

# 2006 Crop Residue Management Survey



a Survey of tillage system usage by crops and acres planted

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# Summary

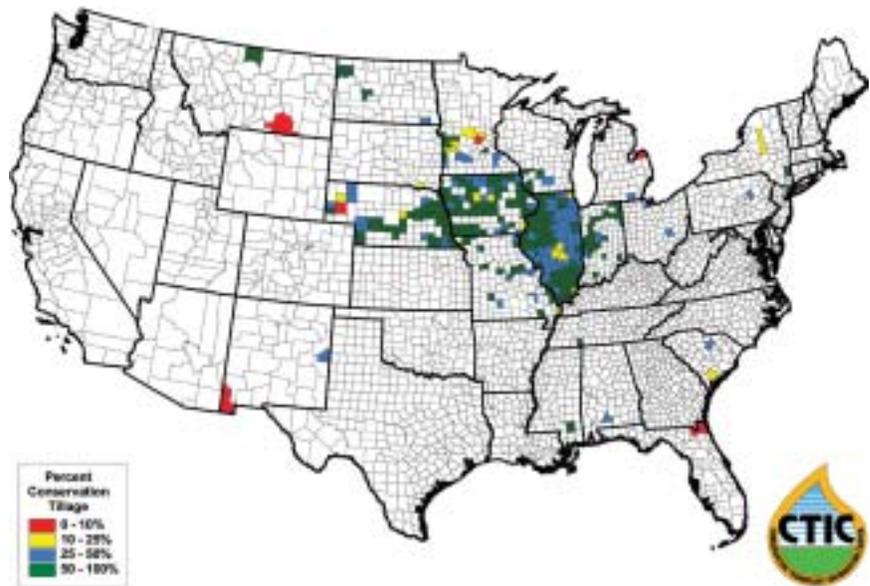
## The Crop Residue Management Survey: 2006 and Beyond

Over 300 counties conducted the Crop Residue Management Survey in 2006. Compared to past Surveys, for which more than a thousand local partnerships (including the Natural Resources Conservation Services (NRCS), Soil and Water Conservation Districts (SWCDs) and Extension) collected data, the amount of data for 2006 is significantly limited. However, thanks to local efforts in 21 states we have a picture of conservation in 305 counties.

In 2006, NRCS did not direct its field offices to collect tillage data at the county level. But NRCS's decision didn't stop several states from collecting the data. "When we heard the federal support had been cut, we jokingly said, 'that's okay, we'll just do our own survey.' And the more we thought about it, we thought, yeah, we want to [conduct the survey]," said Paul Jasa, University of Nebraska extension engineer.

According to Bill Kuenstler, former acting national agronomist for NRCS, the agency's decision was two fold. As Conservation Security Program (CSP) and Environmental Quality Incentives Program (EQIP) contracts increase, field office staffs are decreasing. The demand to service those programs is creating an environment that is extremely competitive for time. The second reason is that, in some circles, the Survey

Percent Conservation Tillage - All Crops - 2006



is not believed to be as useful as it once was because the job of "selling conservation tillage is done."

"I don't think that's right. We need to keep that information in front of farmers, all the benefits of no-till, of conservation tillage, not just erosion," said Kuenstler.

Several states in addition to Nebraska saw the value of the Survey and conducted some amount of data collection. Missouri, Illinois, Iowa and Indiana contributed significant data.

### On the ground

Illinois was the only state to contribute data from all counties. For the first time, conservation tillage acres in that state exceeded traditional tillage acres. According to an Illinois Department of Agriculture press release, "No-till farming, which involves planting seeds directly into the previous year's crop residue without tilling the soil, was practiced in 51 percent of the state's soybean fields, the first time the figure has topped 50 percent and a more than 5 percentage point improvement since the last Survey in 2004."

"We use [the Survey] to zone in on particular areas," says Alan Gulso, of the Illinois Department of Agriculture. The state of Illinois uses a cost-share incentive program to encourage new adoption and the Department of Agriculture and the local SWCDs are



Conservation tillage continues to grow in the 305 counties that reported data in 2006.

## Summary, continued

able to see what areas are lagging behind in adoption trends by looking at Survey results. They then focus their outreach and education in those areas to encourage producers to take advantage of the cost-share program.

Nebraska Extension discovered that in areas where farmers had switched from furrow irrigation to pivot irrigation, they were still using ridge-till. Education efforts are being designed to address those areas. "We're doing a lot of spring planter field days the last weeks of March. We're going out into residue that's a little tougher than what producers normally encounter at planting time and showing them that their planting equipment can go no-till," says Jasa.

Indiana, Iowa and Missouri use the data in much the same way. But state and local governments are certainly not the only groups to use the Survey data. It's an important tool in the ag economy.

"The Survey is valued by a wide variety of companies. Even two years after the last complete Survey, CTIC continues to receive requests for data," says Karen Scanlon, CTIC executive director. In much the same way states utilize the data to focus education, the ag industry uses the data to focus marketing and advertising.

