

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
JANUARY 2017**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
----- °F -----				----- in. -----												mi. Langleys			
1	25	17	44.0	2125.5	-	-	3	10	32	31	32	32	33	33	36	42	235	134	
2	31	17	41.0	2166.5	T		T	3	10	31	31	32	32	33	33	36	42	187	139
3	33	17	40.0	2206.5	0.06	0.06	0.5	3	3	31	31	32	32	33	33	36	42	204	26
4	17	-6	59.5	2266.0	T		T	3	3	31	27	32	32	33	33	36	41	303	142
5	4	-6	66.0	2332.0	-		-	3	3	27	24	32	31	33	32	36	41	216	195
6	1	-10	69.5	2401.5	-		-	3	15	24	21	31	28	32	32	36	41	168	190
7	6	-9	66.5	2468.0	-		-	3	3	23	21	28	27	32	30	35	41	114	171
8	8	-7	64.5	2532.5	-		-	3	3	22	19	27	25	30	28	35	41	138	197
9	20	-3	56.5	2589.0	-		-	3	18	24	19	27	25	28	28	34	41	265	130
10	29	16	42.5	2631.5	0.15	0.21	1.5	4	3	27	24	28	27	29	28	34	41	280	53
11	29	7	47.0	2678.5	0.07	0.28	1.2	3	3	28	27	29	28	30	29	34	40	252	91
12	10	5	57.5	2736.0	-		-	3	3	27	27	29	28	30	29	34	40	219	93
13	18	-5	58.5	2794.5	-		-	3	3	27	26	28	27	29	29	33	40	218	192
14	14	-3	59.5	2854.0	T		T	3	3	26	26	27	27	29	29	33	40	148	66
15	23	5	51.0	2905.0	-		-	3	3	26	25	27	27	29	28	33	40	88	201
16	31	7	46.0	2951.0	-		-	3	3	27	25	28	26	29	28	33	39	155	177
17	32	21	38.5	2989.5	0.59	0.87	1.0	4	19	30	27	30	28	30	29	33	39	100	58
18	33	25	36.0	3025.5	T		T	4	3	31	30	31	30	31	30	33	39	213	100
19	39	28	31.5	3057.0	-		-	3	3	31	31	31	31	31	31	33	39	244	183
20	37	29	32.0	3089.0	0.03	0.90	-	3	3	31	31	31	31	31	31	33	39	192	120
21	36	33	30.5	3119.5	0.07	0.97	-	1	3	31	31	31	31	31	31	33	39	183	72
22	37	33	30.0	3149.5	0.01	0.98	-	T	3	31	31	31	31	31	31	33	39	101	55
23	36	31	31.5	3181.0	T		-	T	12	31	31	31	31	31	31	33	39	133	54
24	33	30	33.5	3214.5				T	3	32	31	31	31	32	31	33	39	90	24
25	31	29	35.0	3249.5	0.35	1.33	4.0	3	3	32	31	31	31	32	31	33	38	248	30
26	30	25	37.5	3287.0	0.10	1.43	1.0	3	12	31	31	31	31	32	32	33	38	271	122
27	26	12	46.0	3333.0	T		T	3	3	31	31	31	31	32	32	33	38	220	147
28	27	11	46.0	3379.0	-		-	3	3	31	31	32	31	32	32	33	38	222	230
29	28	24	39.0	3418.0	-		-	3	3	31	31	32	31	32	32	33	38	217	84
30	29	10	45.5	3463.5	-		-	2	11	31	31	32	31	32	32	33	38	180	212
31	41	27	31.0	3494.5	-		-	T	11	31	31	32	31	32	32	33	38	346	183
Total	25.6	13.2	1413.0	3494.5	1.43	1.43	9.2			29.0	27.9	30.2	29.5	31.1	30.6	33.8	39.7	6150	3871
Avg.	19.4									28.4		29.9		30.9		33.8	39.7		
Dept. from Norma	6.2		-194.0	-544.50	0.18	0.18	-0.3			5.6		5.7		6.0		1.8			-1230

* Since Nov. 1, 2016

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120th Street
 Waseca, MN 56093-4521
FEBRUARY 2017

