

# NORTHERN ILLINOIS AGRONOMY RESEARCH CENTER

## Department of Crop Sciences---University of Illinois COLLEGE of AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES



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#### 2004 Weather Data

	May	June	July	August
Air Temperature (F°)				
Monthly Average High	73.6	78.7	80.7	75.9
Monthly Average Low	52.1	59.6	61.2	54.9
Daily Average	62.6	69.2	71.0	65.4
Departure from Average (38 year)	+ 2.5	-0.8	-2.5	-5.6
Observed High (date)	88.9 ( 9)	92.0 ( 8)	88.3 (13)	88.4 ( 3)
Observed Low (date)	30.3 ( 3)	49.4 (25)	52.7 ( 8)	42.0 (15)
	September	October	November	December
Air Temperature (F°)				
Monthly Average High	77.9	63.0	49.0	34.3
Monthly Average Low	49.5	40.5	33.1	18.6
Daily Average	63.5	51.6	41.2	27.1
Departure from Average (38 year)	-0.0	-0.4	+ 2.5	+ 1.0
Observed High (date)	84.4 (13)	77.6 ( 7)	65.1 (17)	54.1 (30)
Observed Low (date)	32.3 (30)	23.5 ( 5)	14.1 (25)	-5.7 (24)

#### 2004 Precipitation (Inches)

Month	Total	Departure from Average	Year Accumulation	Total Departure 123 Yr
January	0.31	-1.24	0.31	- 1.24
February	0.76	-0.69	1.07	-1.93
March	3.77	+ 1.34	4.84	- 0.59
April	1.94	-1.29	6.78	- 1.88
May	9.54	+ 5.61	16.32	+ 3.73
June	3.07	-1.09	19.39	+ 2.62
July	2.08	-1.53	21.47	+ 1.09
August	3.25	-0.41	24.72	+ 0.68
September	0.70	-2.93	25.42	-2.25
October	3.28	0.49	28.70	-1.76
November	2.74	0.36	31.44	-1.40
December	0.48	-1.40	31.92	-2.80

**2004 Growing Degree Days (Base 50)**

Month	GDD	28 Yr. Ave.	Departure	4/15 to EOM	Ave YTD	Departure
April (15-30)	169.1	109.9	+ 59.2	169.1	109.9	+ 59.2
May	438.3	379.5	+ 58.8	607.4	489.3	+ 118.0
June	569.6	564.2	+ 5.3	1177.0	1053.6	+ 123.3
July	646.9	674.0	-27.2	1823.9	1727.6	+ 96.1
August	461.8	615.4	-153.6	2285.7	2343.0	-57.5
September	460.8	423.4	+ 37.4	2746.5	2766.3	-20.1
October (1-15)	112.7	117.5	-4.8	2859.2	2883.8	-24.9

**2005 Weather Data**

	January	February
Air Temperature (F°)		
Monthly Average High	28.6	37.9
Monthly Average Low	14.9	25.5
Daily Average	22.3	31.3
Departure from Average (39 year)	+ 1.9	-5.6
Observed High (date)	50.5 (12)	53.2 ( 5)
Observed Low (date)	- 4.3 (18)	7.9 (18)

**2005 Precipitation (Inches)**

Month	Total	Departure from Average	Year Accumulation	Total Departure 123 Yr
January	1.83	+ 0.29	1.83	+ 0.29
February	1.58	+ 0.14	3.41	+ 0.43

**Oat Variety Trials :**

Following are the yields from Dr. Fred Kolb oats breeding trials for 2003 & 2004. The averages are as follows:

