

## NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.

Month January 2017

	Temperatures		Precip.	Sky	Wind	Snowfall		
	Max.	Min.						
1	23	15		CI	NE			
2	17	10	0.02	CL	E			
3	10	-13		CL	NW			
4	-9	-20		CI	W			
5	-7	-22		PCL	NW		C - Clear	9
6	-2	-20		PCL	S			
7	-2	-14		CI	NW		PCL - P.Cloudy	3
8	10	-14		CI	S			
9	15	-7		CI	NE		CL - Cloudy	19
10	12	-7		CL	NW			
11	1	-16		CI	W			
12	5	-20		PCL	W			
13	1	-23		C	SE			
14	8	-5		C	SSW			
15	15	3		C	S			
16	15	3		C	S			
17	23	1		C	S			
18	32	18	0.03	C	SSE			
19	37	28	0.02	CI	SSE		<b>Recorded by:</b>	
20	35	33		CL	SE		Michael Leiseth	
21	37	33	0.01	CL	SE		Research Plot Technician	
22	33	30		CL	WNW		NW Research & Outreach Center	
23	33	23		CL	SW		University of Minnesota	
24	28	21		CL	N		Crookston, Mn. 56716	
25	24	14		CL	N			
26	20	9		C	NW			
27	26	10		C	WNW			
28	26	23		CL	N			
29	24	15		CL	N			
30	33	23	0.09	CL	SSE	Trace		
31	33	-4		C	NW	Trace		

High Temperature for the Month 37 on the 19th and 21st

Low Temperature for the Month -23 on the 13th

		2017	2016	30 Yr	124 Yr
January	Avg. Temperature (F)	11.0	10	7.3	5.2
January	Precipitation (Inches)	0.17	0.90	0.56	0.56

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

Month February 2017

	Temperatures		Precip.	Sky	Wind	Snowfall
	Max.	Min.				
1	11	-3		C	NW	
2	9	-2		C	WNW	
3	14	0		CL	WSW	
4	21	5	0.01	CL	SE	
5	8	-2		C	NW	
6	15	1		CL	NE	2
7	5	-14		C	NE	T
8	3	-10		C	NW	
9	0	-17		C	SW	
10	24	-12		CL	SW	
11	35	17		PCL	SSW	
12	28	6		C	SSE	
13	32	14		C	WNW	
14	39	23		C	SW	
15	31	5		C	NW	
16	37	24		C	S	
17	44	32		C	S	
18	42	31		C	SW	
19	47	32		CL	E	
20	47	31	0.15	CL	E	
21	47	31	0.08	CL	N	
22	35	20	0.02	CL	N	
23	29	13		CL	N	
24	21	14		CL	N	
25	30	13		CL	SSW	0.5
26	18	5		C	NNW	
27	30	11		C	S	
28	30	10		C	N	T

**Number of Days**

C - Clear	16
PCL - P.Cloudy	1
CL - Cloudy	11

**Recorded by:**  
 Michael Leiseth  
 Research Plot Technician  
 NW Research & Outreach Ctr  
 University of Minnesota  
 Crookston, Mn. 56716

**Total Snowfall** 2.5

Set a new record temperature on the 19th. The previous record was 45 degrees.

High Temperature for the Month 47

Low Temperature for the Month -17

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
February	Avg. Temperature (F)	18	19	11	9
February	Precipitation (Inches)	0.26	0.24	0.48	0.50
Jan-Feb	Precipitation (Inches)	0.52	0.58	0.50	0.54

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month March                      2017

	Temperatures		Precip.	Sky	Wind	4" Soil Avg. Tmp	Snowfall		Number of Days
	Max.	Min.							
								Clear	20
1	22	1		C	N	29.2		P. Cloudy	4
2	10	3		C	N	27.1		Cloudy	7
3	32	3		PCL	SSE	27.3			
4	45	24		C	S	29.6			
5	52	32		C	SE	30.9			
6	55	18		PCL	W	31.2			
7	23	9	T	PCL	W	30.7	T		
8	24	4		C	N	29.3			
9	11	-6		C	N	26.7			
10	7	-6		C	N	24.2			
11	14	-1		C	N	24.6			
12	19	6		C	NE	25.5			
13	22	2		C	NNW	26.0			
14	25	2		C	S	27.5			
15	31	8		C	S	28.3			
16	38	24	0.28	C	S	30.0			
17	36	23	0.01	CL	W	30.8			
18	36	17		CL	E	30.8			
19	51	33		C	S	31.1			
20	49	22		C	W	31.3			
21	24	15		PCL	N	31.2			
22	34	16		C	SSE	30.6			
23	39	32	0.26	C	S	30.8			
24	37	30	0.01	C	N	31.2			
25	43	30		C	SSE	31.3			
26	46	31		CL	S	31.4			
27	48	30		CL	NNE	31.5			
28	56	31		CL	N	31.5			
29	61	32		CL	SE	31.5			
30	55	33		C	SSE	32.0			
31	57	36	0.04	CL	W	33.1			

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
March	Avg. Temperature (F)	26.4	35.4	25.7	23.6
March	Precipitation (Inches)	0.60	0.65	0.87	0.84
Jan-March	Precipitation (Inches)	1.12	1.23	1.83	1.92

## NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.

Month April 2017

	Temperatures		Precip.	Sky	Wind	4" Soil	Snowfall		Nu mb
	Max.	Min.							
								Clear	18
1	51	38	0.08	CL	NNW	34.0		P. Cloudy	3
2	58	39		C	S	35.0		Cloudy	9
3	58	32		C	CALM	35.0			
4	56	32		C	CALM	36.0			
5	46	31		CL	NE	35.0			
6	52	29		C	CALM	36.0			
7	61	34		C	S	37.0			
8	65	45		C	S	41.0			
9	49	27		C	N	41.0			
10	44	24		C	NNE	37.0			
11	53	26		C	CALM	39.0			
12	62	34		C	SSE	42.0			
13	65	36		CL	S	44.0			
14	70	47	0.01	CL	S	47.0			
15	64	42		C	NNW	49.0			
16	57	32		PCL	W	47.0			
17	43	27	0.05	CL	N	43.3			
18	47	32	0.35	CL	NNE	43.3			
19	53	30		C	CALM	41.8			
20	59	40		CL	NNE	44.8			
21	64	31		C	CALM	46.7			
22	60	32		PCL	CALM	47.7			
23	35	30	0.01	C	NNE	43.4	T		
24	40	33	0.23	C	W	39.3	3"		
25	37	31		PCL	E	38.7			
26	32	27		CL	E	37.1			
27	36	23	0.06	CL	CALM	36.0			
28	52	29		C	NW	37.4			
29	60	28		C	CALM	41.0			
30	62	36		C	E	44.5			

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
April	Avg. Temperature (F)	42.8	39.0	42.1	41.7
April	Precipitation (Inches)	0.79	1.02	1.14	1.45
Jan-April	Precipitation (Inches)	2.17	2.25	2.91	3.37

## Growing Degree Days

### Month April 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days	Days
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	Min Temp	Min Temp
	32	40	45	55	50-86	65	75	<32 F	<0 F
1	12.5	5.5	3.0		0.5	20.5	-30.5		
2	16.5	8.8	6.3	1.3	3.8	16.5	-26.5		
3	13.2	9.2	6.7	1.7	4.2	19.9	-29.9	1	
4	11.8	7.8	5.3	0.3	2.8	21.4	-31.4	1	
5	6.8	2.8	0.3		-2.2	26.6	-36.6	1	
6	9.9	5.9	3.4		0.9	24.7	-34.7	1	
7	15.2	10.3	7.8	2.8	5.3	17.8	-27.8		
8	22.9	14.9	10.0	5.0	7.5	10.1	-20.1		
9	8.7	4.7	2.2		-0.3	26.7	-36.7	1	
10	6.0	2.0			-3.0	31.0	-41.0	1	
11	10.5	6.5	4.0		1.5	25.5	-35.5	1	
12	16.0	11.0	8.5	3.5	6.0	17.0	-27.0		
13	18.5	12.5	10.0	5.0	7.5	14.5	-24.5		
14	26.5	18.5	13.5	7.5	10.0	6.5	-16.5		
15	21.0	13.0	9.5	4.5	7.0	12.0	-22.0		
16	12.5	8.5	6.0	1.0	3.5	20.5	-30.5	1	
17	5.5	1.5			-3.5	29.8	-39.8	1	
18	7.7	3.6	1.1		-1.4	25.3	-35.3		
19	10.3	6.3	3.8		1.3	23.9	-33.9	1	
20	17.6	9.6	7.1	2.1	4.6	15.4	-25.4		
21	15.9	11.9	9.4	4.4	6.9	17.6	-27.6	1	
22	14.1	10.0	7.5	2.5	5.0	18.9	-28.9		
23	1.4				-7.6	32.7	-42.7	1	
24	4.4				-5.1	28.6	-38.6		
25	2.7				-6.3	31.0	-41.0	1	
26					-9.1	35.7	-45.7	1	
27	2.2				-6.8	35.0	-45.0	1	
28	10.2	6.2	3.7		1.2	24.3	-34.3	1	
29	14.2	10.2	7.7	2.7	5.2	20.5	-30.5	1	
30	17.0	10.9	8.4	3.4	5.9	16.0	-26.0		
<b>Total</b>	<b>352.035</b>	<b>212.2</b>	<b>145.24</b>	<b>47.645</b>	<b>45.395</b>	<b>665.9</b>	<b>-965.9</b>	<b>17</b>	

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month May 2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp
	Max.	Min.				Under Sod
1	58	34		C	N	44.1
2	65	40		CL	E	46.3
3	65	43		PCL	N	48.6
4	73	36		C	NW	49.7
5	80	45		C	N	52.1
6	73	38		C	NE	52.8
7	74	48		C	E	53.5
8	73	50	0.17	C	SE	53.0
9	69	42		C	W	53.1
10	58	40		CL	NW	52.3
11	68	31		C	NW	51.6
12	70	45		CL	NE	54.0
13	79	46		C	E	55.3
14	80	53	0.01	C	E	55.9
15	81	47		C	NE	57.2
16	64	49		CL	N	57.0
17	61	45		CL	N	54.1
18	63	38		C	N	53.8
19	63	34		C	NE	52.5
20	53	41	0.23	C	NE	51.5
21	52	36	0.19	CL	NW	48.4
22	53	45	0.08	CL	NW	49.3
23	59	41		CL	N	50.2
24	70	36		C	SE	51.7
25	70	45		C	SE	53.1
26	72	46		C	SW	54.8
27	78	47	0.03	C	SW	55.1
28	64	49	0.21	CL	W	54.8
29	59	44	0.01	CL	NW	53.2
30	66	43	0.01	CL	NW	51.7
31	77	45		C	NW	53.8

