



Crop Watch

Addendum of
Tables
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Adjusting for limited water *(Full story: <http://cropwatch.unl.edu/archives/2004/crop04-2.htm#drought>.)*

Table 1. Irrigation needed for maximum crop yields with average precipitation and temperatures in three areas of Nebraska.

Management level	Panhandle		Southwest		Central	
	<i>Avg.</i>	<i>Best</i>	<i>Avg.</i>	<i>Best</i>	<i>Avg.</i>	<i>Best</i>
----- inches -----						
Furrow irrigation, water used	25.0	22.0	22.0	20.0	20.0	18.0
Center pivot & conventional till., water used	18.0	15.5	16.0	14.0	15.0	13.0
Center pivot & no-till, water used	15.0	12.0	13.0	10.0	12.0	9.0
Water conserved from center pivot & no-till vs. conventional till.	3.0	3.5	3.0	4.0	3.0	4.0

Table 2. The amount of water that can be applied to a single crop or multiple crops requiring water at different times on a 130-acre system.

System capacity	Number of crops		
	<i>One</i>	<i>Two</i>	<i>Three</i>
----- inches per day -----			
200 gpm	0.08	0.10	0.24
400 gpm	0.16	0.32	0.48
600 gpm	0.24	0.48	0.73
800 gpm	0.32	0.64	0.96
1000 gpm	0.40	0.80	1.21

Table 3. Estimated water availability for 2004, from a March 2004 Bureau of Reclamation report. If conditions don't improve, some districts may not deliver water in 2004.

<i>District</i>	<i>Estimated farm delivery</i> ----- inches -----
Mirage Flats	3.5
Ainsworth	Full supply
Sargent	15.0
Farwell	12.0
Twin Loops	Full supply
H&RW	1.0
Frenchman Valley	0.5
Frenchman-Cambridge, Meeker, Red Willow and Bartley	3.0
Cambridge Canal	8.0
Almena	3.0
Bostwick in Nebraska	1.5
Bostwick in Kansas, Upper Courtland	2.0
Bostwick in Kansas, Lower Courtland	6.0
Kirwin	4.0
Webster	4.0
Glen Elder	Full supply
Central Nebraska Public Power and Irrigation District	Full supply

Assessing wheat yield (Full story: http://cropwatch.unl.edu/archives/2004/crop04-2.htm#wheat_yields)

Table 1. Estimated wheat yield potential.

Row spacing inches	Number of plants/foot row											
	1	2	3	4	5	6	7	8	9	10	11	12
	bushels/acre											
6.0	10	20	30	40	50	60	-	-	-	-	-	-
7.5	8	16	24	32	40	48	56	64	-	-	-	-
9.0	7	13	20	27	33	40	47	54	60	-	-	-
10.0	6	12	18	24	30	36	42	48	54	60	-	-
12.0	5	10	15	20	25	30	35	40	45	50	55	60
14.0	4	9	13	17	21	26	30	34	39	43	47	52

Table 2. Estimating winter wheat yield after stem elongation for the Nebraska Panhandle.*

Row spacing inches	Number of tillers/foot of row											
	10	15	20	25	30	35	40	45	50	55	60	65
	bushels/acre											
6.0	22	34	49	56	67	79	90	101	112	-	-	-
7.5	18	27	36	45	54	63	72	81	90	99	118	-
9.0	15	22	30	37	45	52	60	67	75	82	90	97
10.0	13	20	27	34	40	47	54	61	67	74	81	88
12.0	11	17	22	28	34	39	45	51	56	62	67	73
14.0	10	14	19	24	29	34	38	43	48	53	58	63

*This table was developed using data collected in the Nebraska Panhandle. For other Nebraska locations, multiply the yield in the table by the following factor: southwest Nebraska - 0.9; central and south central Nebraska - 0.85; southeast Nebraska - 0.75.

Assessing soil nitrogen (Full story: <http://cropwatch.unl.edu/archives/2004/crop04-2.htm#nitrogen>)

Table 1. Recommended nitrogen rate (lbs N/acre) for wheat, determined by nitrogen and wheat prices at several soil nitrate concentrations.

Residual Nitrate-N	Wheat price per bushel					
	\$3.00			\$3.50		
	Fertilizer price per pound of nitrogen					
	0.30	0.35	0.40	0.30	0.35	0.40
Average ppm in 3 ft.	----- Nitrogen rate (lbs N/acre) -----					
1	87	75	63	98	87	77
2	77	65	53	87	77	66
3	66	54	42	77	66	56
4	56	44	32	66	56	45
5	45	33	21	55	45	35
6	35	23	10	45	35	24
7	24	12	0	34	24	14
8	13	1	0	24	13	3
9	3	0	0	13	3	0
10	0	0	0	3	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0

Assessing soil nitrogen *(Continued)***Equation 1.**

$$((N \text{ PRICE} / WHEAT \text{ PRICE}) + 0.014558 \times \text{NO}_3\text{-N} - 0.235) / -0.00138$$

Where,

- N PRICE is the price of nitrogen fertilizer in dollars per pound;
 - WHEAT PRICE is the price of wheat in dollars per bushel; and
 - NO₃-N is the average ppm nitrate-N in the top three feet of soil.
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Ag land values, reported in AgNews section (Full story: <http://cropwatch.unl.edu/archives/agnews04/an04-3-19.htm#land>)

Table 1. Average reported value of Nebraska farmland for different types of land by Agricultural Statistics District, Feb. 1, 2003 - Feb. 1, 2004^a (Preliminary)