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
--- °F ---		----- in. -----										mi.	Langleys						
1	38	17	37.5	3532.0	0.01	1.44	T	T	10	31	31	32	31	32	32	33	38	245	103
2	19	10	50.5	3582.5	-		-	T		31	30	32	31	32	32	33	38	261	239
3	19	7	52.0	3634.5	-		-	T		30	27	31	27	32	30	34	38	214	239
4	25	8	48.5	3683.0	-		-	T		28	26	27	26	30	28	33	38	279	272
5	35	20	37.5	3720.5	-		-	T		29	27	29	26	30	28	33	38	297	195
6	29	20	40.5	3761.0	-		-	T	15	29	28	29	27	30	29	33	38	164	243
7	39	23	34.0	3795.0	T		-	T		30	28	30	28	31	29	33	38	161	178
8	27	4	49.5	3844.5	-		-	T		30	26	30	26	31	29	33	38	273	53
9	16	3	55.5	3900.0	-		-	T	16	26	22	26	22	29	26	33	38	229	280
10	24	5	50.5	3950.5	-		-	T		24	22	25	22	27	25	33	38	301	284
11	45	23	31.0	3981.5	-		-	T		30	24	30	24	30	26	32	38	141	221
12	42	29	29.5	4011.0	0.06	1.50	-	T		31	30	31	30	31	30	32	38	155	99
13	39	27	32.0	4043.0	-		-	T	17	31	31	31	31	31	31	32	37	192	302
14	45	30	27.5	4070.5	-		-	T		31	31	31	31	31	31	32	37	250	275
15	43	20	33.5	4104.0	-		-	T	16	31	29	31	31	31	31	32	37	257	297
16	36	20	37.0	4141.0	-		-	T		31	28	31	31	31	31	32	37	184	304
17	41	33	28.0	4169.0	-		-			31	30	31	31	31	31	32	37	198	227
18	59	31	20.0	4189.0	-		-			32	31	32	31	31	31	32	37	181	323
19	58	33	19.5	4208.5	-		-			32	32	32	32	31	31	32	37	83	287
20	59	37	17.0	4225.5	-		-		0	37	32	35	32	32	31	32	37	287	261
21	55	32	21.5	4247.0	0.41	1.91	-			41	33	40	33	32	32	33	37	244	34
22	61	35	17.0	4264.0	-		-			44	32	41	33	33	32	33	37	240	326
23	61	33	18.0	4282.0	-		-		0	48	34	44	35	35	32	34	37	197	287
24	36	24	35.0	4317.0	0.83	2.74	7.0	7	0	36	33	37	34	34	33	35	37	358	75
25	25	11	47.0	4364.0	0.25	2.99	3.2	8		33	32	33	33	33	33	35	37	299	171
26	26	11	46.5	4410.5	-		-	6		32	32	33	32	33	33	34	37	263	362
27	35	14	40.5	4451.0	-		-	4	6	32	32	33	32	33	33	34	37	186	360
28	40	20	35.0	4486.0	-		-	3		32	32	32	32	33	33	34	37	233	366
Total	38.5	20.7	991.5	4486.0	1.56	2.99	10.2			32.3	29.5	32.1	29.8	31.4	30.5			6372	6663
Avg.	29.6									30.9		30.9		30.9		33.0	37.4		
Dept. from Norma	11.1		-310.5	-855.0	0.56	0.74	1.2			6.2		5.1		5.1		2.2			-143

* Since Nov. 1, 2016

** Since Jan. 1, 2017

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
MARCH 2017**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind mi.	Solar Radiation Langleys		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
	----- °F -----	----- °F -----								Max	Min	Max	Min.	Max.	Min.				
1	41	26	31.5	4517.5	0.06	3.05	1.0	3	5	32	32	32	32	33	33	34	37	250	223
2	35	16	39.5	4557.0	T		0.2	2		32	32	32	32	33	33	34	37	226	212
3	29	9	46.0	4603.0	-		-	2		32	32	32	32	33	33	34	37	135	343
4	28	13	44.5	4647.5	T		0.2	1		32	32	32	32	33	33	34	37	299	289
5	41	28	30.5	4678.0	-		-	T		32	32	32	32	33	33	34	37	426	366
6	52	40	19.0	4697.0	T		-	-	0	41	32	39	32	37	33	34	37	302	158
7	68	30	16.0	4713.0	0.32	3.37	T	-		51	37	46	38	42	37	36	37	462	196
8	48	29	26.5	4739.5	T		T	-		43	34	41	35	39	37	38	37	531	338
9	39	27	32.0	4771.5	-		-	-		39	33	38	34	37	35	37	38	247	380
10	34	7	44.5	4816.0	-		-	-	6	37	32	36	33	36	35	37	38	250	231
11	21	8	50.5	4866.5	-		-	-		32	31	33	32	35	34	36	38	208	348
12	23	12	47.5	4914.0	-		-	-		32	29	32	32	34	33	36	38	143	252
13	24	15	45.5	4959.5	0.43	3.80	6.0	6	9	31	29	32	32	33	33	35	38	293	134
14	24	0	53.0	5012.5	-		-	3		31	31	32	32	33	33	35	38	208	431
15	26	-2	53.0	5065.5	-		-	2		31	31	32	32	33	33	35	38	105	462
16	27	0	51.5	5117.0	-		-	2	9	31	31	32	32	33	33	34	38	181	461
17	36	19	37.5	5154.5	-		-	1		31	31	32	32	33	32	34	38	334	296
18	42	29	29.5	5184.0	-		-	T		32	31	32	32	33	32	34	38	270	165
19	41	28	30.5	5214.5	-		-	T		32	32	32	32	33	32	34	38	184	311
20	57	32	20.5	5235.0	-		-	0	0	32	32	32	32	33	32	34	38	233	292
21	55	32	21.5	5256.5	-		-	0		46	32	42	32	37	33	35	38	193	365
22	39	21	35.0	5291.5	-		-	-		43	33	40	34	37	35	36	38	222	434
23	39	23	34.0	5325.5	-		-	-		35	33	34	33	35	34	36	38	313	338
24	42	35	26.5	5352.0	0.27	4.07	-	-		36	33	36	34	36	34	36	38	279	58
25	43	36	25.5	5377.5	0.01	4.08	-	-		39	36	38	36	37	36	36	38	270	65
26	39	35	28.0	5405.5	0.10	4.18	-	-		38	36	38	36	37	37	37	38	264	85
27	43	35	26.0	5431.5	T		-	-	0	42	36	40	36	38	37	37	38	131	123
28	52	32	23.0	5454.5	-		-	-		48	37	45	38	41	38	38	38	103	257
29	61	35	17.0	5471.5	-		-	-		54	36	49	38	43	39	39	39	135	489
30	47	37	23.0	5494.5	0.29	4.47	-	-		43	39	43	40	42	40	40	39	310	87
31	42	35	26.5	5521.0	0.02	4.49	-	-	-	40	37	40	38	40	39	40	39	233	74
Total	39.9	23.3	1035.0	5521.0	1.50	4.49	7.4			37.1	33.0	36.3	33.8	35.9	34.5			7740	8263
Avg.	31.6									35.1		35.0		35.2		35.8	37.8		
Dept. from Normal	0.4		-13.0	-868.0	-0.99	-0.25	-2.8			3.2		3.3		4.9		3.4			-1494

