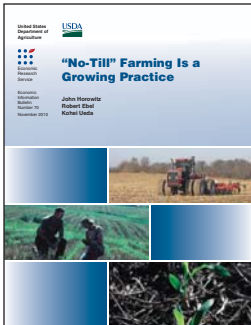


ERS *Report Summary*

Economic Research Service

November 2010

U.S. Department of Agriculture



This is a summary
of an ERS report.

Find the full report at
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ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

“No-Till” Farming Is a Growing Practice

John Horowitz, Robert Ebel, and Kohei Ueda

What Is the Issue?

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.

What Do the Data Show?

Approximately 35.5 percent of U.S. cropland (88 million acres) planted to eight major crops had no tillage (“no till”) operations in 2009, according to ERS researchers who analyzed 2000-07 data from USDA’s Agricultural Resource Management Survey (ARMS). The crops—barley, corn, cotton, oats, rice, sorghum, soybeans, and wheat—constituted 94 percent of total planted U.S. acreage in 2009. In addition:

- 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 percentage points 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 percent in 2006; projected at almost 50 percent in 2009).
- No-till was practiced on 23.5 percent of corn acres in 2005 (projected at 29.5 percent in 2009). More acres are planted to corn than to any other field crop in the United States.
- Cotton farmers practiced no-till on 20.7 percent of planted acres in 2007 (projected at 23.7 percent in 2009).
- Rice farmers had the lowest percentage of planted acres with no-till (11.8 percent in 2006; projected at 16.3 percent in 2009) among the major crops analyzed.
- Greenhouse gas benefits are largest when no-till is practiced over a prolonged period. In one of the Nation’s major growing areas, the Upper Mississippi River Basin, 13 percent of agricultural acres were in no-till for 3 consecutive years based on surveys conducted from 2003-2006, according to the National Resources Inventory-Conservation Effects Assessment Project (NRI-CEAP) Cropland Survey.

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How Were the Data Compiled?

The bulk of this study is based on data from the 2000-07 ARMS. Because only one or two crops are typically targeted by the ARMS each year, tillage practices for crops not surveyed during a specific year were estimated. These estimates were based on the latest data available for that crop and tillage trends for all major crops for which trends could be calculated.

Because the ARMS reports tillage practices for only 1 year at a time, the authors of this study also used data from the NRI-CEAP Cropland Survey for the Upper Mississippi River Basin. The Cropland Survey requests tillage practice information for the current year and the preceding 2 years, providing information on the continuation of farm-level no-till over time for a major crop-producing region of the country.

The National Resources Inventory-Conservation Effects Assessment Project Cropland Survey examined farming practices in the Upper Mississippi River Basin



Source: USDA, Economic Research Service based on data from USDA, Natural Resources Conservation Service.