The Benefits of Conservation Practices -- Use of Conservation Practices in the St. Joseph River Basin

On October 13, 2011, the US Department of Agriculture (USDA) released the results of its study, *Conservation Effects Assessment Project* (CEAP) for the Great Lakes. The study was prepared by the Natural Resources Conservation Service and is similar to ones conducted both in the Mississippi Basin and the Chesapeake Bay Watershed.

The newest study covered the entire U.S. side of the Great Lakes Region including nearly all of Michigan and parts of Illinois, Indiana, Minnesota, New York, Ohio, Pennsylvania and Wisconsin with data collected between 2003 through 2006. The study looked at farming and conservation practices--many of which are funded under the *Federal Food Conservation and Energy Act—"The Farm Bill"*-- the primary agricultural and food policy tool of the Federal government. Conservation tillage is a farming practice where at least 30 percent residue cover is left after planting.

According to the CEAP study, there is a 50 percent decline in sediment entering our waterways because of conservation tillage practices and other conservation practices. It is estimated that as much as 65 percent of sediments can be reduced by the use of filter strips along streams or ditches that crisscross agricultural fields. The study further found a 36 percent reduction in phosphorus and 37 percent decline in nitrogen loading through the use of conservation practices.

Conservation tillage practices can include:

No-till: A practice that includes minimal soil disturbance with direct seeding
Mulch-till: A practice that represents 30-75 percent cover residue after planting
Reduced-till: A practice that represents 16-30 percent residue after planting

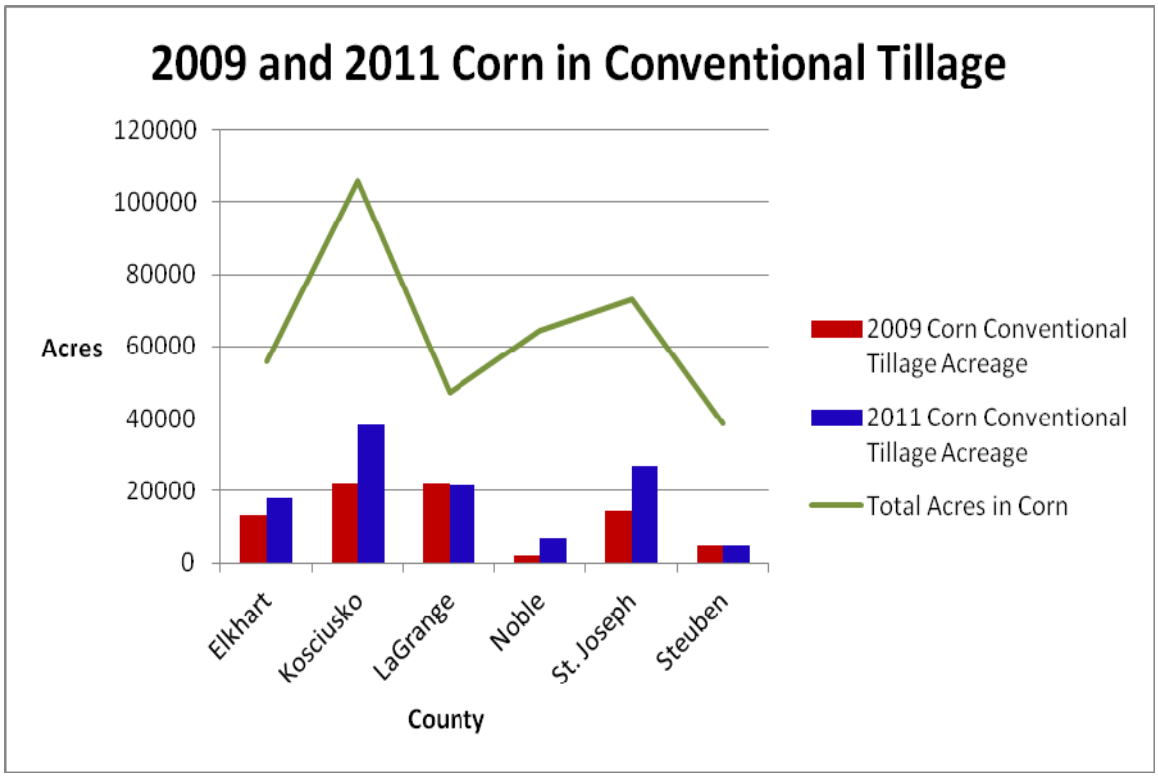
Due to the low plant residue that remains on the ground surface to reduce erosion (less than 15 percent), **conventional tillage** is not considered a conservation tillage practice.