* Since Nov. 1, 2016

** Since Jan. 1, 2017

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
APRIL 2017**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow	Evap	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				2"				4"		8"		20"	40"				
	----- °F -----					Max	Min			Max	Min.	Max.	Min.	° F -----				mi.	Langleys
1	51	32	23.5	5544.5	-		-			47	37	44	38	41	39	40	40	122	258
2	64	34	16.0	5560.5	0.02	4.51	-			56	36	51	38	45	39	40	40	101	482
3	53	44	16.5	5577.0	0.01	4.52	-			47	42	46	43	44	42	41	40	211	124
4	51	44	17.5	5594.5	0.33	4.85	-			47	44	46	44	44	43	42	40	227	78
5	60	41	14.5	5609.0	-		-			54	42	51	44	47	43	43	41	177	403
6	52	34	22.0	5631.0	-		-			47	38	46	41	44	42	43	41	168	204
7	54	28	24.0	5654.0	-		-			53	38	49	40	45	41	43	41	176	546
8	61	28	20.5	5675.5	-		-			54	37	50	40	46	41	43	42	263	514
9	77	45	4.0	5679.5	-		-			57	44	53	44	49	44	43	42	309	363
10	70	49	5.5	5685.0	T		-	1.05		58	50	55	50	51	48	45	42	232	234
11	50	34	23.0	5708.0	0.02	4.87	-			51	42	52	44	51	46	47	42	246	111
12	55	34	20.5	5728.5	-		-			59	42	53	44	49	45	46	43	151	427
13	62	43	12.5	5741.0	0.08	4.95	-			51	45	50	46	48	46	46	43	246	182
14	56	47	13.5	5754.5	T		-			52	47	50	47	48	47	46	44	247	156
15	66	49	7.5	5762.0	0.69	5.64	-			55	47	53	48	50	47	46	44	279	215
16	73	42	7.5	5769.5	0.09	5.73	-			63	50	59	52	54	50	48	44	190	311
17	66	44	10.0	5779.5	-		-	0.83		63	49	59	50	54	51	49	44	189	597
18	61	47	11.0	5790.5	T		-			67	50	61	51	55	51	50	45	217	581
19	68	47	7.5	5798.0	0.15	5.88	-			58	49	56	51	53	51	50	45	341	239
20	49	42	19.5	5817.5	0.70	6.58	-	0.36		50	47	51	48	51	49	50	46	275	92
21	49	38	21.5	5839.0	-		-			49	41	49	44	49	46	49	46	183	154
22	60	38	16.0	5855.0	-		-			58	41	55	43	51	46	48	46	108	526
23	68	39	11.5	5866.5	-		-			66	43	61	46	54	47	48	46	104	622
24	74	45	5.5	5872.0	-		-			66	48	62	50	56	50	50	46	251	563
25	72	49	4.5	5876.5	T		-			60	52	58	53	55	53	51	47	336	277
26	55	42	16.5	5893.0	0.72	7.30	-	1.12		56	50	55	51	54	52	51	47	187	122
27	43	32	27.5	5920.5	0.01	7.31	T			50	41	51	44	52	47	50	47	227	133
28	38	29	31.5	5952.0	-		-			44	38	45	40	47	43	49	47	204	165
29	49	31	25.0	5977.0	-		-			48	37	47	40	46	43	47	47	150	329
30	52	37	20.5	5997.5	0.02	7.33	-	0.33		49	39	48	41	46	43	46	47	283	338
Total	58.6	39.6	476.5	5997.5	2.84	7.33	0.0			54.5	43.5	52.2	45.2	49.3	45.8			6400	9346
Avg.	49.1									49.0		48.7		47.6		46.3	46.3		
Dept. from Normal	3.0		-94.5	-962.5	-0.37	-0.62				2.9		3.9		5.2		5.7			-2228

