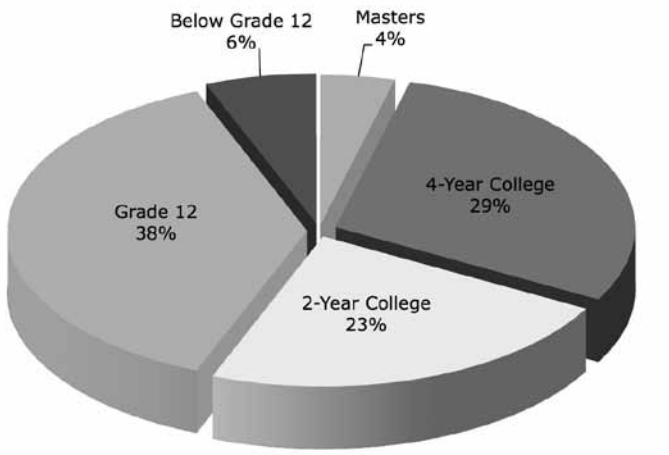
When it comes to corn, it appears that some form of one-pass tillage helped provide better average yields overall. ***(See Table 8.)*** No-till corn yields averaged 156 bu./A, while strip-till came in at 166 bu./A and one-pass tillage averaged 163 bu./A.

However, the Eastern Corn Belt and the Northeast saw little variability in corn yields between the three tillage systems. For example, in the Eastern Corn Belt, average no-till corn yields (172 bu./A) matched one-pass tillage and beat strip-till (168 bu./A).

In the Western Corn Belt, one-pass tillage only beat no-till by just 2 bu./A (169 to 167 bu./A).

However, strip-till yields of 182

Education Levels Achieved by Farmers



EDUCATED. 56% of farmers have 2- or 4-year post-secondary degrees.

More Farmers Fitting In Older Age Bracket

One of the things you'll notice about survey respondents is that a greater percentage of farmers are in an older age bracket.

Nearly 79% of the 549 respondents were age 45 or older, with 30% of growers in the 55-to-64 age bracket.

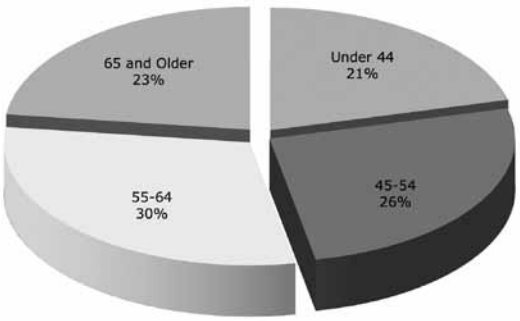
Appalachian growers were much younger, on average, with 37% age 44 or younger. The Northeast was also younger, on average, with 28% in the under-44 bracket.

Conversely, 89% of Southern Plains' respondents were 45 years or older.

The 65-and-over group was the largest in the Western Corn Belt at 27.3% just ahead of the 55-to-64 bracket (26.6%).

At 40%, the 45-to-55 age group was the largest for the Great Lakes region.

Age of Respondent



bu./A were significantly greater than either no-till or one-pass tillage.

Strip-till corn yields also saw a substantial advantage over no-till in the Great Lakes (154 to 139 bu./A); Northern Plains (161 to 120 bu./A); and the Southern Plains (171 to 95 bu./A), though a smaller data pool in those two Plains regions may not be giving the most accurate representation of corn yields.

When it came to soybean yields ***(Table 9)***, no-till yields (45 bu./A) were basically a statistical dead heat with one-pass tillage yields (46 bu./A).

No-tilled soybeans outyielded one-pass tillage in the Western Corn Belt and the Northeast, while one-pass tillage showed an advantage in the Eastern Corn Belt, Great Lakes and Southern Plains.

In Table 10, no-tilled wheat yields at 62 bu./A beat one-pass tillage yields of 58 bu./A.

The Eastern Corn Belt, Great Lakes and Northeast all saw higher no-till wheat yields, while the Western Corn Belt and Northern Plains saw a slight advantage with one-pass tillage.

The Top Corn Yielders

Another way to further break down the yield data was to take all of the growers for each particular crop and break them into groups of three: the highest-yielding one-third; the middle-yielding third; and the lowest-yielding third.

Our goal was to see if the data would reveal certain characteristics of the top-third in corn yield.

First, it was interesting to note that among this top-yielding third, they appeared to use multiple tillage systems. When asked what tillage practices they used, their responses put them above the total respondents' average percentage for no-till (96.8% to 93.4% national average); strip-till (25.6% to 13.2%); and one-pass tillage (51.9% to 30.4%).

They also used more tillage on their farm than the national average.

No-till was used on 71% of their acreage vs. 81% nationwide, with strip-till nearly double at 9% vs. 5%. One-pass tillage saw a 6% increase in acreage.

