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Supporting Research

August 1980

CANADIAN CROP CALENDARS IN SUPPORT OF THE EARLY WARNING PROJECT

M. H. Trenchard and T. Hodges

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16. Abstract

The Canadian crop calendars in this report were produced for the Large Area Crop Inventory Experiment (LACIE), and the enclosed ancillary material was developed to evaluate the LACIE crop calendars. Long-term monthly averages of daily maximum and daily minimum temperatures for subregions of provinces were used to simulate normal daily maximum and minimum temperatures. The Robertson (1968) spring wheat and Williams (1974) spring barley phenology models were run using the simulated daily temperatures and daylengths for appropriate latitudes.

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CANADIAN CROP CALENDARS IN SUPPORT OF THE EARLY WARNING PROJECT

Job Order 73-312

This report described Vegetation/Soils/Field Research activities of the Supporting Research project of the AgRISTARS program.

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For

Earth Observations Division

Space and Life Sciences Directorate

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
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August 1980

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SUMMARY

The Canadian crop calendars in this report were produced for the Large Area Crop Inventory Experiment (LACIE), and the enclosed ancillary material was developed to evaluate the LACIE crop calendars. The LACIE crop calendars are in appendix A. Long-term monthly averages of daily maximum and daily minimum temperatures for subregions of provinces were used to simulate normal daily maximum and minimum temperatures. The Robertson (1968) spring wheat and Williams (1974) spring barley phenology models were run using the simulated daily temperatures and daylengths for appropriate latitudes. Simulated daily temperatures are in appendix B. Phenology model output for spring wheat is in appendix C, and output for spring barley is in appendix D. Evaluation of the LACIE crop calendars may be found in an earlier report (Hodges et al., 1980).

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Hodges, T.; Sestak, M. L.; and Trenchard, M. H.: Crop Calendars for the U.S., U.S.S.R., and Canada in Support of the Early Warning Project. LEMSCO-14673, JSC-16359, NASA/JSC (Houston), May 1980.

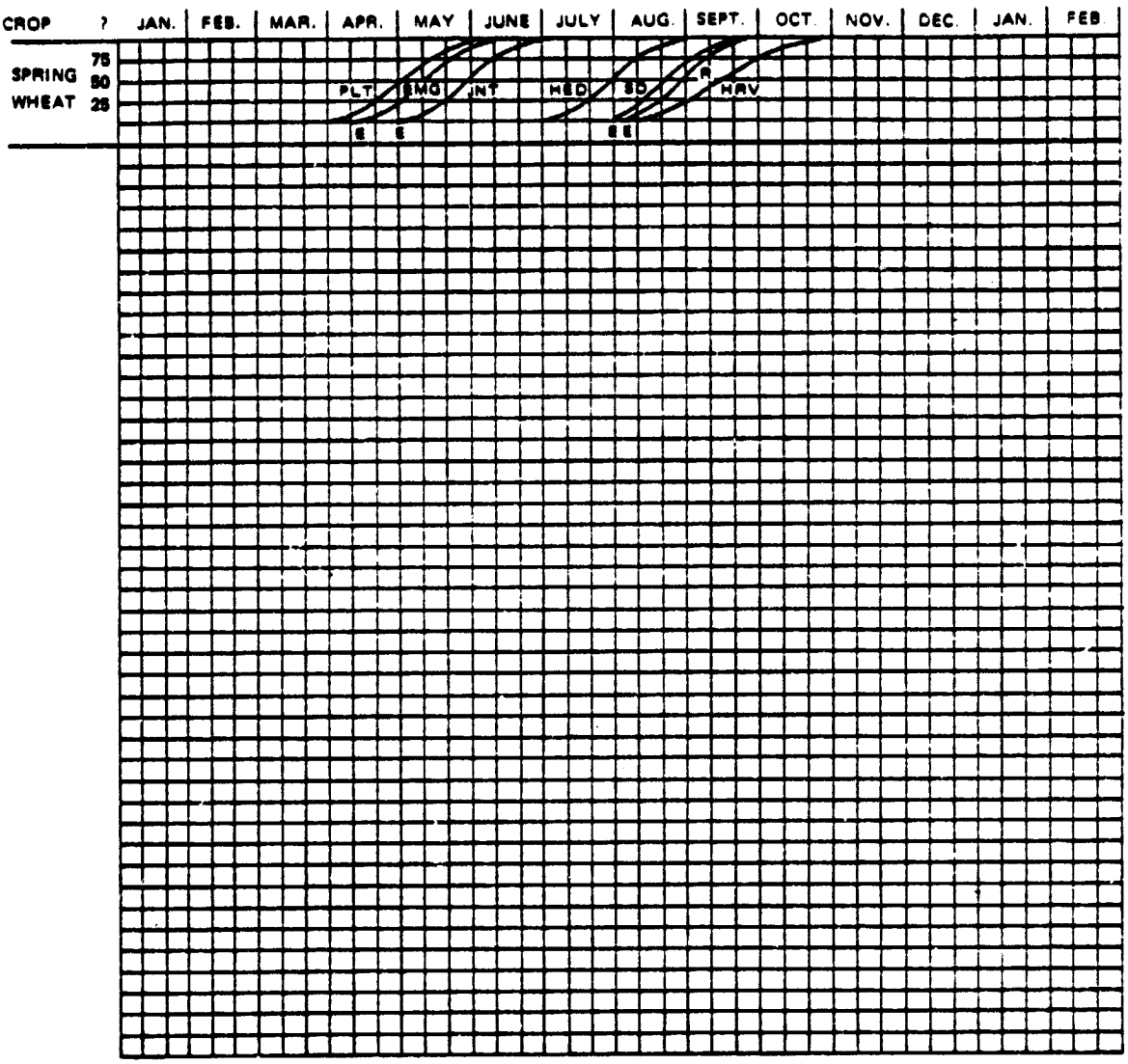
Robertson, G. W.: A Biometeorological Timescale for a Cereal Crop Involving Day and Night Temperatures and Photoperiod. Int. J. Biometeorol, vol. 12, 1968, pp. 191-223.

Williams, C. D. W.: Deriving a Biometeorological Timescale for Barley. Int. J. Biometeorol., vol. 18, 1974, pp. 57-69.

APPENDIX A

LACIE CROP CALENDARS

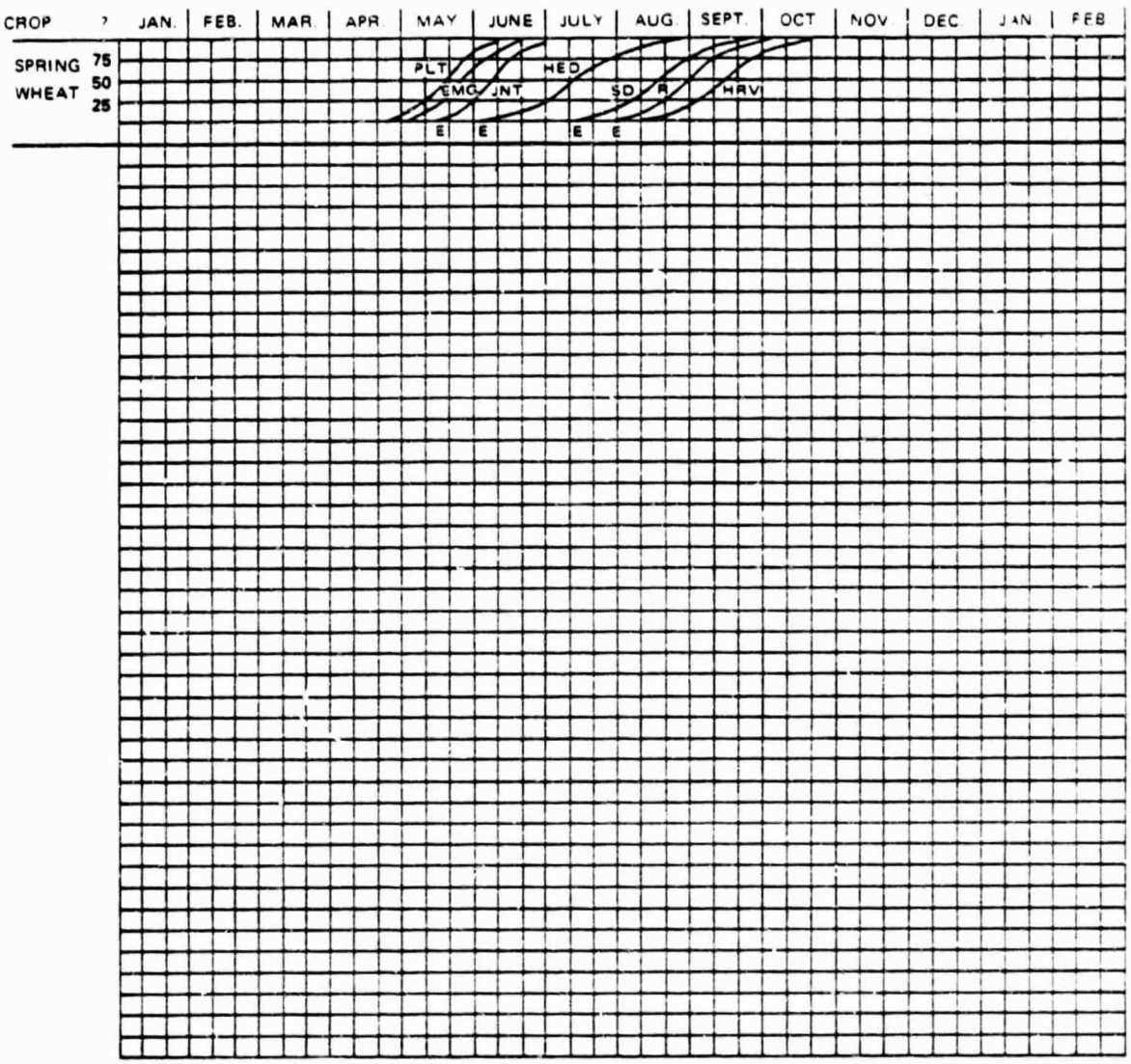
CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
ALBERTA AREA 1: SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

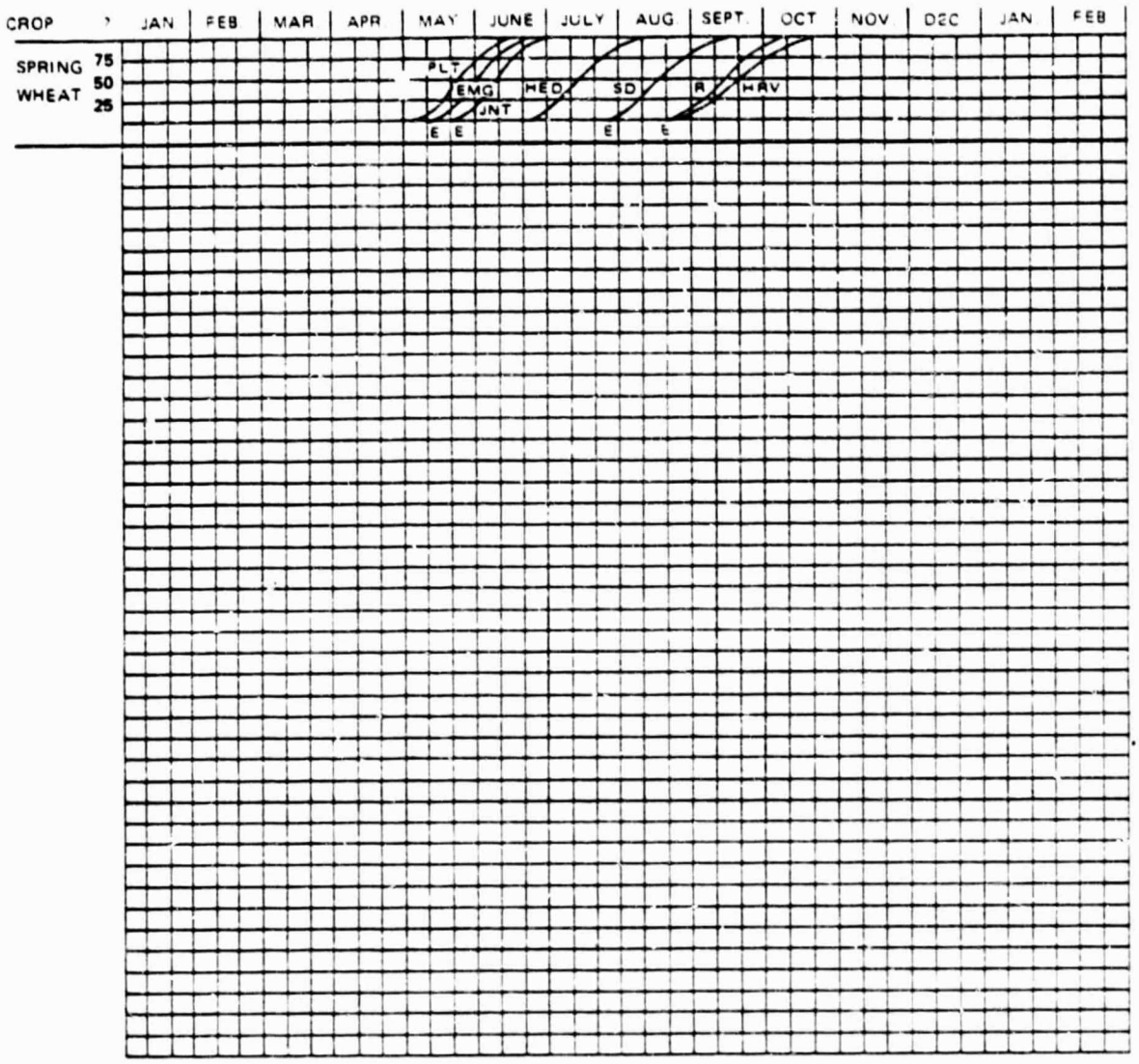
CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
ALBERTA AREA 2: SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

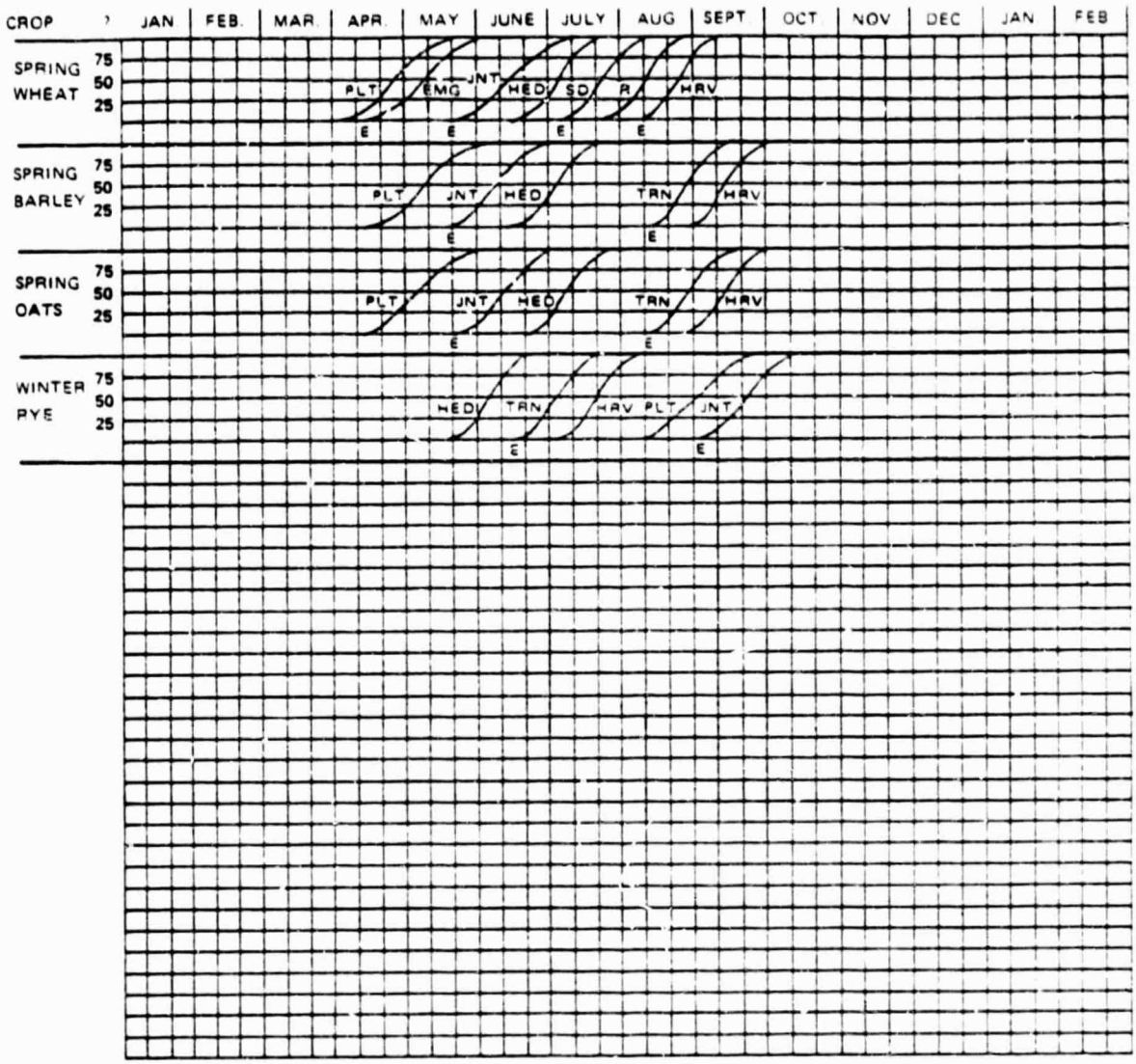
CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
ALBERTA AREA 3. SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
LETHBRIDGE, ALBERTA, CANADA