The next generation of ag leaders is using the data as well. Robert Earnest, a master's degree candidate at Mississippi State University is studying NBPT, the active ingredient in Agrotain, a urease inhibitor. "I needed to know the number of no-till cotton acres in Mississippi to show the need for an inhibitor, as an alternative to ammonium nitrate," says Earnest. "The Survey was really useful. It had all the data I was looking for." And Earnest is not alone. Graduate students in fields of study ranging from agronomy, ag economics and alternative energy studies use the data for their research.

### What's next?

Iowa NRCS agronomist Barbara Stewart has some concerns that there may be some bad news hidden in the exciting fall corn prices. "Just going from shop talk, I think there will be a lot more tillage next year," says Stewart. Energy conservation is likely driving the adoption of conservation tillage, and particularly no-till. Producers want maximum corn yields while keeping their fuel costs down, but many believe that no-tilling corn into corn residue is risky as they go from a corn-bean rotation to corn-on-corn.

Without a national Survey, how will Stewart, and everyone else concerned about conservation tillage, know if the shop talk predictions came true? How have rising fuel prices and rising corn prices affected the amount of tillage? Estimates and assumptions have proved wrong in the past.

In the beginning of the no-till movement, it was believed that the practice would only be successful on certain types of soil. Jim Lake, the first executive director of CTIC, says that the early years of the CRM Survey revealed a different story. "What we found was that there wasn't necessarily a correlation between soil type and adoption. Farmers were figuring out how to do [no-till] in places where people initially thought the soil wouldn't work for it." Without the nationwide CRM Survey in the future, today's guesses about how corn and fuel prices affect tillage trends are equally unsubstantiated as those early beliefs.

CTIC is considering a number of options for future Surveys, including continuing voluntary collection, seeking out new partners to conduct the Survey and the use of satellite imagery.

"We're considering remote sensing as one of the options," says CTIC board member Harold Reetz, Ph.D., president of Foundation for Agronomic Research. Reetz leads the CTIC committee supporting the Survey.

Remote sensing would use satellite imagery to estimate amounts of crop residue left on the fields. There are many variables to work through using this method, Reetz explains, so CTIC is considering launching a pilot project on a small number of fields. Substantial amounts of data would be several years away. This method could provide more product options, but would take a couple of years to develop and implement.

"For today, it's important for us to find a way to work with partners at the local level to collect tillage data, estimate residue cover and maintain the county-level assessment of conservation in agriculture," says Reetz. "We have almost two decades worth of trends in conservation tillage; it would be a shame to lose it now."

To find out more about the Crop Residue Management Survey and how you can support it, please contact Karen Scanlon at [scanlon@conservationinformation.org](mailto:scanlon@conservationinformation.org) or by calling (765)494-9555.

# State Summaries

## Illinois

Illinois was the only state to report tillage data for all counties. In 2004, 6.1 million acres were no-till. In 2006, the number of no-till acres increased by 646,000 acres to 6.7 million acres. The increase was largely in soybeans, which accounted for 473,000 of the increased acres. No-till corn increased from 14 percent to 15.5 percent over the two-year period.

Conservation tillage in Illinois increased by nearly half a million acres between 2004 and 2006. In 2004 10.5 million acres were reported as no-till, strip-till or mulch-till. In 2006, 10.95 million acres were reported in those tillage types.

Producers in Illinois decreased their use of mulch-till at a rate greater than they adopted no-till, which accounts for the change in no-till acres being greater than the change in conservation tillage acres, though no-till is included in the conservation tillage data.

*The following state summaries were created using data collected from corn and soybeans only. By removing the counties that did not report in 2006 from the 2004 data, the rate of increase is accurate for that set of counties. CTIC is not able to make accurate estimates of statewide trends. It should be noted that the counties that reported in 2006, when taken as a unique set in 2004, reported above-average amounts of conservation tillage compared to their respective state averages.*

## Iowa

Seventy Iowa counties reported data in 2006. These data cover nearly three quarters of the state’s crop ground. Since 2004, there was an increase of 660,000 acres of no-till in the reporting counties.

The reporting counties in Iowa saw a 3 percent increase in conservation tillage between 2004 and 2006, increasing from 9.2 million acres, or 57 percent of the cropland in those counties, to 9.9 million acres, which is approximately 60 percent of the reported cropland.

## Nebraska

Forty-three Nebraska counties reported data in 2006, which is approximately 53 percent of the state’s crop ground. These counties saw an increase of nearly 1 million acres in no-till — increasing from 36 percent to 45 percent in 2006.