	Number of Days
Clear	19
P. Cloudy	1
Cloudy	11

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
May	Avg. Temperature (F)	55.0	59.0	55.7	54.9
May	Precipitation (Inches)	0.94	6.68	3.04	2.68
Jan-May	Precipitation (Inches)	2.85	8.94	6.00	6.05

## Growing Degree Days

### Month May 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days	Days
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	Min Temp	Min Temp
	32	40	45	55	50-86	65	65	<32 F	<0 F
1	14.0	9.0	6.5	1.5	4.0	19.0	-19.0		
2	20.5	12.5	10.0	5.0	7.5	12.5	-12.5		
3	22.0	14.0	10.0	5.0	7.5	11.0	-11.0		
4	22.5	16.5	14.0	9.0	11.5	10.5	-10.5		
5	30.5	22.5	17.5	12.5	15.0	2.5	-2.5		
6	23.5	16.5	14.0	9.0	11.5	9.5	-9.5		
7	29.0	21.0	16.0	9.5	12.0	4.0	-4.0		
8	29.5	21.5	16.5	9.0	11.5	3.5	-3.5		
9	23.5	15.5	12.0	7.0	9.5	9.5	-9.5		
10	17.0	9.0	6.5	1.5	4.0	16.0	-16.0		
11	17.9	13.9	11.4	6.4	8.9	15.7	-15.7	1	
12	25.3	17.3	12.3	7.3	9.8	7.7	-7.7		
13	30.7	22.7	17.7	12.0	14.5	2.3	-2.3		
14	34.7	26.7	21.7	12.6	16.7	-1.7	1.7		
15	31.8	23.8	18.8	12.9	15.4	1.2	-1.2		
16	24.6	16.6	11.6	4.6	7.1	8.4	-8.4		
17	20.8	12.8	7.9	2.9	5.4	12.2	-12.2		
18	18.6	11.5	9.0	4.0	6.5	14.4	-14.4		
19	16.5	11.4	8.9	3.9	6.4	16.5	-16.5		
20	15.0	7.0	4.2		1.7	18.0	-18.0		
21	11.8	5.8	3.3		0.8	21.3	-21.3		
22	16.9	8.9	4.0		1.5	16.1	-16.1		
23	18.3	10.3	7.2	2.2	4.7	14.7	-14.7		
24	20.7	14.9	12.4	7.4	9.9	12.3	-12.3		
25	25.8	17.8	12.8	7.7	10.2	7.2	-7.2		
26	26.8	18.8	13.8	8.3	10.8	6.2	-6.2		
27	30.6	22.6	17.6	11.6	14.1	2.4	-2.4		
28	24.5	16.5	11.5	4.6	7.1	8.5	-8.5		
29	19.5	11.5	7.0	2.0	4.5	13.5	-13.5		
30	22.5	14.5	10.5	5.5	8.0	10.5	-10.5		
31	29.0	21.0	16.0	11	13.5	4	-4.0		
<b>Total</b>	<b>714.12</b>	<b>484.16</b>	<b>362.535</b>	<b>195.73</b>	<b>271.285</b>	<b>309.49</b>	<b>1.655</b>	<b>1</b>	<b>1</b>

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month June                      2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp		Number of Days
	Max.	Min.						
						Under Sod	Clear	15
1	85	46		C	SE	56.4	P. Cloudy	6
2	94	61	0.49	C	SE	59.7	Cloudy	9
3	83	59	0.02	C	SW	63.2		
4	81	54		C	NW	61.6		
5	85	56		C	E	62.3		
6	90	61		C	SE	63.2		
7	80	57	0.28	C	NE	63.5		
8	80	56		C	NE	62.8		
9	86	56	0.10	C	N	63.0		
10	81	60	0.02	C	SW	65.1		
11	84	59		PCL	S	63.9		
12	78	52		C	N	62.3		
13	76	57	0.71	CL	E	61.4		
14	79	59		PCL	S	63.8		
15	77	59		PCL	SW	63.3		
16	80	55	0.16	PCL	SW	63.1		
17	71	56		CL	NW	63.2		
18	69	52		CL	NW	61.6		
19	73	51	0.10	PCL	W	61.4		
20	74	48		PCL	NW	62.6		
21	85	52	0.08	C	SE	63.2		
22	77	50		CL	SW	62.4		
23	65	53		CL	W	61.1		
24	59	46		CL	W	58.4		
25	67	40		C	NW	57.9		
26	74	41		C	W	59.6		
27	79	45		C	SE	60.9		
28	67	59	1.45	CL	NE	61.5		
29	76	55		CL	NW	63.3		
30	71	53		CL	NW	63.5		

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
June	Avg. Temperature (F)	65.5	64.3	65.8	64.6
June	Precipitation (Inches)	3.41	1.78	3.81	3.61
Jan-June	Precipitation (Inches)	6.26	10.71	9.82	9.77