However, whereas yields of strip-till and one-pass tillage beat no-till nationally, this group saw average no-till corn yields of 178 bu./A vs. strip-till yields of 171 bu./A and one-pass tillage yields of 168 bu./A.

Here are some other interesting items of note about the top-third corn yielders in the survey when compared to the average respondent:

- Regarding cover crops, 47% used a cover crop vs. 49% nationally; however, they used cover crops on 86% of their acreage vs. 70% nationally. Annual ryegrass was used by 32% of these growers vs. 19%.
- When it came to planter attachments, more used a coulter (55% to 49%), seed firmer (76% to 69%), down-pressure system (46% to 39%), and row cleaners (74% to 65%) than the average grower.
- More used some type of tillage tool, including a cultivator (22% to 14%), a finisher (15% to 7%), a chisel plow (18% to 11%), a disc (29% to 16%) and a vertical tillage tool (10% to 8%) than the survey average.
- When it came to precision tools,

What Were Your Average Per-Bushel Yields For Corn?

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**156**	167	172	139	120	95	152	157
Strip-Till	**166**	182	168	154	161	171	151	
1-Pass Tillage	**163**	169	172	155	70	95	155	175

Table 8. Here's the average corn yields based upon tillage method used.

What Were Your Average Per-Bushel Yields For Soybeans?

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**45**	50	47	36	34	44	45	46
1-Pass Tillage	**46**	47	49	43		55	41	

Table 9. Here's the average soybean yields based upon tillage method used.

What Were Your Average Per-Bushel Yields For Winter Wheat?

(Based Upon Tillage System Used)

	All	WCB	ECB	GL	NP	SP	NE	AP
No-Till	**62**	58	69	66	60	43	68	77
1-Pass Tillage	**58**	61	58	58		48	64	

Table 10. Here's the average winter wheat yields based upon tillage method used.

Net Income Increase and Total Operating Expenses of The Top Third Yielding Corn, Soybeans and Wheat Growers.

	Average Farm Acres (Per Farm)	Average Increase In Net Income	Average Increase In Net Income (Per Acre)	Average Operating Expenses	Average Operating Expenses (Per Acre)	Income Increase Vs. Expenses
All	**1,269**	**$62,125**	**$48.96**	**$427,407**	**$336.81**	**13%**
Corn	1,378	$95,888	$69.58	$504,788	$366.32	16%
Soybeans	1,288	$104,356	$81.02	$504,021	$391.32	17%
Wheat	1,901	$59,303	$31.20	$651,675	$342.81	8%

Table 11. Here are financials on the corn, soybean and wheat growers who were in the top third for yield for each crop. The top-yielding corn and soybean growers showed a greater net income increase vs. total operating expenses (16% and 17%, respectively) than the average grower (13%), while the top-yielding wheat growers only showed an increase in net income of 8% vs. total operating expenses.

more used yield monitor data analysis (39% to 32%) and variable-rate fertilization (27% to 20%) than the average respondent.

- They also tended to outsource their fertilizer applications more than the average grower (38% to 30%).
- These top-third corn yielders apply more nitrogen in the fall (30% to 23%), pre-plant (35% to 31%) and sidedress (44% to 40%), an indication that they may split their nitrogen application timings more often than the average survey respondent. They also apply more phosphorus and potassium in the fall and pre-plant.
- Their seeding populations were 30,535 and final stands were 28,546 compared to national averages of 29,315 and 27,504, respectively.
- Some 52% of top corn yielders applied manure in 2008 vs. just 40% nationally. Fewer applied manure into cover crops at 25% vs. the national average of 36%. More used injection (27% to 16%) than broadcast applications (82% to 93%).
- The average acreage of these top corn yielders was 1,378 vs. the national average of 1,269. Their total crop operating expenses averaged $504,788, which was above the average of $427,407.
- n Their increase in net income of $95,888 was also well above the average increase of $62,125, or 16% of their total crop operating expenses.

Nearly Half of Farmers Surveyed Raise Cover Crops

Cover crops are drawing a lot of interest these days with 49% of farmers surveyed already utilizing them in their crop rotations. In Figure 3, cereal rye is the most popular at 41% followed by annual ryegrass (19%), millet (13%) and a host of others.

The use of cover crops varies widely by region. (See Figure 4.) Already, 80% of growers in the Northeast and 76% in Appalachia are using cover crops. Cereal rye at 42% and annual ryegrass at 27% are the most popular cover crops in the Northeast with radishes at 8%. In Appalachia, cereal rye dominates at 47% with buckwheat at 8%.

