

## **TILLAGE PRACTICES IN KANSAS: 2010 SURVEY RESULTS**

**DeAnn Presley**

Extension Specialist, Soil and Water Management  
Department of Agronomy, Kansas State University  
Manhattan, Kansas

Voice:785-532-1218 Fax: 785-532-6315

Email:deann@ksu.edu

### **INTRODUCTION**

Between 1989 and 2004, crop tillage and residue management surveys were conducted on a county-level basis for all counties in Kansas (and in many other states) as part of the Conservation Technology Information Center's Crop Residue Management Survey (CTIC-CRM).

Since 2004, changing input prices (including fuel, fertilizer, equipment, etc.) are thought to have caused increases in reduced tillage practices, especially no-till. Anecdotal information from producers, extension agents, and other agricultural professionals suggest that no-till acreage has increased greatly in some counties (such as those in northeast and north central Kansas), and lagged behind in other counties (the south-central portion of Kansas is often mentioned).

Other than the 1989-2004 CTIC CRM survey data, there is no other comprehensive, current data source for this information. From 1989-2004 USDA-NRCS personnel completed these driving transects, however, neither the USDA-NRCS, USDA-Farm Service Agency, or the Kansas Agricultural Statistics Service collects this type of information. Therefore, there is no current source of information available to describe on a crop-by-crop, county-by-county, or state-wide basis, which tillage practices are being utilized by Kansas producers.

### **OBJECTIVE**

To quantify tillage and residue management practices in Kansas on a crop-by-crop, county-level basis through the use of driving transects for nine selected counties in Kansas.

## METHODS

Kansas State University secured \$10,000 in funds from SCC, and \$20,000 from KDHE Clean Water Neighbor Grant. Twenty-two counties were selected, and each county was paid \$750.00 to collect data. The counties were identified by targeting areas of interest in watersheds above Kanopolis, Tuttle, Perry, John Redmond, and Clinton Reservoirs(KDHE funds) while SCC funds were used to select for representative counties throughout the remainder of the state. Counties were selected carefully in order to capture information from counties that are predominantly cropland, and representative of the climate/soils/cropping systems that occur in a geographic area. Once the potential counties were selected, volunteers were recruited from among extension agents, Conservation District employees, WRAPS staff/volunteers, etc. Kansas State University Research and Extension Watershed Specialists also played a vital role in collecting data in their work areas, particularly due to their efficient use of tablet computers to collect the information in GIS-ready formats.

Volunteers were trained to collect the data, and completed driving tours of the selected counties in Fall 2009 (to observe the wheat crop) and spring 2010 (for row crops). Data was collected for a minimum of 460 fields in both the fall of 2009 (wheat) and spring of 2010 (row crops) and the tillage practice and crop was recorded for each point. Data was collected and compiled and presented in multiple formats, including tabular, spatial maps, and formats viewable in Google Earth. Calculations were made using the data points collected by the volunteers, and using 2010 Farm Services Agency data for planted acres in each county.

## RESULTS

All data and outputs are posted on the KSU Agronomy Extension website at: <http://www.agronomy.ksu.edu/extension/tillage> The data available on the website and on the data CDs is presented in multiple formats. For example, for any given county, the user can observe the tillage practices observed for each crop, and we also added up the points observed for each tillage practice and divided by the total number of points observed, and reported as % acres for each tillage practice per county. In addition, we used the 2010 FSA acreage planted per county to extrapolate the % values into acres.

Data from Sherman County, Kansas is presented on the following pages. The data is presented separately for irrigated and dryland. Reduced tillage (15-30% residue) was the most common practice for most crops on the 119 irrigated fields surveyed, while conventional tillage (<15% residue) was the most common practice on dryland. For row crops, no-till was the most common tillage practice, while wheat was dominated by conventional tillage.