* Since Nov. 1, 2016

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
May 2017

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.**		Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.				Precip.	Evap.	2"		4"		8"		20"	40"		
	° F					in.		° F									
1	46	38	0.0	0.0	0.95	8.28	0.15	45	42	45	43	46	44	46	47	342	125
2	43	37	0.0	0.0	0.06	8.34		45	40	45	42	44	43	45	47	272	150
3	61	39	5.5	5.5	-			58	40	54	41	48	43	45	46	190	636
4	65	42	7.5	13.0	T			58	43	55	45	50	46	46	46	166	412
5	69	44	9.5	22.5	-			67	46	61	48	54	48	48	46	158	634
6	77	45	13.5	36.0	-			72	49	66	51	58	51	50	46	172	634
7	70	50	10.0	46.0	-			72	53	67	55	59	54	52	47	186	642
8	71	50	10.5	56.5	-		1.56	71	54	66	56	59	55	53	48	226	514
9	81	51	16.0	72.5	0.25	8.59	0.17	71	55	66	56	60	56	54	48	322	507
10	72	50	11.0	83.5	T			73	55	68	56	60	56	55	49	119	561
11	67	44	8.5	92.0	T			63	52	62	55	59	56	55	49	119	237
12	68	41	9.0	101.0	-			72	52	67	54	60	55	55	50	175	672
13	77	49	13.5	114.5	-			76	53	70	56	63	56	56	50	146	650
14	87	60	23.0	137.5	-			80	60	74	61	66	60	57	50	219	655
15	90	62	24.0	161.5	-		1.38	80	63	75	64	68	62	59	51	274	616
16	79	62	20.5	182.0	0.54	9.13	0.22	75	65	71	65	66	65	60	52	260	385
17	84	60	22.0	204.0	0.93	10.06		72	63	69	64	66	64	61	52	235	326
18	77	49	13.5	217.5	0.60	10.66	0.41	69	59	67	61	64	62	61	53	215	237
19	56	43	3.0	220.5	0.01	10.67		62	51	61	54	62	57	60	53	313	286
20	52	42	1.0	221.5	0.18	10.85		55	49	55	51	57	54	58	54	324	289
21	52	41	1.0	222.5	1.13	11.98		50	48	51	48	54	51	55	54	292	79
22	47	39	0.0	222.5	T		0.39	51	45	51	47	51	50	53	54	264	153
23	67	44	8.5	231.0	0.21	12.19		67	45	61	47	56	49	53	53	142	588
24	57	46	3.5	234.5	0.19	12.38		57	50	56	52	55	54	54	53	165	187
25	63	47	6.5	241.0	-			62	50	59	52	56	53	54	52	144	382
26	72	51	11.5	252.5	T			69	50	64	52	59	54	54	52	205	600
27	81	50	15.5	268.0	-			75	58	69	58	62	57	56	52	118	504
28	73	53	13.0	281.0	T			70	58	66	59	62	59	57	52	109	385
29	75	52	13.5	294.5	-		1.61	74	58	69	59	64	59	58	53	251	597
30	67	48	8.5	303.0	0.05	12.43		68	54	65	57	62	59	58	53	239	364
31	63	43	6.5	309.5	-			66	54	63	57	60	58	58	54	191	386
Total	68.0	47.5	309.5	309.5	5.10	12.43	5.89	66.0	52.1	62.5	53.7	58.4	54.5			6553	13393
Avg.	57.8							59.0		58.1		56.5		54.4	50.5		
Dept. from Normal	-0.9		-22.5	-22.5	1.17	0.55	-1.63	-1.3		-0.5		0.7		0.6			-986.0

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
June 2017

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.**		Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.				Precip.	Evap.	2"		4"		8"		20"	40"		
	° F	° F						Max.	Min.	Max.	Min.	Max.	Min.				
1	77	46	13.5	323.0	-		0.42	76	53	70	56	64	57	58	54	162	717
2	83	57	20.0	343.0	-			82	58	75	60	67	60	59	54	143	714
3	93	64	25.0	368.0	0.01	12.44		83	64	77	65	69	64	61	54	277	624
4	95	55	20.5	388.5	-			83	66	77	69	71	67	63	55	214	549
5	92	61	23.5	412.0	-		1.52	87	66	81	68	73	67	64	55	172	731
6	88	60	23.0	435.0	-			85	68	80	70	74	69	65	56	206	714
7	86	57	21.5	456.5	-			87	67	81	70	74	69	66	57	141	714
8	90	65	25.5	482.0	-			86	68	80	70	74	70	67	57	262	643
9	87	58	22.0	504.0	-		1.56	89	71	84	72	76	71	68	58	153	697
10	92	68	27.0	531.0	-			90	71	84	73	77	72	69	59	240	635
11	97	73	29.5	560.5	-			86	75	82	75	77	74	70	59	374	591
12	92	64	25.0	585.5	0.02	12.46	1.06	80	73	78	74	75	73	70	60	192	201
13	77	63	20.0	605.5	1.73	14.19	0.58	75	67	74	68	73	69	69	60	210	198
14	92	64	25.0	630.5	0.43	14.62		81	67	78	68	73	69	68	61	324	614
15	83	61	22.0	652.5	T			78	66	76	68	71	69	68	61	197	546
16	87	61	23.5	676.0	T			86	66	81	68	74	68	68	61	138	684
17	86	61	23.5	699.5	0.10	14.72		81	66	77	69	73	69	68	61	113	375
18	81	58	19.5	719.0	0.48	15.20		82	65	78	68	73	68	68	61	164	424
19	72	53	12.5	731.5	T		1.58	74	62	73	65	69	67	68	61	168	476
20	74	56	15.0	746.5	-			80	62	76	65	70	66	67	62	165	616
21	76	57	16.5	763.0	T			84	64	79	66	72	66	67	62	145	697
22	78	63	20.5	783.5	-			82	67	77	68	72	68	67	62	220	541
23	73	53	13.0	796.5	0.45	15.65	0.86	72	62	72	65	71	67	68	62	143	137
24	69	48	9.5	806.0	-			70	58	69	62	67	64	67	62	198	469
25	66	49	8.0	814.0	0.03	15.68		72	58	70	61	67	63	65	62	184	551
26	68	48	9.0	823.0	-		0.64	73	59	70	61	66	63	64	62	176	478
27	71	47	10.5	833.5	-			78	60	74	62	69	63	64	61	132	672
28	79	53	16.0	849.5	0.82	16.50		79	61	75	64	69	65	65	61	296	625
29	83	59	21.0	870.5	0.01	16.51		75	64	73	66	69	66	66	61	207	438
30	76	59	17.5	888.0	0.08	16.59		80	64	76	66	71	66	66	61	148	561
Total	82.1	58.0	578.5	888.0	4.16	16.59	8.22	80.5	64.6	76.6	66.7	71.3	67.0			5864	16632
Avg.	70.1							72.6		71.7		69.2		66.1	59.4		
Dept. from Normal	1.6		40.5	18.0	-0.53	0.02	-0.29	0.8		1.9		2.3		2.3			1102.0

