

**Dixon Springs Agricultural Center
Brownstown Agronomy Research Center
Crop Sciences
Southern Illinois Newsletter**

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Weather and Crop Report. Dixon Springs recorded nearly 62 inches of rainfall in 2006. This exceeds the normal of 48 inches by 14 inches, but is not the record rainfall for the center. In 1945 the center received nearly 72 inches. The 2006 rainfall ranks 4th overall, since Dixon Springs started recording weather in 1938. The rainfall at Brownstown was near normal for the year, but low rainfall in July certainly affected corn yields there.

High rainfall in the fall took it’s toll on wheat emergence and fall growth at Dixon Springs, and throughout parts of southern Illinois. This combined with cold temperatures in February may have an impact on wheat yields. See below.

Mark Your Calendars

Feb 19 – IWA Wheat Forum, Mt. Vernon
July 26 – Brownstown Agronomy Field Day
August 2 – Dixon Springs Field Day
August 16 – Urbana Agronomy Field Day

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
March	7.25	2.85	202	17	61	39	54	51	53	43
April	2.98	-1.46	488	134	77	52	70	65	68	57
May	4.07	-1.27	517	-28	77	56	74	69	71	61
June	2.81	-1.34	715	8	87	63	84	79	85	73
July	8.50	4.87	810	-17	89	67	86	83	85	77
August	3.08	-0.34	832	43	90	69	86	83	86	76
September	8.52	5.13	515	-95	78	56	75	71	72	63
October	6.60	3.22	319	-68	69	45	64	61	60	53
November	5.42	0.78	143	-27	58	38	54	51	49	45
December	5.27	0.99	74	19	51	34	48	46	44	39
<i>Totals</i>	<i>61.91</i>	<i>14.14</i>	<i>4796</i>	<i>63</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
March	4.12	1.44	64	-48	47	34	45	43	46	45
April	1.79	-1.58	371	106	70	51	57	55	60	57
May	5.39	0.56	439	-36	71	57	67	65	70	68
June	3.60	0.24	714	37	82	66	78	75	83	79
July	2.14	-0.58	820	35	86	69	82	80	85	83
August	4.93	2.35	788	33	84	68	81	77	85	82
September	3.06	0.59	457	-94	74	56	70	68	74	71
October	4.24	1.49	220	-103	61	44	58	56	62	59
November	2.13	-1.50	98	-21	54	41	59	47	50	49
December	4.14	2.04	42	-13	47	32	44	43	46	44
<i>Totals</i>	<i>38.24</i>	<i>0.63</i>	<i>4061</i>	<i>-118</i>						

Wheat Management for 2007

Wheat stands are certainly being put to the test this year. With high rainfall after planting in the fall, wheat got off to a rough start with poor emergence and fall growth heading into the winter. The cold weather as of late is not helping the wheat come out of winter dormancy in much better shape. But, as the chart in Figure 1 might suggest, all is not lost. Even as poor as a 50% stand could still produce 80% of the normal yield potential. Time and patience will be needed before a better evaluation of stands can be determined.

The first consideration is “what is the stand”? One must take a careful evaluation of stand. The first determination is how many plants per square foot is there. This requires you to divide the row spacing into 144 to get the length of row to measure. For example, if you have 7.5" rows then you divide 144/7.5 and get 19". You would measure off 19" of row and count the plants, repeating this several more times across the field to get an average stand. You will probably find that digging the section of row with a shovel will help you differentiate plants from tillers. Remember, we are only counting plants (not tillers) at this time. Once you have determined the number of plants, then you need to determine the number of potential seed heads (the main plant plus all tillers with three unfolded leaves).

While I have reported on several occasions that it is unlikely that you will see any benefit to spring split N treatments on wheat, this year could be the exception. Some states report that thin stands (low tiller numbers) might be benefitted by early N application (Figure 2). With the shape of this year's wheat crop coming out of dormancy, there may be a benefit to some early N.

Our data still suggests that the bulk of the N needs to be applied at Feekes growth stage 5.0 (late tillering, just before jointing) (Figure 3). This places the time of N application very close to the time when wheat utilizes it with the greatest efficiency, thus reducing the chance of N losses from the system and reduced yields.

