

Methodology, Uses and Definitions



Methodology & Uses

Methodology

The survey is conducted on a county-by-county basis, with over 3,000 responses. Counties with at least 25,000 cropland acres update responses annually.

After the raw data arrives at CTIC, it is compiled using the center's proprietary software, WinCEDAR™. The data is embedded into the software. This software is provided to customers/members who purchase county-level data for specific states or regions. A printed Full Report (including state-level data) is also available.

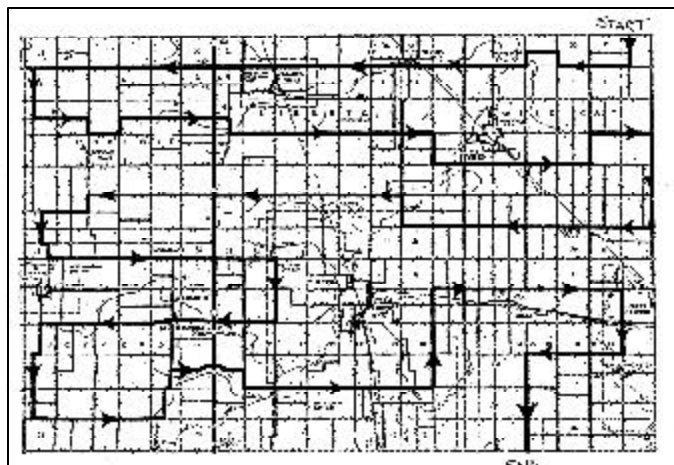
Gathering data

USDA Natural Resources Conservation Service field offices, soil and water conservation districts, and others work in partnership to collect the survey data. Collected data includes the tillage system used prior to planting and resulting residue level, crop planted, acres planted and acres per crop planted for each reporting county. Many field offices report the addi-

tional benefit of increased communication and cooperation of local partners is accomplished during this brief process.

Key areas use Driving Transects

Several key states (Indiana, Illinois, Ohio, Iowa and Minnesota) as well as a few counties and watersheds conduct an annual "driving transect" to physically survey crop residue levels. This process includes traveling a specific route, stopping at regular intervals, and recording residue levels at each stop along the route.



Driving Transect Method

This survey method is more accurate than other methods. Local leaders get together and drive a specific route, stopping on a regular interval and recording the residue levels. This approach is ideal for areas with a high percent of cropland. For details, contact CTIC. Tel: 765-494-9555. Or email: ctic@ctic.purdue.edu.

Definitions: Conservation tillage includes no-till/strip-till, ridge-till & mulch-till. Conservation tillage, 30% residue. Reduced tillage, 15-30% residue. Intensive/conventional tillage, 15% residue.

A software program is available to speed the capture of this statistically valid field data. For information contact CTIC, 765-494-9555.

Compilation

An NRCS conservationist at each office completes the electronic data entry with input from supporting agencies, organizations and individuals.

After completing the county level data entry process, the data is sent to state NRCS contacts for review and merging. CTIC makes a final data verification check with the necessary state offices and summarizes state totals which are then combined into regional and national totals. Thus, the acreages and percentages reported are based on land actually planted to crops, not the total cropland base. Highly Erodible Land (HEL) is based on NRCS determinations.

Data uses

Agricultural companies, government agencies, university researchers, Congress, watershed groups and many others rely on CTIC's Annual Crop Residue Management Survey.

Agricultural companies rely on data to:

- Guide research and development
- Develop farmer training and education programs
- Customize goals and promotions to local situations
- Combine with geographic information systems or other statistical/marketing data
- Document crop or area trends
- Communicate progress and associated benefits to growers, Congress, consumers, and more

State/federal government agencies and university researchers use the survey to:

- Chart, track and analyze progress
- Prioritize resources
- Attract funds for special projects
- Plan work load and develop budgets
- Determine research emphasis
- Analyze water quality, water conservation, and soil quality impacts

Local watershed groups, government agencies and local organizations rely on the annual survey to:

- Analyze land uses, calculate runoff potential, identify critical areas, and track progress in their watershed
- Develop education and incentive plans
- Determine Total Maximum Daily Loads (TMDLs)
- Track progress toward achieving water quality goals
- Determine research emphasis
- Prioritize resources
- Attract funds for special projects

In addition, CTIC relies on the annual report for funding the day-to-day operations including serving field-level staff and farmers. The Center serves as a clearinghouse for conservation tillage and other agricultural management practices that provide both economic and environmental benefits.