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 06/01/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
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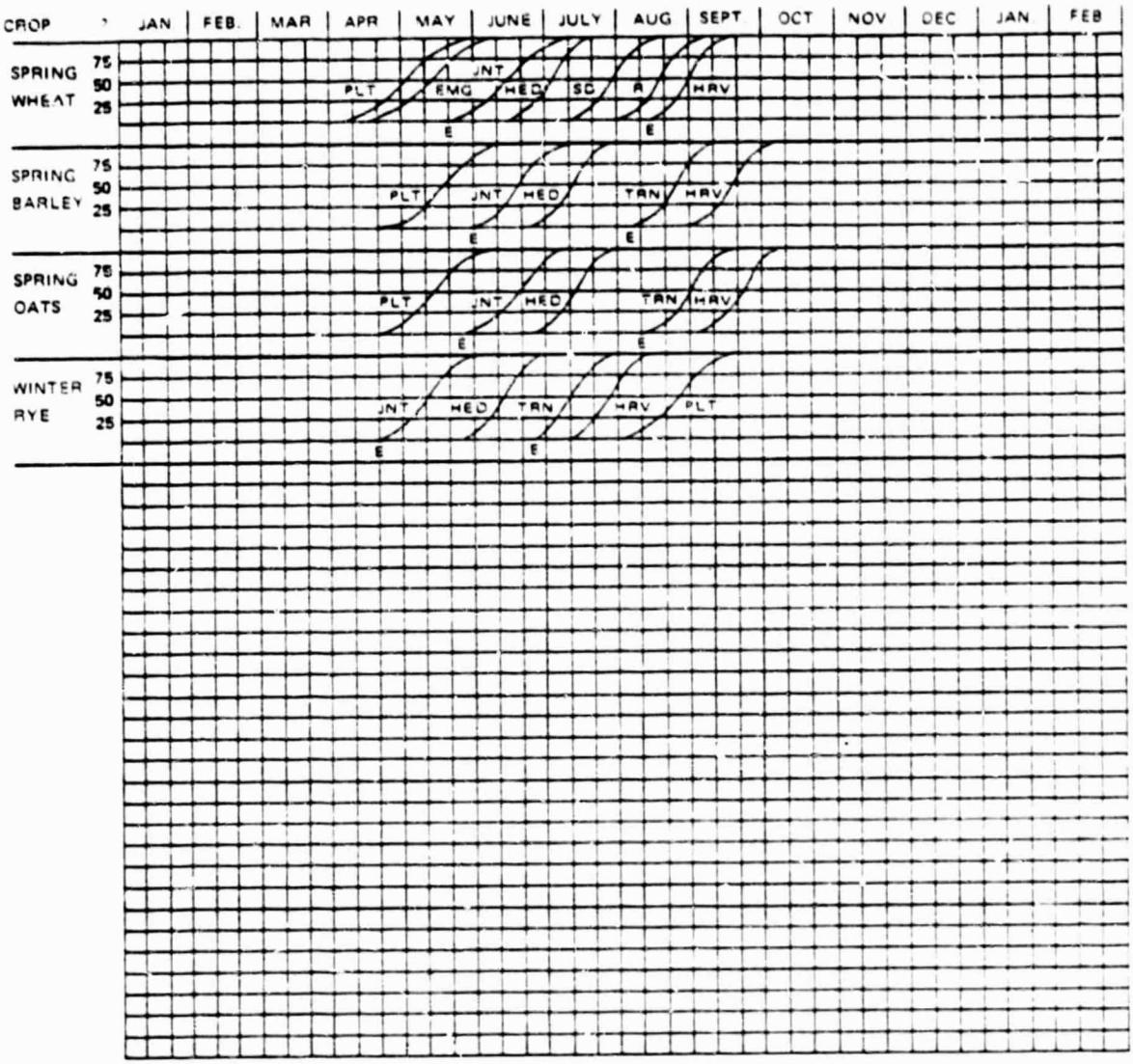

LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
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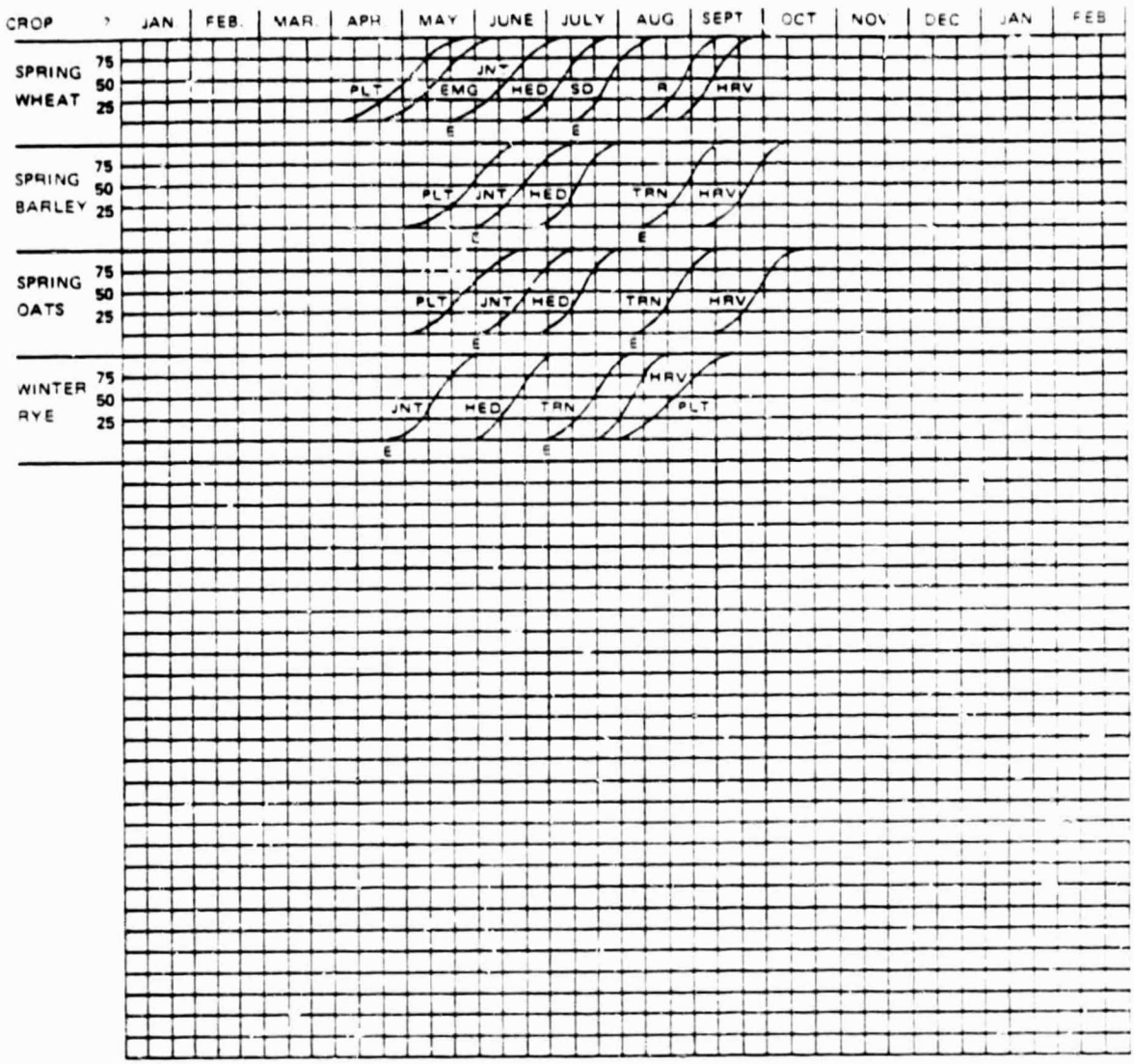
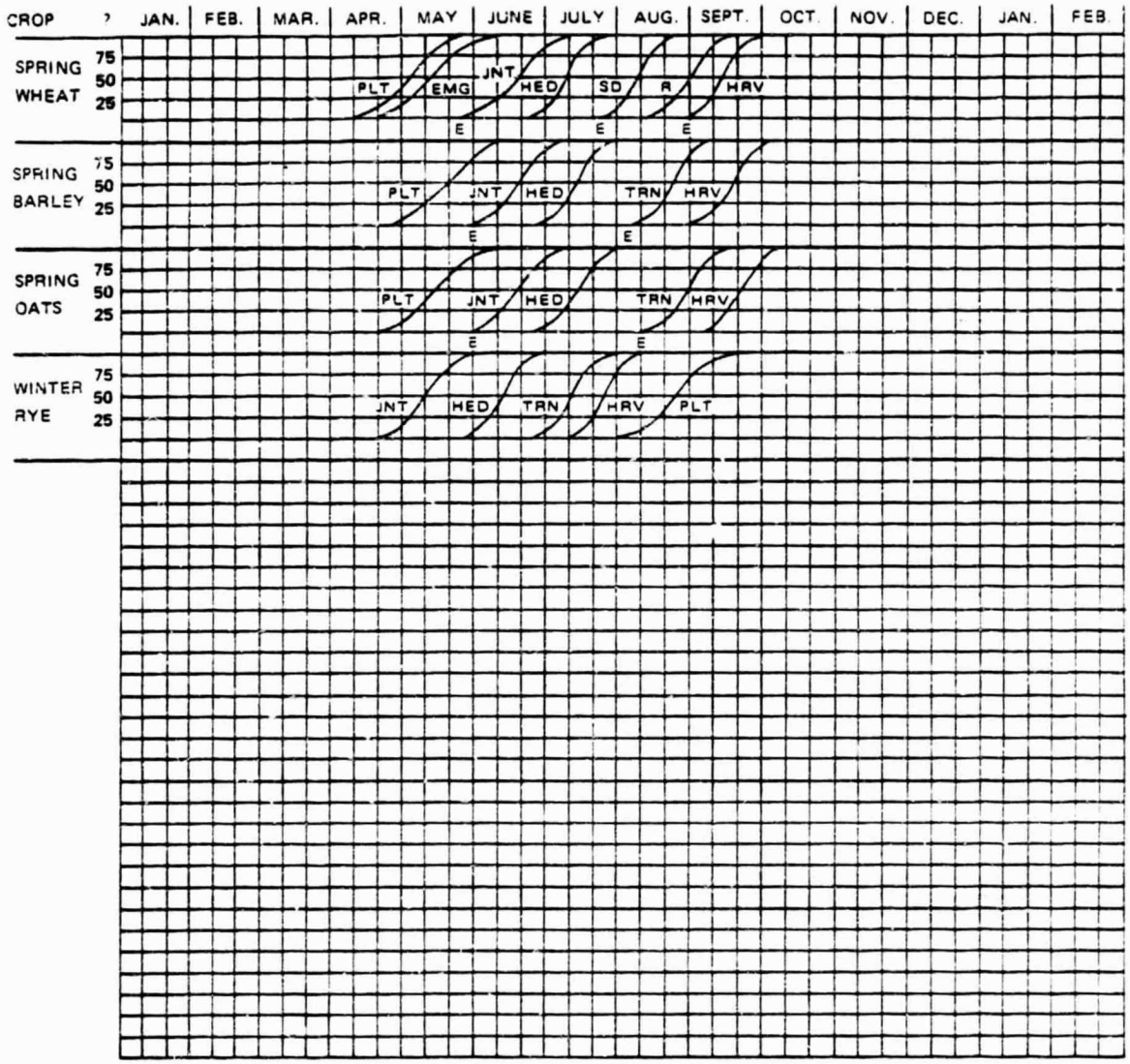


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
LACOMBE, ALBERTA, CANADA



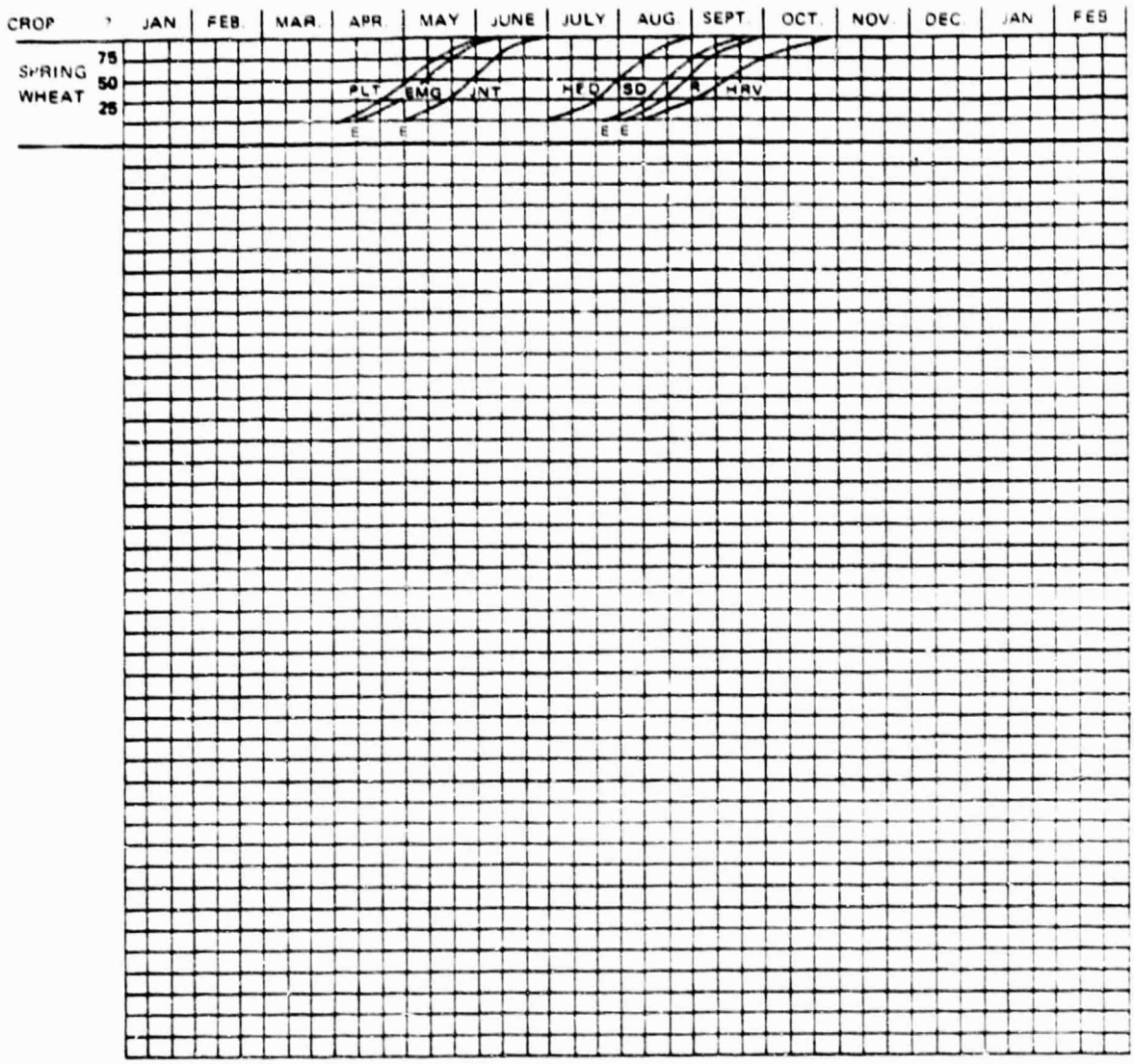
LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/78

PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR

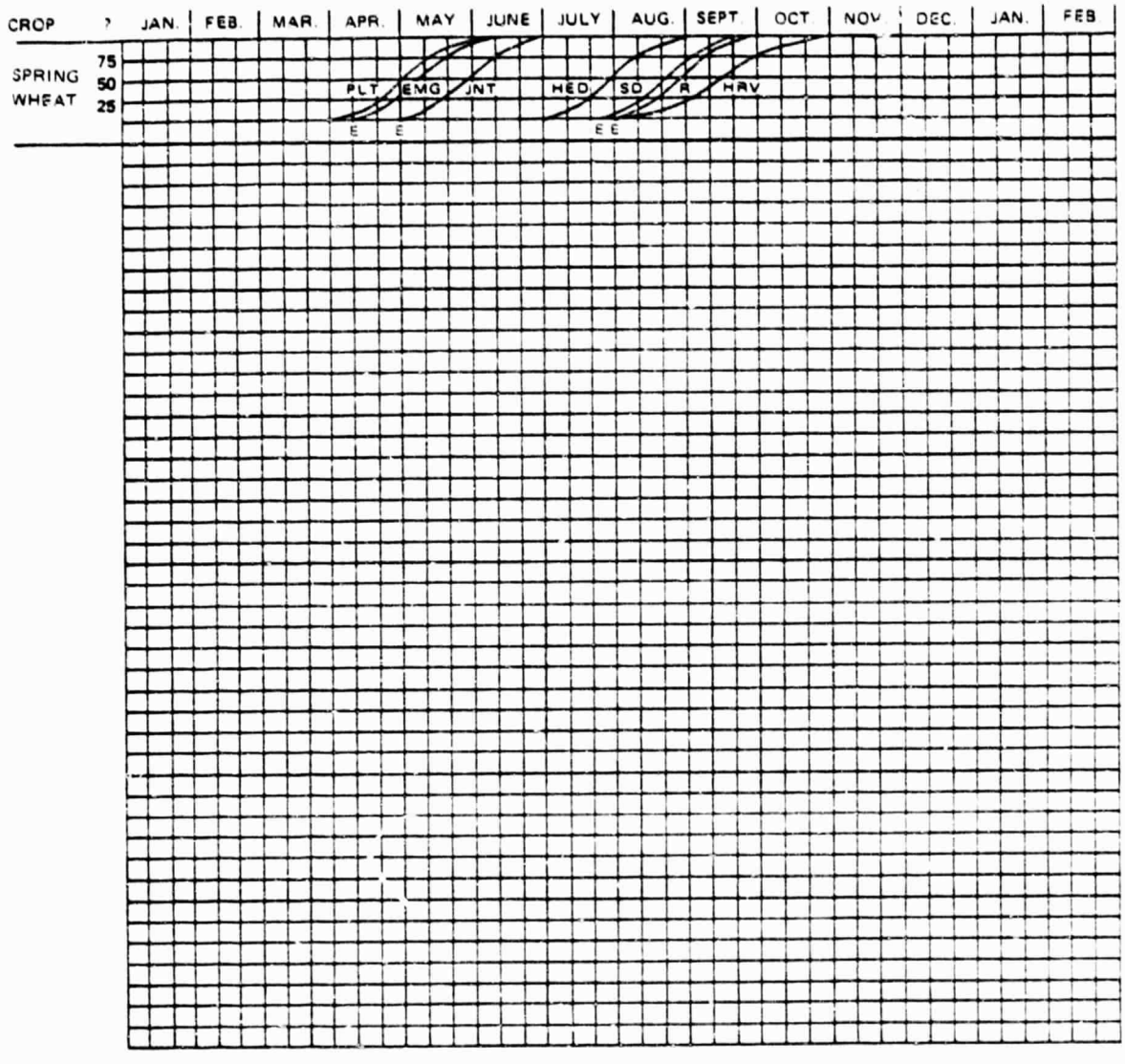
SASKATCHEWAN AREA 1 SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 2: SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
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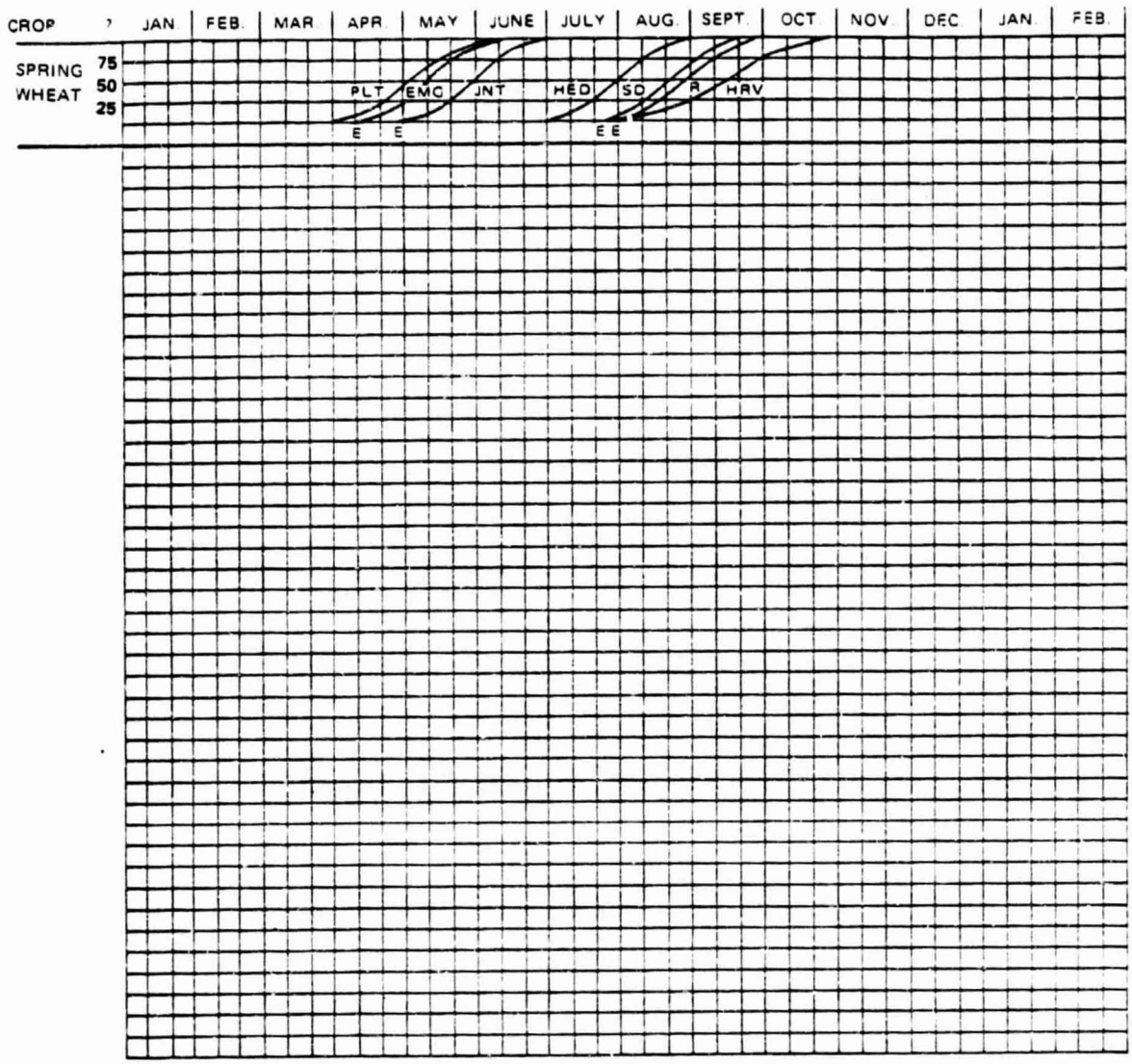
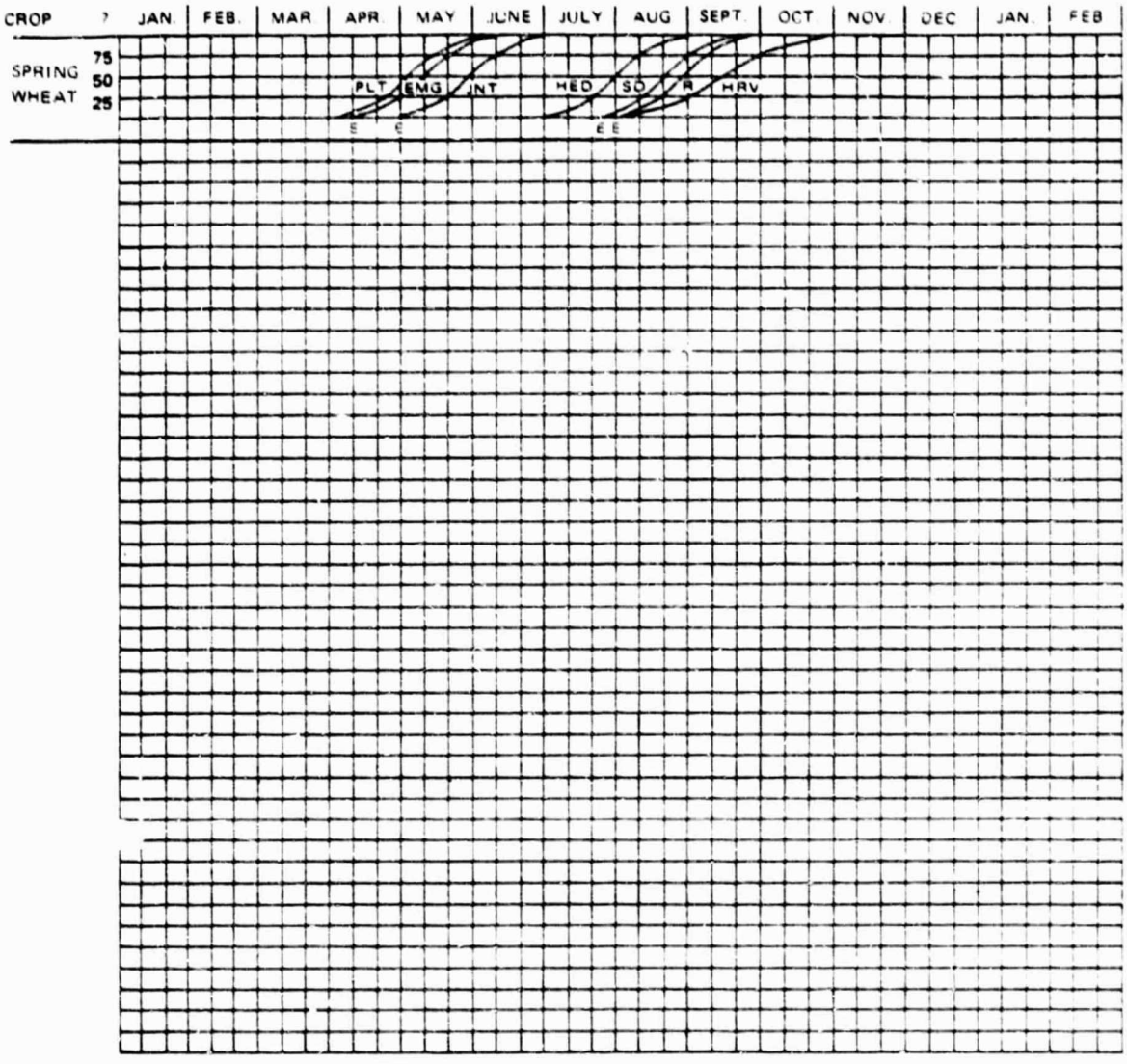


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

13

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 4: SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



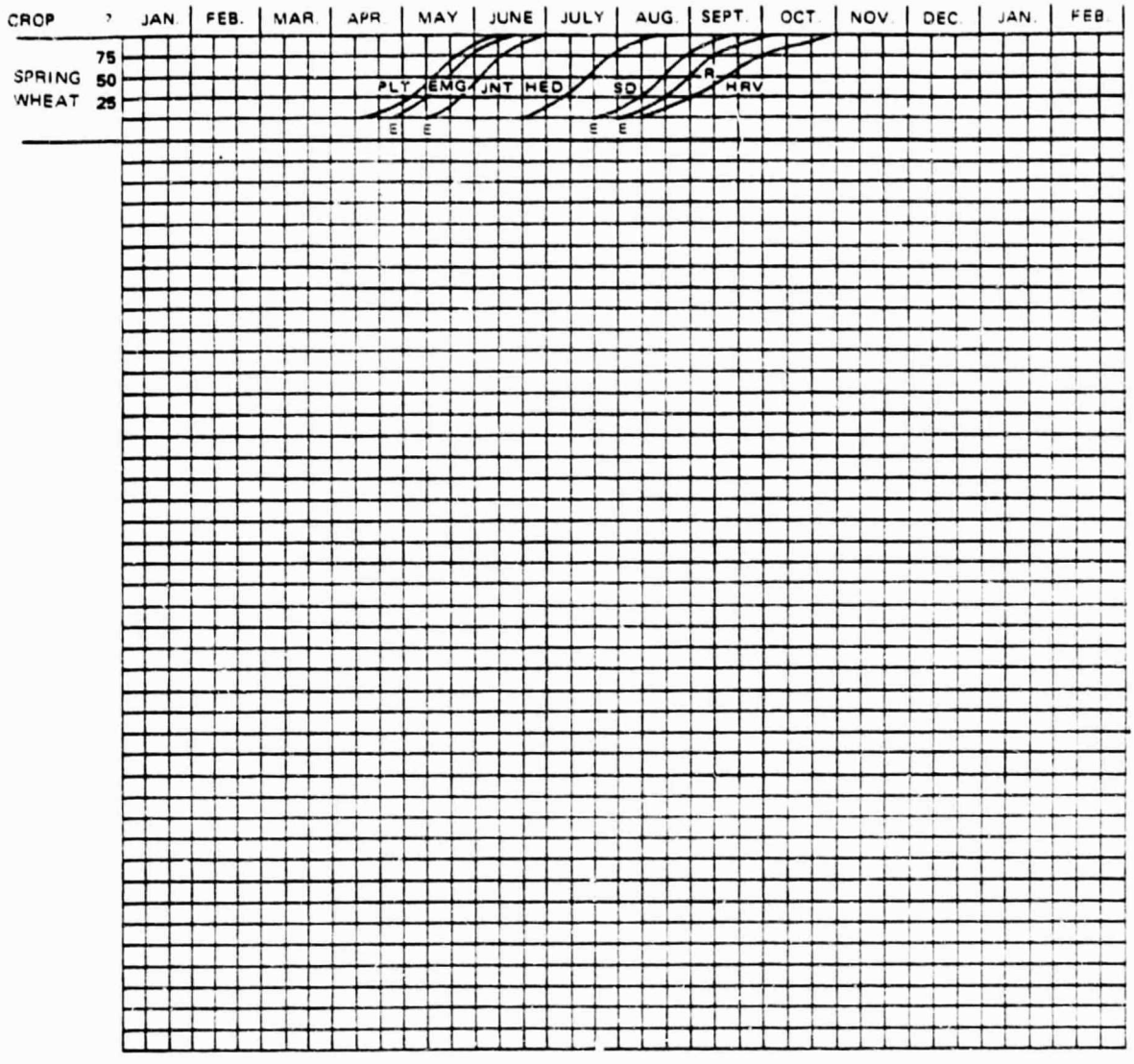
LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

14

CROP CALENDARS PLOTTED 05/15/76

PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 5. SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

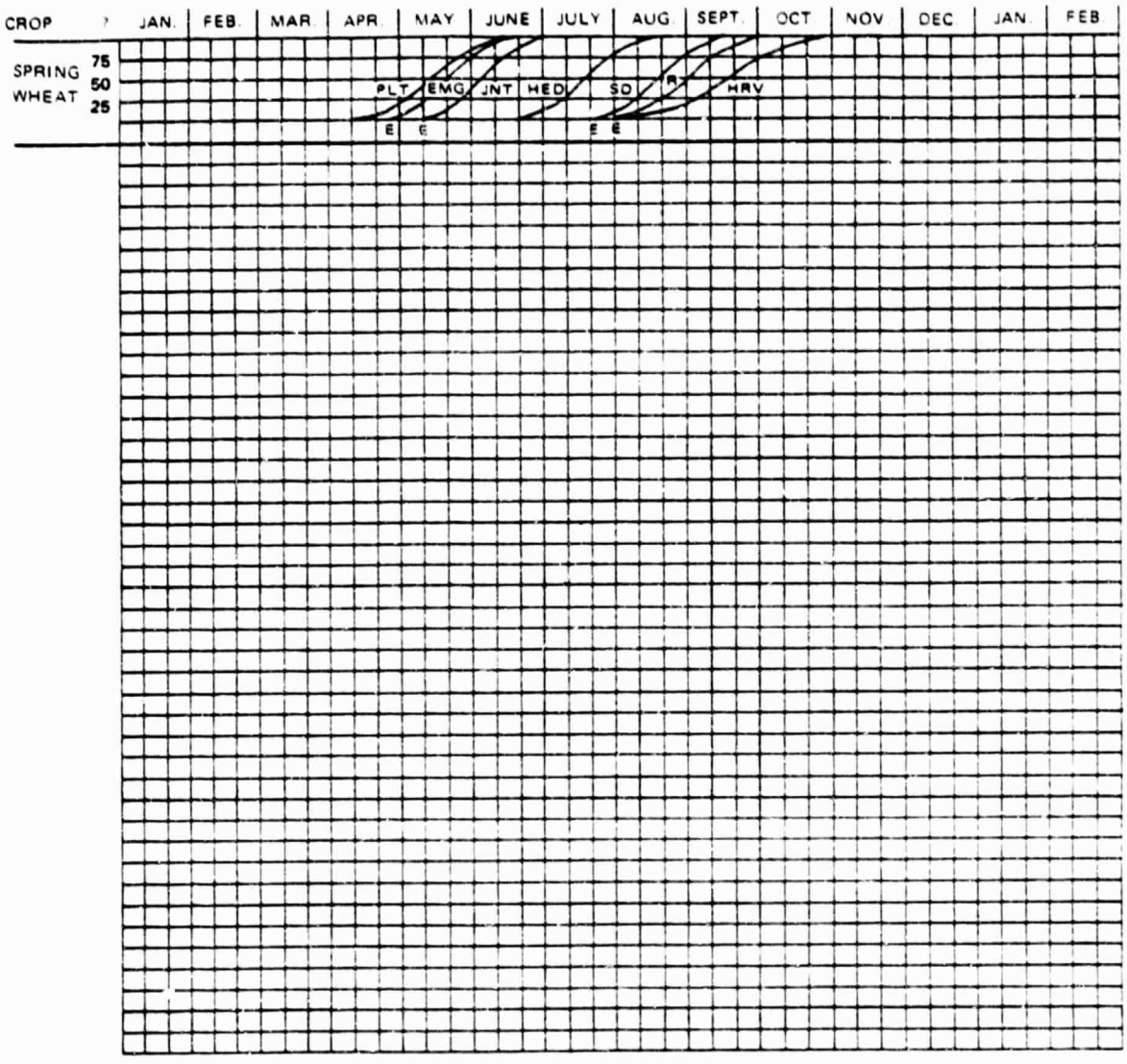
E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

15

CROP CALENDARS PLOTTED 05/15/76

PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR

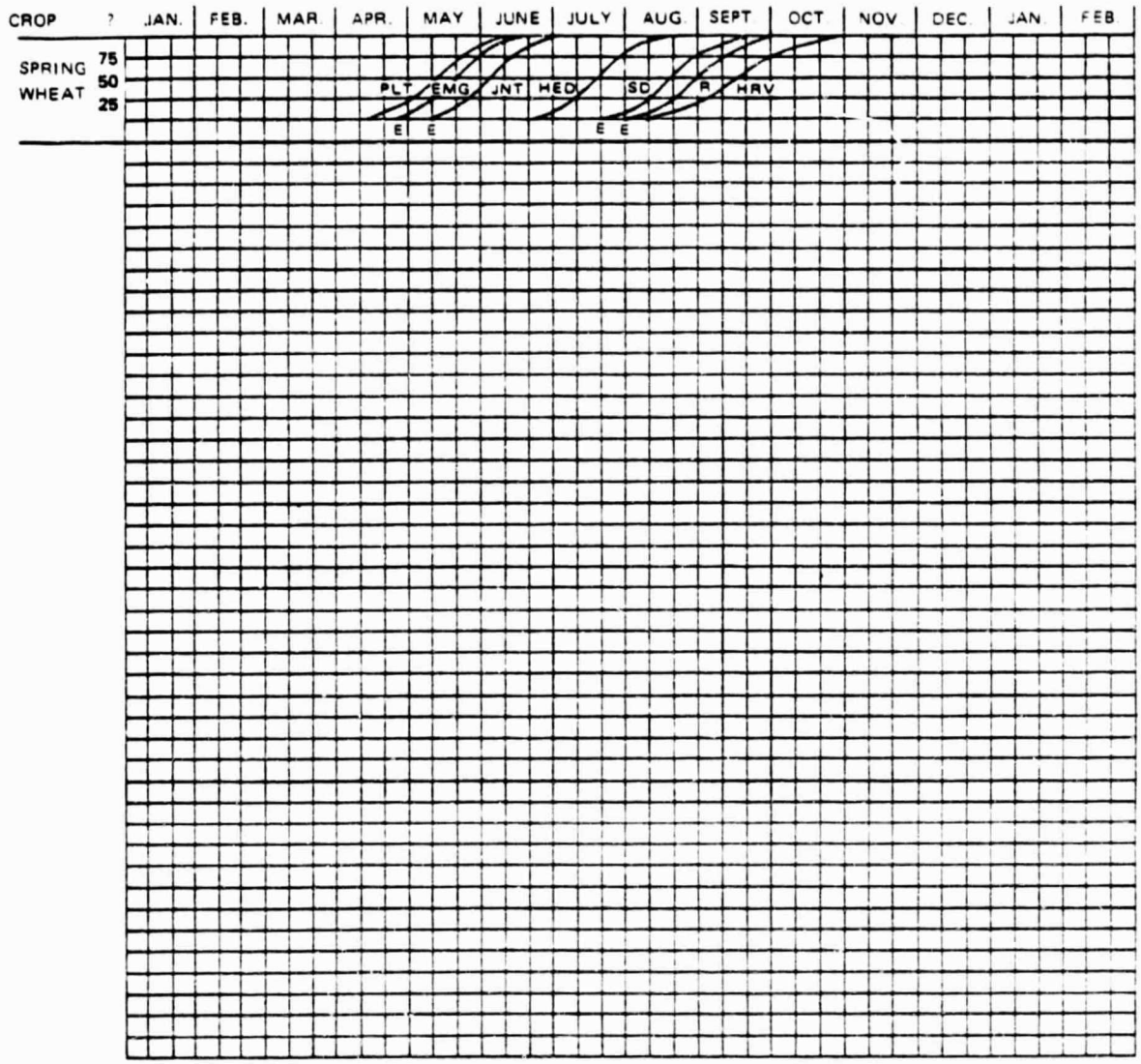
SASKATCHEWAN AREA 6. SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 7. SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS

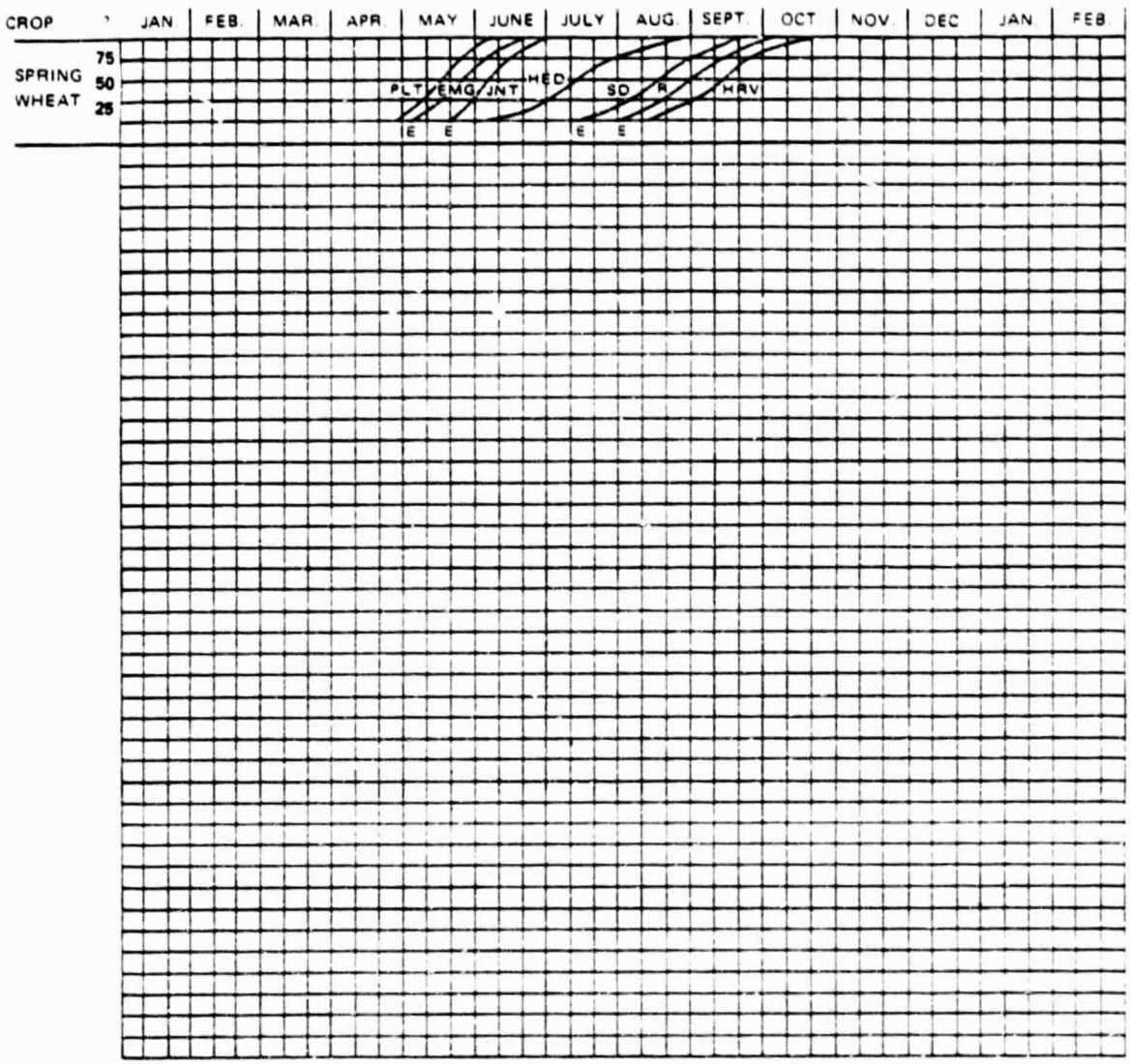


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76

PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 8. SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS

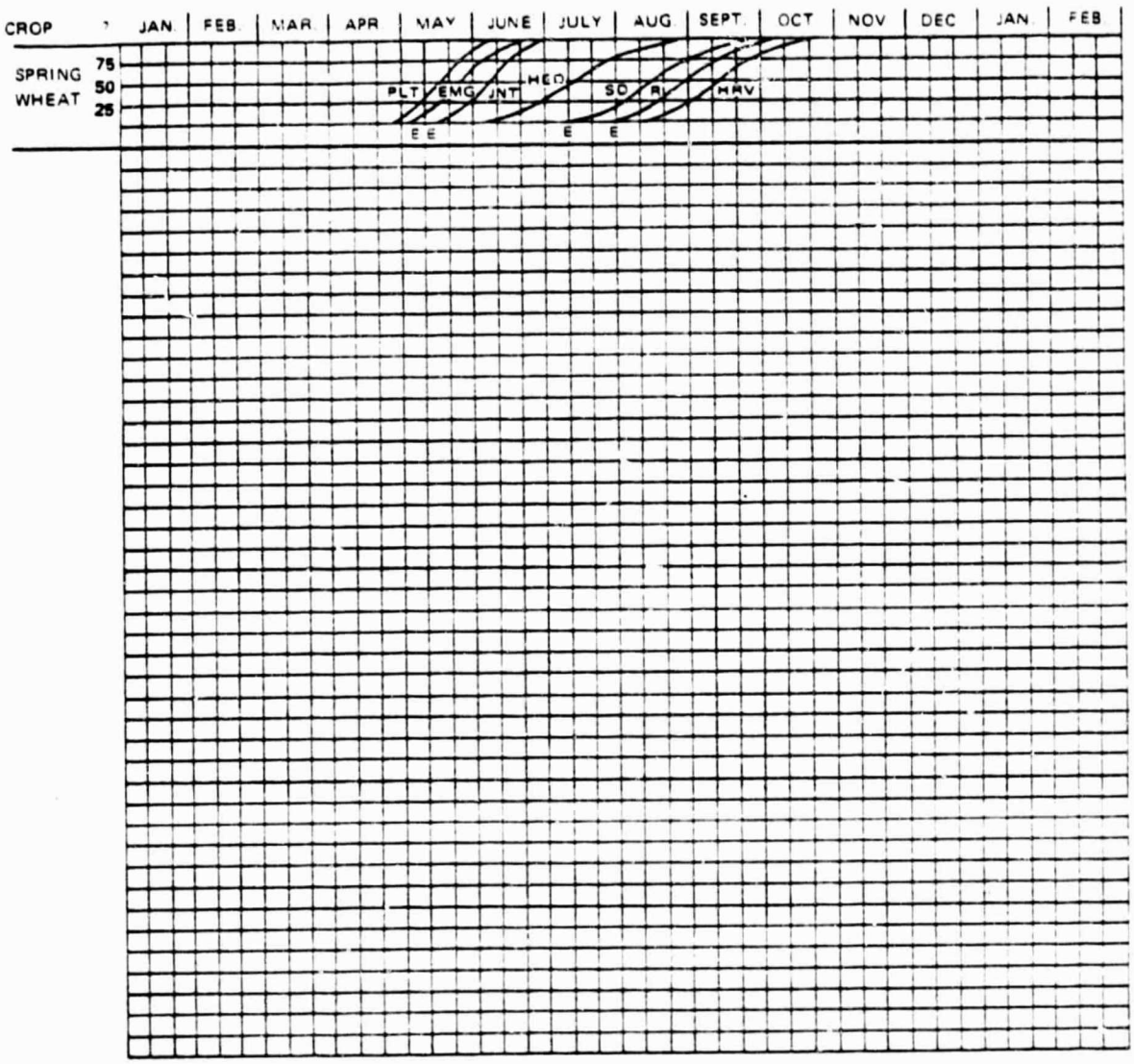


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76

PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATCHEWAN AREA 9: SEVERAL YEARS AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

19

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
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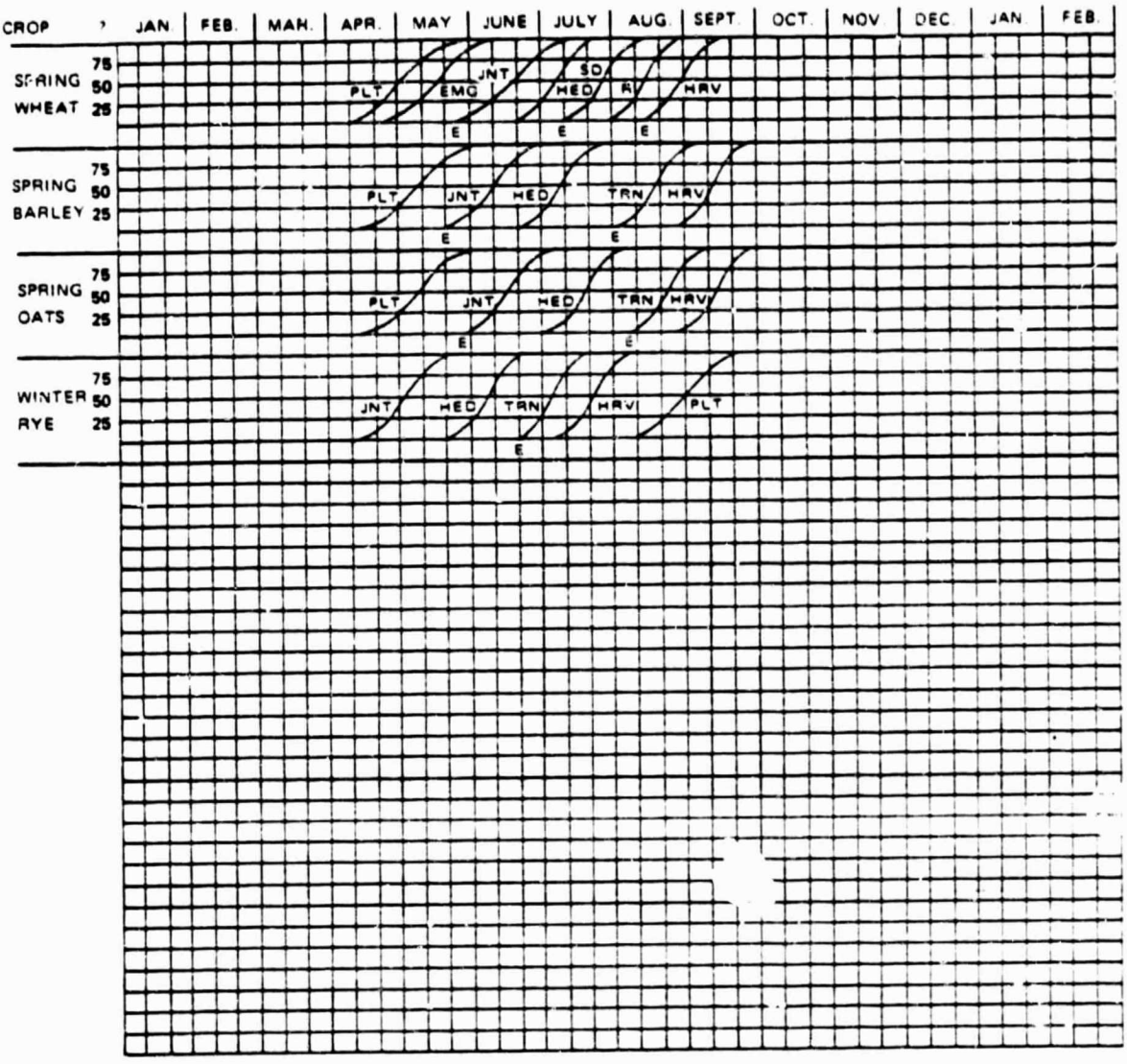
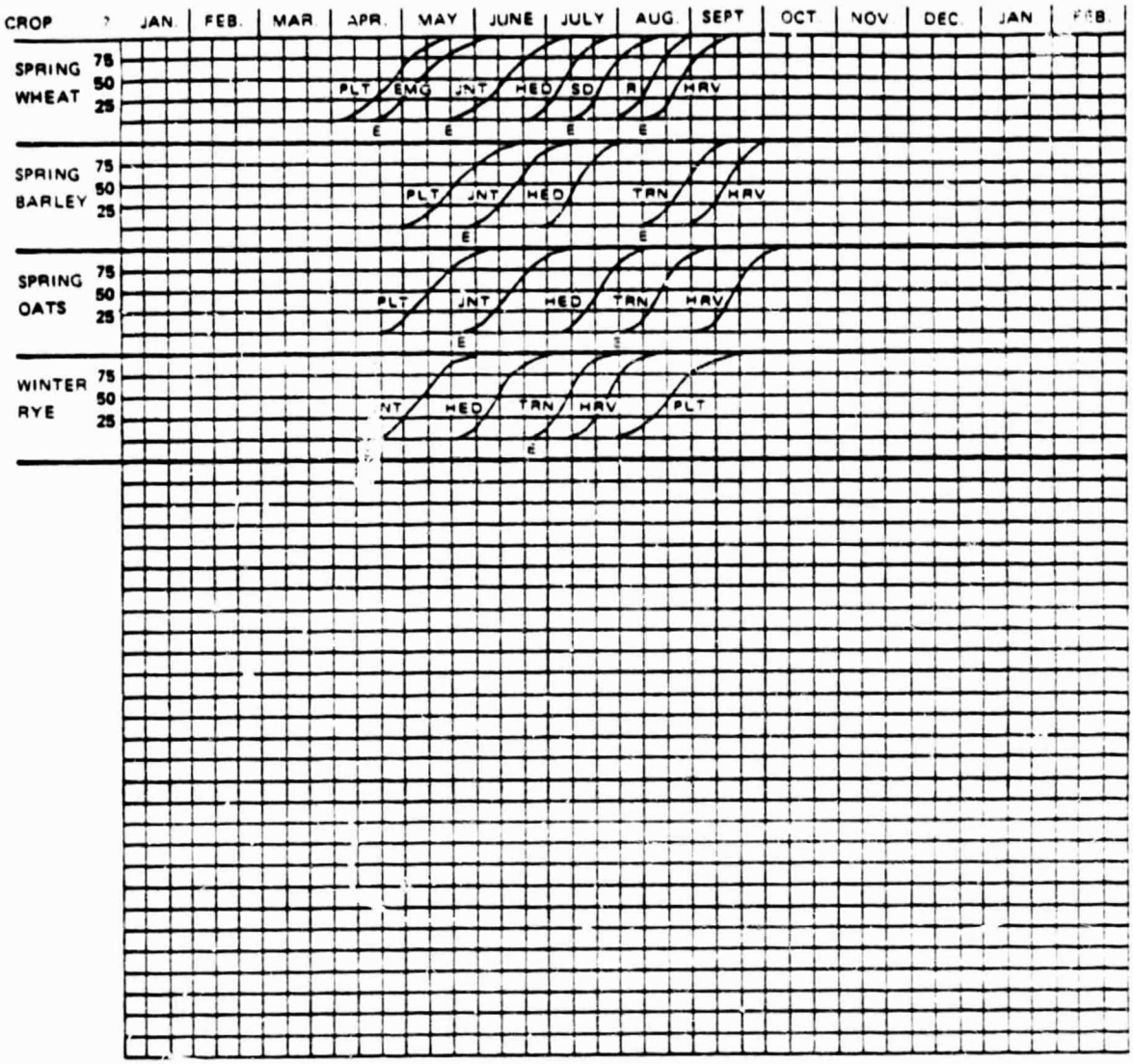


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

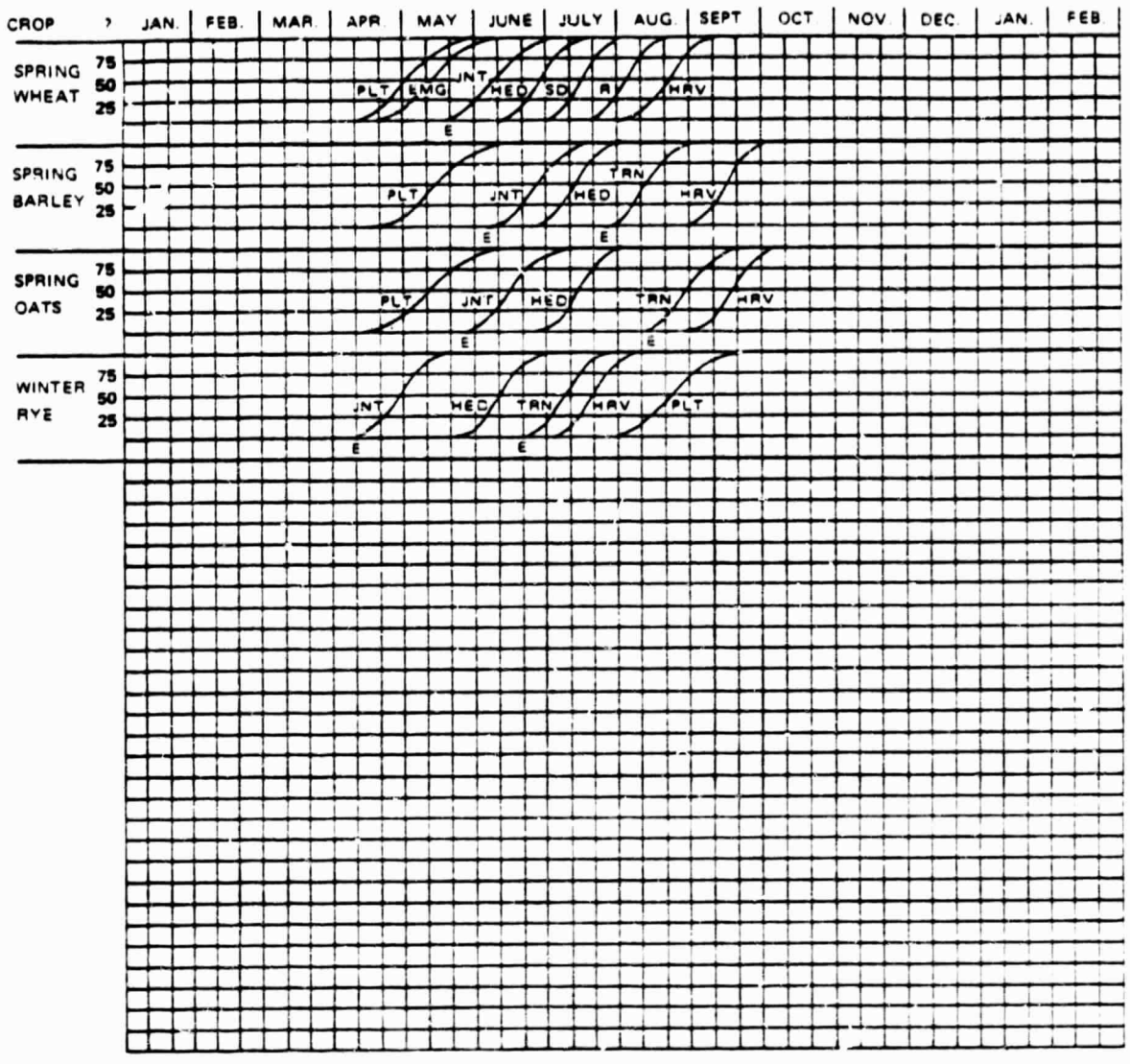
CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SCOTT, SASKATCHEWAN, CANADA