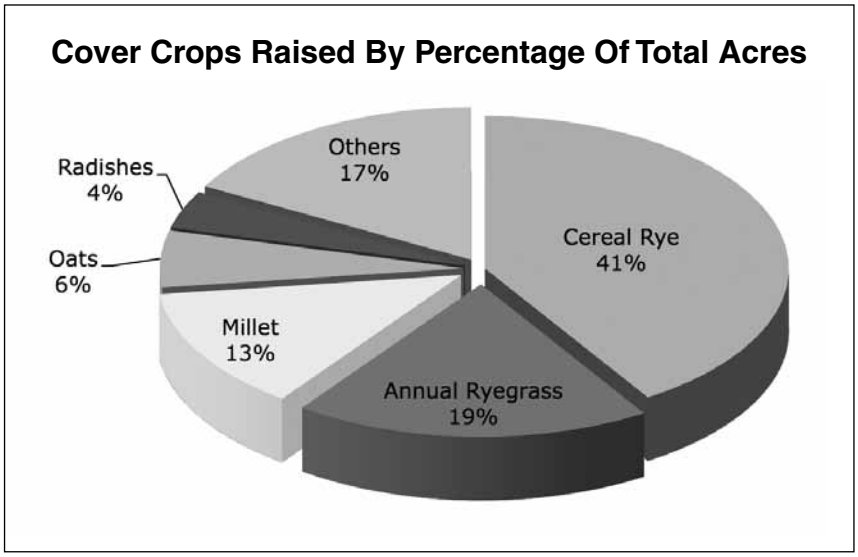


Figure 3. Of the 49% of survey respondents who used a cover crop in 2008, cereal rye was the cover crop of choice on 41% of the acreage. Annual ryegrass at 19% and millet at 17% were also popular choices.

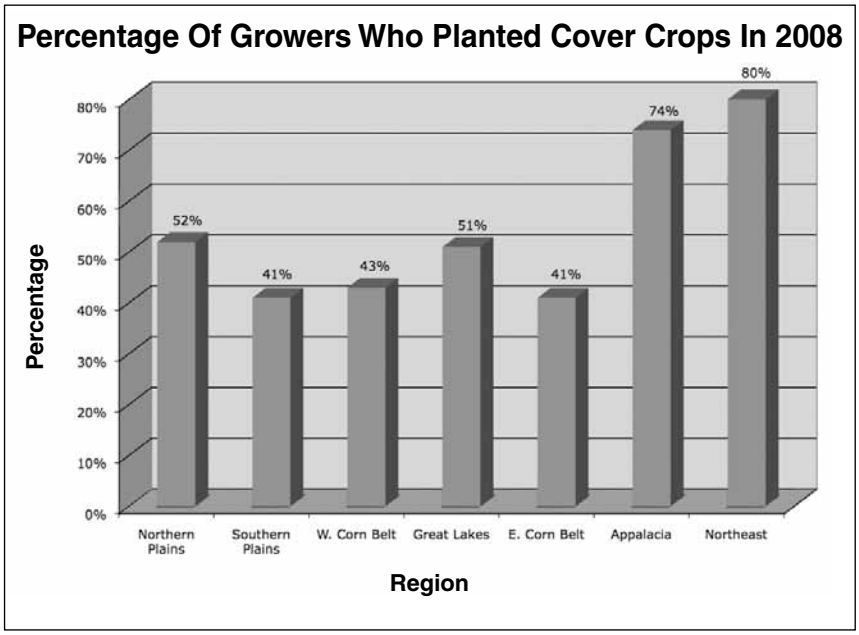


Figure 4. When it comes to utilizing cover crops in their rotations, 80% of Northeastern farmers and 74% of Appalachian farmers actively grow them. The Northern Plains and Great Lakes are slightly ahead of the national average for cover crop usage at 52% and 51%, respectively.

The Top Soybean Yielders

In a review of the top one-third soybean yielders, their no-till soybean yields of 54 bu./A is out-performing one-pass tillage yields of 47 bu./A.

Overall, fewer used no-till at 76% vs. the national average of 80% and more used one-pass tillage at 16% vs. the national average of 11%.

Here are some other observations about this group:

- More rented their farmland than owned in the national trends. Some 38% owned and 49% rented farmland vs. 43% and 40%, respectively.
- They used cover crops on 180 acres on average vs. just 109 acres nationally. Cereal rye accounted for 50% of their acreage, annual ryegrass 26% and clover 6%. This compares to 41%, 19% and 3%,

respectively, for all respondents.