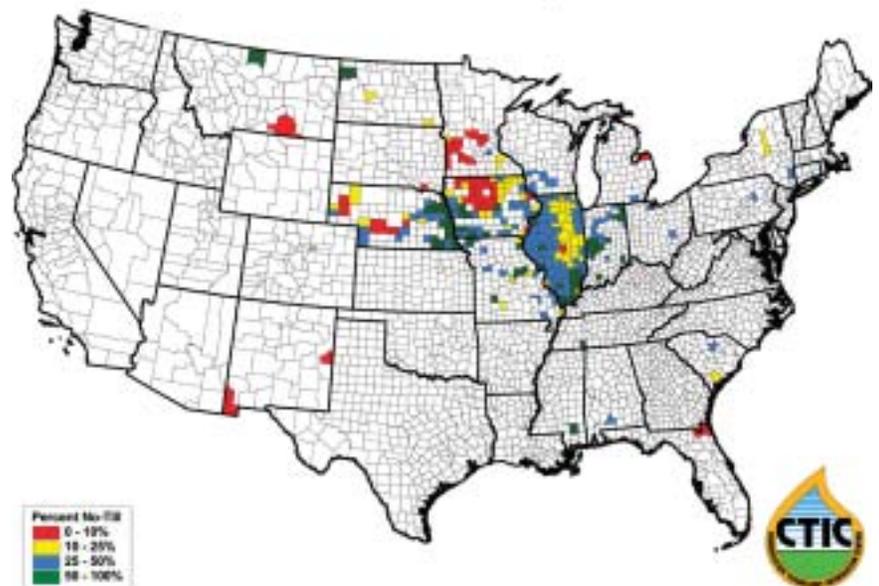
Conservation tillage in reporting Nebraska counties rose to nearly 5.2 million acres in 2006, a change from 65 percent in 2004 to 67 percent in 2006.

## Indiana

Thirty counties, roughly a third of Indiana’s crop ground, reported in 2006. Those counties saw a slight increase in no-till from 1.5 million acres to 1.65 million acres.

The reporting counties in Indiana reported a slight increase in conservation tillage — from 1.95 million acres in 2004 to 2.03 million acres in 2006.

Percent No-Till - All Crops - 2006



# County Highlights

## One Mind at a Time in Gage County, Nebraska

Protecting the soil is part of the history of Gage County, Neb. As far back as the 1940s, a significant number of terraces and dams were being constructed to increase infiltration and prevent erosion of the silt-clay loams in the southeastern Nebraska county.

“No-till is just the next step in that long history of caring for the land,” says Paul Hay, Gage County extension educator.

Extension, Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA) and Nebraska Resources District (NRD) offices working closely together to deliver a constant and consistent message is the key to the county’s continued growth in no-till acres. The offices promote the benefits of fuel savings, soil protection and crop rotation. In addition to the environmental benefits of no-till, the offices promote the quality of life benefits of no-till through local radio and newspaper, mailers, meetings and talking to producers one on one.

Hay evangelized to one producer for more than 15 years, and when the producer retired, he still hadn’t converted to no-till. However, when the producer retired and rented out his ground, a stipulation of the lease required the new tenant to no-till.

“In the end, we won that battle,” says Hay, “You just have to change one mind at a time.”

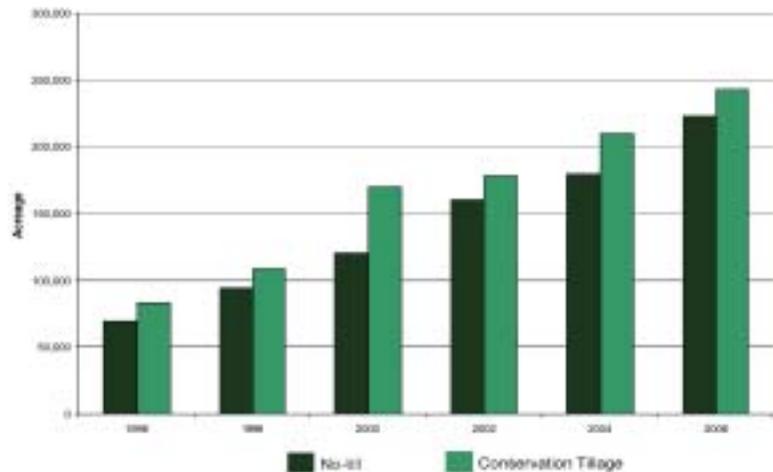
Maintaining enthusiasm for no-till in Gage County is year-long effort, but is often highlighted by taking a group of producers to either the No-Till on the Plains winter conference or the National No-Tillage Conference every year.

“They come home excited and ready to try new things,” says Hay.

The extension educators in the southeastern part of the state have always been way ahead of the curve and ready to try new things, according to Dan Gillespie, Nebraska NRCS no-till specialist.

“Their passion for no-till shows in the CRM Survey. That’s why they have 70 percent of their corn in no-till, 78 percent of their beans,” says Gillespie.

Conservation Tillage and No-Till Acres in Gage County, NE  
1996 - 2006



And it’s not just tillage practices. The concept of trading carbon credits on continuous no-till is just reaching some parts of the country, but in Gage County, 128 producers are already receiving checks from the Chicago Climate Exchange.

“We told them we didn’t know exactly what to expect, but you’ve got to start somewhere,” says Hay.

It’s that willingness to try new things and foresight for the future of conservation that makes Gage County a remarkable example of the power of conservation.