## Growing Degree Days

### Month June 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days
	T-Base 32	T-Base 40	T-Base 45	T-Base 55	T-Base 50-86	T-Base 65	T-Base 65	Max Temp >90 F
1	33.2	25.2	20.2	14.8	17.3	-0.2	0.2	
2	45.8	37.8	32.8	22.8	23.7	-12.8	12.8	1
3	39.4	31.4	26.4	16.4	21.4	-6.4	6.4	
4	35.5	27.5	22.5	13.1	17.5	-2.5	2.5	
5	38.4	30.4	25.4	15.4	20.4	-5.4	5.4	
6	43.2	35.2	30.2	20.2	23.3	-10.2	10.2	
7	36.6	28.6	23.6	13.6	18.6	-3.6	3.6	
8	36.0	28.0	23.0	13.0	18.0	-3.0	3.0	
9	39.2	31.2	26.2	16.2	21.1	-6.2	6.2	
10	38.5	30.5	25.5	15.5	20.5	-5.5	5.5	
11	39.5	31.5	26.5	16.5	21.5	-6.5	6.5	
12	33.2	25.2	20.2	11.5	15.2	-0.2	0.2	
13	34.5	26.5	21.5	11.5	16.5	-1.5	1.5	
14	37.1	29.1	24.1	14.1	19.1	-4.1	4.1	
15	35.5	27.5	22.5	12.5	17.5	-2.5	2.5	
16	35.3	27.3	22.3	12.4	17.3	-2.3	2.3	
17	31.2	23.2	18.2	8.2	13.2	1.8	-1.8	
18	28.3	20.3	15.3	7.0	10.3	4.7	-4.7	
19	29.9	21.9	16.9	8.9	11.9	3.1	-3.1	
20	28.9	20.9	15.9	9.7	12.2	4.1	-4.1	
21	36.1	28.1	23.1	14.8	18.1	-3.1	3.1	
22	31.1	23.1	18.1	10.8	13.3	2.0	-2.0	
23	27.3	19.3	14.3	5.2	9.3	5.7	-5.7	
24	20.1	12.1	7.1	1.9	4.4	12.9	-12.9	
25	21.2	13.3	10.8	5.8	8.3	11.8	-11.8	
26	25.4	17.4	14.6	9.6	12.1	7.6	-7.6	
27	30.1	22.1	17.1	11.9	14.4	2.9	-2.9	
28	30.9	22.9	17.9	7.9	12.9	2.1	-2.1	
29	33.8	25.8	20.8	10.8	15.8	-0.8	0.8	
30	29.6	21.6	16.6	7.8	11.6	3.4	-3.4	
<b>Total</b>	<b>1004.7</b>	<b>764.8</b>	<b>619.5</b>	<b>359.6</b>	<b>476.5</b>	<b>62.1</b>	<b>76.8</b>	<b>1</b>

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month July 2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp		Number of
	Max.	Min.						Days
						Under Sod	Clear	21
1	71	50	0.04	CL	W	61.7	P. Cloudy	4
2	72	46		C	N	62.1	Cloudy	5
3	81	52		C	SE	63.9		
4	91	63	0.03	C	SE	66.3		
5	89	64		C	E	69.9		
6	81	57		C	NW	70.2		
7	78	55		C	NW	68.0		
8	84	51		C	W	67.6		
9	81	60	0.16	CL	NE	69.3		
10	84	53		C	N	69.0		
11	85	63	0.11	PCL	SE	68.4		
12	69	56	0.04	CL	NW	67.3		
13	74	52		CL	NE	66.2		
14	80	48		C	S	64.9		
15	78	55		PCL	NW	66.9		
16	83	49		C	SE	65.7		
17	87	60	0.11	C	S	68.4		
18	80	56		C	W	67.1		
19	81	53		C	S	66.3		
20	85	55		C	SE	67.0		
21	86	65	0.49	PCL	SE	68.3		
22	79	60	0.02	C	W	68.5		
23	80	58		CL	NW	67.6		
24	80	57		C	SE	66.9		
25	84	60		PCL	S	67.6		
26	81	56		C	NW	67.3		
27	84	54		C	SW	66.8		
28	86	57		C	S	67.3		
29	87	59		C	S	67.9		
30	89	62		C	S	68.7		
31	87	64	0.42	C	S	69.4		

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
July	Avg. Temperature (F)	68.9	68.7	69.4	69.5
July	Precipitation (Inches)	1.42	3.51	3.14	3.07
Jan-July	Precipitation (Inches)	7.68	14.22	12.96	12.74

## Growing Degree Days

### Month July 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	Max Temp
	32	40	45	55	50-86	65	65	>90 F
1	28.3	20.3	15.3	7.8	10.3	4.7	-4.7	
2	27.0	19.0	14.0	8.6	11.1	6.0	-6.0	
3	34.8	26.8	21.8	13.2	16.8	-1.8	1.8	
4	44.8	36.8	31.8	21.8	24.3	-11.8	11.8	1
5	44.4	36.4	31.4	21.4	25.0	-11.4	11.4	
6	37.3	29.3	24.3	14.3	19.3	-4.3	4.3	
7	34.1	26.1	21.1	11.3	16.1	-1.1	1.1	
8	35.5	27.5	22.5	14.3	17.5	-2.5	2.5	
9	38.5	30.5	25.5	15.5	20.5	-5.5	5.5	
10	36.5	28.5	23.5	14.3	18.5	-3.5	3.5	
11	42.1	34.1	29.1	19.1	24.1	-9.1	9.1	
12	30.2	22.2	17.2	7.2	12.2	2.8	-2.8	
13	30.5	22.5	17.5	9.3	12.5	2.5	-2.5	
14	31.7	23.7	18.7	12.5	15.0	1.3	-1.3	
15	34.8	26.8	21.8	11.8	16.8	-1.8	1.8	
16	33.9	25.9	20.9	14.1	16.6	-0.8	0.8	
17	41.6	33.6	28.6	18.6	22.9	-8.6	8.6	
18	35.8	27.8	22.8	12.8	17.8	-2.8	2.8	
19	35.1	27.1	22.1	13.2	17.1	-2.1	2.1	
20	38.1	30.1	25.1	15.1	20.1	-5.1	5.1	
21	43.8	35.8	30.8	20.8	25.7	-10.8	10.8	
22	37.6	29.6	24.6	14.6	19.6	-4.6	4.6	
23	37.2	29.2	24.2	14.2	19.2	-4.2	4.2	
24	36.7	28.7	23.7	13.7	18.7	-3.7	3.7	
25	40.0	32.0	27.0	17.0	22.0	-7.0	7.0	
26	36.3	28.3	23.3	13.3	18.3	-3.3	3.3	
27	37.0	29.0	24.0	14.5	19.0	-4.0	4.0	
28	39.2	31.2	26.2	16.2	21.2	-6.2	6.2	
29	40.9	32.9	27.9	17.9	22.6	-7.9	7.9	
30	43.2	35.2	30.2	20.2	23.8	-10.2	10.2	
31	43.7	35.7	30.7	20.7	25.1	-10.7	10.7	
<b>Total</b>	<b>1150.4</b>	<b>902.4</b>	<b>747.4</b>	<b>458.8</b>	<b>589.6</b>	<b>17.3</b>	<b>144.7</b>	<b>1</b>

