

2023

Western Kansas Field Station Weather Report: 2022 Growing Season

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2022 Weather Information for Tribune

D. Bond and J. Slattery

In 2022, annual precipitation of 14.83 in. was recorded, which is 3.61 in. below normal. Only two months had above-normal precipitation. July (7.12 in.) was the wettest month. The largest single amount of precipitation was 2.54 in. on July 30. November, the driest month, recorded 0.02 in. of precipitation. In addition, December only recorded 0.05 in. of precipitation.

Snowfall for the year totaled 24.7 in. (2.5 in. above normal); January, February, March, November, and December had 10.9, 5.2, 7.7, 0.4, and 0.5 in., respectively. There was a total of 26 days of snow cover, which is one day above normal. The longest consecutive period of snow cover, 5 days, occurred February 2 through February 6.

Record-high temperatures were recorded on 2 days: March 3 (77°F) and September 21 (99°F). Historical record-high temperatures were tied on 4 days: May 29 (98°F), September 20 (97°F), November 3 (80°F), and December 28 (68°F). Record-low temperatures were recorded on 5 days: February 23 (-8°F), April 14 (10°F), June 28 (42°F), and November 19 (8°F) and 30 (-1°F). Historical record-low temperatures were tied on 2 days: April 25 (24°F) and September 11 (38°F). July was the warmest month with a mean temperature of 77.2°F. The hottest day of the year (105°F) occurred on July 24. The coldest days of the year (-16°F) occurred on December 22 and 23. January was the coldest month with a mean temperature of 27.7°F. The month of November (18.7°F) broke a historical record-low minimum mean temperature record that occurred in 1993 (19.5°F).

Mean air temperature was below normal for 7 months. September had the greatest departure above normal (2.0°F), and February had the greatest departure below normal (-4.4°F). Temperatures were 100°F or higher on 12 days, which is normal. Temperatures were 90°F or higher on 71 days, which is six days above normal. The latest spring freeze was May 3, which is one day earlier than normal; the earliest fall freeze fell on October 13, which is six days later than normal. This produced a frost-free period of 163 days, which is seven days greater than the normal 156 days.

April (11.77 in.) had record-setting evaporation. The previous record occurred in 1963 (11.30 in.). Open-pan evaporation from April through September totaled 82.15 in., which is 11.88 in. above normal. Wind speed for this period averaged 4.3 mph, which is 0.7 mph less than normal.

The 2022 weather information for Tribune is summarized in Table 1.

Table 1. Climatic data, Southwest Research-Extension Center, Tribune, KS

Month	Monthly average temperatures, °F															
	Precipitation, in.		2022						Normal		2022 extreme		Wind, MPH		Evaporation, in.	
	2022	Normal	Max	Min	Max	Min	Max	Min	2022	Normal	2022	Normal	2022	Normal		
January	0.60	0.43	43.4	12.0	44.2	16.1	65	-5	---	---	---	---	---			
February	0.52	0.54	45.2	12.1	47.2	18.7	67	-8	---	---	---	---	---			
March	0.71	0.99	55.6	21.5	56.9	26.5	77	0	---	---	---	---	---			
April	0.26	1.66	67.9	31.3	64.9	34.6	90	10	6.0	5.6	11.77	8.06	---			
May	2.01	2.23	76.4	44.4	74.6	46.0	98	32	4.8	5.2	14.55	11.73	---			
June	1.30	2.77	86.5	56.5	86.2	56.6	103	40	5.4	5.2	17.53	14.27	---			
July	7.12	3.14	92.4	62.0	91.4	61.7	105	50	4.1	4.8	16.01	15.11	---			
August	1.19	2.87	89.5	57.9	88.2	59.8	98	49	2.5	4.3	12.00	11.67	---			
September	0.93	1.13	85.6	50.5	81.4	50.8	99	38	3.2	4.7	10.29	9.43	---			
October	0.12	1.59	72.7	36.0	68.3	36.7	91	22	2.9*	4.2*	7.19*	6.01*	---			
November	0.02	0.53	54.4	18.7	54.7	25.6	80	-1	---	---	---	---	---			
December	0.05	0.56	45.3	10.6	44.8	17.2	68	-16	---	---	---	---	---			
Annual	14.83	18.44	68.0	34.6	66.9	37.5	105	-16	4.3	5.0	82.15	70.27	---			

Normal latest freeze (32°F) in spring: May 4. In 2022: May 3.