## Exceptional Progress in Henry County, Illinois

In 2004, 29 percent of Henry County, Ill., crop ground was under no-till. Two years later that number increased dramatically to 47 percent. In the same period, total conservation tillage increased by approximately 30,000 acres.

Natural Resources Conservation Service (NRCS) District Conservationist Rich Stewart attributes the significant growth in Henry County to a variety of sources — a number of producers, managers, crop advisors, a local college and extension advisors.

## County Highlights, continued

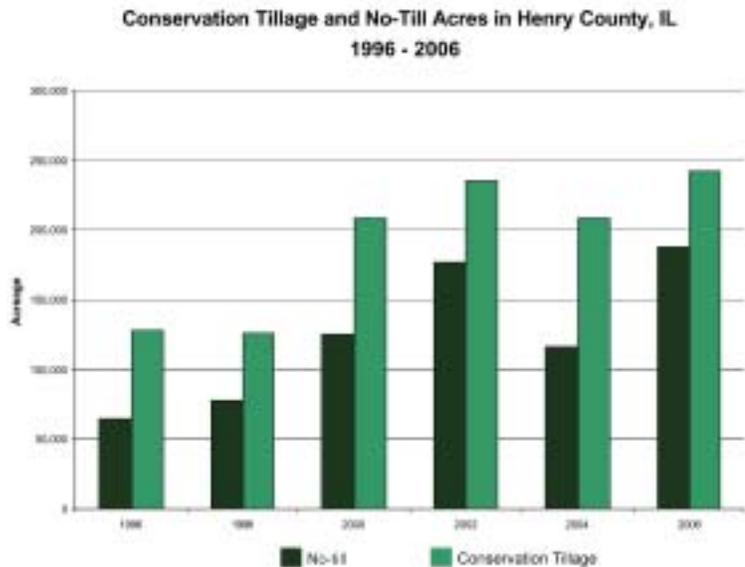
“Producers like Bryan Johnson and Glenn Nelson used strip-till on all their land, mostly flatter heavy soils. Producers see the results and like what they see,” says Stewart.

Producers’ fears about cool soils in the northwestern Illinois county were also put to rest by demonstration strip-till plots managed by NRCS and Extension, and highlighted by the local Soil and Water Conservation District (SWCD), which also promoted a cost-share program for producers to put strip-till to use on their own land. (Strip-till is included as a variation of no-till. See Definitions, page 10.)

Jerry Snodgrass, chairman of the Henry County SWCD has used 100 percent continuous no-till on his farm since 1987 and has been an active promoter of the practice throughout the county.

According to Stewart, another factor in the increase in no-till was the availability of a number of drills for rent from a farm management company and individual producers. Being able to learn the practice without making a long-term financial commitment was beneficial in convincing producers to make the switch from conventional tillage.

The combination of education, active producer-promoters and the availability of equipment make Henry County a model to follow for exceptional progress in conservation tillage adoption.



# Widespread Support for Survey

As word got out that the National CRM Survey would be limited in 2006, calls, e-mails and letters came pouring into CTIC. They came from agribusiness, ag organizations, commodity groups, research institutions, government agencies and more. Every person who contacted us conveyed how much they rely on and value the Survey.

We learned that the Survey is used at agencies and research institutions to justify research projects and guide research decisions, in the classroom to help students understand cropping and conservation trends and at grower meetings to convince producers that they can succeed with no-till. Data from the Survey also are used in presentations to producers and policy makers, in erosion and sediment control models and to help explain or interpret trends in water quality. It was even used to estimate use values of agricultural land and used in analysis of the potential of cellulosic ethanol production.

Here's a sample of some of the letters received.

## Ag Organizations

Corn growers view the Survey as an invaluable tool that provides information on conservation at the local, state and national levels. For instance, assessments and planning at the watershed level cannot be accurately or effectively done without data about tillage type by crop at the county level. Data on tillage usage will be a major variable in measuring the effects of conservation on the watershed.

...Partners at the state, regional and county level use the data to gauge progress with conservation programs, education efforts and other initiatives such as energy conservation. For example, farm input costs have risen dramatically in recent years because of skyrocketing energy costs. By measuring and encouraging greater adoption of no-till and conservation tillage, NRCS staff through cooperative efforts can help farmers deal with one of their biggest challenges.

*Ken McCauley  
President*

*National Corn Growers Association*

The Survey was "essential to our analysis of the steps necessary to achieve the President's goal" of cost-competitive production of cellulosic ethanol by 2012.

*Matthew T. Carr*

*Director, Industrial and Environmental Section  
Biotechnology Industry Organization*

The Survey provides valuable information for conservation at the local, state and national levels. Using the Survey, for example, conservation districts and their local partners can demonstrate the achievements of their education and outreach efforts and, perhaps most importantly, show the value of partnership efforts to increase conservation and save energy, creating positive environmental results.

*Bill Wilson*

*Past President*

*National Association of Conservation Districts*

## Agribusiness

Syngenta uses the CRM Survey to better provide products and service in high-use conservation tillage areas. CTIC and its Survey is the only place that Syngenta can get this type of information. The CRM Survey is not only a timely source of information, but historical as well, which helps Syngenta track trends in conservation tillage.