Type of Land and Year	Agricultural Statistics District								
	Northwest	North	Northeast	Central	East	Southwest	South	Southeast	State ^c
----- Dollars Per Acre -----									
Dryland Cropland (No Irrigation Potential)									
Rptd. In 2004	328	416	1,231	758	1,717	473	800	1,190	862
Rptd. In 2003	319	360	1,107	710	1,585	453	748	1,059	788
% Change	2.8	15.6	11.2	6.8	8.3	4.4	7.0	12.4	9.4
Dryland Cropland (Irrigation Potential)									
Rptd. In 2004	445	534	1,554	1,137	2,093	586	1,217	1,469	1,272
Rptd. In 2003	396	480	1,410	1,095	1,930	558	1,118	1,290	1,159
% Change	12.4	11.3	10.2	3.8	8.4	5.0	8.9	13.9	9.7
Grazing Land (Tillable)									
Rptd. In 2004	212	307	794	611	926	305	558	716	375
Rptd. In 2003	180	280	750	562	801	290	534	640	341
% Change	17.8	9.6	5.9	8.7	15.6	5.2	4.5	11.9	10.0
Grazing Land (Nontillable)									
Rptd. In 2004	163	230	619	494	655	240	422	550	275
Rptd. In 2003	149	210	559	446	590	219	389	490	250
% Change	9.4	9.5	10.7	10.8	11.0	9.6	8.5	10.2	10.0
Hayland									
Rptd. In 2004	339	433	715	577	815	413	513	611	505
Rptd. In 2003	319	380	660	557	765	375	508	575	464
% Change	6.3	13.9	8.3	3.6	6.5	10.1	1.0	6.3	8.8
Gravity Irrigated Cropland									
Rptd. in 2004	925	1,125	1,867	1,961	2,531	1,297	1,969	2,087	1,957
Rptd. in 2003	890	1,075	1,760	1,835	2,401	1,213	1,863	1,899	1,840
% Change	3.9	4.7	6.1	6.9	5.4	6.9	5.7	9.9	6.4
Center Pivot Irrigated Cropland^b									
Rptd. in 2004	806	1,211	2,004	1,901	2,669	1,123	2,044	2,218	1,788
Rptd. in 2003	750	1,075	1,840	1,785	2,460	1,033	1,846	1,981	1,636
% Change	7.5	12.7	8.9	6.5	8.5	8.7	10.7	12.0	9.3
All Land Average^c									
Rptd. in 2004	302	343	1,388	1,005	1,999	500	1,188	1,354	827
Rptd. in 2003	276	308	1,266	939	1,850	467	1,102	1,204	757
% Change	9.4	11.4	9.6	7.0	8.1	7.1	7.8	12.5	9.2

^aSOURCE: 2003 and 2004 UNL Nebraska Farm Real Estate Market Developments surveys.

^bValue of pivot not included in per acre value.

^cWeighted averages. Note: With the institution of a new weighing system, the weighted averages for 2003 will vary slightly from previously published averages.

Table 2. Reported cash rental rates for various types of Nebraska farmland by Agricultural Statistics District for 2004 and comparison with year-earlier levels.^a (Preliminary) (Full story: <http://cropwatch.unl.edu/archives/agnews04/an04-3-19.htm#land>)

Type of land and year	Agricultural Statistics District							
	Northwest	North	Northeast	Central	East	Southwest	South	Southeast
----- Dollars Per Acre -----								
Dryland Cropland								
2004	22	37	91	60	94	33	55	75
2003	22	32	86	59	89	32	52	71
% Change	0.0	15.6	5.8	1.7	5.6	3.1	5.8	5.6
Gravity Irrigated Cropland								
2004	88	103	129	134	138	100	128	131
2003	86	98	120	129	135	97	125	128
% Change	2.3	5.1	7.5	3.9	2.2	3.1	2.4	2.3
Center Pivot Irrigated Cropland								
2004	97	114	144	139	151	117	139	143
2003	97	105	137	134	145	115	135	138
% Change	0.0	8.6	5.1	3.7	4.1	1.7	3.0	3.6
Dryland Alfalfa								
2004	26	b	92	63	85	b	53	74
2003	25	b	84	62	77	b	53	68
% Change	4.0	--	9.5	1.6	10.4	--	0.0	8.8
Irrigated Alfalfa								
2004	b	b	132	126	128	b	123	126
2003	b	b	125	121	124	b	117	b
% Change	--	--	5.6	4.1	3.2	--	5.1	--
Other Hayland								
2004	b	30	b	42	57	b	36	42
2003	b	26	b	36	53	b	33	b
% Change	--	15.4	--	16.7	7.5	--	9.1	--
Pasture								
2004	8	13	36	24	32	12	23	27
2003	7	11	33	23	28	11	22	24
% Change	14.3	18.2	9.1	4.3	14.3	9.1	4.5	12.5
----- Dollars Per Animal Unit Month ^c -----								
2004	21.00	27.65	26.80	26.35	26.00	26.25	24.00	25.15
2003	19.15	26.15	25.10	24.90	24.45	24.60	23.00	23.15
% Change	9.7	5.7	6.8	5.8	6.3	6.7	4.3	8.6

^a SOURCE: Reporters' estimated average cash rental rates from the 2003 and 2004 UNL Nebraska Farm Real Estate Market Developments surveys

^b Insufficient number of reports.

^c Animal Unit Month (AUM) refers to sufficient forage capacity to sustain an animal unit (1,000 lb. cow with calf at side or equivalent) for one month during the normal range season.