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

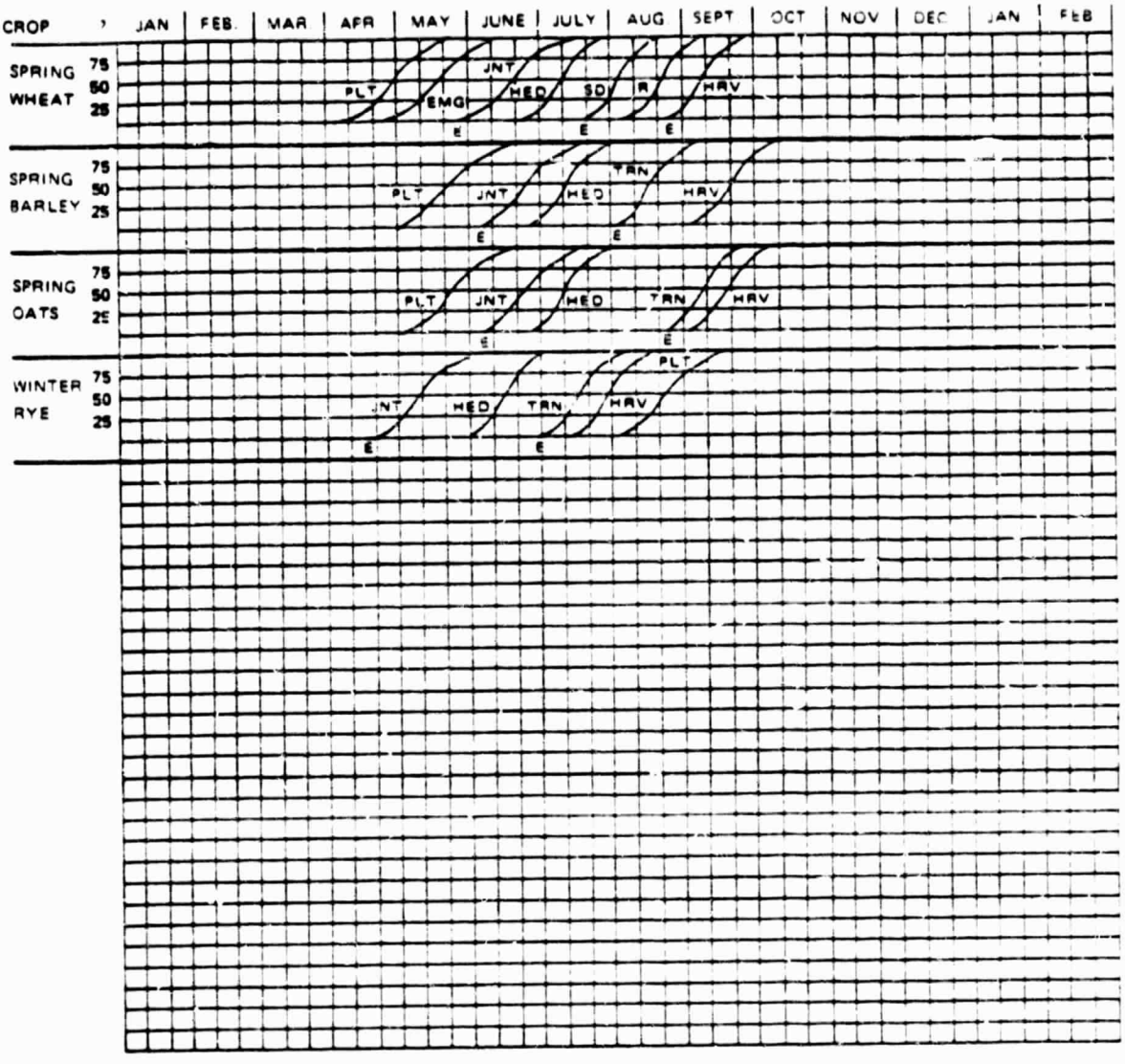
CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
SASKATOON, SASKATCHEWAN, CANADA



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MELFORT, SASKATCHEWAN, CANADA



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
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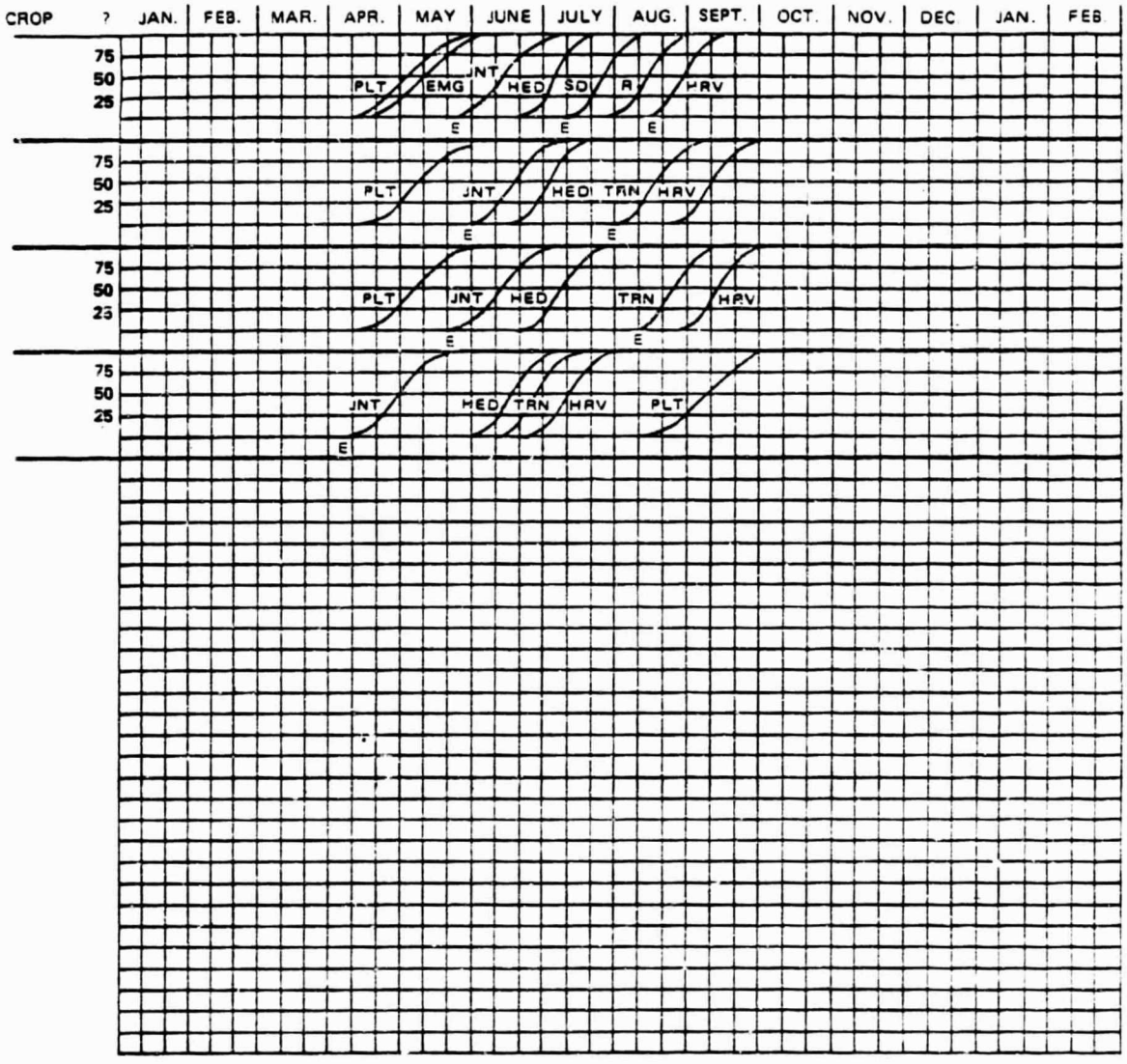
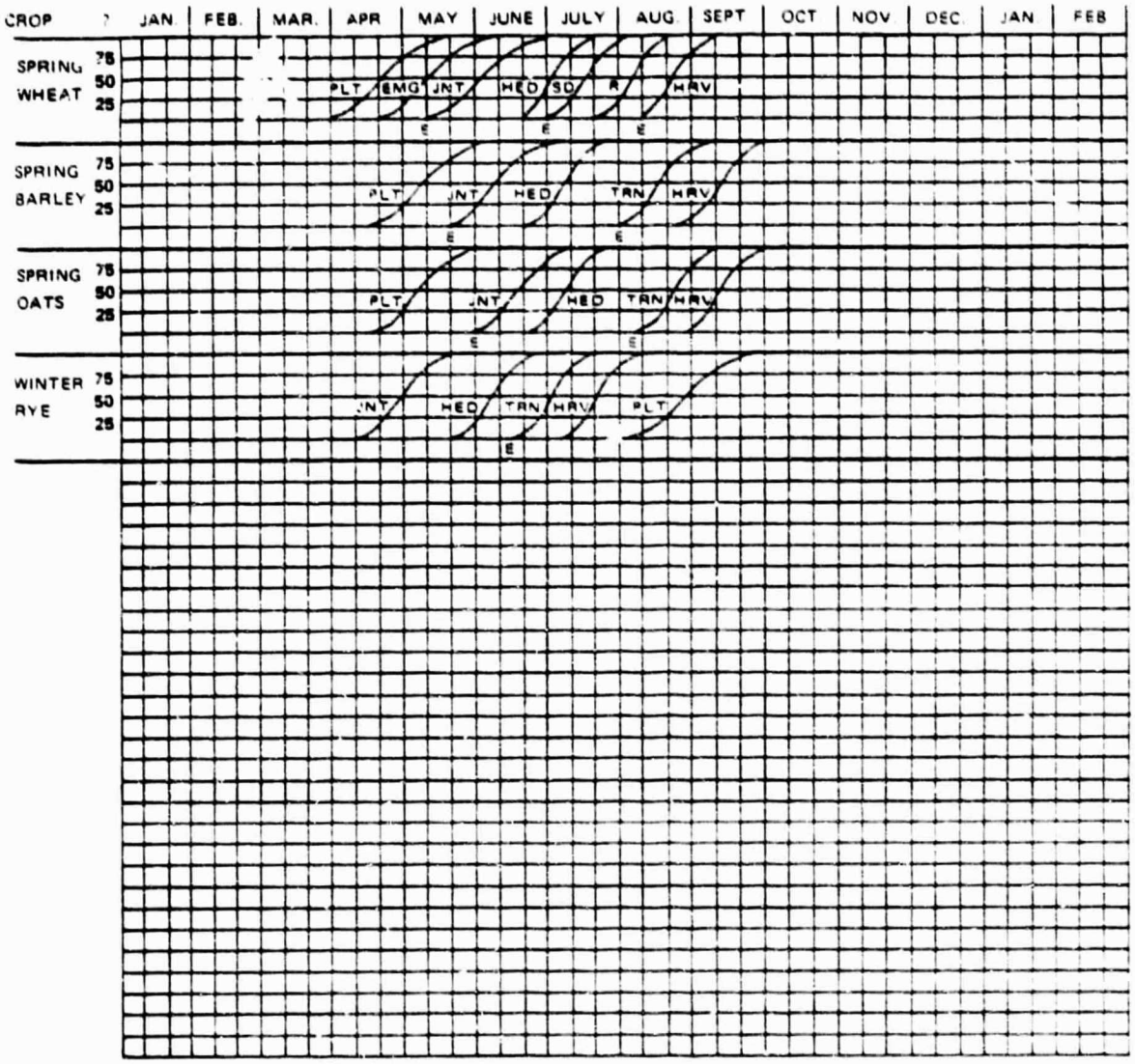


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
REGINA, SASKATCHEWAN, CANADA

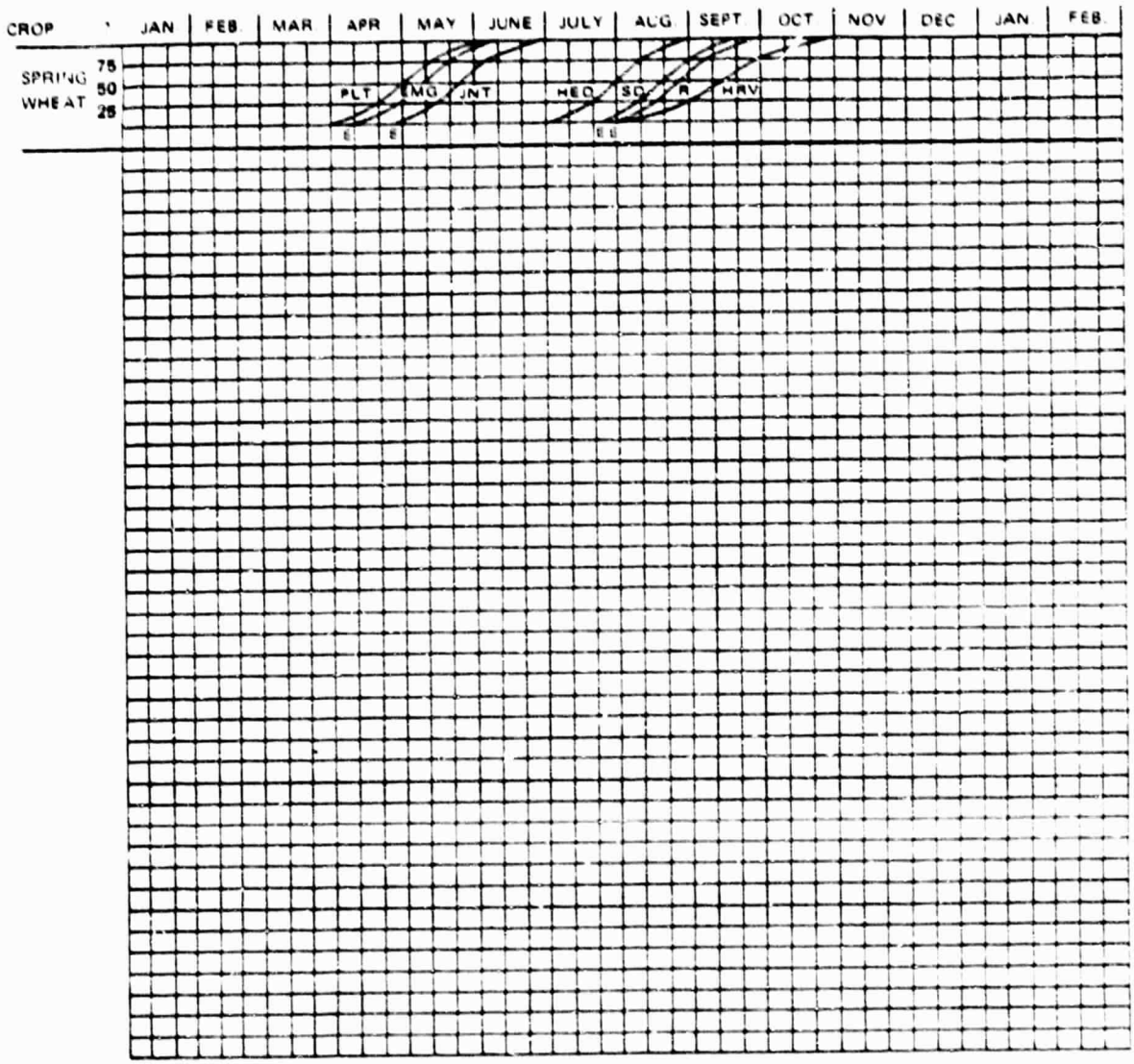


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

25

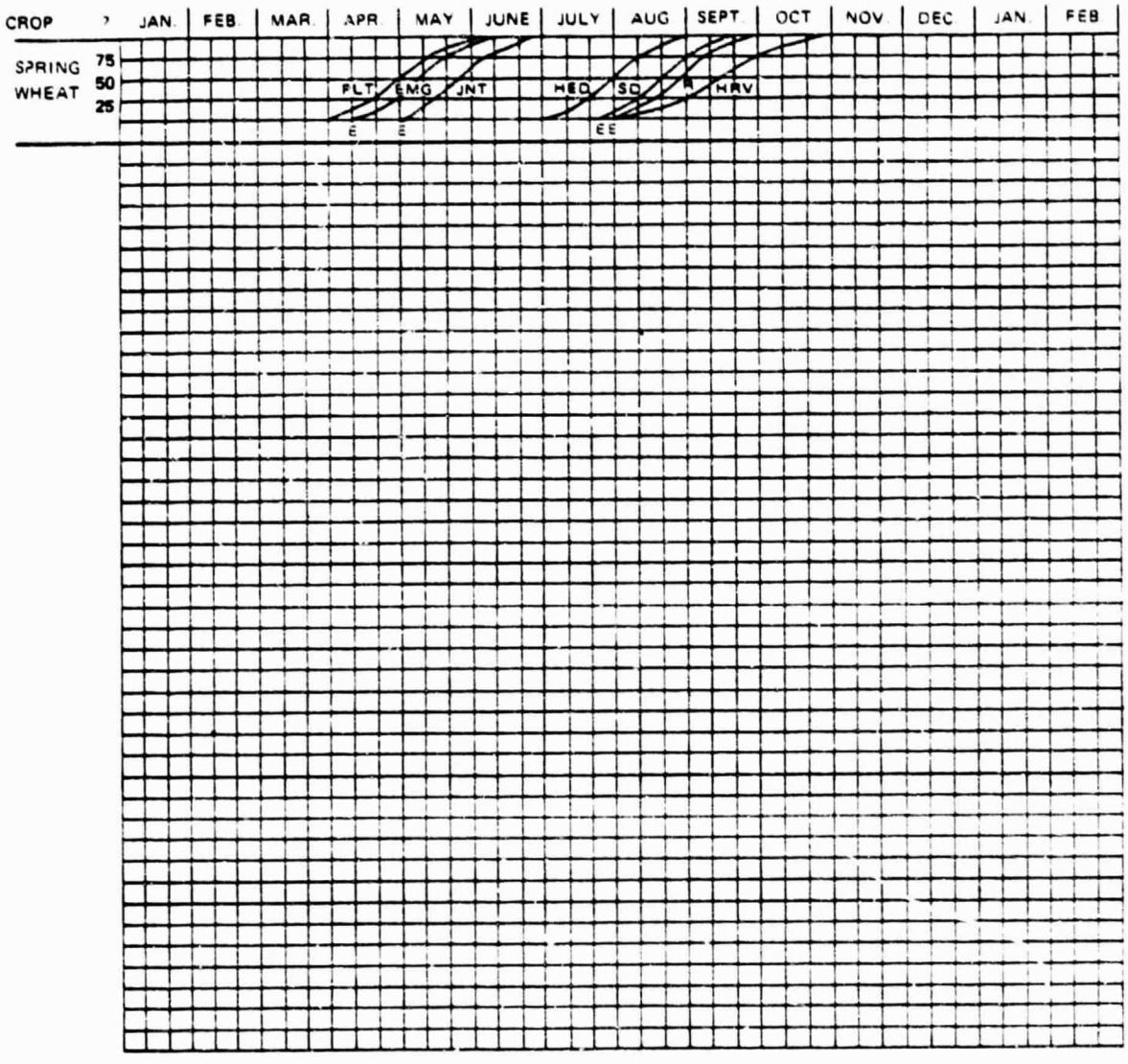
CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MANITOBA AREA 1. AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MANITOBA AREA 2. AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS

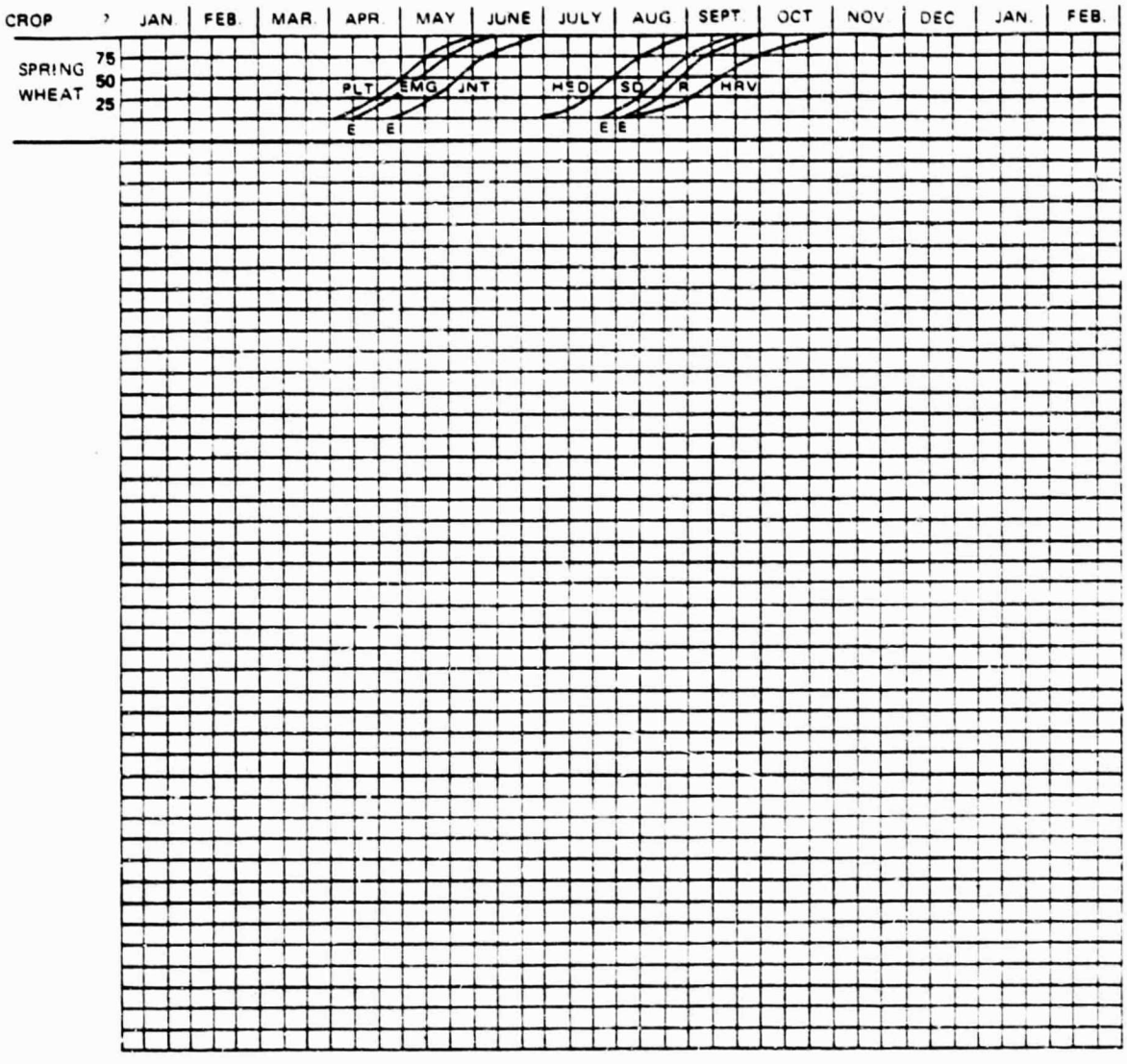


LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

27

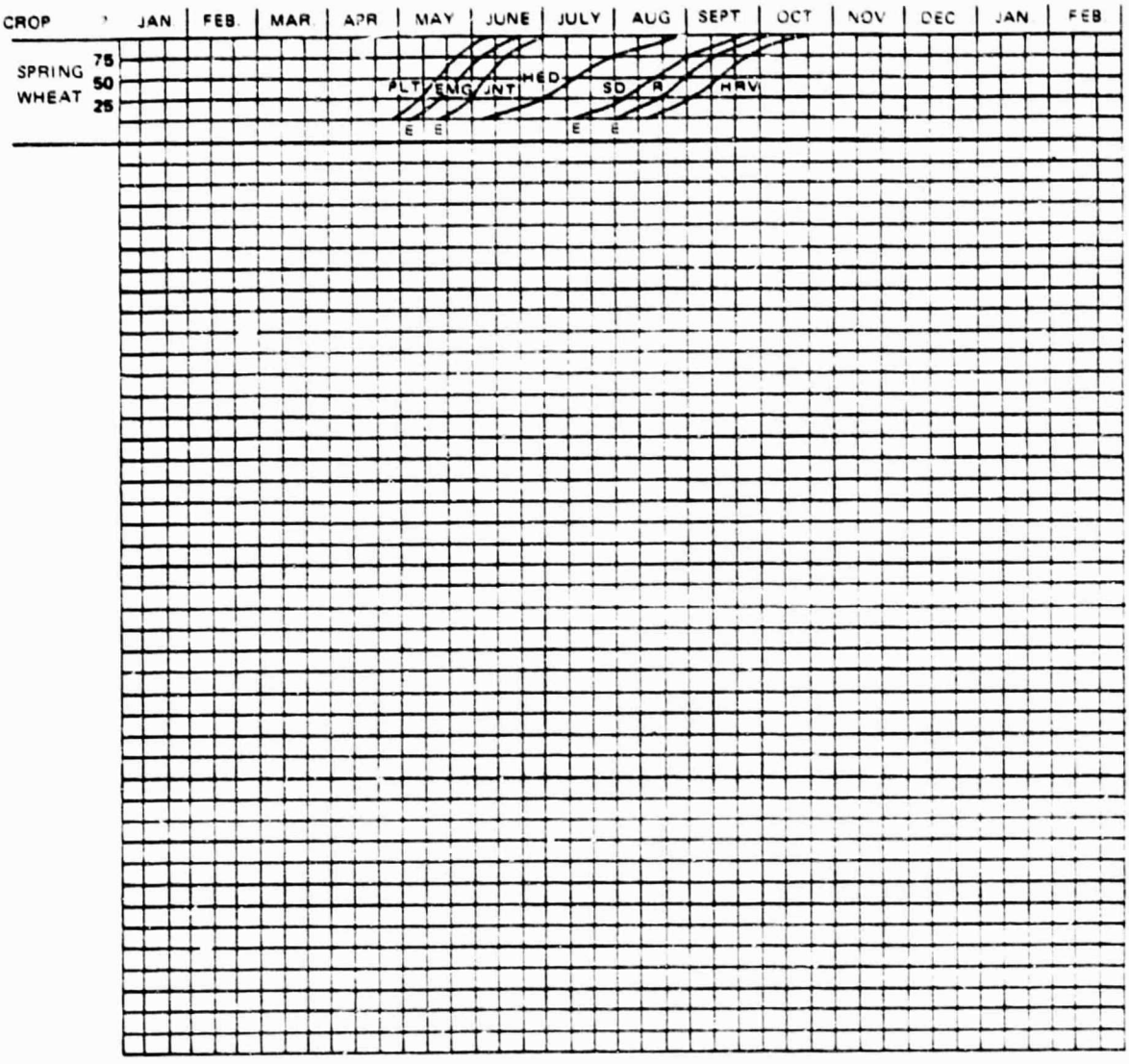
CROP CALENDARS PLOTTED 05/15/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MANITOBA AREA 3: AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

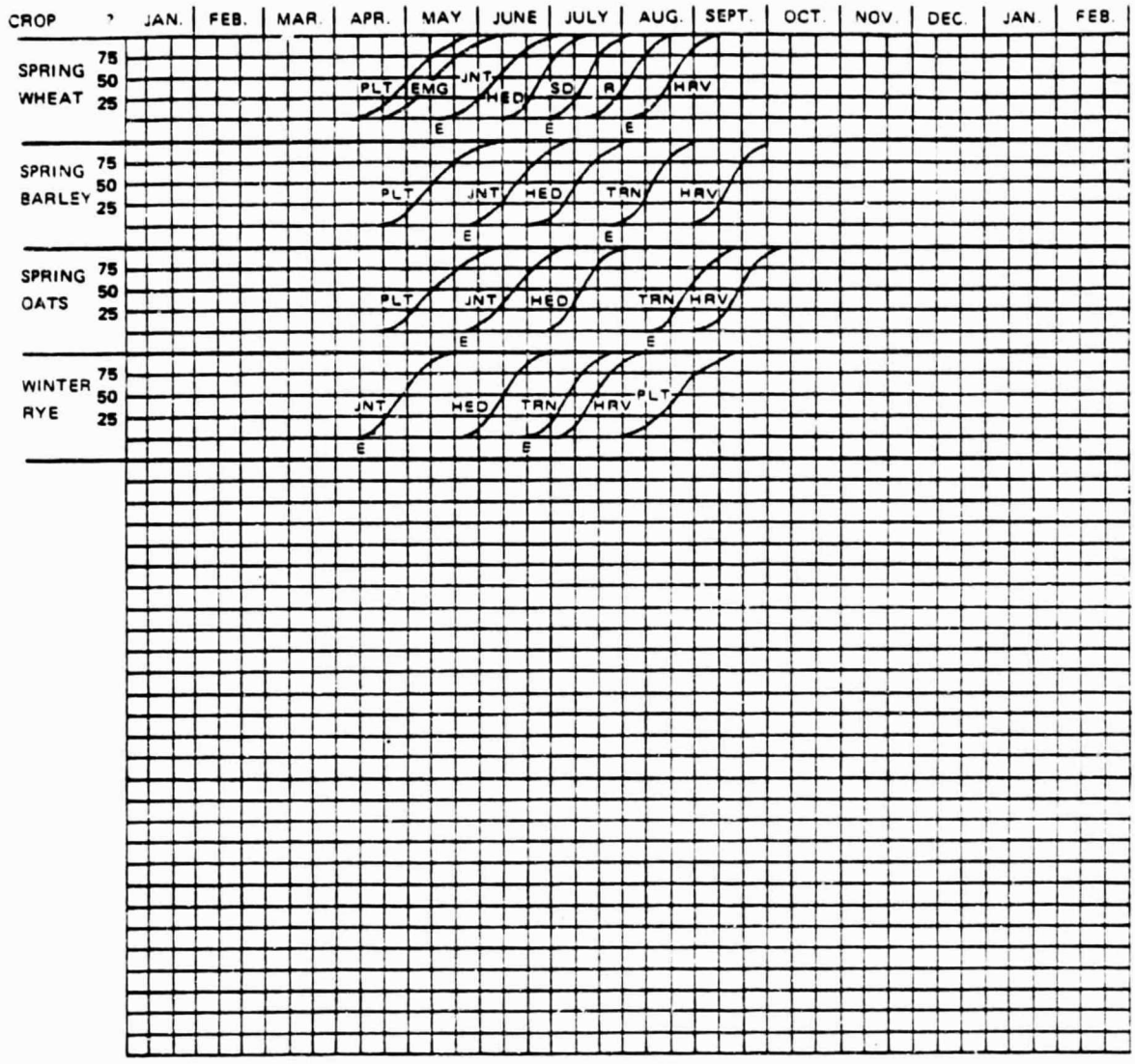
CROP CALENDARS PLOTTED 05 15 76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MANITOBA AREA 4. AVERAGE CROP CALENDAR FROM 1973 LETTER OF W. L. PORTEOUS



LEGEND

E	Under stage name indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

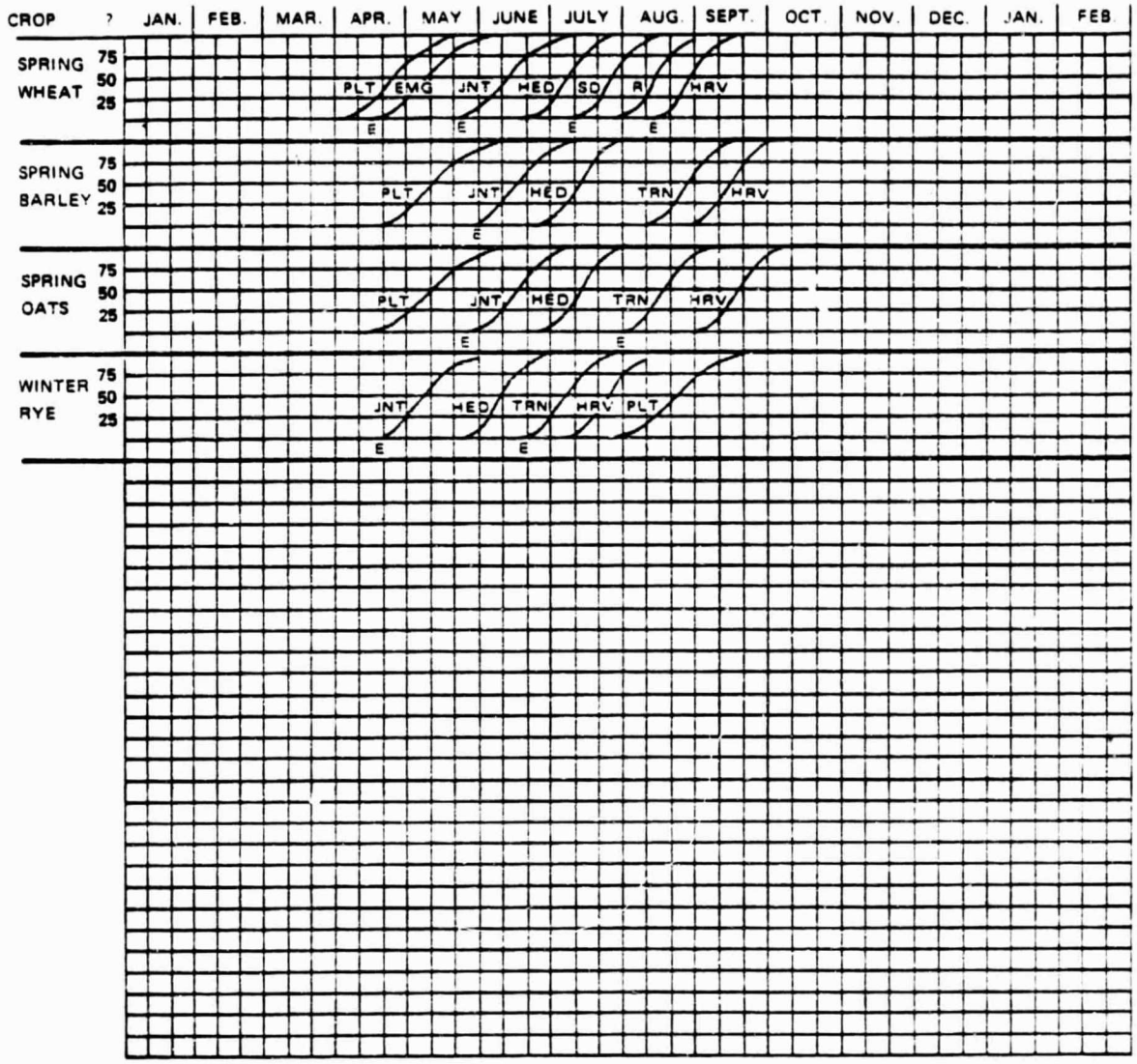
CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
BRANDON, MANITOBA, CANADA (SASKATOON, SASKATCHEWAN DATA)