*Neil Strong*

*Industry Relations Lead  
Syngenta America*

Agrotain International utilizes the CRM data to identify counties in each of the lower forty-eight States where no-till agriculture is practiced by producers. ...Yearly data is most important not only to Agrotain International, but to all companies who have products and services that are marketed to no-till agriculture. Without the continuation of this Survey, we will lose focus making our efforts less efficient, expending more energy, time and fossil fuel to identify our market areas.

*Timothy J. Healey*

*Vice President Regulatory Affairs  
Agrotain International, L.L.C.*

## Widespread Support for Survey, continued

### Research Institutions

The loss of this information leaves a large void in explaining relationships between land cover and water quality in predominantly agricultural watersheds.

*John Crumrine  
Agricultural Project Coordinator  
National Center for Water Quality Research*

I...urge USDA-NRCS to reconsider its top-down decision to withdraw financial support for these very important Surveys...As we start to recognize the increasing importance of conservation tillage and residue cover to go beyond erosion control to soil quality improvement, we need to have a way to track adoption. ...For example, how will the United States Government make a reasonable estimate of carbon sequestration in agricultural soils due to the adoption of conservation tillage without the help of CTIC?

*Sjoerd W. Duiker, Ph.D.  
Soil Management Specialist  
The Pennsylvania State University*

### Government Agencies

Without this type of information, we would not be able to determine the relative level of success associated with our research. It is imperative that we obtain this information for local areas as well as state and nationally. Only then can we correctly target our research to problematic areas where producers are having difficulty adopting conservation technologies.

*Randy L. Raper, Ph.D., P.E.  
Agricultural Engineer and Lead Scientist  
ARS National Soil Dynamics Laboratory*

These data serves a purpose much greater than simply informing cropland managers of current trends in tillage practices. ...Data for annual tillage practices are needed to capture changes in soil carbon that coincide with changes in tillage practices. Trends in tillage practices occurring over 5-year increments, similar to the time period used for the National Resources Inventory, will not be as useful in estimating changes in soil carbon.

*Tristram O. West, Ph.D.  
Research Associate  
Oak Ridge National Laboratory*

The information provided by the Conservation Technology Information Center (CTIC) is vital for our budgeting process. We use the data provided by the CTIC to determine the percentage of farms in each county and city in Virginia that use conventional tillage and reduced tillage. At this time there is no other source for the data that CTIC provides. Without the information that CTIC collects, we would be unable to budget as accurately as we have in the past.

*Monica Licher  
Research Associate  
Agricultural and Applied Economics, Virginia Tech*

### Extension

The national data (2004) was especially revealing for Illinois, because although we typically were one of the largest states in total acres of no-till, no-till soybeans and no-till corn acreages, when it came to *percent* of farmers adopting and using no-till technology, we were way down the list among the states. Without the state and national tillage data being collected, evaluated, and dispersed, we would have no way to evaluate our true progress in adopting no-till farming methods.

Maintaining this national data bank of information will benefit not only the producers, conservation agencies, and agribusinesses by providing *accurate* and *unbiased* tillage trend data, but we will also be protecting the quality of our soil and water resources for future generations!

*Bob Frazee  
Natural Resources Educator  
University of Illinois East Peoria Extension Center*

In addition to the overwhelming support for the Survey, each author wanted to know if the Survey would continue. CTIC is working diligently with partners to make sure that this valuable, irreplaceable measurement of tillage in the U.S. not only returns but is improved. See Future of the Survey, page 11, for more information.

If you use the Survey, CTIC wants to hear from you, too. Please go to [www.conservationinformation.org/?action=article&id=19](http://www.conservationinformation.org/?action=article&id=19) to give us your opinion.

# Methodology

## Data Collection Procedures

The 2006 Crop Residue Management (CRM) Survey used two different procedures for collecting data — county roadside transects and local knowledge and expert partnerships. Data collection procedures were based on acres of cropland in the county, cropland density, type of road systems and adoption history of conservation tillage.

Voluntary efforts of local conservation partnerships made possible the 2006 CRM Survey. Soil and Water Conservation Districts (SWCD), Natural Resources Conservation Service (NRCS) field offices, Extension and other local partners selected one of the two methods for data collection. Data were then submitted to CTIC for compilation, analysis and interpretation. The goal was to use the best procedure that would ensure the highest quality data for each state/county while minimizing the workload.

### Roadside Transects

Roadside transects were suggested for counties with more than 100,000 cropland acres and a grid road system. To conduct a roadside transect, local partners drove along a set course through the county. Depending on the size of the county, stops were made at half-mile or mile intervals. The crop planted and tillage/residue level used in the fields on both sides of the road were assessed at each stop. Data were recorded from approximately 480 fields in each county on a transect route, which enabled percentages of each crop/tillage system to be calculated. This information, also supplemented with local knowledge, was used to calculate acres of each tillage system for each crop. This crop/tillage acreage information was then entered into CTIC's web-based data collection program. CTIC tracked progress as each county reported and reviewed the data for accuracy.