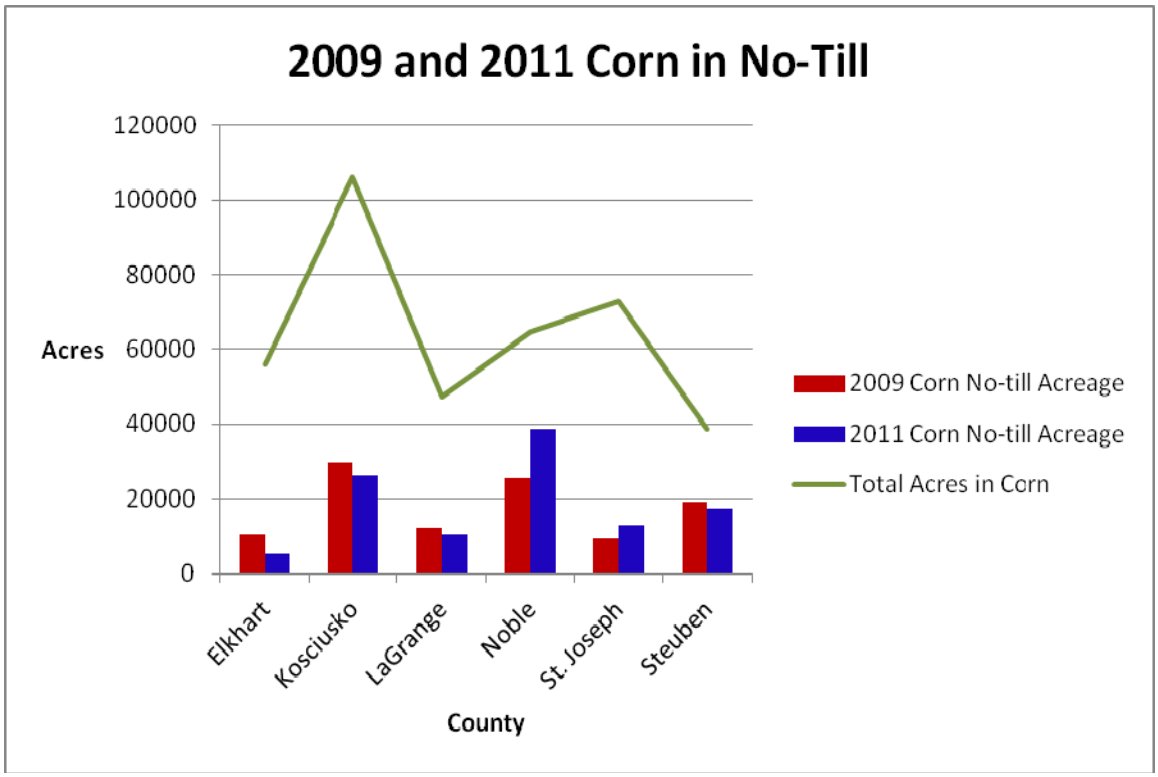
The Great Lakes CEAP identified slightly more than half of cropland as having either "a high or moderate need for additional conservation practices to lessen sediment and nutrient losses." This is similar to those studies conducted in the Upper Mississippi River Basin and the Chesapeake Bay watershed.

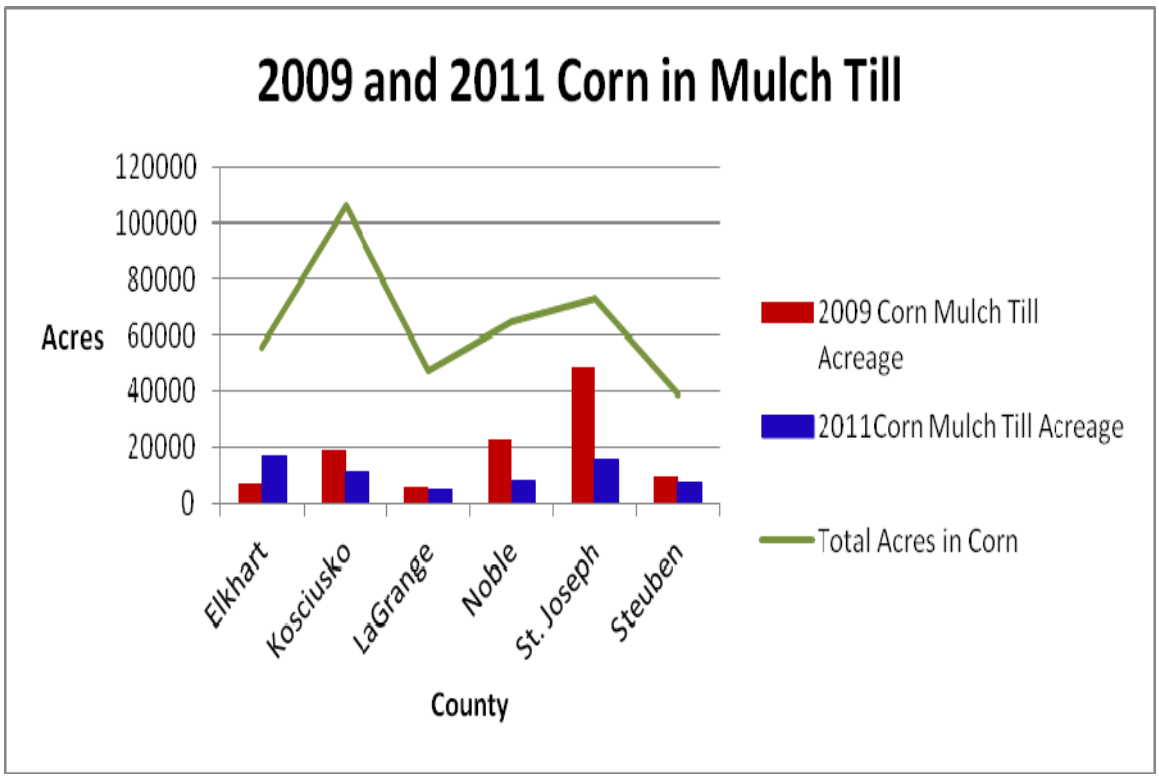
The following graphs and tables show the acreage of tillage practices in all six major St. Joseph River Basin Counties in Indiana for corn and soybeans for 2009 and 2011(Data Source: Indiana State Department of Agriculture).