Figure 1. Effect of wheat stand on yield potential.

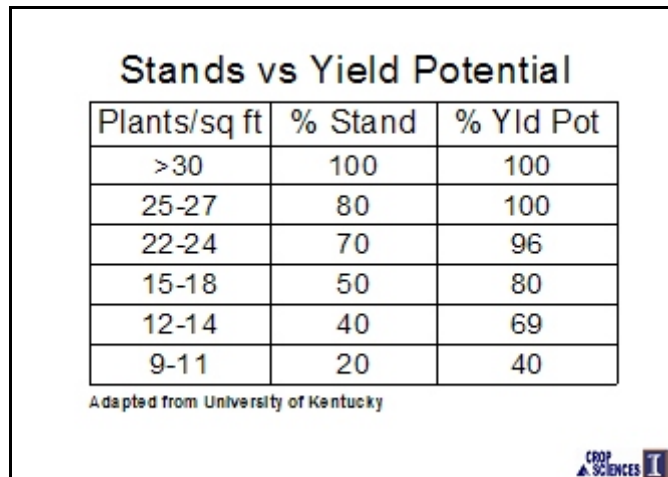


Figure 2. Tiller counts and early N application.

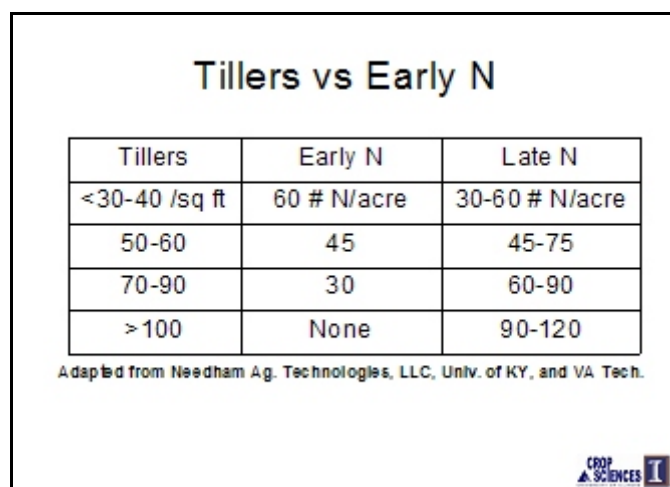
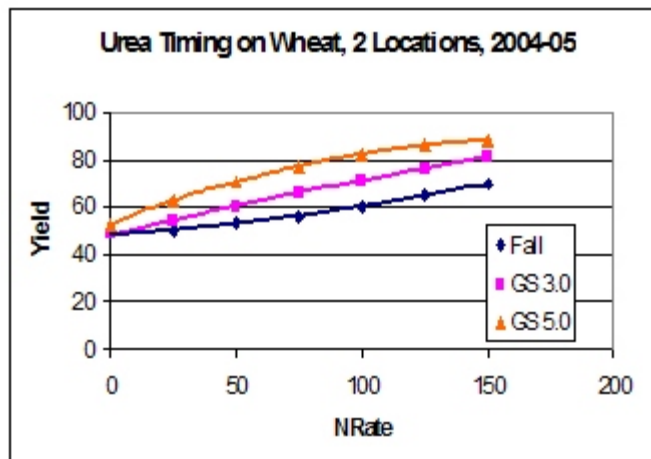


Figure 3. Effects of time of N application on wheat.



The economic optimum spring rate of N to apply to wheat is closely associated with the price of N and the value of the wheat crop. Using the research results from the past four years across several locations we can determine the economical optimum N rate. We assumed a N price of \$0.38/lb N and a wheat value of \$4.50/bu.

The optimum spring N rate for northern IL appears to be around 60 lb N/acre and for southern IL around 140 lb N/acre. This is highly dependent on your ability to uniformly apply the N to the wheat. Spreading problems, including overlapping of N could cause lodging problems.

Figure 4. Effect of spring N rates on wheat yields in northern and southern IL.