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

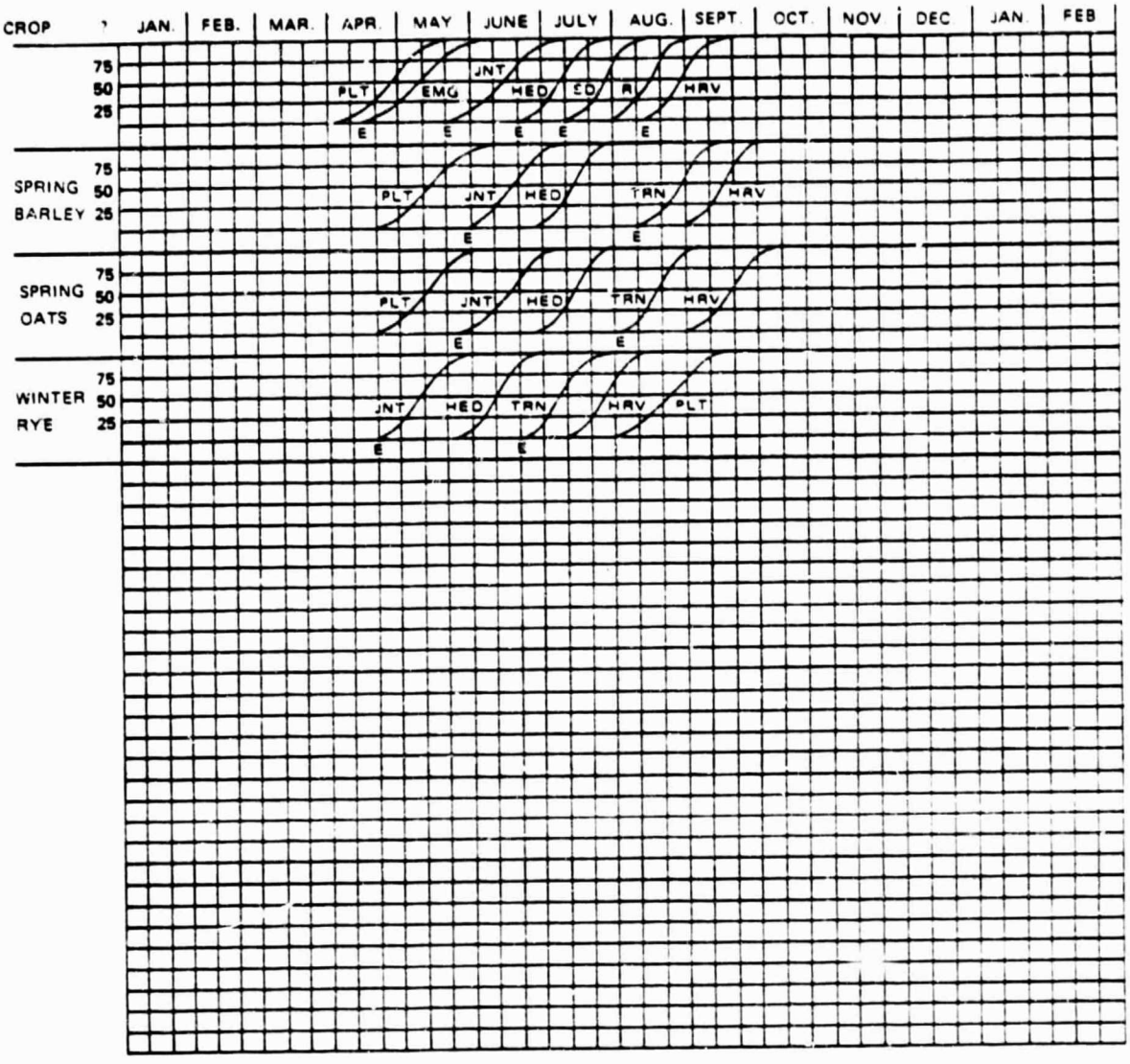
CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
MORDEN, MANITOBA, CANADA (SCOTT, SASKATCHEWAN DATA)



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

CROP CALENDARS PLOTTED 05/28/76
PERCENT OF AREA IN DEVELOPMENT STAGE BY SPECIFIED DATE FOR
WINNEPEG, MANITOBA, CANADA (SCOTT, SASKATCHEWAN DATA)



LEGEND

E	Under stage name, indicates rough estimate of date
EMG	Emergence
HED	Heading
HRV	Harvest
JNT	Jointing
PLT	Planting
R	Ripe
SD	Soft dough
TRN	Turning

APPENDIX B

SIMULATED DAILY TEMPERATURES

SIMULATED DAILY TEMPERATURES FOR: MANITOBA: NORTHERN
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8289 0.0000 0.8186 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	7.5	13.6	24.2	45.9	61.7	71.2	77.4	75.2	63.4	51.6	29.7	15.3
T-MIN:	-11.0	-7.4	5.2	25.7	38.1	48.6	54.7	52.0	42.1	32.2	14.7	-1.8

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	10	-6	61	17	-3	121	51	27	181	79	55	241	74	54	301	41	24	361	11	-5
2	10	-6	62	17	-3	122	51	27	182	79	55	242	74	53	302	40	23	362	11	-5
3	10	-6	63	18	-2	123	52	28	183	80	56	243	73	53	303	39	22	363	11	-5
4	10	-7	64	18	-2	124	53	28	184	80	56	244	73	53	304	39	22	364	11	-5
5	9	-7	65	19	-2	125	53	29	185	80	56	245	73	52	305	38	21	365	10	-6
6	9	-7	66	19	-1	126	54	30	186	80	56	246	72	52	306	38	21			
7	9	-7	67	19	-1	127	55	30	187	80	57	247	72	52	307	37	20			
8	9	-8	68	20	0	128	55	31	188	81	57	248	71	51	308	36	19			
9	9	-8	69	20	0	129	56	31	189	81	57	249	71	51	309	36	19			
10	9	-8	70	21	0	130	56	32	190	81	57	250	70	50	310	35	18			
11	9	-8	71	21	0	131	57	33	191	81	57	251	70	50	311	34	18			
12	8	-8	72	22	1	132	57	33	192	81	58	252	69	50	312	34	17			
13	8	-8	73	22	1	133	58	34	193	81	58	253	69	49	313	33	17			
14	8	-8	74	23	1	134	59	34	194	81	58	254	68	49	314	33	16			
15	8	-9	75	23	2	135	59	35	195	82	58	255	68	48	315	32	15			
16	8	-9	76	24	2	136	60	35	196	82	58	256	67	48	316	31	15			
17	8	-9	77	24	3	137	61	36	197	82	58	257	67	47	317	31	14			
18	8	-9	78	25	3	138	61	37	198	82	58	258	66	47	318	30	14			
19	8	-9	79	25	3	139	62	37	199	82	58	259	66	47	319	30	13			
20	8	-9	80	26	4	140	62	38	200	82	59	260	65	46	320	29	13			
21	8	-9	81	26	4	141	63	38	201	82	59	261	65	46	321	29	12			
22	8	-9	82	27	5	142	63	39	202	82	59	262	64	45	322	28	12			
23	8	-9	83	27	5	143	64	39	203	82	59	263	64	45	323	27	11			
24	8	-9	84	28	6	144	64	40	204	82	59	264	63	44	324	27	11			
25	8	-9	85	29	6	145	65	40	205	82	59	265	63	44	325	26	10			
26	8	-9	86	29	7	146	66	41	206	82	59	266	62	43	326	25	9			
27	8	-9	87	30	7	147	66	41	207	82	59	267	62	43	327	25	9			
28	8	-9	88	30	8	148	67	42	208	82	59	268	61	42	328	25	8			
29	8	-9	89	31	8	149	67	42	209	82	59	269	60	42	329	24	8			
30	9	-9	90	32	9	150	68	43	210	82	59	270	60	41	330	24	7			
31	9	-9	91	32	9	151	68	43	211	82	59	271	59	41	331	23	7			
32	9	-9	92	33	10	152	69	44	212	82	59	272	59	40	332	23	6			
33	9	-9	93	33	10	153	69	44	213	82	59	273	58	40	333	22	6			
34	9	-9	94	34	11	154	70	45	214	81	59	274	58	39	334	22	5			
35	9	-9	95	35	12	155	70	45	215	81	59	275	57	39	335	21	5			
36	9	-9	96	35	12	156	70	46	216	81	59	276	56	38	336	21	4			
37	10	-8	97	36	13	157	71	46	217	81	59	277	56	38	337	20	4			
38	10	-8	98	36	13	158	71	47	218	81	58	278	55	37	338	20	3			
39	10	-8	99	37	14	159	72	47	219	80	58	279	54	36	339	19	3			
40	10	-8	100	38	15	160	72	48	220	80	58	280	54	36	340	19	2			
41	10	-8	101	39	15	161	73	48	221	80	58	281	53	35	341	18	2			
42	10	-8	102	39	16	162	73	49	222	80	58	282	53	35	342	18	1			
43	11	-8	103	39	16	163	73	49	223	80	58	283	52	34	343	17	1			
44	11	-7	104	40	17	164	74	49	224	79	58	284	52	34	344	17	0			
45	11	-7	105	41	17	165	74	50	225	79	58	285	51	33	345	17	0			
46	12	-7	106	41	18	166	75	50	226	79	57	286	50	33	346	16	0			
47	12	-7	107	42	18	167	75	51	227	79	57	287	50	32	347	16	0			
48	12	-7	108	43	19	168	75	51	228	78	57	288	49	31	348	15	0			
49	12	-6	109	43	20	169	76	51	229	78	57	289	48	31	349	15	-1			
50	13	-6	110	44	20	170	76	52	230	78	57	290	48	30	350	15	-1			
51	13	-6	111	45	21	171	76	52	231	78	56	291	47	30	351	14	-1			
52	13	-6	112	45	21	172	77	52	232	77	56	292	46	29	352	14	-2			
53	14	-5	113	46	22	173	77	53	233	77	56	293	46	28	353	14	-2			
54	14	-5	114	46	23	174	77	53	234	77	56	294	45	28	354	13	-2			
55	14	-5	115	47	23	175	78	53	235	76	56	295	44	27	355	13	-3			
56	15	-5	116	48	24	176	78	54	236	76	55	296	44	27	356	13	-3			
57	15	-4	117	48	24	177	78	54	237	76	55	297	43	26	357	12	-3			
58	16	-4	118	49	25	178	78	54	238	75	55	298	43	26	358	12	-4			
59	16	-4	119	50	26	179	79	55	239	75	54	299	42	25	359	12	-4			
60	16	-3	120	50	26	180	79	55	240	75	54	300	41	24	360	12	-4			

STIMULATED DAILY TEMPERATURES FOR: MANITOBA: SOUTHEAST
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUARED'S: 0.8275 0.0000 0.8211 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	9.3	14.1	27.4	44.2	63.7	72.1	79.5	77.0	65.7	52.7	30.9	16.9
T-MIN:	-9.4	-5.4	7.3	24.9	38.7	48.4	54.0	51.1	40.8	30.6	14.2	-0.8

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	12	-5	61	14	-1	121	53	28	181	81	55	241	79	52	301	42	23	361	13	-4
2	12	-5	62	14	-1	122	53	29	182	81	55	242	79	52	302	41	22	362	12	-4
3	12	-5	63	15	0	123	54	29	183	82	55	243	78	51	303	41	22	363	12	-4
4	12	-5	64	15	0	124	55	30	184	82	55	244	78	51	304	40	21	364	12	-4
5	12	-5	65	16	0	125	55	30	185	82	55	245	74	50	305	39	20	365	12	-5
6	12	-5	66	16	0	126	56	31	186	82	55	246	74	50	306	39	20			
7	12	-6	67	17	1	127	57	31	187	82	56	247	73	50	307	38	20			
8	12	-6	68	17	1	128	57	32	188	82	56	248	73	49	308	38	19			
9	12	-6	69	18	1	129	58	33	189	82	56	249	72	49	309	37	19			
10	12	-6	70	18	2	130	58	33	190	82	56	250	72	49	310	36	18			
11	12	-6	71	19	2	131	59	34	191	82	56	251	71	48	311	36	17			
12	12	-7	72	19	2	132	60	34	192	82	57	252	71	48	312	35	17			
13	12	-7	73	20	3	133	60	35	193	82	57	253	70	47	313	35	16			
14	12	-7	74	20	3	134	61	35	194	83	57	254	70	47	314	34	16			
15	12	-7	75	21	3	135	61	36	195	83	57	255	69	47	315	33	15			
16	12	-7	76	21	4	136	62	36	196	83	57	256	69	46	316	33	15			
17	12	-7	77	22	4	137	62	37	197	83	57	257	68	46	317	32	14			
18	12	-7	78	22	4	138	63	37	198	83	57	258	68	45	318	32	14			
19	12	-7	79	23	5	139	64	38	199	84	57	259	67	45	319	31	13			
20	12	-7	80	23	5	140	64	38	200	84	57	260	67	44	320	31	13			
21	12	-7	81	24	6	141	65	39	201	84	57	261	66	44	321	30	12			
22	12	-7	82	24	6	142	65	39	202	84	58	262	66	44	322	30	12			
23	12	-7	83	25	6	143	66	40	203	84	58	263	65	43	323	29	11			
24	12	-7	84	25	7	144	66	40	204	84	58	264	65	43	324	29	11			
25	12	-7	85	26	7	145	67	41	205	84	58	265	64	42	325	28	10			
26	12	-7	86	26	8	146	67	41	206	84	58	266	64	42	326	28	10			
27	12	-7	87	27	8	147	68	42	207	83	58	267	63	42	327	27	9			
28	12	-7	88	27	8	148	68	42	208	83	58	268	63	41	328	27	9			
29	12	-7	89	28	9	149	69	43	209	83	58	269	62	41	329	26	8			
30	12	-7	90	28	9	150	69	43	210	83	58	270	62	40	330	26	8			
31	12	-7	91	29	10	151	70	44	211	83	57	271	61	39	331	25	7			
32	12	-7	92	29	10	152	70	44	212	83	57	272	60	39	332	25	7			
33	12	-7	93	30	10	153	71	45	213	83	57	273	60	38	333	24	6			
34	12	-7	94	30	11	154	71	45	214	83	57	274	59	38	334	24	6			
35	12	-7	95	31	11	155	72	46	215	83	57	275	59	37	335	23	5			
36	12	-7	96	31	12	156	72	46	216	83	57	276	58	37	336	23	5			
37	12	-7	97	32	12	157	73	46	217	83	57	277	57	36	337	22	4			
38	12	-7	98	32	13	158	73	47	218	83	57	278	56	35	338	22	4			
39	12	-7	99	33	13	159	74	47	219	83	57	279	55	35	339	21	3			
40	12	-7	100	33	14	160	74	48	220	83	57	280	55	34	340	20	3			
41	12	-6	101	34	14	161	75	48	221	82	57	281	55	34	341	20	2			
42	12	-6	102	34	15	162	75	49	222	82	56	282	54	33	342	19	2			
43	12	-6	103	35	15	163	75	49	223	82	56	283	53	33	343	19	1			
44	12	-5	104	35	16	164	76	49	224	82	56	284	53	32	344	18	1			
45	12	-5	105	36	16	165	76	50	225	82	56	285	52	32	345	18	1			
46	12	-5	106	36	17	166	77	50	226	82	56	286	52	31	346	17	0			
47	12	-5	107	37	17	167	77	50	227	82	55	287	51	31	347	17	0			
48	12	-5	108	37	18	168	77	51	228	82	55	288	50	30	348	16	0			
49	12	-4	109	38	18	169	78	51	229	82	55	289	50	30	349	16	0			
50	12	-4	110	38	19	170	78	51	230	82	55	290	49	29	350	15	0			
51	12	-4	111	39	19	171	78	52	231	82	55	291	48	29	351	15	0			
52	12	-3	112	39	20	172	79	52	232	82	54	292	48	28	352	14	0			
53	12	-3	113	40	20	173	79	52	233	82	54	293	47	27	353	14	0			
54	12	-3	114	40	21	174	79	52	234	82	54	294	46	27	354	13	0			
55	12	-2	115	41	21	175	80	53	235	82	54	295	46	26	355	13	0			
56	12	-2	116	41	22	176	80	53	236	82	53	296	45	26	356	12	0			
57	12	-2	117	42	22	177	80	54	237	82	53	297	45	25	357	12	0			
58	12	-2	118	42	23	178	81	54	238	82	53	298	44	25	358	11	0			
59	12	-1	119	43	23	179	81	54	239	82	53	299	44	24	359	11	0			
60	12	-1	120	43	24	180	81	54	240	82	52	300	43	24	360	10	0			

SIMULATED DAILY TEMPERATURES FOR: OKLAHOMA: SOUTHCENTRAL
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8279 0.0000 0.8202 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	9.5	15.7	29.0	47.8	63.7	72.5	79.2	77.4	65.7	53.2	41.1	17.1
T-MIN:	-9.6	-5.4	7.5	27.0	38.8	44.9	54.5	51.9	41.5	31.3	14.7	-0.8

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	12	-5	61	14	-1	121	53	28	181	81	55	241	75	53	301	42	23	361	13	-4
2	12	-5	62	14	-1	122	53	29	182	82	55	242	76	52	302	42	23	362	13	-4
3	12	-5	63	15	0	123	54	29	183	82	56	243	75	52	303	42	23	363	13	-4
4	12	-6	64	15	0	124	54	30	184	82	56	244	75	52	304	42	23	364	13	-4
5	12	-6	65	15	0	125	55	30	185	82	56	245	74	51	305	42	23	365	12	-5
6	12	-6	66	16	0	126	55	31	186	82	56	246	74	51	306	42	23			
7	12	-6	67	16	0	127	56	31	187	82	57	247	73	51	307	42	23			
8	12	-6	68	16	0	128	56	32	188	82	57	248	73	50	308	42	23			
9	12	-6	69	16	0	129	56	32	189	82	57	249	73	50	309	42	23			
10	12	-7	70	17	0	130	56	32	190	82	57	250	72	50	310	42	23			
11	12	-7	71	17	0	131	56	33	191	82	57	251	72	49	311	42	23			
12	12	-7	72	17	1	132	56	33	192	82	57	252	71	49	312	42	23			
13	12	-7	73	17	1	133	56	33	193	82	58	253	71	48	313	42	23			
14	12	-7	74	17	1	134	56	34	194	82	58	254	70	48	314	42	23			
15	12	-7	75	17	1	135	56	34	195	82	58	255	70	47	315	42	23			
16	12	-7	76	17	2	136	56	34	196	82	58	256	69	47	316	42	23			
17	12	-7	77	17	2	137	56	35	197	82	58	257	69	47	317	42	23			
18	12	-7	78	17	2	138	56	35	198	82	58	258	68	46	318	42	23			
19	12	-7	79	17	2	139	56	35	199	82	58	259	68	46	319	42	23			
20	12	-7	80	17	2	140	56	36	200	82	58	260	67	46	320	42	23			
21	12	-7	81	17	2	141	56	36	201	82	58	261	67	45	321	42	23			
22	12	-7	82	17	2	142	56	36	202	82	58	262	66	45	322	42	23			
23	12	-7	83	17	2	143	56	37	203	82	58	263	66	45	323	42	23			
24	12	-7	84	17	2	144	56	37	204	82	58	264	65	44	324	42	23			
25	12	-7	85	17	2	145	56	37	205	82	58	265	65	44	325	42	23			
26	12	-7	86	17	2	146	56	38	206	82	58	266	64	44	326	42	23			
27	12	-7	87	17	2	147	56	38	207	82	58	267	64	43	327	42	23			
28	12	-7	88	17	2	148	56	38	208	82	58	268	63	43	328	42	23			
29	12	-7	89	17	2	149	56	38	209	82	58	269	63	43	329	42	23			
30	12	-7	90	17	2	150	56	39	210	82	58	270	62	42	330	42	23			
31	12	-7	91	17	2	151	56	39	211	82	58	271	62	42	331	42	23			
32	12	-7	92	17	2	152	56	39	212	82	58	272	61	42	332	42	23			
33	12	-7	93	17	3	153	56	40	213	82	58	273	61	41	333	42	23			
34	12	-7	94	17	3	154	56	40	214	82	58	274	60	41	334	42	23			
35	12	-7	95	17	3	155	56	40	215	82	58	275	60	41	335	42	23			
36	12	-7	96	17	3	156	56	41	216	82	58	276	59	40	336	42	23			
37	12	-7	97	17	3	157	56	41	217	82	58	277	59	40	337	42	23			
38	12	-7	98	17	3	158	56	41	218	82	58	278	58	40	338	42	23			
39	12	-7	99	17	3	159	56	41	219	82	58	279	58	39	339	42	23			
40	12	-7	100	17	3	160	56	42	220	82	58	280	57	39	340	42	23			
41	12	-7	101	17	3	161	56	42	221	82	58	281	57	39	341	42	23			
42	12	-7	102	17	3	162	56	42	222	82	58	282	57	38	342	42	23			
43	12	-7	103	17	3	163	56	43	223	82	58	283	56	38	343	42	23			
44	12	-7	104	17	3	164	56	43	224	82	58	284	56	38	344	42	23			
45	12	-7	105	17	3	165	56	43	225	82	58	285	56	37	345	42	23			
46	12	-7	106	17	3	166	56	43	226	82	58	286	55	37	346	42	23			
47	12	-7	107	17	3	167	56	44	227	82	58	287	55	37	347	42	23			
48	12	-7	108	17	3	168	56	44	228	82	58	288	55	36	348	42	23			
49	12	-7	109	17	3	169	56	44	229	82	58	289	54	36	349	42	23			
50	12	-7	110	17	3	170	56	44	230	82	58	290	54	36	350	42	23			
51	12	-7	111	17	3	171	56	45	231	82	58	291	54	35	351	42	23			
52	12	-7	112	17	3	172	56	45	232	82	58	292	53	35	352	42	23			
53	12	-7	113	17	3	173	56	45	233	82	58	293	53	35	353	42	23			
54	12	-7	114	17	3	174	56	45	234	82	58	294	53	34	354	42	23			
55	12	-7	115	17	3	175	56	46	235	82	58	295	52	34	355	42	23			
56	12	-7	116	17	3	176	56	46	236	82	58	296	52	34	356	42	23			
57	12	-7	117	17	3	177	56	46	237	82	58	297	52	33	357	42	23			
58	12	-7	118	17	3	178	56	46	238	82	58	298	51	33	358	42	23			
59	12	-7	119	17	3	179	56	47	239	82	58	299	51	33	359	42	23			
60	12	-7	120	17	3	180	56	47	240	82	58	300	50	32	360	42	23			