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
July 2017

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.**		Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.				Precip.	Evap.	2"		4"		8"		20"	40"		
	----- °F -----					----- in. -----		----- ° F -----									
1	80	56	18.0	906.0	0.05	16.64	1.36	83	64	78	67	72	67	66	61	143	546
2	77	58	17.5	923.5	-			82	64	78	66	72	67	67	61	162	650
3	83	60	21.5	945.0	-		0.52	87	67	81	69	74	68	67	62	149	667
4	85	63	24.0	969.0	-			87	68	82	75	75	70	68	62	183	687
5	89	67	26.5	995.5	0.22	16.86		89	72	84	73	77	72	69	62	171	629
6	88	69	27.5	1023.0	-			88	71	83	73	77	73	70	63	182	663
7	93	64	25.0	1048.0	-		1.05	93	73	87	74	79	73	71	63	157	657
8	84	54	19.0	1067.0	-			90	72	85	75	79	75	72	63	175	684
9	83	58	20.5	1087.5	-			91	71	86	74	79	74	72	64	85	666
10	89	62	24.0	1111.5	2.28	19.14	~1.20	83	71	81	73	77	74	73	64	192	423
11	84	64	24.0	1135.5	T			81	70	79	72	75	73	72	65	98	427
12	86	67	26.5	1162.0	T			84	70	81	72	76	72	72	65	164	551
13	86	60	23.0	1185.0	-			92	72	87	75	80	74	72	65	143	613
14	72	61	16.5	1201.5	-		0.94	82	70	79	72	76	73	73	65	146	376
15	75	60	17.5	1219.0	-			85	70	81	72	76	72	72	66	99	472
16	92	65	25.5	1244.5	-			92	70	86	72	78	72	72	66	163	609
17	87	66	26.0	1270.5	-		0.71	91	74	87	76	80	75	73	66	144	609
18	89	69	27.5	1298.0	-			92	75	87	76	80	76	74	66	226	629
19	90	66	26.0	1324.0	-			93	76	88	79	81	77	75	66	160	484
20	84	67	25.5	1349.5	1.53	20.67	0.84	85	72	83	74	79	75	75	67	173	371
21	86	70	28.0	1377.5	0.06	20.73		84	72	81	73	78	74	74	67	123	473
22	80	69	24.5	1402.0	1.01	21.74	0.47	78	71	73	73	75	73	73	67	183	316
23	87	66	26.0	1428.0	-			86	71	82	72	77	73	73	68	97	529
24	77	57	17.0	1445.0	T		0.49	85	69	82	72	77	73	73	68	166	576
25	78	62	20.0	1465.0	0.08	21.82		85	68	81	71	76	72	73	68	167	530
26	87	66	26.0	1491.0	1.22	23.04	0.68	84	70	80	72	75	72	72	68	227	437
27	83	65	24.0	1515.0	0.11	23.15		81	69	79	71	75	73	72	67	102	304
28	86	62	24.0	1539.0	T			85	68	82	71	76	72	72	68	103	634
29	82	58	20.0	1559.0	-			90	70	84	72	78	73	72	68	118	610
30	85	59	22.0	1581.0	-			90	69	85	72	79	3	73	68	65	652
31	87	60	23.0	1604.0	-		1.08	91	71	87	74	80	74	74	68	60	621
Total	84.3	62.9	716.0	1604.0	6.56	23.15	8.14	86.7	70.3	82.5	72.6	77.0	70.5			4526	17095
Avg.	73.6							78.5		77.6		73.7		71.8	65.4		
Dept. from Normal	1.6		61.0	79.0	2.14	2.16	0.24	-0.1		0.9		-0.2		0.9			457