Coordinating organization

The Conservation Technology Information Center (CTIC) is an ag-based clearinghouse of information and data about management systems. The center does not get involved in policy issues. It's independently funded by public-private partners and product-service fees.





Definitions

Crop Residue Management (CRM)

CRM is a year-round conservation tillage management system beginning with the selection of crops that produce sufficient quantities of residue. The system

“Crop Residue Management is a year-round tillage management system.”

may include the use of cover crops after low residue producing crops. CRM includes all field operations that affect residue amounts, orientation and distribution throughout the period requiring protection. Site-specific residue cover

is usually expressed in “percent residue” but may also be expressed as “pounds of residue.”

Conservation Tillage

Conservation tillage is any tillage and planting system with 30% or more residue remaining on the soil surface after planting to reduce soil erosion by water. Where soil

“Conservation tillage includes no-till, ridge-till and mulch-till ... any system with 30% residue remaining after planting.”

erosion by wind is the primary concern, conservation tillage is any system that maintains at least 1,000 pounds per acre of flat, small grain residue equivalent on the surface throughout the critical wind erosion period.

Conservation tillage includes:

No-till and Strip-till - The soil is left undisturbed from harvest to planting except strips up to 1/3 of the row width (strips may involve only residue disturbance or may include soil disturbance). Planting or drilling is accomplished using disc openers, coulters, row cleaners, in-row chisels or roto-tillers. Weed control is accomplished primarily with crop protection products. Cultivation may be used for emergency weed control. Other common terms used to describe No-till include direct seeding, slot planting, zero-till, row-till and slot-till.

Ridge-till - The soil is left undisturbed from harvest to planting except for strips up to 1/3 of the row width. Planting is completed on the ridge and usually involves the removal of the top of the ridge. Planting is completed with sweeps, disk openers, coulters, or row cleaners. Residue is left on the surface between ridges. Weed control is accomplished with crop protection products (frequently banded) and/or

cultivation. Ridges are rebuilt during cultivation.

Mulch-till - Full width tillage which disturbs all of the soil surface is performed prior to and/or during planting. Tillage tools such as chisels, field cultivators, disks, sweeps or blades are used. Weed control is accomplished with crop protection products and/or cultivation.

More Tillage Definitions

Reduced-till - Tillage types that leave 15-30% residue cover after planting or 500 to 1,000 pounds per acre of small grain residue equivalent throughout the critical erosion period.

Intensive-till or Conventional-till - Tillage types that leave less than 15% residue cover after planting or less than 500 pounds per acre of small grain residue equivalent throughout the critical erosion period. Generally involves plowing or intensive (numerous) tillage trips.

Other Terms

Non-cropped acres - Includes newly established permanent pasture, fallow, annual conservation use, and the Conservation Reserve Program (CRP)

Highly Erodible Land (HEL) - USDA Natural Resources Conservation Service (NRCS) has determined which fields meet the HEL criteria based on conservation compliance requirements. Both HEL and HEL Adequately Treated are reported in acres.

Total Planted Acres - Includes newly seeded alfalfa and other rotational forage crops ... only the year they are planted.

Acres reported may exceed the cropland base due to double cropping. Does not include newly established permanent pastures, fallow, annual conservation use and Conservation Reserve Program (CRP) acres.

Stale Seedbed

Stale seedbed is *not* an official category. The residue level after planting dictates the category (mulch-till, reduced-till, or intensive-till). Fields are tilled full-width soon after harvest. The seedbed 'settles' until planting is performed in the undisturbed (settled) seedbed or in reformed beds (minimum disturbance). Weeds and/or cover crops are managed with crop protection product(s) and/or

Small Grains - Includes wheat, oats, barley, rye, rice, etc. 1997 fall-seeded and 1998 spring-seeded crops ... both harvested in 1998 ... are included in this report. Rice is considered a spring-seeded small grain.

Forage Crops - Grasses or legumes planted as part of a crop rotation.

Permanent Pastures - Includes land planted to grasses or legumes.

Other Crops - Crops not specifically listed, such as vegetable and truck crops, peanuts, tobacco, etc.

Fallow - Cropland idled or "fallowed" the entire growing season.

Conservation Reserve Program (CRP) - Long-term land retirement program. Land recorded in the 1998 survey includes acres through the 17th sign-up that are remaining under contract.

Annual Conservation Use - Discontinued in 1997, this category included cropland idled for government cropland diversion programs.

"Reduced-till has between 15% and 30% residue cover on the soil's surface after planting. Intensive-till has less than 15% cover."