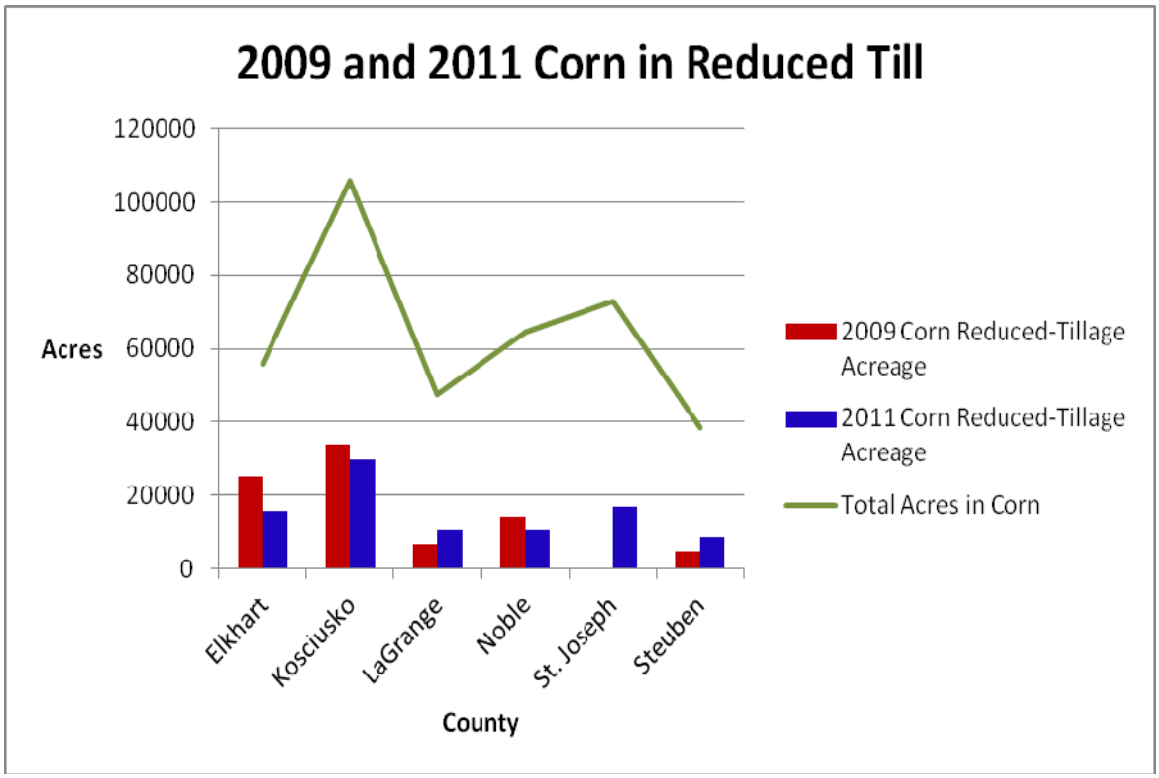
2009 and 2011 Corn Acreage in Conservation Practices

