

**Dixon Springs Agricultural Center
Brownstown Agronomy Research Center**

Crop Sciences

Southern Illinois Newsletter

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Weather and Crop Report. A fairly mild January was followed by a fairly cold February, but wheat seems to have begun spring growth without any difficulties. Wheat is at GS 6.0 (jointing) here at Dixon Springs and is around GS 5.0 at Brownstown. All N has now been applied at both locations. There have been a few reports of aphid outbreaks in selected areas, but otherwise wheat remains pest free.

Mark Your Calendars

Field Days for 2006:

Brownstown -- Thursday July 27
Dixon Springs -- Thursday August 3
Urbana -- Thursday August 17

¹Ron Hines, Senior Research Specialist, reports regularly on pest management at the Center in "The Hines Report" found at http://www.ipm.uiuc.edu/pubs/hines_report/index.html

Dixon Springs Weather Summary 2006

Month	Total Rainfall	Departure From Normal	Growing Degree Days	Departure From Normal	Ave. Air Temp.		Soil Temp. 4" Sod		Soil Temp. 4" Bare	
					High	Low	High	Low	High	Low
January	4.78	1.46	103	70	55	35	47	45	43	38
February	2.63	-0.73	81	7	50	27	46	43	42	37
<i>Totals</i>	<i>7.41</i>	<i>0.73</i>	<i>184</i>	<i>77</i>						

Brownstown Weather Summary 2006

Month	Total Rainfall	Departure From Normal	Growing Degree Days	Departure From Normal	Ave. Air Temp.		Soil Temp. 4" Sod		Soil Temp. 4" Bare	
					High	Low	High	Low	High	Low
January	2.29	-0.78	40	18	46	32	43	41	45	43
February	0.41	-1.63	8	-32	37	23	42	40	43	41
<i>Totals</i>	<i>2.70</i>	<i>-2.41</i>	<i>48</i>	<i>-14</i>						

To Till or Not To Till? A tillage study has been conducted at both Dixon Springs and Brownstown since the fall, 1999, on a Grantsburg silt loam and Cisne silt loam soil, respectively. This study has compared the following primary tillage systems:

- Continuous no-till (since 1999)
- Continuous chisel tillage (since 1999)
- No-till with an annual deep ripping in the fall (since 1999)
- No-till with a fall deep ripping every other year (1999, 2001, 2003, 2005)
- No-till with a fall deep ripping every fourth year (1999, 2003)

At both locations the ripper used consisted of straight shanks with minimum residue disturbance and ran 14-16 inches deep on average.

Each of the primary tillage system plots were split with a secondary tillage consisting of either 1) no-till or 2) spring disking prior to planting. Corn and soybeans were grown in rotation in separate fields and plots rotated between these two fields. Because of the rough nature of chisel tillage, the spring tillage consisted of either 1) a single disking (minimum disturbance) or 2) disking twice or disking followed by a field cultivator (similar to the other tillage systems).

The six-year x two location (12 site-years) average corn and soybean yields are shown in the figures below. Although only statistically significant in 2002 at Dixon Springs, the chisel tillage has consistently produced lower yields than the other tillage systems, as shown by the overall lower average yields.

The deep tillage treatments never provided any yield responses above the continuous no-tillage system. This was true for both corn and soybeans. The secondary tillage treatments had no significant effect either. With corn the yields averaged 3 bu/acre less (141 vs. 144) with spring disking compared to no-till at Dixon Springs, and 6 bu/acre less (97 vs. 103) at Brownstown. Soybean yields showed no response to secondary tillage.

This study would seem to indicate that residue is a vital part of crop production in southern IL, especially with corn. Tillage (both chiseling and disking) that tend to bury residue and disturb the soil (probably affecting internal drainage) tended to reduce yields. These tilled plots tended to show higher levels of water stress during periods of drought.

One would have to conclude that during this period of high fuel costs, reducing the amount of fuel used for tilling the soil is an economical benefit. Since no-till yields are equal to or better than any system where some tillage is employed, perhaps this is a system worth visiting.

Figure 1.

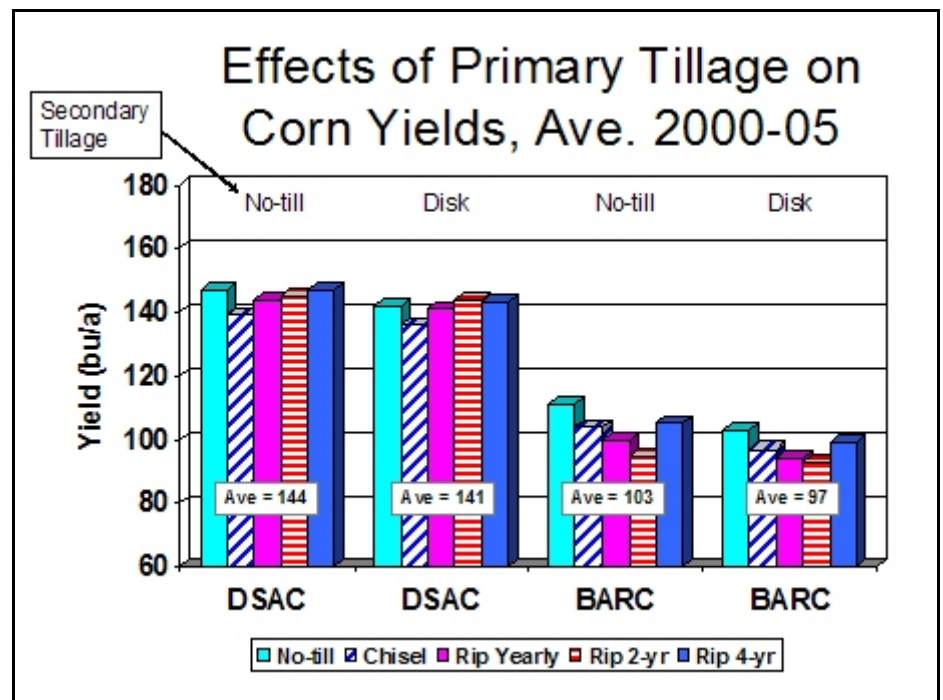


Figure 2.