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
August 2017

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.**		Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.				Precip.	Evap.	2"		4"		8"		20"	40"		
	----- °F -----					----- in. -----		----- ° F -----									
1	86	59	22.5	1626.5	-		0.27	93	74	88	77	81	76	75	68	89	633
2	90	62	24.0	1650.5	0.28	23.43		92	71	87	74	81	76	75	68	105	560
3	82	64	23.0	1673.5	0.05	23.48		86	71	84	74	79	75	75	68	139	579
4	68	51	9.5	1683.0	T			73	63	75	66	76	70	74	69	201	248
5	79	52	15.5	1698.5	-			82	63	80	66	75	69	72	69	105	619
6	77	55	16.0	1714.5	T			78	66	76	69	73	70	72	69	77	352
7	75	57	16.0	1730.5	0.09	23.57	0.97	75	66	74	68	71	70	71	68	78	288
8	82	53	17.5	1748.0	-			82	65	80	67	75	69	70	68	49	557
9	87	56	21.0	1769.0	-			84	67	82	69	76	70	71	68	93	594
10	71	61	16.0	1782.0	0.18	23.75		72	66	72	68	73	69	71	68	146	139
11	75	57	16.0	1801.0	0.16	23.91		73	63	72	66	70	68	70	68	131	348
12	75	53	14.0	1815.0	-			75	63	75	65	72	67	69	67	87	570
13	78	56	17.0	1832.0	-			79	64	78	66	74	68	69	67	91	559
14	74	59	16.5	1848.5	0.24	24.15	1.12	75	66	74	68	72	70	70	67	172	331
15	74	54	14.0	1862.5	0.01	24.16		75	65	74	67	71	69	69	67	90	376
16	71	57	14.0	1876.5	0.22	24.38		72	65	72	66	70	68	69	67	166	342
17	79	64	21.5	1898.0	0.85	24.23		73	66	72	68	70	68	69	67	246	227
18	73	55	14.0	1912.0	0.06	25.29	0.49	72	64	71	65	69	67	68	67	152	246
19	74	52	13.0	1925.0	0.09	25.38		73	63	71	65	68	66	68	66	73	302
20	78	53	15.5	1940.5	-			78	62	74	64	70	65	67	66	112	554
21	83	65	24.0	1964.5	0.17	25.55	0.47	82	67	79	68	73	68	68	66	134	497
22	79	58	18.5	1983.0	1.09	26.64	0.28	76	64	74	66	72	68	69	66	138	218
23	72	47	11.0	1994.0	T			74	60	72	63	70	66	69	66	134	574
24	75	48	12.5	2006.5	-			79	59	76	62	71	65	68	66	100	569
25	72	56	14.0	2020.5	0.03	26.67		74	64	73	66	70	67	68	66	185	383
26	72	59	15.5	2036.0	0.05	26.72		73	65	71	66	69	67	68	66	256	299
27	70	57	13.5	2049.5	0.32	27.04		68	63	67	65	67	66	67	66	125	141
28	75	58	16.5	2066.0	0.01	27.05	0.92	75	63	72	64	69	69	67	66	111	405
29	70	52	11.0	2077.0	-			71	61	70	63	68	65	67	66	85	273
30	77	53	15.0	2092.0	-			81	60	76	63	71	64	67	65	47	510
31	80	54	17.0	2109.0	-		0.49	84	64	79	66	73	67	67	65	149	513
Total	76.5	56.0	505.0	2109.0	3.90	27.05	5.01	77.4	64.6	75.5	66.8	72.2	68.5			3866	12806
Avg.	66.3							71.0		71.1		70.3		69.6	67.0		
Dept. from Normal	-3.5		-92.0	-13.00	-0.85	1.31	-1.36	-4.5		-3.4		-2.3		-1.3			-1369

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
 SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120TH STREET
 WASECA, MINNESOTA 56093-4521
 SEPTEMBER 2017

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.** Precip.	Evap.	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.						2"		4"		8"				20"	40"
	° F							Max.	Min.	Max.	Min.	Max.	Min.			20"	40"
1	71	50	10.5	2119.5	-		0.16	79	63	76	66	72	68	68	65	176	430
2	71	50	10.5	2130.0	0.02	27.07		77	62	74	65	70	67	68	66	177	452
3	78	52	15.0	2145.0	-			79	64	74	66	70	67	68	66	109	342
4	82	54	18.0	2163.0	-		0.36	80	63	76	65	71	67	68	66	176	473
5	72	46	11.0	2174.0	0.18	27.25		77	59	75	63	71	66	69	66	131	360
6	64	44	7.0	2181.0	-			67	57	67	61	66	64	67	66	145	394
7	66	38	8.0	2189.0	-			73	57	70	60	67	63	66	66	86	448
8	75	39	12.5	2201.5	-			76	56	71	59	67	62	66	65	115	471
9	69	51	10.0	2211.5	-			76	60	72	62	68	64	66	65	221	485
10	76	51	13.5	2225.0	-			75	60	72	62	68	64	66	65	214	425
11	78	59	18.5	2243.5	-		1.39	77	64	74	65	69	66	66	65	212	389
12	82	56	19.0	2262.5	-			81	65	76	66	71	66	67	65	121	445
13	84	56	20.0	2282.5	-			84	66	78	67	72	68	68	65	81	443
14	85	60	22.5	2305.0	-			83	68	79	69	73	69	69	65	128	441
15	88	62	24.0	2329.0	-			83	69	79	70	74	70	69	65	169	431
16	84	64	24.0	2353.0	0.01	27.26		79	70	76	71	73	71	70	65	212	281
17	77	47	13.5	2366.5	-			78	65	76	68	73	70	70	66	133	208
18	65	46	7.5	2374.0	0.02	27.28	1.28	74	64	73	66	70	68	69	66	114	394
19	61	53	7.0	2381.0	1.27	28.55	0.09	64	61	66	63	68	64	68	66	128	48
20	79	60	19.5	2400.5	0.01	28.56		72	62	70	63	67	64	66	66	272	364
21	74	53	13.5	2414.0	-			77	61	74	64	69	66	68	66	117	430
22	86	54	20.0	2434.0	-			77	60	74	63	69	64	67	66	209	366
23	91	72	29.0	2463.0	-			83	70	79	70	73	69	68	65	252	375
24	88	66	26.0	2489.0	-			83	71	80	72	74	71	69	65	149	345
25	89	59	22.5	2511.5	0.31	28.87	1.18	82	69	79	71	74	71	70	66	157	353
26	63	57	10.0	2521.5	0.20	29.07		71	64	71	66	72	67	70	66	120	136
27	64	43	7.0	2528.5	T			68	56	67	59	67	63	68	66	125	192
28	64	42	7.0	2535.5	T			68	55	66	58	64	61	66	66	96	419
29	75	42	12.5	2548.0	-			71	54	68	57	64	60	65	66	137	387
30	65	41	7.5	2555.5	-		0.51	72	55	69	58	65	61	64	66	107	414
Totals	75.5	52.2	446.5	2555.5	2.02	29.07	4.97	76.2	62.3	73.4	64.5	69.7	66.0			4589	11141
Avg.	63.9							69.3		68.9		67.9		67.6	65.6		
Dept. from																	
Norma	2.6		98.5	85.50	-1.65	-0.34	0.06	4.1		4.0		3.8		-65.3			425