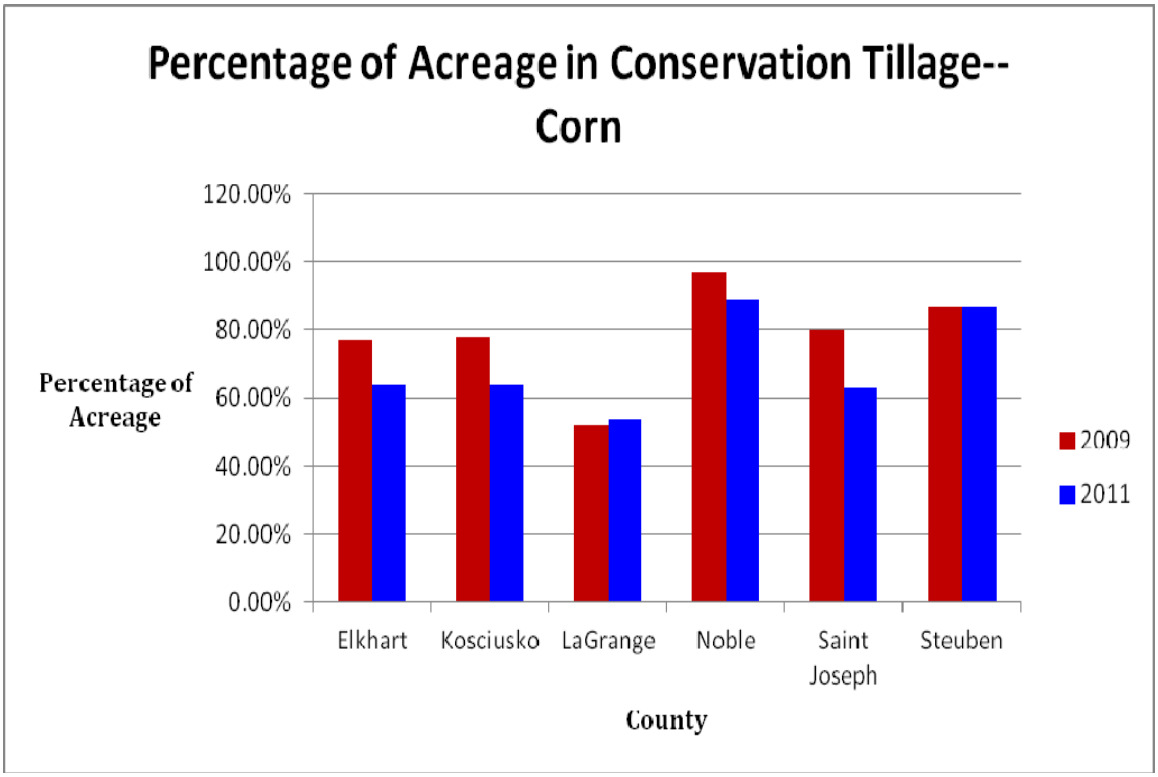
	Elkhart	Kosciusko	LaGrange	Noble	St. Joseph	Steuben
Total Acres in Corn	56000	106000	47400	64500	73000	38600
2009 Corn No-till Acreage	10640	29680	12324	25800	9490	19300
2011 Corn No-till Acreage	5600	26500	10428	38700	13140	17370
2009 Corn Mulch Till Acreage	7280	19080	5688	22575	48910	9650
2011Corn Mulch Till Acreage	17360	11660	4740	8385	16060	7720
2009 Corn Reduced-Tillage Acreage	25200	33920	6636	14190	0	4632
2011 Corn Reduced-Tillage Acreage	15680	29680	10428	10320	16790	8492
2009 Corn Conventional Tillage Acreage	13440	22260	22278	1935	14600	5018
2011 Corn Conventional Tillage Acreage	17920	38160	21330	7095	27010	5018

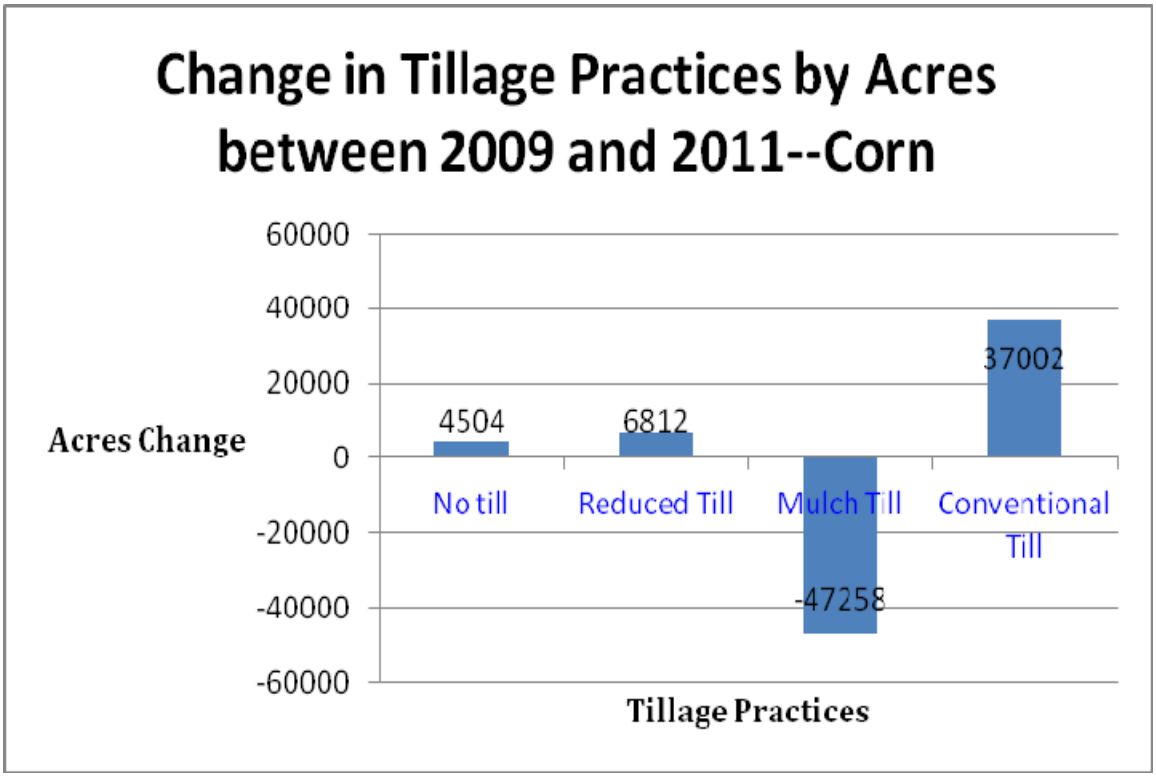

2009 and 2011 Corn in Conventional Tillage
120000
100000
80000
60000
40000
20000
0
Acres
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Corn Conventional Tillage Acreage
2011 Corn Conventional Tillage Acreage
Total Acres in Corn


2009 and 2011 Corn in No-Till
120000
100000
80000
60000
40000
20000
0
Acres
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Corn No-till Acreage
2011 Corn No-till Acreage
Total Acres in Corn