### Local Knowledge & Expertise

It was recommended that local conservation partnerships estimate tillage practices by crop in counties with less than 100,000 cropland acres. The local conservation partnership, including NRCS, SWCDs, Extension, Farm Service Agency, agribusiness and other interested parties, used local knowledge to make a best estimate of tillage practices by crop. These data were then entered into the CTIC web site and reviewed by CTIC for accuracy.

### Thanks for helping with the 2006 Crop Residue Management Survey

We extend our gratitude to all the individuals who took the time and effort to compile crop residue data for the 2006 Crop Residue Management Survey. Locally led conservation continues to be the root of change for tillage practices.

The 2006 CRM Survey affords local partners an opportunity to demonstrate the achievements of their education and outreach efforts and, perhaps most importantly, show the value of partnership efforts to increase conservation and save energy. Without knowing how much conservation tillage and no-till is applied on our land, we will have a more difficult time tracking the progress of our efforts, highlighting successes in conservation and identifying areas that need more attention.

Thank you for your contribution to this effort. Your local work will be used to further the growth of conservation tillage throughout the nation, improving the financial position of producers and soil and water quality for all.

# Definitions

## Tillage Type Definitions

**C**onservation tillage is any cropland system that leaves at least one-third of the soil covered with crop residue after planting. Conservation tillage types include no-till/strip-till, ridge-till and mulch-till.

The **no-till** concept has evolved as technology has changed. With no-till, producers disturb only the minimal amount of soil needed to ensure a good stand and yield. Variations under the no-till umbrella include the following:

Midwest **strip-till**<sup>1</sup> usually involves a mole knife to till a zone approximately 10 inches wide and 4 to 5 inches high in the fall. Some combination of nutrients is usually applied at the same time. The following spring, planting occurs in the tilled strip.

Southeast **strip-till**<sup>1</sup> is used on the Sandy Coastal Plain soils (soils that naturally compact) in the Southeast portion of the U.S. A ripper runs about 14 inches deep ahead of or with the planter.

**Vertical tillage**<sup>1</sup> is used with a narrow ripper about 12 to 14 inches deep, usually in the fall, which causes very little surface soil disturbance.

Planting occurs directly over the tilled strip.

**Fluffing harrows**<sup>1</sup> “fluff” the residue, allowing excess moisture in the seedbed to evaporate and improve planting conditions.

Other conservation tillage practices include the following:

**Ridge-till** involves building 4- to 6-inch high ridges during row cultivation and scraping off 1 to 2 inches of the ridge during planting.



Strip-till tool bar.

Allen County, Ind. SWCD



Vertical tillage tool.

Allen County, Ind. SWCD



Fluffing harrows.

Allen County, Ind. SWCD

**Mulch-till** is a full-width (100 percent of soil surface disturbed) tillage system that usually involves one to three tillage passes. Implements such as chisel plows, disks, field cultivators and combination tools are used.

No-till (including all variations mentioned), ridge-till and mulch-till fall under the conservation tillage umbrella.

## NOT Conservation Tillage

**Reduced-till** systems are somewhat similar to mulch till in that they involve full-width tillage, use the same implements and may use one to three tillage trips. Reduced-till, however, leaves 15-30 percent residue on the soil surface after planting.

**Intensive-till or conventional-till** involve full-width tillage and may involve one, three or perhaps up to 15 tillage passes. There is less than

15 percent residue on the soil surface after planting. Moldboard plowing and/or multiple tillage trips are involved.

<sup>1</sup> These implements must be used properly in order to qualify as no-till. Multiple trips or excessive soil or residue disturbance may not meet the no-till criteria.

# Future of the Survey

## The Future of the CRM Survey

Agriculture is changing. In addition to meeting growing food and fiber demands globally, U.S. agriculture is now making significant contributions to meeting increasing fuel and energy needs. This shift comes at a time when more and more people are becoming aware of the effects of their actions on our planet. These developments will change cropping systems, tillage practices, trade and other facets of the industry that have yet to be considered. The Conservation Technology Information Center works to be on the leading edge of that change, and to do so, recognizes the need for improving the National CRM Survey.

Ethanol production is booming — and with it, the demand for more corn from our nation's fields. As the bio-diesel industry grows, so will the need for more soybeans. The same is true of cellulose-based ethanol — when it becomes a commercially viable technology, a variety of grasses and woody plants will likely enter into a period of increased production. Each of these growth sectors will put new demands on our cropland and change the way we farm it.

To continue making significant contributions to conservation, we'll need comprehensive, accurate data to monitor these changes and make economically viable choices for our future. For example, the Survey includes strip-till as a variation of no-till, an important first step in monitoring this conservation practice. A question arises, however, as to how much of the increase in no-till acres reported each year is the result of an increased use of no-till and how much of the increase is the result of an increase in strip-till?