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
 SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120th Street
 Waseca, MN 56093-4521
 October 2017

Date	Air Temp.		GDU	Cumul* GDU	Precip	Cumul** Precip.	Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.							2"		4"		8"				20"	40"
	° F								Max	Min	Max	Min.	Max.	Min.			° F	
1	69	44	9.5	2565.0	0.03	29.10			68	54	66	57	63	60	64	65	222	339
2	62	54	8.0	2573.0	0.55	29.65			59	56	60	58	61	59	63	65	240	80
3	71	56	13.5	2586.5	0.33	29.98			63	56	63	57	62	59	62	64	191	109
4	71	40	10.5	2597.0	T				65	52	64	56	63	59	62	64	136	135
5	61	39	5.5	2602.5	0.02	30.00			64	51	62	64	60	58	62	63	96	395
6	62	51	6.5	2609.0	0.32	30.32			59	55	58	56	58	57	61	63	114	83
7	56	52	4.0	2613.0	1.32	31.64			57	56	57	56	58	57	60	63	185	38
8	66	48	8.0	2621.0	0.17	31.81			62	52	60	54	58	56	59	62	127	155
9	74	45	12.0	2633.0	-				65	51	62	53	59	56	59	62	178	360
10	58	36	4.0	2637.0	T				58	46	57	50	57	54	59	62	158	271
11	47	35	0.0	2637.0	0.03	31.84			50	45	51	48	54	51	57	61	106	102
12	56	39	3.0	2640.0	T				54	45	54	47	53	51	56	61	151	160
13	64	42	7.0	2647.0	-				62	51	59	53	56	53	56	60	175	231
14	60	40	5.0	2652.0	T				59	48	57	50	55	53	56	60	130	230
15	55	41	2.5	2654.5	0.21	32.05			53	48	53	50	53	52	55	60	222	68
16	53	33	1.5	2656.0	-				56	44	54	47	53	51	55	59	112	254
17	67	32	FREEZE		-				57	43	55	46	52	49	55	59	190	337
18	75	42			-				62	47	59	49	55	51	55	59	150	329
19	72	37			-				63	48	60	51	56	53	55	58	130	295
20	72	36			-				61	47	59	50	55	52	56	58	194	307
21	76	54			0.54	32.59			64	53	61	54	57	54	56	58	305	279
22	68	45			0.37	32.96			61	52	60	54	58	56	57	58	221	73
23	64	43			-				59	48	58	51	56	53	57	58	156	272
24	58	38			-				53	44	53	47	53	50	56	58	302	142
25	49	33			-				51	42	51	45	50	48	54	58	261	286
26	58	32			-				55	42	53	44	50	48	53	58	177	282
27	54	30			0.06	33.02	0.8		50	41	50	44	50	48	53	57	298	92
28	33	29			0.10	33.12	0.8	T	41	37	44	40	48	44	52	57	299	76
29	35	26			-		T	T	41	36	42	38	44	42	50	56	152	119
30	43	30			0.09	33.21			41	36	42	38	43	41	48	56	170	91
31	36	26			T		T		39	36	40	37	43	41	47	55	291	73
Total	59.5	39.6	100.5	2656.0	4.14	33.21	1.6		56.5	47.2	55.6	49.8	54.6	52.1			5839	6063
Avg.	49.6								51.8		52.7		53.4		56.5	59.9		
Dept. from Norma	1.4		80.5	166.0	1.47	1.13	1.0		2.0		2.2		2.6		2.1			-1359

* Since May 1, 2017

** Since Jan. 1, 2017

UNIVERSITY OF MINNESOTA
 SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120th Street
 Waseca, MN 56093-4521
 NOVEMBER 2017

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
----- °F -----			----- in. -----						----- ° F -----						mi.	Langleys			
1	33	21	38.0	38.0	-					40	35	40	37	41	40	46	55	157	241
2	38	29	31.5	69.5	T					37	35	38	36	40	39	45	54	190	56
3	40	26	32.0	101.5	-					40	36	40	38	41	40	45	53	176	75
4	36	27	33.5	135.0	0.02	33.23				38	36	39	37	40	40	45	53	227	84
5	42	35	26.5	161.5	0.08	33.31				41	37	41	38	42	40	44	52	160	44
6	35	19	38.0	199.5	-					41	35	41	37	42	40	45	52	194	66
7	32	21	38.5	238.0	0.02	33.33	0.2			37	35	38	36	40	39	44	51	111	139
8	36	18	38.0	276.0	-					40	34	40	36	40	39	44	51	128	191
9	43	17	35.0	311.0	-					38	34	38	35	39	38	43	51	227	238
10	22	10	49.0	360.0	T		T			35	32	36	34	39	37	43	50	233	236
11	32	13	42.5	402.5	T		T			32	32	34	33	37	36	42	50	289	104
12	41	22	33.5	436.0	-					33	32	34	33	36	36	41	50	138	123
13	35	22	36.5	472.5	-					33	33	34	34	36	36	41	49	96	218
14	45	26	29.5	502.0	0.01	33.34				37	33	37	34	37	36	40	49	229	125
15	49	35	23.0	525.0	0.01	33.35				42	37	41	37	40	37	41	48	222	31
16	35	22	36.5	561.5	-					40	34	41	36	40	38	42	48	259	34
17	36	24	35.0	596.5	-					35	34	36	35	38	37	41	48	286	66
18	38	32	30.0	626.5	0.02	33.37				37	35	38	35	38	37	41	48	184	15
19	37	13	40.0	666.5	-					39	33	39	35	39	37	41	48	243	189
20	43	15	36.0	702.5	-					33	33	35	34	37	36	41	47	197	177
21	48	22	30.0	732.5	T					37	33	37	34	37	36	40	47	305	135
22	27	8	47.5	780.0	T					34	32	35	34	37	36	40	47	209	181
23	32	10	44.0	824.0	-					32	32	34	33	36	35	40	47	204	126
24	46	20	32.0	856.0	-					35	32	34	33	35	35	39	47	217	195
25	62	31	18.5	874.5	0.01	33.38				42	35	40	34	35	35	39	46	227	168
26	42	21	33.5	908.0	-					40	34	39	35	37	37	40	46	136	199
27	53	29	24.0	932.0	-					39	34	38	35	37	37	40	46	139	163
28	60	36	17.0	949.0	-					41	35	41	36	40	37	40	46	324	150
29	51	18	30.5	979.5	-					42	35	41	36	41	39	41	46	152	144
30	45	23	31.0	1010.5	-					40	34	39	36	39	38	41	46	288	186
Total	40.5	22.2	1010.5	1010.5	0.17	33.38	0.2			37.7	34.0	37.9	35.2	38.5	37.4			6147	4099
Avg.	31.3									35.9		36.6		38.0		41.8	49.0		
Dept. from Normal	-1.4		41.5	41.5	-1.99	-0.86	-7.6			0.3		-0.5		0.0		-1.9			-386