2009 and 2011 Corn in Mulch Till
120000
100000
80000
60000
40000
20000
0
Acres
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Corn Mulch Till Acreage
2011Corn Mulch Till Acreage
Total Acres in Corn

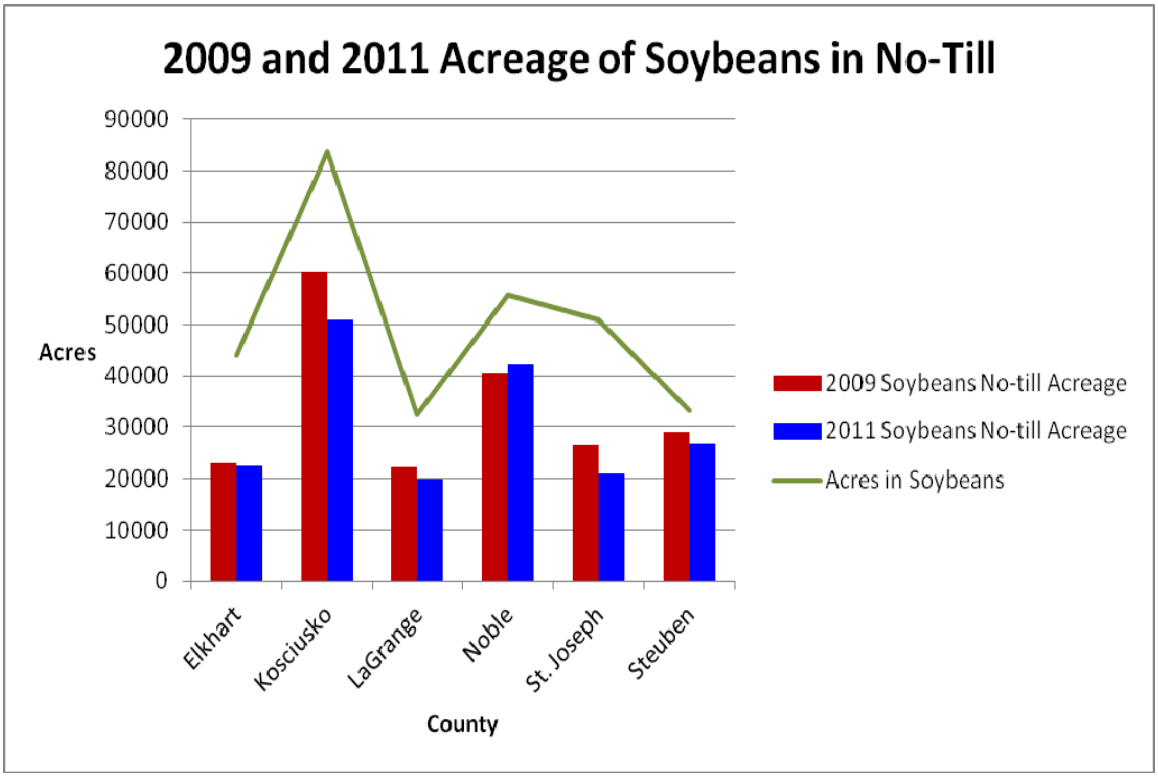

2009 and 2011 Corn in Reduced Till
120000
100000
80000
60000
40000
20000
0
Acres
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Corn Reduced-Tillage Acreage
2011 Corn Reduced-Tillage Acreage
Total Acres in Corn