**University of Illinois Oat Drill Plots - Summary over 2003 and 2004**

Name	2004 - 3 Location averages					DeKalb- 2004			2 year Averages			
	Yield	Yield	Test	Height	Lodging	Yield	Yield	Test	Yield	Yield	Test	Height
	(bu/A)	Rank	Weight (lbs/bu)	(in.)	(0-9)	(bu/A)	Rank	Weight (lbs/bu)	(bu/A)	Rank	Weight (lbs/bu)	(in.)
Spurs	127.7	1	33.4	37	4	144.5	1	33.6	134.9	1	33.8	39.2
Sesqui	125.0	2	32.9	41	2	126.9	5	32.5	133.7	2	33.3	42.6
Jim	120.8	3	31.8	39	4	134.2	2	32.3	130.5	3	32.6	41.8
Jay	116.1	4	32.8	34	2	125.4	6	31.5	124.8	7	33.4	37.0
Leonard	115.6	5	29.1	43	3	121.4	7	27.3	124.4	8	29.7	43.8
Blaze	114.6	6	32.5	38	4	120.6	9	33.6	128.1	4	33.5	40.7
Wabasha	114.6	7	31.8	42	3	133.6	3	32.8				
Classic	111.9	8	30.8	40	2	127.4	4	31.5	115.2	12	32.1	42.3
Gem	111.7	9	32.0	41	2	120.5	10	32.0	119.5	10	32.3	43.6
Chaps	111.1	10	29.7	38	3	120.2	11	30.4	125.4	6	31.4	40.4
Rodeo	108.8	11	30.4	40	4	119.8	12	29.9	127.9	5	31.0	41.7
Dane	108.6	12	29.0	35	2	115.6	13	28.6	111.0	13	30.2	38.2
Moraine	106.5	13	31.1	40	4	121.1	8	32.4	117.9	11	32.1	42.6
Ogle	101.9	14	28.8	38	3	101.7	14	26.9	121.9	9	30.1	40.3
Don	89.8	15	28.6	35	4	96.9	15	28.1	103.8	14	30.7	37.1
<b>Mean</b>	<b>112.3</b>		<b>31.0</b>	<b>38.7</b>	<b>3</b>	<b>124.3</b>		<b>33.1</b>	<b>122.8</b>		<b>31.9</b>	<b>40.8</b>
<b>No. of tests</b>	<b>3</b>		<b>3</b>	<b>3</b>	<b>2</b>				<b>5</b>		<b>5</b>	<b>4</b>

Three locations - DeKalb, Monmouth & Urbana.

### Nitrogen rates:

Determining the proper nitrogen rate recommendations continues to be of research interest. These recommendations are presently being reviewed by specialists in the Midwest to determine what changes need to be made to the recommendations that are made. The final decision on how to make the recommendations has not been reached.

The nitrogen rate work at NIARC has continued to show better corn yields following soybeans than in continuous corn. The six year average increase in yield has been about 18 to 47 bushels per acre at the same nitrogen rates. The maximum nitrogen rate in the study were 225 pounds per acre. Over six years, the maximum average yield was at the maximum nitrogen level.

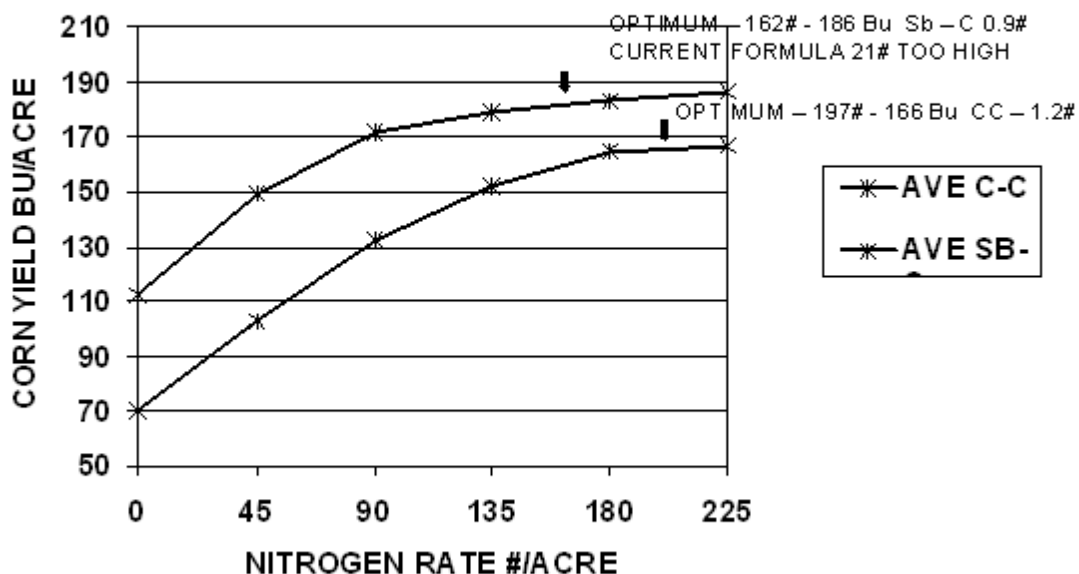
The recommendation of 1.2 pounds of nitrogen per bushel of yield worked out almost perfectly for continuous corn. The optimum rate of nitrogen based on the price of corn and soybeans was 197# of nitrogen with a corn yield of 166 bushels per acre.