It is important to be able to answer this question because no-till, while it works most places, doesn't work everywhere. No one can say where exactly strip-till and other reduced tillage practices are being implemented, or should be, as the best practice. To maximize the environmental and financial benefits of these tillage systems, we need to know where they're working. In future Surveys, CTIC plans to distinguish strip-till from no-till and track the adoption of each.

To continue making significant contributions to conservation, we'll need comprehensive, accurate data to monitor these changes and make economically viable choices for our future.

The Survey provides a snapshot-look at tillage practices implemented at the time of the Survey. Conducted every year from 1982 to 2000 and every other year since 2000, the Survey does not track acres under continuous no-till, the best way to build and keep carbon in the soil. Recently, carbon sequestration and carbon credit trading on continuous no-till fields has been a frequent topic in certain ag communities. It's more important than ever to identify those acres that are in continuous no-till.

The Chicago Climate Exchange provides a platform for those who are carbon emitters to trade with those who are reducing carbon emissions. A farmer who enrolls 2,000 acres for continuous no-till receives a yearly check for approximately \$4,000 for the carbon he sequesters on those acres. Experts believe that if "caps" are placed on carbon dioxide emissions, carbon could trade for at least five times the current price. Yet, no survey had been conducted on the amount of continuous no-till in the U.S. — the number of acres available for trading is still unknown. CTIC aims to establish the Survey once again as an annual measure of tillage practices, creating the only measure of continuous no-till for the nation.

CTIC is considering a number of other options for future Surveys. They include continuing and expanding voluntary participation and seeking out new partners to conduct the data collection at the local level. CTIC is also looking to the future of technology and has begun work on acquiring funds to conduct a pilot project that will utilize remote sensing. Through this project, satellite imagery would be analyzed to determine crop and tillage type, with the potential to overlay the data with soil type.

When the Survey returns to a national scale, CTIC wants to bring it back better than before. Reduced tillage and continuous no-till data are just a few of things we'd like to see added to the Survey. Please contribute your thoughts about how to make the CRM Survey more data-rich by visiting [www.conservationinformation.org/?action=article&id=19](http://www.conservationinformation.org/?action=article&id=19) and contributing your opinion.

# CTIC Membership

## Membership Levels

<b>Corporate</b> (based on Corporate Gross Income)	
<u>Membership Level</u>	<u>Gross Income</u>
\$6,500	Greater than \$500 million
\$2,000	Greater than \$100 million and less than \$500 million
\$ 500	Less than \$100 million
<b>Institutional</b>	
\$ 250	
<b>Individual</b>	
\$ 25	

### What the Center Does

CTIC is THE credible, reliable source for information and technology for agricultural conservation. We are dedicated to delivering balanced information to our members about the emerging issues facing our industry. We keep our network of members connected while maintaining our commitment to conservation.

CTIC is:

- A clearinghouse of information about emerging issues. We review and communicate new research, technologies and innovative approaches. If you have a question, we'll find the answer.
- A source of national messages. We work with public and private sector National Partners to assure consistent messages reach those who influence farm management decisions.
- A facilitator of workshops, conferences and trainings. We have developed several training workshops to help Members, Alliances and other groups. We also have extensive experience in meeting facilitation and planning.

### How our Members Benefit

Our members are CTIC's strength. Without an active membership, we would fail in our mission to improve the relationship between agriculture and the environment. With our solid, active and dedicated membership, we've demonstrated the value of public/private partnerships, and have proven that more can be done together than alone.

Some of the highlights of membership are:

- Members-only access to data on CTIC web site
- Electronic "Member Mail" updates
- National acknowledgement of support for agricultural conservation through the CTIC web site, *Partners*, and use of the CTIC logo for your own promotion
- Sharing your work and successes in conservation with the CTIC national membership
- Sponsorship opportunities at national conferences, meetings and workshops
- Special "News from our Members" section of the CTIC web site
- Networking opportunities with a diverse group of agricultural entities at CTIC meetings
- Access to technical experts and promotional materials on agricultural conservation and conservation practices
- Interaction with policy makers at state and national levels
- Ability to provide guidance to CTIC through the Advisory Panel
- Preferred advertising placement and special ad rates for CTIC's *Partners* online magazine

Contact us and join the CTIC membership today. Together, we can make things happen.

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# National Data (1990-2004)

## Conservation Tillage and Other Tillage Types in the United States -- 1990 - 2004

(in millions of acres and percent of planted acres under each category)