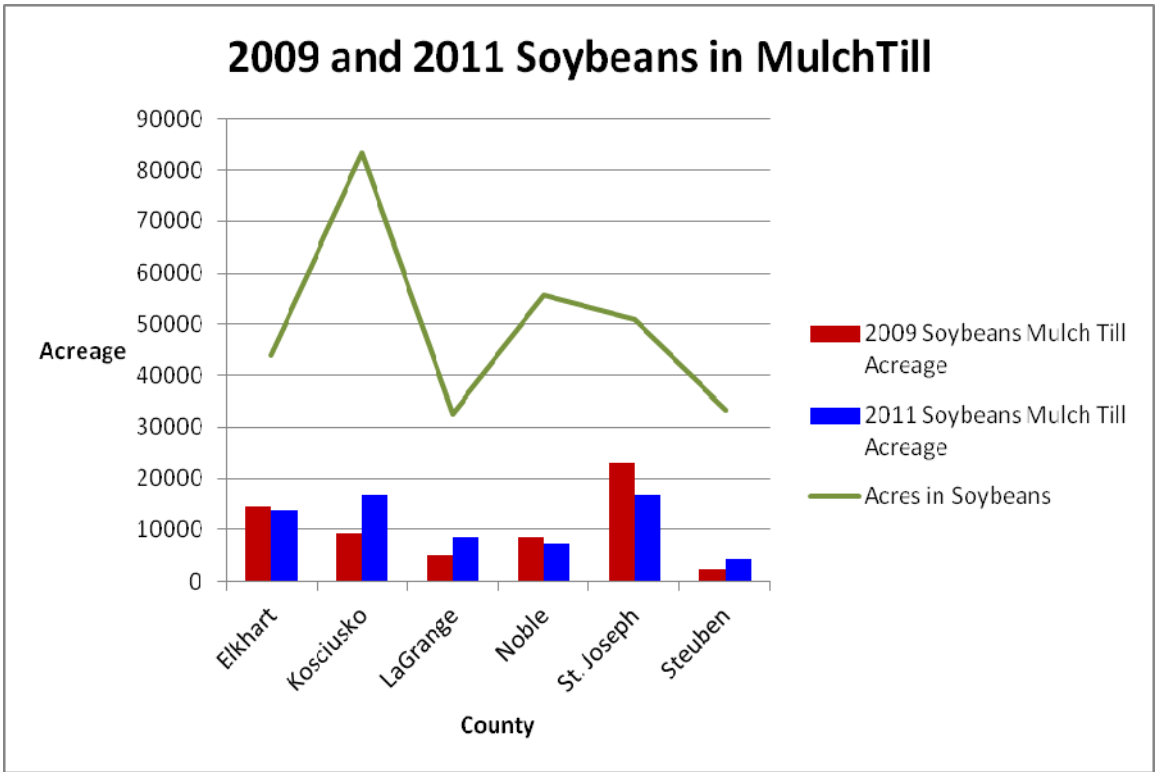

Percentage of Acreage in Conservation Tillage--Corn
120.00%
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
Percentage of Acreage
Elkhart
Kosciusko
LaGrange
Noble
Saint Joseph
Steuben
County
2009
2011

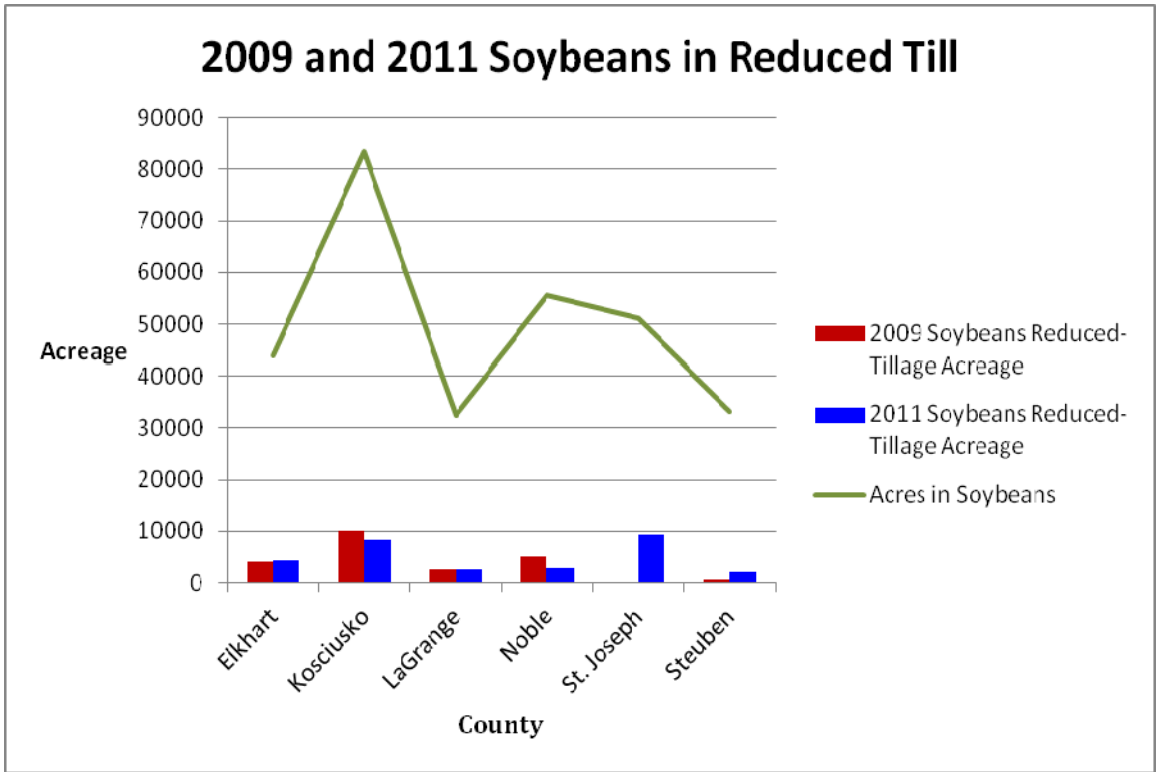

Change in Tillage Practices by Acres between 2009 and 2011--Corn
60000
40000
20000
0
-20000
-40000
-60000
Acres Change
4504
6812
-47258
37002
No till
Reduced Till
Mulch Till
Conventional Till
Tillage Practices