Normal earliest freeze (32°F) in fall: October 7. In 2022: October 13.

Normal frost-free (>32°F) period: 156 days. In 2022: 163 days.

Normal for precipitation and temperature is 30-year average (1991–2020) from National Weather Service.

Normal for latest freeze, earliest freeze, wind, and evaporation is 30-year average (1991–2020) from Tribune weather data.

* Normal for October wind and evaporation is 20-year average (2001–2020) from Tribune weather data; October not included in annual totals.

2022 Western Kansas Research and Extension Centers Weather

Table 1. 2022 Precipitation at Alexander, Ashland Bottoms, and Belleville

	Alexander		Ashland Bottoms		Belleville	
	Actual	Normal	Actual	Normal	Actual	Normal
January	0.67	0.69	0.11	0.64	0.10	0.61
February	0.05	0.94	0.04	1.14	0.00	0.97
March	2.14	1.51	2.40	2.17	1.57	1.49
April	0.52	2.12	0.95	3.38	1.88	2.75
May	4.19	3.75	8.15	5.23	4.80	4.57
June	1.98	3.56	6.21	5.47	2.44	4.34
July	2.48	4.36	5.91	4.62	3.96	4.46
August	1.93	3.25	1.55	4.40	1.61	3.72
September	1.54	1.83	1.72	3.41	3.72	3.12
October	0.05	1.83	1.25	2.50	1.09	2.50
November	0.33	0.83	3.28	1.62	0.40	1.15
December	0.19	1.07	1.05	1.19	0.85	0.92
Annual	16.07	25.74	32.62	35.77	22.42	30.60
Last spring freeze	4/26/2022		4/26/2022		4/26/2022	
First fall freeze	10/17/2022		10/18/2022		10/17/2022	
Frost free days	173		174		173	
Number of days $\geq 90^{\circ}\text{F}$	88		61		56	
Number of days $\geq 100^{\circ}\text{F}$	29		3		2	
Number of days $< 10^{\circ}\text{F}$	32		24		35	

Normal = 30-year average, 1991-2020.

Table 2. 2022 Precipitation at Brownell, Colby, and Garden City

	Brownell (HB Ranch)		Colby		Garden City	
	Actual	Normal	Actual	Normal	Actual	Normal
January	0.73	0.56	0.38	0.41	0.47	0.30
February	0.08	0.65	0.07	0.56	0.01	0.40
March	1.02	1.33	0.56	0.92	0.29	1.07
April	0.98	1.93	0.50	1.97	0.39	1.46
May	2.34	3.12	2.53	2.92	2.15	2.52
June	1.45	3.18	1.21	2.62	1.25	3.51
July	1.46	3.59	3.96	3.81	2.13	3.43
August	0.07	2.50	1.13	3.04	0.40	2.49
September	1.68	1.61	1.17	1.44	0.58	1.37
October	0.05	1.84	0.46	1.56	0.02	1.42
November	T	0.89	T	0.63	0.10	0.42
December	0.03	0.88	0.28	0.51	0.03	0.56
Annual	9.89	22.08	12.25	20.39	7.82	18.95
Last spring freeze	4/26/2022		5/1/2022		4/25/2022	
First fall freeze	10/17/2022		10/17/2022		10/17/2022	
Frost free days	173		168		174	
Number of days $\geq 90^{\circ}\text{F}$	98		69		97	
Number of days $\geq 100^{\circ}\text{F}$	34		11		29	
Number of days $< 10^{\circ}\text{F}$	36		38		32	