The 1.2# of nitrogen per bushel was within a pound of the optimum rate.

The optimum rate of nitrogen for corn following soybeans was 162# of nitrogen and a yield level of 186 bushels. At that yield and nitrogen rate, the recommendations using the formula of 1.2 pounds per bushel and a 40# nitrogen credit for the previous crop, the rate would have been about 21 pounds too high. The rate of nitrogen per bushel of yield worked out to .91 pounds per bushel with no adjustment for the previous crop and 1.1 pounds per bushel using the 40# nitrogen credit for following the soybean crop.

Current indications are that the nitrogen rate recommendations for corn following soybeans in northern Illinois will probably be lowered. In southern Illinois and soils with low organic matter the recommendation will probably be raised. This will avoid the crop being nitrogen deficient during times of stress. These recommendations are based on the work at research centers in Illinois and other states.

## CORN YIELD & NITROGEN RATE



NIARC AVERAGE RESPONSE 1999-2004

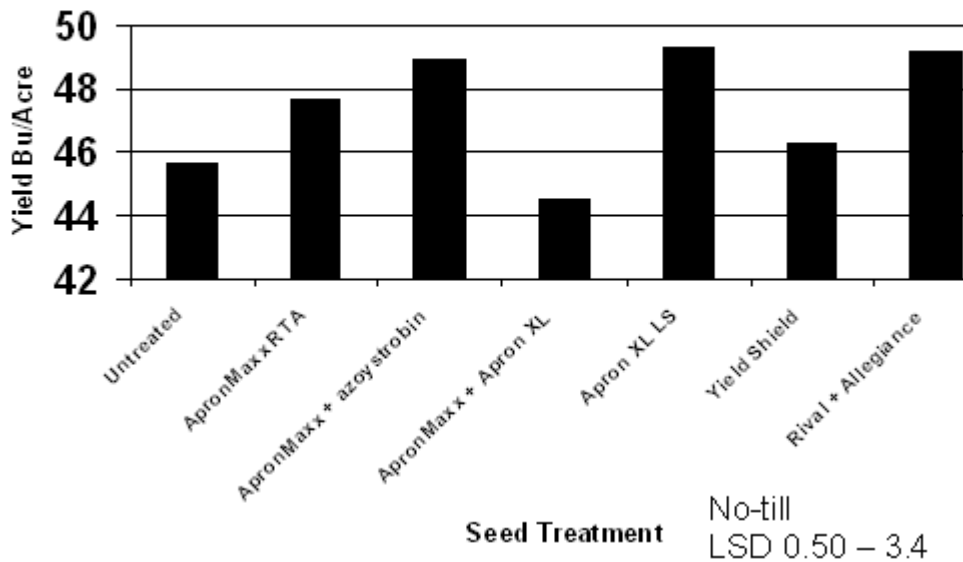
**Soybean fungicide seed treatment:**

The use of seed treatment has been studied for some period of time. Work from about 10 years ago with Walker Kirby did not show a response to the use of seed treatment with early planting or in no-till. He did get a response to later planting. Dean Malvick has been working with a seed treatment for the past 3 years. His work with this seed treatment that we have had at the Research Center has been in no-

till and also in conventional tillage. The results of the three year averages with no-till follow with a LSD 0.05 of 3.4 bushels per acre. These studies were planted as early as reasonably possible each year.

There has been a response to some of the seed treatment products. These are not necessarily due to a better stand. For 2004, the stands were less than 5000 plants per acre different between treatments. The yield results for 2004 are shown below.

**SOYBEAN FUNGICIDE SEED TREATMENT 2002-04**



**SOYBEAN FUNGICIDE SEED TREATMENT 2004**