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month August 2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp		Number of
	Max.	Min.						Days
						Under Sod	Clear	17
1	79	58		PCL	NW	68.9	P. Cloudy	6
2	73	52	0.22	C	NE	66.8	Cloudy	7
3	73	55	0.01	CL	NW	65.0		
4	79	50		C	W	64.3		
5	78	50		C	N	64.6		
6	80	49	0.22	C	NE	64.6		
7	81	49		C	SW	64.5		
8	83	49		C	SE	64.6		
9	78	60		PCL	E	65.3		
10	80	57		PCL	N	65.4		
11	80	46		C	NW	64.4		
12	79	49		C	E	63.5		
13	72	57	0.04	CL	E	63.9		
14	80	51		C	NE	64.1		
15	80	54		C	SE	63.9		
16	68	62	0.18	CL	NE	64.1		
17	79	61		CL	NW	65.1		
18	82	53		C	NW	64.8		
19	87	53		C	SE	64.6		
20	78	55		C	W	65.3		
21	74	51	0.03	CL	W	63.5		
22	76	44		C	NW	60.9		
23	75	44	0.07	PCL	NW	61.1		
24	75	50		PCL	E	61.2		
25	77	52		PCL	E	61.7		
26	69	56		CL	NE	62.4		
27	78	54		CL	NW	62.6		
28	87	51		C	SW	62.8		
29	90	58		C	S	64.4		
30	81	50		C	E	65.2		
31	77	49		C	SE	63.0		

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
Aug	Avg. Temperature (F)	65.4	68.1	67.9	67.5
Aug	Precipitation (Inches)	0.77	3.34	2.89	2.92
Jan-Aug	Precipitation (Inches)	8.33	17.56	15.85	15.67

## Growing Degree Days

### Month August 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	Max Temp
	32	40	45	55	50-86	65	65	>90 F
1	36.5	28.5	23.5	13.5	18.5	-3.5	3.5	
2	30.5	22.5	17.5	9.0	12.5	2.5	-2.5	
3	32.0	24.0	19.0	9.0	14.0	1.0	-1.0	
4	32.5	24.5	19.5	12.0	14.5	0.5	-0.5	
5	32.0	24.0	19.0	11.5	14.0	1.0	-1.0	
6	32.5	24.5	19.5	12.5	15.0	0.5	-0.5	
7	33.0	25.0	20.0	13.0	15.5			
8	34.0	26.0	21.0	14.0	16.5	-1.0	1.0	
9	37.0	29.0	24.0	14.0	19.0	-4.0	4.0	
10	36.5	28.5	23.5	13.5	18.5	-3.5	3.5	
11	31.0	23.0	18.0	12.5	15.0	2.0	-2.0	
12	32.0	24.0	19.0	12.0	14.5	1.0	-1.0	
13	32.5	24.5	19.5	9.5	14.5	0.5	-0.5	
14	33.5	25.5	20.5	12.5	15.5	-0.5	0.5	
15	35.0	27.0	22.0	12.5	17.0	-2.0	2.0	
16	33.0	25.0	20.0	10.0	15.0			
17	38.0	30.0	25.0	15.0	20.0	-5.0	5.0	
18	35.5	27.5	22.5	13.5	17.5	-2.5	2.5	
19	38.0	30.0	25.0	16.0	19.5	-5.0	5.0	
20	34.5	26.5	21.5	11.5	16.5	-1.5	1.5	
21	30.5	22.5	17.5	9.5	12.5	2.5	-2.5	
22	28.0	20.0	15.5	10.5	13.0	5.0	-5.0	
23	27.5	19.5	15.0	10.0	12.5	5.5	-5.5	
24	30.5	22.5	17.5	10.0	12.5	2.5	-2.5	
25	32.5	24.5	19.5	11.0	14.5	0.5	-0.5	
26	30.5	22.5	17.5	7.5	12.5	2.5	-2.5	
27	34.0	26.0	21.0	11.5	16.0	-1.0	1.0	
28	37.0	29.0	24.0	16.0	18.5	-4.0	4.0	
29	42.0	34.0	29.0	19.0	22.0	-9.0	9.0	1
30	33.5	25.5	20.5	13.0	15.5	-0.5	0.5	
31	31.0	23.0	18.0	11.0	13.5	2.0	-2.0	
<b>Total</b>	<b>1036.5</b>	<b>788.5</b>	<b>634.5</b>	<b>376.0</b>	<b>486.0</b>	<b>29.5</b>	<b>43.0</b>	<b>1.0</b>

## NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.

Month September      2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp		Number of
	Max.	Min.						Days
						Under Sod	Clear	15
1	70	58		CL	SE	62.5	P. Cloudy	4
2	83	49		C	W	62.2	Cloudy	11
3	92	49		C	W	62.3		
4	71	45	0.35	CL	W	61.5		
5	69	41		C	NW	58.4		
6	70	32		PCL	NW	56.7		
7	80	44		PCL	E	58.2		
8	73	38		C	E	58.1		
9	81	43		C	SE	58.9		
10	86	60		C	SE	62.2		
11	83	49		C	W	62.7		
12	93	52		C	SE	63.1		
13	84	60		C	N	65.4		
14	68	56	0.01	CL	N	64.6		
15	60	49	0.91	CL	N	61.4		
16	54	46	0.01	CL	W	58.8		
17	62	41		CL	SW	57.1		
18	70	41		PCL	SE	56.6		
19	76	56	1.02	PCL	N	59.8		
20	73	52		C	S	61.1		
21	81	53		C	SE	60.0		
22	80	54		C	N	62.1		
23	61	49		CL	N	61.6		
24	56	49	0.82	CL	NW	59.4		
25	54	47	0.26	CL	NW	57.7		
26	53	40	0.60	CL	NW	56.3		
27	71	40		C	SW	55.8		
28	68	40	0.03	CL	NW	56.5		
29	63	33		C	E	54.9		
30	72	44		C	SE	55.0		

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center

University of Minnesota Crookston, MN

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
Sept	Avg. Temperature (F)	59.5	59.8	57.9	57.4
Sept	Precipitation (Inches)	4.01	1.58	2.89	2.92
Jan-Sept	Precipitation (Inches)	12.34	19.14	18.22	17.86

## Growing Degree Days

### Month September 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling	Days
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	Max Temp
	32	40	45	55	50-86	65	65	>90 F
1	32.0	24.0	19.0	9.0	14.0	1.0	-1.0	
2	34.0	26.0	21.0	14.0	16.5	-1.0	1.0	
3	38.3	30.3	25.3	18.5	18.0	-5.3	5.3	1
4	26.3	18.3	13.3	8.1	10.6	6.7	-6.7	
5	22.6	14.6	11.8	6.8	9.3	10.4	-10.4	
6	19.2	15.2	12.7	7.7	10.2	13.8	-13.8	
7	30.0	22.0	17.7	12.7	15.2	3.0	-3.0	
8	23.9	16.7	14.2	9.2	11.7	9.1	-9.1	
9	30.1	22.1	18.2	13.2	15.7	2.9	-2.9	
10	41.1	33.1	28.1	18.1	23.1	-8.1	8.1	
11	33.8	25.8	20.8	13.8	16.3	-0.8	0.8	
12	40.5	32.5	27.5	19.1	19.0	-7.5	7.5	1
13	40.0	32.0	27.0	17.0	22.0	-7.0	7.0	
14	30.2	22.2	17.2	7.2	12.2	2.8	-2.8	
15	22.4	14.4	9.4	2.4	4.9	10.6	-10.6	
16	18.2	10.2	5.2		2.0	14.8	-14.8	
17	19.5	11.5	8.5	3.5	6.0	13.5	-13.5	
18	23.5	15.5	12.6	7.6	10.1	9.5	-9.5	
19	34.3	26.3	21.3	11.3	16.3	-1.3	1.3	
20	30.1	22.1	17.1	8.8	12.1	2.9	-2.9	
21	34.6	26.6	21.6	12.8	16.6	-1.6	1.6	
22	35.2	27.2	22.2	12.7	17.2	-2.2	2.2	
23	23.1	15.1	10.1	3.2	5.7	9.9	-9.9	
24	20.7	12.7	7.7	0.7	3.2	12.3	-12.3	
25	18.5	10.5	5.5		2.2	14.5	-14.5	
26	14.3	6.4	3.9		1.4	18.7	-18.7	
27	23.5	15.5	13.0	8.0	10.5	9.5	-9.5	
28	22.0	14.0	11.5	6.5	9.0	11.0	-11.0	
29	16.2	11.7	9.2	4.2	6.7	16.8	-16.8	
30	26.3	18.3	13.7	8.7	11.2	6.7	-6.7	
<b>Total</b>	<b>824.5</b>	<b>592.9</b>	<b>466.2</b>	<b>264.5</b>	<b>348.7</b>	<b>200.4</b>	<b>34.9</b>	<b>2.0</b>

## NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.

Month October                      2017

	Temperatures		Precip.	Sky	Wind	4" Soil Temp	Snowfall	Number of	
	Max.	Min.						Clear	
						Under Sod		13	
1	64	54	0.25	CL	SE	56.3		5	
2	64	45	0.01	CL	S	57.2		12	
3	62	44		CL	SW	55.9			
4	58	39		CL	SW	54.6			
5	61	36		CL	NW	53.6			
6	62	32		C	SE	52.1			
7	75	44		C	S	52.7			
8	61	42		PCL	W	53.3			
9	49	27		C	W	50.9			
10	64	27		C	SE	48.1			
11	62	34		PCL	SE	48.4			
12	69	40		PCL	S	50.7			
13	56	31		C	W	49.9			
14	52	31		C	N	48.1			
15	54	21		C	SW	46.6			
16	72	31		C	S	46.6			
17	77	33		PCL	SE	47.9			
18	62	40		C	SW	49.7			
19	74	32		C	S	48.5			
20	79	50		C	SE	52.2			
21	70	49		CL	SW	54.9			
22	65	39		C	SW	52.7			
23	56	35	0.05	CL	NW	50.9			
24	47	28		C	W	48.0			
25	56	34		PCL	W	47.8			
26	50	29		CL	NW	46.6			
27	31	21	0.05	CL	NW	43.8	0.5		
28	35	20		CL	SE	42.5			
29	47	29		CL	W	41.4			
30	34	25	0.01	CL	N	40.1			
31	32	16	T	CL	S	38.7	T		

Recorded by: **Michael Leiseth**

Research Plot Tech.  
Northwest Research and Outreach Center  
University of Minnesota Crookston, MN

**Snowfall**                      0.5

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
Oct	Avg. Temperature (F)	46.1	45.9	43.5	44.8
Oct	Precipitation (Inches)	0.37	1.76	1.89	1.59
Jan-Oct	Precipitation (Inches)	12.71	19.9	20.11	19.45

## Growing Degree Days

### Month October 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling
	T-Base 32	T-Base 40	T-Base 45	T-Base 55	T-Base 50-86	T-Base 65	T-Base 65
1	27.0	19.0	14.0	4.4	9.0	6.1	-6.1
2	22.8	14.8	9.8	4.7	7.2	10.2	-10.2
3	21.0	13.0	8.7	3.7	6.2	12.0	-12.0
4	16.7	9.2	6.7	1.7	4.2	16.3	-16.3
5	16.8	10.6	8.1	3.1	5.6	16.2	-16.2
6	14.8	10.8	8.3	3.3	5.8	18.3	-18.3
7	27.4	19.4	15.0	10.0	12.5	5.6	-5.6
8	19.3	11.3	8.0	3.0	5.5	13.7	-13.7
9	8.5	4.5	2.0		-0.5	26.7	-26.7
10	16.1	12.1	9.6	4.6	7.1	19.4	-19.4
11	16.1	11.0	8.5	3.5	6.0	17.0	-17.0
12	22.5	14.5	12.0	7.0	9.5	10.5	-10.5
13	12.0	8.0	5.5	0.5	3.0	21.3	-21.3
14	9.8	5.8	3.3		0.8	23.7	-23.7
15	11.2	7.2	4.7		2.2	27.2	-27.2
16	19.8	15.8	13.3	8.3	10.8	13.8	-13.8
17	22.7	18.3	15.8	10.8	13.3	10.3	-10.3
18	18.7	11.0	8.5	3.5	6.0	14.3	-14.3
19	20.8	16.8	14.3	9.3	11.8	12.3	-12.3
20	32.2	24.2	19.2	11.9	14.4	0.8	-0.8
21	27.4	19.4	14.4	7.4	9.9	5.6	-5.6
22	20.2	12.6	10.1	5.1	7.6	12.8	-12.8
23	13.5	8.2	5.7	0.7	3.2	19.5	-19.5
24	7.7	3.7	1.2		-1.3	27.1	-27.1
25	12.9	8.1	5.6	0.6	3.1	20.1	-20.1
26	9.1	5.1	2.6		0.1	25.6	-25.6
27					-9.6	39.0	-39.0
28	1.5				-7.5	37.4	-37.4
29	7.7	3.7	1.2		-1.3	26.6	-26.6
30	0.9				-8.1	35.9	-35.9
31	0.2				-8.8	40.8	-40.8
<b>Total</b>	<b>477.4</b>	<b>318.1</b>	<b>235.9</b>	<b>106.8</b>	<b>127.4</b>	<b>585.8</b>	

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month November      2017

	Temperatures		Precip.	Wind	4" Soil Temp	Snowfall
	Max.	Min.				
					Under Sod	
1	35	28	0.17	SE	37.8	2.6
2	30	17		S	38.2	
3	30	13		SW	37.8	
4	34	26		SW	37.4	
5	30	11	0.05	NW	37.1	
6	24	5		SE	36.2	
7	25	1		S	35.3	
8	17	6	0.04	W	34.7	1.0
9	12	-5		W	34.2	
10	22	-1		SE	33.7	
11	31	21		SE	33.3	
12	26	16		S	33.3	
13	43	19		W	33.3	
14	41	31		N	33.3	
15	33	21		SW	33.5	
16	33	22		S	33.4	
17	35	18		SE	33.4	
18	20	11		SW	33.0	
19	36	9		S	32.4	
20	44	20		SE	32.2	
21	22	11		SW	32.0	
22	28	8		SW	31.5	
23	44	17		NW	31.4	
24	45	27	0.06	W	31.6	
25	30	16		W	31.7	
26	31	24		NW	31.9	
27	54	28		NW	31.9	
28	38	18		SE	32.0	
29	48	20		W	32.0	
30	40	26		N	32.1	

Recorded by: **Michael Leiseth**

Research Plot Tech.