Table 3. 2022 Precipitation at Great Bend, Hays, and Hutchinson

	Great Bend		Hays		Hutchinson	
	Actual	Normal	Actual	Normal	Actual	Normal
January	0.21	0.71	0.20	0.56	0.07	0.72
February	0.01	0.89	0.00	0.81	0.07	1.12
March	1.88	1.56	1.21	1.32	1.60	2.21
April	0.39	2.15	0.42	2.13	0.81	2.51
May	4.57	4.83	3.40	3.60	6.88	4.67
June	2.62	3.66	1.41	3.03	2.68	4.58
July	1.05	3.86	1.77	3.95	1.70	3.65
August	1.45	3.69	1.39	3.47	0.27	3.56
September	1.29	1.98	2.12	2.13	1.44	2.48
October	0.21	1.96	0.17	1.68	0.44	2.38
November	1.74	1.00	0.22	0.90	1.49	1.28
December	0.53	1.01	0.66	0.86	0.98	1.13
Annual	15.95	27.30	12.97	24.44	18.43	30.29
Last spring freeze	4/26/2022		4/26/2022		4/26/2022	
First fall freeze	10/17/2022		10/17/2022		10/17/2022	
Frost free days	173		173		173	
Number of days $\geq 90^{\circ}\text{F}$	96		87		91	
Number of days $\geq 100^{\circ}\text{F}$	19		26		19	
Number of days $< 10^{\circ}\text{F}$	21		31		19	

Table 4. 2022 Precipitation at Leoti, Manhattan, and Marquette

	Leoti		Manhattan		Marquette	
	Actual	Normal	Actual	Normal	Actual	Normal
January	0.20	0.38	0.27	0.64	0.09	0.71
February	0.00	0.51	0.08	1.14	0.13	1.12
March	0.22	1.27	2.23	2.17	1.73	1.69
April	0.59	1.95	1.01	3.38	0.76	2.54
May	2.31	2.31	9.08	5.23	9.62	4.90
June	1.34	2.58	6.08	5.47	4.41	4.13
July	4.08	2.87	5.04	4.62	2.69	3.95
August	1.89	3.11	1.31	4.40	0.20	3.51
September	0.58	1.40	2.29	3.41	1.61	2.73
October	0.02	1.66	1.18	2.50	0.26	2.27
November	0.00	0.64	3.57	1.62	1.15	1.09
December	0.02	0.60	1.17	1.19	1.02	0.97
Annual	11.25	19.28	33.31	35.77	23.67	29.61
Last spring freeze	4/25/2022		4/26/2022		4/13/2022	
First fall freeze	10/17/2022		10/18/2022		10/18/2022	
Frost free days	174		174		187	
Number of days $\geq 90^{\circ}\text{F}$	84		60		80	
Number of days $\geq 100^{\circ}\text{F}$	19		4		19	
Number of days $< 10^{\circ}\text{F}$	28		23		18	

Table 5. 2022 Precipitation at Solomon and Tribune

	Solomon		Tribune	
	Actual	Normal	Actual	Normal
January	0.15	0.86	0.60	0.43
February	0.03	1.43	0.52	0.54
March	1.70	2.23	0.71	0.99
April	0.64	3.26	0.26	1.66
May	7.85	5.20	1.67	2.23
June	3.14	4.18	1.30	2.77
July	3.55	4.75	7.12	3.14
August	1.47	4.27	1.19	2.87
September	2.79	2.54	0.93	1.13
October	0.60	2.47	0.12	1.59
November	2.23	1.59	0.02	0.53
December	0.68	1.50	0.05	0.56
Annual	24.83	34.28	14.49	18.44
Last Spring Freeze	5/1/2022		4/26/2022	
First Fall Freeze	10/17/2022		10/17/2022	
Frost Free Days	168		173	
Number of Days $\geq 90^{\circ}\text{F}$	78		62	
Number of Days $\geq 100^{\circ}\text{F}$	18		10	
Number of Days $< 10^{\circ}\text{F}$	25		35	

Table 6. Location references per field locations

Field location	Mesonet site	Normals site
Alexander	La Crosse	Alexander (ALXK1)
Ashland Bottoms	Ashland Bottoms	Manhattan (MHTK1)
Belleville	Belleville 2W	Belleville (BLVK1)
Brownell (HB Ranch)	Ness City	Ransom 2NE (RANK1)
Colby	Colby	Colby 1SW (CBKK1)
Garden City	Garden City	Garden City Rgnl. Apt. (GCK)
Great Bend	St. John 1NW	Great Bend 3W (GRBK1)
Hays	Hays	Hays 1S (HASK1)
Hutchinson	Hutchinson 10SW	Hutchinson 10SW (HINK1)
Leoti	Leoti	Leoti (LEOK1)
Manhattan	Manhattan	Manhattan (MHTK1)
Marquette	McPherson 1S	Kanopolis Lake (KANK1)
Solomon	Gypsum	Abilene (ABLK1)
Tribune	Tribune	Tribune (TRBK1)