<b>Conservation Tillage Types - over 30% cover after planting</b>	<b><u>1990</u></b>	<b><u>1992</u></b>	<b><u>1994</u></b>	<b><u>1996</u></b>	<b><u>1998</u></b>	<b><u>2000</u></b>	<b><u>2002</u></b>	<b><u>2004</u></b>
No-till	16.9 (6.0%)	28.1 (9.9%)	38.9 (13.7%)	42.9 (14.8%)	47.8 (16.3%)	52.2 (17.5%)	55.3 (19.7%)	62.4 (22.6%)
Ridge-till	3 (1.1%)	3.4 (1.2%)	3.6 (1.3%)	3.4 (1.2%)	3.5 (1.2%)	3.3 (1.1%)	2.8 (1.0)	2.2 (0.8%)
Mulch-till	53.3 (19.0%)	57.3 (20.2%)	56.8 (20.0%)	57.5 (19.8%)	57.9 (19.7%)	53.5 (18.0%)	45.0 (16.0)	48 (17.4%)
<b>Conservation Tillage SUB-TOTAL</b>	<b>73.2 (26.1%)</b>	<b>88.7 (31.4%)</b>	<b>99.3 (35.0%)</b>	<b>103.8 (35.8%)</b>	<b>109.2 (37.2%)</b>	<b>109.1 (36.7%)</b>	<b>103.1 (36.6)</b>	<b>112.6 (40.7%)</b>
<b>Other Tillage Types - less than 30% cover after planting</b>								
Reduced-till (15-30% cover)	71 (25.3%)	73.4 (25.9%)	73.2 (25.8%)	74.8 (25.8%)	78.1 (26.2%)	61.3 (20.6%)	64.1 (22.8%)	59.6 (21.5%)
<b>Crop Residue Management SUB-TOTAL</b>	<b>144.2 (51.3%)</b>	<b>162.1 (57.3%)</b>	<b>172.5 (60.8%)</b>	<b>178.6 (61.5%)</b>	<b>187.3 (61.5%)</b>	<b>170.4 (67.2%)</b>	<b>167.2 (59.4%)</b>	<b>172.2 (62.2%)</b>
Conventional-till (0-15% cover)	136.7 (48.7%)	120.8 (42.7%)	111.4 (39.3%)	111.6 (38.5%)	106.1 (36.2%)	127.1 (42.7%)	114.3 (40.6%)	104.4 (37.7%)
<b>US Planted Acres TOTAL</b>	<b>280.9</b>	<b>282.9</b>	<b>283.9</b>	<b>290.2</b>	<b>293.4</b>	<b>297.5</b>	<b>281.4</b>	<b>276.6</b>

# Data for Counties (1990-2006)

## Conservation Tillage and Other Tillage Types 1990 - 2006 for Counties Reporting in 2006

(in millions of acres and percent of planted acres under each category)

<b>Conservation Tillage Types - over 30% cover after planting</b>	<b>1990</b>	<b>1992</b>	<b>1994</b>	<b>1996</b>	<b>1998</b>	<b>2000</b>	<b>2002</b>	<b>2004</b>	<b>2006</b>
No-till	4.4 (7.4%)	9.2 (15.2%)	12.6 (21.2%)	12.9 (20.9%)	13.6 (21.6%)	15.7 (24.6%)	15.8 (25.3%)	16.4 (26.5%)	19.3 (31.5%)
Ridge-till	1.1 (1.8%)	1.1 (1.8%)	1.0 (1.6%)	0.8 (1.3%)	0.7 (1.1%)	0.7 (1.1%)	0.6 (0.9%)	0.4 (0.6%)	0.5 (0.9%)
Mulch-till	14.7 (24.6%)	16.2 (26.7%)	12.4 (20.8%)	13.9 (22.5%)	14.5 (23.0%)	15.6 (24.5%)	13.4 (21.4%)	14.7 (23.7%)	13.6 (22.3%)
<b>Conservation Tillage SUB-TOTAL</b>	<b>20.1 (33.8%)</b>	<b>26.6 (43.7%)</b>	<b>26.0 (43.7%)</b>	<b>27.6 (44.7%)</b>	<b>28.8 (45.8%)</b>	<b>32.0 (50.2%)</b>	<b>29.7 (47.5%)</b>	<b>31.5 (50.8%)</b>	<b>33.5 (54.7%)</b>
<b>Other Tillage Types - less than 30% cover after planting</b>									
Reduced-till (15-30% cover)	16.9 (28.4%)	16.8 (27.6%)	14.7 (24.6%)	15.6 (25.4%)	16.5 (26.2%)	14.6 (22.9%)	15.4 (24.6%)	14.7 (23.7%)	13.3 (21.8%)
<b>Crop Residue Management SUB-TOTAL</b>	<b>37.1 (62.2%)</b>	<b>43.3 (71.3%)</b>	<b>40.6 (68.3%)</b>	<b>43.2 (70.0%)</b>	<b>45.2 (72.0%)</b>	<b>46.6 (73.0%)</b>	<b>45.1 (72.1%)</b>	<b>46.3 (74.5%)</b>	<b>46.8 (76.5%)</b>
Conventional-till (0-15% cover)	22.5 (37.8%)	17.5 (28.7%)	18.9 (31.7%)	18.5 (30.0%)	17.6 (28.0%)	17.2 (27.0%)	17.4 (27.9%)	15.8 (25.5%)	14.4 (23.5%)
<b>US Planted Acres TOTAL</b>	<b>59.5</b>	<b>60.8</b>	<b>59.5</b>	<b>61.7</b>	<b>62.8</b>	<b>63.8</b>	<b>62.5</b>	<b>62.1</b>	<b>61.2</b>