* Since Nov. 1, 2017

** Since Jan. 1, 2017

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
DECEMBER 2017**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
	----- °F -----					----- in. -----				----- ° F -----		Max	Min	Max	Min.			Max.	Min.
1	46	24	30.0	1040.5	-					40	34	39	36	39	38	41	46	161	184
2	53	21	28.0	1068.5	-					39	34	39	35	39	37	41	46	208	118
3	47	23	30.0	1098.5	-					38	34	38	35	38	37	41	46	110	120
4	57	32	20.5	1119.0	-					42	34	41	35	40	37	40	46	287	100
5	61	14	27.5	1146.5	0.17	33.55	1.0	1	0	46	37	44	39	42	40	41	46	369	32
6	20	10	50.0	1196.5	-			1		37	35	39	36	40	38	42	46	311	172
7	20	5	52.5	1249.0	0.04	33.59	1.0	1		35	34	36	34	38	36	41	46	272	129
8	20	5	52.5	1301.5	-			1		34	33	34	33	36	35	40	46	216	180
9	30	13	43.5	1345.0	-			1		33	33	33	33	35	35	39	45	263	142
10	27	15	44.0	1389.0	T		T	1		33	32	33	33	35	34	38	45	213	112
11	31	18	40.5	1429.5	0.01	33.60		1	0	32	32	33	33	34	34	38	45	150	98
12	35	6	44.5	1474.0	T		T	1		32	32	33	32	34	34	38	44	242	31
13	37	7	43.0	1517.0	-			1		32	32	32	32	34	33	37	44	221	106
14	35	6	44.5	1561.5	T		T	1		32	31	32	32	33	33	37	44	231	17
15	25	6	49.5	1611.0	0.02	33.62	0.3	1		31	31	32	31	33	33	37	44	152	55
16	35	23	36.0	1647.0	-			1		32	31	32	31	33	33	37	43	122	68
17	36	17	38.5	1685.5	-			T		32	31	32	32	33	33	36	43	144	139
18	27	21	41.0	1726.5	-			T	3	32	31	32	32	33	33	36	43	113	51
19	42	24	32.0	1758.5	-			T		32	31	32	32	33	33	36	43	208	134
20	36	19	37.5	1796.0	-			T		32	31	32	32	33	33	36	43	178	166
21	23	19	44.0	1840.0	T		T	T		31	30	32	31	33	33	36	42	240	50
22	21	17	46.0	1886.0	0.26	33.88	3.8	4		31	30	31	31	33	32	36	42	207	57
23	19	-2	56.5	1942.5	-			3		31	31	31	31	32	32	36	42	119	120
24	14	-4	60.0	2002.5	-			3		31	30	31	31	32	32	36	42	116	162
25	19	-12	61.5	2064.0	0.03	33.91	0.8	3	6	31	30	31	30	32	32	35	42	197	137
26	-1	-20	75.5	2139.5	-			3		30	29	30	29	32	32	35	42	148	179
27	-2	-23	77.5	2217.0	-			2		29	27	29	28	32	31	35	41	94	182
28	3	-23	75.0	2292.0	0.29	34.20	1.8	3		28	27	28	28	31	30	35	41	185	161
29	11	-2	60.5	2352.5	0.02	34.22	0.5	3		28	28	29	28	30	30	35	41	207	102
30	1	-15	72.0	2424.5	0.06	34.28	1.0	4		28	28	29	28	30	30	34	41	90	195
31	-8	-18	78.0	2502.5	T			4		28	27	28	28	30	29	34	41	175	164
Total	26.5	7.3	1492.0	2502.5	0.90	34.28	10.2			33.0	31.3	33.1	32.0	43.7	33.6			5949	3663
Avg.	16.9									32.1		32.5		38.7		37.4	43.6		
Dept. from Norma	-0.9		29.0	70.5	-0.58	-1.44	-2.8			5.3		4.0		8.8		1.4			-299

* Since Nov. 1, 2017

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