Northwest Research and Outreach Center  
University of Minnesota Crookston, MN

**Snowfall**                      3.6

		2017	2016	30 Yr. Avg.	126 Yr. Avg.
Nov	Avg. Temperature (F)	24.4	39.6	27.4	26.9
Nov	Precipitation (Inches)	0.32	0.88	0.89	0.81
Jan-Nov	Precipitation (Inches)	13.03	20.78	20.99	20.26

## Growing Degree Days

### Month November 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base
	32	40	45	55	50-86	65	65
1	1.6				-7.4	33.4	-33.4
2					-9.8	41.2	-41.2
3					-9.9	43.3	-43.3
4	1.2				-7.8	34.7	-34.7
5					-10.0	44.7	-44.7
6					-13.2	50.7	-50.7
7					-12.3	51.8	-51.8
8					-16.3	53.3	-53.3
9					-18.8	61.3	-61.3
10					-14.0	54.6	-54.6
11					-9.7	39.3	-39.3
12					-12.1	44.1	-44.1
13	5.3	1.3			-3.8	34.4	-34.4
14	4.3	0.3			-4.7	29.4	-29.4
15	0.5				-8.5	38.0	-38.0
16	0.6				-8.4	37.2	-37.2
17	1.4				-7.6	38.8	-38.8
18					-15.1	49.6	-49.6
19	2.2				-6.8	42.2	-42.2
20	6.0	2.0			-3.0	33.0	-33.0
21					-13.9	48.6	-48.6
22					-10.9	47.1	-47.1
23	6.0	2.0			-3.0	34.4	-34.4
24	6.3	2.3			-2.7	29.0	-29.0
25					-10.2	42.0	-42.0
26					-9.7	38.0	-38.0
27	11.0	7.0	4.5		2.0	24.3	-24.3
28	3.2				-5.8	36.8	-36.8
29	8.2	4.2	1.7		-0.8	30.9	-30.9
30	3.8				-5.2	32.0	-32.0
<b>Total</b>	<b>61.6</b>	<b>19.0</b>	<b>6.1</b>	<b>2.0</b>	<b>2.0</b>	<b>1217.7</b>	

**NW RESEARCH & OUTREACH CENTER, CROOKSTON, MN.**

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Month December 2017

	Temperatures		Precip.	Wind	4" Soil Temp	Snowfall
	Max.	Min.				
					Under Sod	
1	39	23		SE	32.1	
2	43	16		SE	32.1	
3	39	19		E	32.0	
4	37	14	0.67	NW	32.1	3.5
5	15	6		W	32.2	
6	14	-3		W	32.2	
7	24	-3		SW	32.2	
8	31	13		W	32.2	
9	26	10		SW	32.2	
10	27	18		W	32.1	
11	35	0	0.01	W	32.2	
12	32	-1		N	32.1	
13	35	13		NW	32.1	
14	20	14		W	32.1	
15	21	13	0.01	E	32.1	1.0
16	28	10	T	E	32.1	T
17	30	13		SE	32.1	
18	35	26	0.01	SW	32.1	
19	31	2		W	32.1	
20	10	-1	0.10	NE	32.1	1.2
21	9	-14		NW	32.0	
22	18	-8	0.02	SW	31.9	0.5
23	21	-8		W	31.7	
24	1	-12		NW	31.6	
25	-10	-18		W	31.1	
26	-11	-20		SW	30.3	
27	3	-24		SE	29.5	
28	7	-16		S	29.3	
29	-8	-17		W	29.6	
30	-16	-26		W	29.0	
31	-11	-27		SW	28.0	

Recorded by: **Michael Leiseth**  
 Research Plot Tech.  
 Northwest Research and Outreach Center  
 University of Minnesota Crookston, MN

<b>Snowfall</b>	6.2
<b>Snow Depth*</b>	9

	2017	2016	30 Yr. Avg.	126 Yr. Avg.
Dec	9.5	12.1	12.6	11.6
Dec	0.82	0.46	0.64	0.59
Jan-Dec	13.85	21.24	21.64	20.85

## Growing Degree Days

### Month December 2017

Day	Wheat	SugarBeet	Potatoes	Dry Bean	Corn	Heating	Cooling
	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base	T-Base
	32	40	45	55	50-86	65	65
1	3.3				-5.7	34.4	-34.4
2	5.6	1.6			-3.4	35.3	-35.3
3	3.3				-5.7	35.9	-35.9
4	2.6				-6.4	39.2	-39.2
5					-17.5	54.5	-54.5
6					-18.1	59.4	-59.4
7					-13.2	54.7	-54.7
8					-9.5	43.1	-43.1
9					-11.9	47.0	-47.0
10					-11.6	42.6	-42.6
11	1.6				-7.4	47.4	-47.4
12	0.2				-8.8	49.3	-49.3
13	1.4				-7.6	40.9	-40.9
14					-14.9	48.1	-48.1
15					-14.5	47.9	-47.9
16					-11.1	46.0	-46.0
17					-9.9	43.2	-43.2
18	1.7				-7.3	34.2	-34.2
19					-9.3	48.3	-48.3
20					-20.2	60.8	-60.8
21					-20.6	67.7	-67.7
22					-16.1	60.0	-60.0
23					-14.6	58.4	-58.4
24					-24.3	70.1	-70.1
25					-29.8	78.7	-78.7
26					-30.4	80.4	-80.4
27					-23.3	75.1	-75.1
28					-21.5	69.4	-69.4
29					-29.1	77.8	-77.8
30					-33.2	86.1	-86.1
<b>Total</b>	<b>19.7</b>	<b>1.6</b>				<b>1635.8</b>	

\*Snow depth is the amount of snow on the ground at the end of the month.