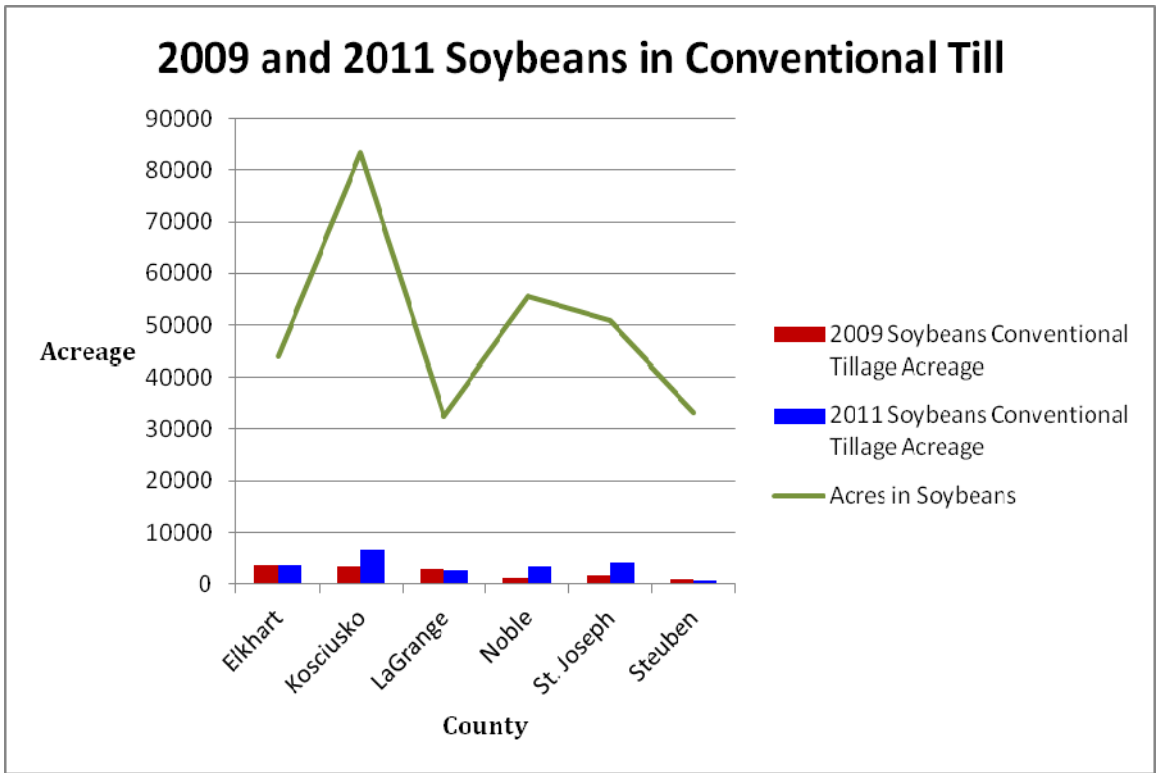
2009 and 2011 Acreage in Conservation Tillage--Soybeans

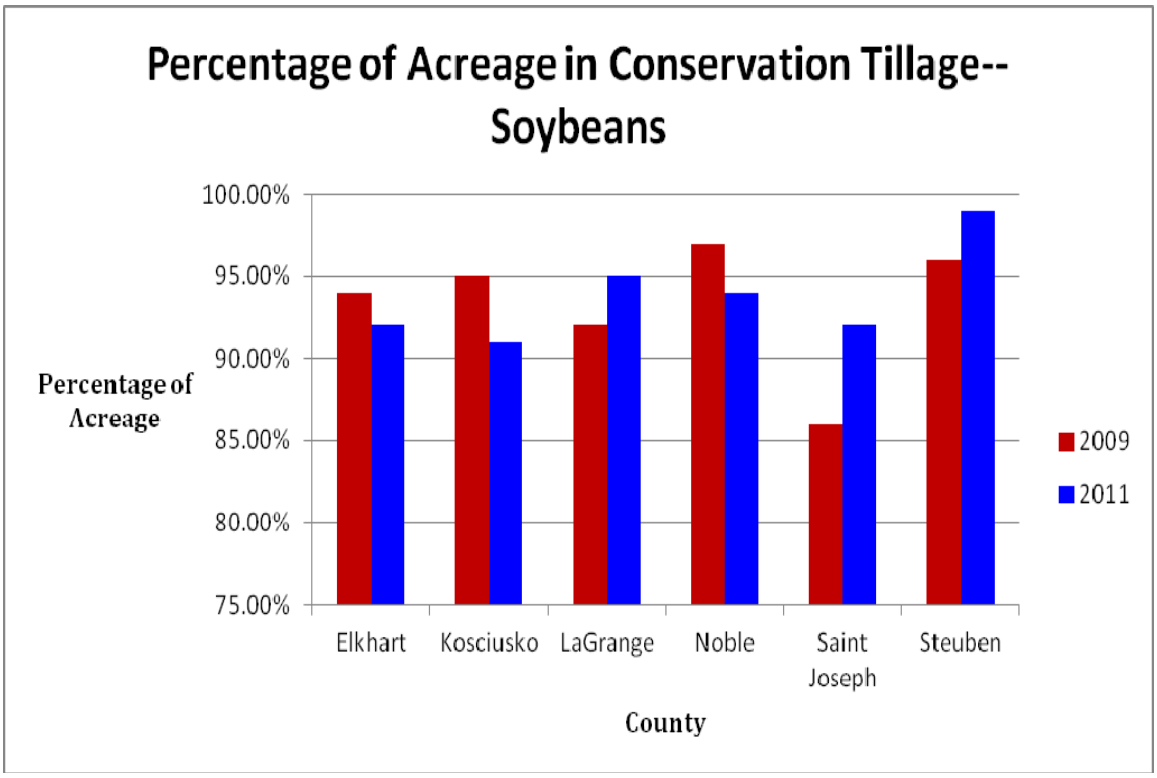
	Elkhart	Kosciusko	LaGrange	Noble	St. Joseph	Steuben
Acres in Soybeans	44000	83500	32500	55700	51000	33300
2009 Soybeans No-till Acreage	22880	60120	22100	40661	26520	28971
2011 Soybeans No-till Acreage	22440	50935	19825	42332	20910	26640
2009 Soybeans Mulch Till Acreage	14520	9185	5200	8355	22950	2331
2011 Soybeans Mulch Till Acreage	13640	16700	8450	7241	16830	4329
2009 Soybeans Reduced-Tillage Acreage	3960	10020	2600	5013	0	666
2011 Soybeans Reduced-Tillage Acreage	4400	8350	2600	2785	9180	1998
2009 Soybeans Conventional Tillage Acreage	3520	3340	2925	1114	1530	999
2011 Soybeans Conventional Tillage Acreage	3520	6680	2600	3342	4080	666