## 2010 Growing Season - Sherman County, Kansas Irrigated Tillage by Land Cover Summary

	Number of Fields	Percent Tillage of Crop
<b>CORN</b>	<b>74</b>	
No Till	12	16.2%
Reduced Till	46	62.2%
Conventional Till	16	21.6%
<b>FALLOW</b>	<b>5</b>	
No Till	4	80.0%
Reduced Till	1	20.0%
<b>GRAIN SORGHUM</b>	<b>6</b>	
No Till	1	16.7%
Reduced Till	3	50.0%
Conventional Till	2	33.3%
<b>SOYBEAN</b>	<b>9</b>	
No Till	4	44.5%
Reduced Till	3	33.3%
Conventional Till	2	22.2%
<b>SUNFLOWER</b>	<b>12</b>	
No Till	3	25.0%
Reduced Till	5	41.7%
Conventional Till	3	25.0%
Strip Till	1	8.3%
<b>WHEAT</b>	<b>10</b>	
Reduced Till	5	50.0%
Conventional Till	5	50.0%
<b>OTHER CROPS (Total)</b>	<b>3</b>	
<b>Dry Beans</b>	<b>2</b>	
Reduced Till	1	50.0%
Conventional Till	1	50.0%
<b>Oats</b>	<b>1</b>	
Reduced Till	1	100.0%
<b>TOTAL FIELDS</b>	<b>119</b>	

**2010 Growing Season - Sherman County, Kansas  
Irrigated Tillage Summary**

	Number of Fields	Percent of Tillage Fields
<b>NO TILL</b> (Greater than 30% Residue)	24	20.2%
<b>REDUCED TILL</b> (15-30% Residue)	65	54.6%
<b>CONVENTIONAL TILL</b> (Less than 15% Residue)	29	24.4%
<b>OTHER METHODS (TOTAL)</b>	1	0.8%
<b>Continuous No Till</b>	-	-
<b>Burn</b>	-	-
<b>Mulch Till</b>	-	-
<b>Ridge Till</b>	-	-
<b>Strip Till</b>	1	1%
<b>TOTAL TILLAGE FIELDS</b>		
	<b>119</b>	

**2010 Growing Season - Sherman County, Kansas  
Dryland Tillage by Land Cover Summary**

	<b>Number of Fields</b>	<b>Percent Tillage of Crop</b>
<b>CORN</b>	<b>37</b>	
No Till	30	81.1%
Reduced Till	6	16.2%
Conventional Till	1	2.7%
<b>CRP</b>	<b>19</b>	
Not Applicable	19	100.0%
<b>FALLOW</b>	<b>91</b>	
No Till	29	31.9%
Reduced Till	33	36.2%
Conventional Till	29	31.9%
<b>GRAIN SORGHUM</b>	<b>5</b>	
No Till	4	80.0%
Conventional Till	1	20.0%
<b>PASTURE</b>	<b>38</b>	
Not Applicable	38	100.0%
<b>SOYBEAN</b>	<b>1</b>	
No Till	1	100.0%
<b>SUNFLOWER</b>	<b>5</b>	
No Till	5	100.0%
<b>WHEAT</b>	<b>104</b>	
No Till	1	1.0%
Reduced Till	19	18.3%
Conventional Till	84	80.7%
<b>OTHER (Total)</b>	<b>2</b>	
<b>Dry Beans</b>	<b>1</b>	
Conventional Till	1	100.0%
<b>Oats</b>	<b>1</b>	
Conventional Till	1	100.0%
<b>TOTAL FIELDS</b>	<b>302</b>	

## 2010 Growing Season - Sherman County, Kansas Dryland Tillage Summary

	Number of Fields	Percent of Tillage Fields
<b>NO TILL</b> (Greater than 30% Residue)	70	28.6%
<b>REDUCED TILL</b> (15-30% Residue)	58	23.7%
<b>CONVENTIONAL TILL</b> (Less than 15% Residue)	117	47.8%
<b>OTHER METHODS (TOTAL)</b>	-	-
<b>Continuous No Till</b>	-	-
<b>Burn</b>	-	-
<b>Mulch Till</b>	-	-
<b>Ridge Till</b>	-	-
<b>Strip Till</b>	-	-
<b>TOTAL TILLAGE FIELDS</b>	<b>245</b>	