- They use precision tools much more than the average farmer, including GPS lightbar guidance (37% to 34%), GPS tractor auto-steer (40% to 30%), field mapping (43% to 33%), yield monitor data analysis (45% to 32%) and variable-rate fertilizing (33% to 20%).
- Other than planting, they tend to outsource tasks more, including spraying (35% to 27%) and fertilization (39% to 30%).
- They use their planters more for seeding soybeans. Some 56% use a planter vs. the national average of 50%. Those using their planter use an average seeding rate of 154,818 vs. 168,238 for drilled soybeans.
- They applied more calcitic lime (68% to 52%) than dolomitic lime (28% to 38%) than the average grower.
- A higher percentage of top-yielding soybean growers use more sulfur, zinc, magnesium, copper and iron than the average grower.
- While the same percentage of high-yielding soybean growers used manure as the national average, these growers used more hog manure (37% to 22%) and less cattle manure (52% to 69%).
- Like the top-yielding corn growers, they injected more manure and broadcast less manure than the average farmer.
- While the average farm size of these growers was just 19 acres more (1,288 to 1,269) than the average farmer, their total crop operating expenses averaged $504,021, well above the average of $427,407.
- Their increase in net income of $104,356 was also well above the average increase of $62,125, or 17% of their total crop operating expenses.

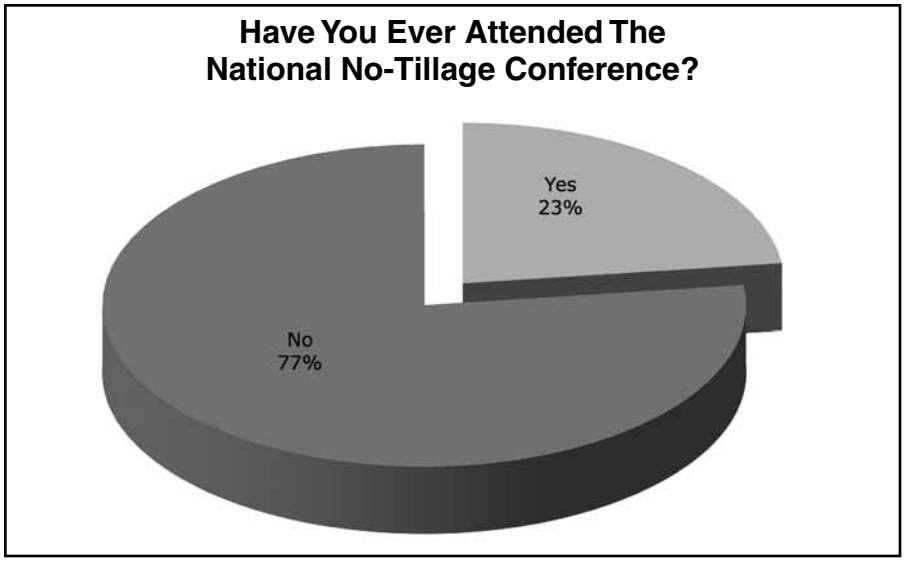
The Top Wheat Yielders

In a review of the top one-third wheat yielders, their no-till winter wheat yields of 79 bu./A far out-performed the 62 bu./A of one-pass tillage operations.

Here are some other observations about this group:

- They tend to rent more land and own less than the average farmer. Some 48% of their acreage was rented vs. the 40% national average. They owned just 38% of their farmland vs. 43%.
- A higher percentage of this group (58%) uses cover crops vs. all respondents (49%). Some 50% of their total cover crop acreage was planted with millet, while cereal rye was just 7.3%.
- A larger percentage of this group planned to purchase more equipment than the typical farmer, including a drill (20% to 7%), planter (17% to 12%), sprayers (10% to 9%), combine (17% to 10%) and tractors (18% to 12%).
- This group as a percentage is also more invested in precision tools than the average grower, including GPS guidance lightbars (52% to 34%), GPS tractor auto-steer (36% to 30%), yield monitor data analysis (38% to 32%), satellite aerial imagery (7% to 4%) and variable-rate seeding (16% to 9%).
- They don't rely on outsourcing as much as the average farmer for spraying (only 21% outsourced vs. 27% nationally), but they tend to have somebody else apply fertilizer (33% vs. 30% nationally).
- As a percentage, they applied more nutrients like sulfur, zinc, calcium and boron as the average farmer, but less magnesium, copper and molybdenum.
- They are more like to apply manure at 51% vs. 40% nationally. Poultry manure was used by 44% vs. 31% nationally, while hog manure was only applied by 10% vs. 22%.
- They also tend to apply manure more in the late summer or fall (80%) than nationally (73%) and use fewer spring applications (56% to 64%).
- These top wheat-yielders had average farm acreage of 1,901 vs. the overall average of 1,269. Their total crop operating expenses averaged $651,675, which was 52% higher than all respondents.
- They saw an increase in net revenue of $59,303, which was just $3,000 less than the national average, or just 8% of their total crop operating expenses.

Look for still more data from this exclusive 2009 No-Till Practices Survey in future issues of *No-Till Farmer* and the *Conservation Tillage Product Guide*.



"Some 27% of corn growers in the top 3 for yield used variable-rate fertilizer vs. 20% of all corn growers..."

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