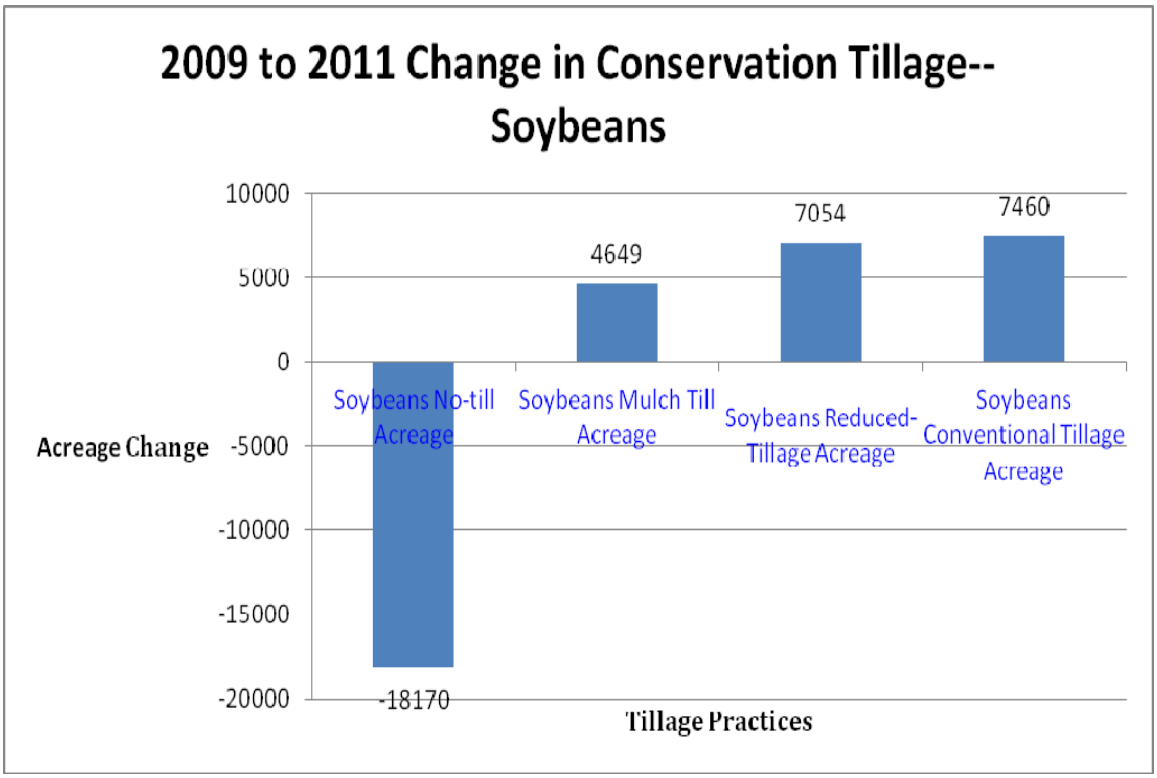

2009 and 2011 Acreage of Soybeans in No-Till
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Acres
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Soybeans No-till Acreage
2011 Soybeans No-till Acreage
Acres in Soybeans


2009 and 2011 Soybeans in MulchTill
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Acreage
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Soybeans Mulch Till Acreage
2011 Soybeans Mulch Till Acreage
Acres in Soybeans


2009 and 2011 Soybeans in Reduced Till
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Acreage
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Soybeans Reduced-Tillage Acreage
2011 Soybeans Reduced-Tillage Acreage
Acres in Soybeans


2009 and 2011 Soybeans in Conventional Till
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Acreage
Elkhart
Kosciusko
LaGrange
Noble
St. Joseph
Steuben
County
2009 Soybeans Conventional Tillage Acreage
2011 Soybeans Conventional Tillage Acreage
Acres in Soybeans


Percentage of Acreage in Conservation Tillage--Soybeans
100.00%
95.00%
90.00%
85.00%
80.00%
75.00%
Percentage of Acreage
Elkhart
Kosciusko
LaGrange
Noble
Saint Joseph
Steuben
County
2009
2011


2009 to 2011 Change in Conservation Tillage--Soybeans
10000
5000
0
-5000
-10000
-15000
-20000
Acreage Change
-18170
4649
7054
7460
Soybeans No-till Acreage
Soybeans Mulch Till Acreage
Soybeans Reduced-Tillage Acreage
Soybeans Conventional Tillage Acreage
Tillage Practices