SIMULATED DAILY TEMPERATURES FOR: [illegible] SOUTHEAST
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.9293 0.0000 0.8175 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	9.5	15.7	28.6	47.5	63.5	73.0	77.5	77.2	69.7	53.1	31.5	15.7
T-MIN:	-9.9	-6.6	7.2	27.1	39.6	50.4	56.1	53.6	43.7	33.3	16.3	-0.4

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	12	-5	61	19	-2	121	53	28	181	71	57	241	76	55	301	62	25	361	13	-3
2	12	-5	62	19	-1	122	53	29	182	71	57	242	76	55	302	62	24	362	13	-4
3	12	-5	63	19	-1	123	54	29	183	72	57	243	75	55	303	61	24	363	13	-4
4	13	-6	64	20	0	124	55	30	184	72	58	244	75	54	304	61	23	364	12	-4
5	13	-6	65	20	0	125	55	30	185	72	58	245	74	54	305	60	23	365	12	-4
6	13	-6	66	21	1	126	56	31	186	73	58	246	74	54	306	60	23			
7	13	-6	67	21	1	127	57	32	187	73	58	247	73	54	307	59	23			
8	13	-6	68	22	2	128	57	32	188	73	58	248	73	53	308	59	23			
9	13	-7	69	22	2	129	58	33	189	74	58	249	73	53	309	58	22			
10	13	-7	70	23	3	130	58	33	190	74	58	250	72	53	310	58	22			
11	13	-7	71	23	3	131	59	34	191	74	58	251	72	52	311	57	22			
12	13	-7	72	24	4	132	59	34	192	75	59	252	71	52	312	57	22			
13	13	-7	73	24	4	133	60	35	193	75	59	253	71	52	313	56	21			
14	13	-7	74	25	5	134	60	35	194	75	59	254	70	51	314	56	21			
15	13	-7	75	25	5	135	61	36	195	76	59	255	70	51	315	55	21			
16	13	-7	76	26	6	136	61	36	196	76	60	256	69	51	316	55	20			
17	13	-8	77	26	6	137	62	37	197	76	60	257	69	50	317	54	20			
18	13	-8	78	27	7	138	62	37	198	77	60	258	68	50	318	54	20			
19	13	-8	79	27	7	139	63	38	199	77	60	259	68	50	319	53	19			
20	13	-8	80	28	8	140	63	38	200	77	61	260	67	49	320	53	19			
21	13	-8	81	28	8	141	64	39	201	78	61	261	67	49	321	52	19			
22	13	-8	82	29	9	142	64	39	202	78	61	262	66	49	322	52	18			
23	13	-8	83	29	9	143	65	40	203	78	61	263	66	48	323	51	18			
24	13	-8	84	30	10	144	65	40	204	79	62	264	65	48	324	51	18			
25	13	-8	85	31	10	145	66	41	205	79	62	265	65	48	325	50	17			
26	13	-8	86	31	11	146	67	42	206	79	62	266	64	47	326	50	17			
27	13	-8	87	32	11	147	67	42	207	80	62	267	63	47	327	49	17			
28	13	-8	88	32	12	148	68	43	208	80	63	268	63	47	328	49	16			
29	13	-8	89	33	12	149	68	43	209	80	63	269	62	46	329	48	16			
30	13	-8	90	33	13	150	69	44	210	81	63	270	62	46	330	48	16			
31	13	-8	91	34	13	151	70	44	211	81	63	271	61	46	331	47	15			
32	13	-8	92	34	14	152	70	45	212	81	64	272	61	45	332	47	15			
33	13	-8	93	35	14	153	71	45	213	82	64	273	60	45	333	46	15			
34	13	-8	94	35	15	154	71	46	214	82	64	274	60	45	334	46	14			
35	13	-7	95	36	15	155	72	47	215	82	64	275	59	44	335	45	14			
36	13	-7	96	37	16	156	72	47	216	82	65	276	58	44	336	45	14			
37	13	-7	97	37	16	157	73	48	217	83	65	277	57	44	337	44	13			
38	13	-7	98	38	17	158	73	48	218	83	65	278	57	43	338	44	13			
39	13	-7	99	38	17	159	74	49	219	83	65	279	56	43	339	43	13			
40	13	-7	100	39	18	160	74	49	220	83	66	280	56	43	340	43	12			
41	13	-7	101	39	18	161	75	50	221	84	66	281	55	42	341	42	12			
42	13	-7	102	40	19	162	75	50	222	84	66	282	54	42	342	42	12			
43	13	-6	103	40	19	163	75	51	223	84	67	283	54	42	343	41	11			
44	13	-6	104	41	20	164	76	51	224	84	67	284	53	41	344	41	11			
45	13	-6	105	41	20	165	76	52	225	85	67	285	53	41	345	40	11			
46	13	-6	106	42	21	166	77	52	226	85	68	286	52	41	346	40	10			
47	13	-6	107	42	21	167	77	53	227	85	68	287	52	40	347	39	10			
48	13	-5	108	43	22	168	77	53	228	85	68	288	51	40	348	39	10			
49	14	-5	109	43	22	169	78	54	229	85	68	289	50	40	349	38	9			
50	14	-5	110	44	23	170	78	54	230	85	69	290	50	39	350	38	9			
51	15	-5	111	44	23	171	78	55	231	86	69	291	49	39	351	37	9			
52	15	-5	112	45	24	172	79	55	232	86	69	292	49	39	352	37	8			
53	16	-5	113	45	24	173	79	56	233	86	69	293	48	38	353	36	8			
54	16	-5	114	46	25	174	79	56	234	86	70	294	48	38	354	36	8			
55	16	-5	115	46	25	175	80	57	235	86	70	295	47	38	355	35	7			
56	16	-5	116	47	26	176	80	57	236	87	70	296	47	37	356	35	7			
57	17	-4	117	47	26	177	80	58	237	87	70	297	46	37	357	34	7			
58	17	-4	118	48	27	178	81	58	238	87	71	298	46	37	358	34	6			
59	17	-3	119	48	27	179	81	59	239	87	71	299	45	36	359	33	6			
60	18	-2	120	49	28	180	81	59	240	87	71	300	45	36	360	33	6			

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SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: NORTHW
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8241 0.0000 0.8123 0.0002

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	7.5	14.0	26.6	46.9	63.3	70.2	76.3	73.4	66.6	50.0	28.0	14.0
T-MIN:	-13.0	-7.8	3.7	24.6	36.5	44.2	49.5	46.4	37.2	27.5	10.9	-4.5

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	9	-8	61	17	-4	121	52	25	181	79	51	241	73	48	301	39	19	361	11	-7
2	9	-8	62	18	-4	122	52	25	182	79	51	242	72	48	302	38	19	362	10	-7
3	9	-9	63	18	-3	123	53	26	183	79	52	243	72	48	303	38	18	363	10	-8
4	9	-9	64	19	-3	124	53	26	184	80	52	244	71	47	304	37	18	364	10	-8
5	9	-9	65	19	-3	125	54	27	185	80	52	245	71	47	305	36	17	365	10	-8
6	9	-9	66	19	-2	126	55	28	186	80	52	246	71	47	306	36	16			
7	9	-9	67	20	-2	127	55	28	187	80	52	247	70	46	307	35	16			
8	8	-10	68	20	-2	128	56	29	188	80	53	248	70	46	308	35	16			
9	8	-10	69	21	-1	129	56	29	189	80	53	249	69	46	309	34	15			
10	8	-10	70	21	-1	130	57	30	190	80	53	250	69	45	310	33	14			
11	8	-10	71	22	0	131	58	30	191	81	53	251	68	45	311	33	14			
12	8	-10	72	22	0	132	58	31	192	81	53	252	68	44	312	32	13			
13	8	-10	73	23	0	133	59	31	193	81	53	253	67	44	313	32	12			
14	8	-10	74	23	0	134	59	32	194	81	54	254	67	44	314	31	12			
15	8	-10	75	24	0	135	60	32	195	81	54	255	66	43	315	30	11			
16	8	-10	76	24	1	136	61	33	196	81	54	256	66	43	316	30	11			
17	8	-10	77	25	1	137	61	34	197	81	54	257	65	42	317	29	10			
18	8	-11	78	25	2	138	62	34	198	81	54	258	65	42	318	29	10			
19	8	-11	79	26	2	139	62	35	199	81	54	259	64	41	319	28	9			
20	8	-11	80	27	3	140	63	35	200	81	54	260	64	41	320	28	9			
21	8	-11	81	27	3	141	63	36	201	81	54	261	63	41	321	27	8			
22	8	-11	82	28	4	142	64	36	202	81	54	262	63	40	322	26	8			
23	8	-11	83	28	4	143	64	37	203	81	54	263	62	40	323	26	7			
24	8	-11	84	29	5	144	65	37	204	81	54	264	62	39	324	25	7			
25	8	-11	85	29	5	145	65	38	205	81	54	265	61	39	325	25	6			
26	8	-11	86	30	6	146	66	38	206	81	54	266	60	38	326	24	6			
27	8	-11	87	31	6	147	66	39	207	81	54	267	60	38	327	24	5			
28	8	-11	88	31	7	148	67	39	208	81	54	268	59	37	328	23	5			
29	8	-11	89	32	7	149	67	40	209	81	54	269	59	37	329	23	4			
30	9	-11	90	32	8	150	68	40	210	81	54	270	58	36	330	22	4			
31	9	-10	91	33	8	151	68	41	211	81	54	271	58	36	331	22	3			
32	9	-10	92	34	9	152	69	41	212	80	54	272	57	35	332	21	3			
33	9	-10	93	34	9	153	69	41	213	80	54	273	56	35	333	21	2			
34	9	-10	94	35	10	154	70	42	214	80	54	274	56	34	334	20	2			
35	9	-10	95	35	10	155	70	42	215	80	54	275	55	34	335	20	1			
36	10	-10	96	36	11	156	71	43	216	80	54	276	55	33	336	19	1			
37	10	-10	97	37	11	157	71	43	217	80	54	277	54	33	337	19	0			
38	10	-10	98	37	12	158	72	44	218	80	54	278	53	32	338	18	0			
39	10	-10	99	38	12	159	72	44	219	79	53	279	53	32	339	18	0			
40	10	-9	100	38	13	160	72	44	220	79	53	280	52	31	340	18	0			
41	11	-9	101	39	13	161	73	45	221	79	53	281	51	30	341	17	0			
42	11	-9	102	40	14	162	73	45	222	79	53	282	51	30	342	17	-1			
43	11	-9	103	40	15	163	74	46	223	78	53	283	50	29	343	16	-1			
44	11	-9	104	41	15	164	74	46	224	78	53	284	50	29	344	16	-1			
45	12	-8	105	42	16	165	74	46	225	78	53	285	49	28	345	15	-2			
46	12	-8	106	42	16	166	75	47	226	78	52	286	49	28	346	15	-2			
47	12	-8	107	43	17	167	75	47	227	77	52	287	48	27	347	15	-3			
48	13	-8	108	43	17	168	75	47	228	77	52	288	47	27	348	14	-3			
49	13	-8	109	44	18	169	76	48	229	77	52	289	46	26	349	14	-3			
50	13	-7	110	45	19	170	76	48	230	77	51	290	46	25	350	14	-4			
51	13	-7	111	45	19	171	76	48	231	76	51	291	45	25	351	13	-4			
52	14	-7	112	46	20	172	77	49	232	76	51	292	45	24	352	13	-4			
53	14	-7	113	47	20	173	77	49	233	75	51	293	44	24	353	13	-5			
54	15	-6	114	47	21	174	77	49	234	75	51	294	43	23	354	12	-5			
55	15	-6	115	48	21	175	78	50	235	75	50	295	43	23	355	12	-5			
56	15	-6	116	48	22	176	78	50	236	75	50	296	42	22	356	12	-6			
57	16	-5	117	49	22	177	78	50	237	74	50	297	41	21	357	12	-6			
58	16	-5	118	50	23	178	78	50	238	74	49	298	41	21	358	11	-6			
59	16	-5	119	50	24	179	79	51	239	73	49	299	40	20	359	11	-7			
60	17	-4	120	51	24	180	79	51	240	73	49	300	40	20	360	11	-7			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN:NORTHEAS
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUARED'S: 0.8256 0.0000 0.8165 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	5.7	13.5	25.9	46.2	63.3	71.1	77.4	74.8	63.1	50.2	27.3	12.9
T-MIN:	-13.5	-8.9	3.2	24.4	37.0	45.9	51.6	48.6	39.0	24.8	11.3	-4.7

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	8	-9	61	16	-5	121	52	25	181	70	46	241	74	50	301	56	29	361	6	-7
2	8	-9	62	16	-5	122	52	25	182	70	46	242	74	50	302	56	29	362	6	-7
3	7	-9	63	16	-5	123	52	25	183	70	46	243	74	50	303	56	29	363	6	-7
4	7	-9	64	16	-5	124	52	25	184	70	46	244	74	50	304	56	29	364	6	-7
5	7	-9	65	16	-5	125	52	25	185	70	46	245	74	50	305	56	29	365	6	-7
6	7	-9	66	16	-5	126	52	25	186	70	46	246	74	50	306	56	29			
7	7	-9	67	16	-5	127	52	25	187	70	46	247	74	50	307	56	29			
8	7	-9	68	16	-5	128	52	25	188	70	46	248	74	50	308	56	29			
9	7	-9	69	16	-5	129	52	25	189	70	46	249	74	50	309	56	29			
10	7	-9	70	16	-5	130	52	25	190	70	46	250	74	50	310	56	29			
11	7	-9	71	16	-5	131	52	25	191	70	46	251	74	50	311	56	29			
12	7	-9	72	16	-5	132	52	25	192	70	46	252	74	50	312	56	29			
13	7	-9	73	16	-5	133	52	25	193	70	46	253	74	50	313	56	29			
14	7	-9	74	16	-5	134	52	25	194	70	46	254	74	50	314	56	29			
15	7	-9	75	16	-5	135	52	25	195	70	46	255	74	50	315	56	29			
16	7	-9	76	16	-5	136	52	25	196	70	46	256	74	50	316	56	29			
17	7	-9	77	16	-5	137	52	25	197	70	46	257	74	50	317	56	29			
18	7	-9	78	16	-5	138	52	25	198	70	46	258	74	50	318	56	29			
19	7	-9	79	16	-5	139	52	25	199	70	46	259	74	50	319	56	29			
20	7	-9	80	16	-5	140	52	25	200	70	46	260	74	50	320	56	29			
21	7	-9	81	16	-5	141	52	25	201	70	46	261	74	50	321	56	29			
22	7	-9	82	16	-5	142	52	25	202	70	46	262	74	50	322	56	29			
23	7	-9	83	16	-5	143	52	25	203	70	46	263	74	50	323	56	29			
24	7	-9	84	16	-5	144	52	25	204	70	46	264	74	50	324	56	29			
25	7	-9	85	16	-5	145	52	25	205	70	46	265	74	50	325	56	29			
26	7	-9	86	16	-5	146	52	25	206	70	46	266	74	50	326	56	29			
27	7	-9	87	16	-5	147	52	25	207	70	46	267	74	50	327	56	29			
28	7	-9	88	16	-5	148	52	25	208	70	46	268	74	50	328	56	29			
29	7	-9	89	16	-5	149	52	25	209	70	46	269	74	50	329	56	29			
30	7	-9	90	16	-5	150	52	25	210	70	46	270	74	50	330	56	29			
31	7	-9	91	16	-5	151	52	25	211	70	46	271	74	50	331	56	29			
32	7	-9	92	16	-5	152	52	25	212	70	46	272	74	50	332	56	29			
33	7	-9	93	16	-5	153	52	25	213	70	46	273	74	50	333	56	29			
34	7	-9	94	16	-5	154	52	25	214	70	46	274	74	50	334	56	29			
35	7	-9	95	16	-5	155	52	25	215	70	46	275	74	50	335	56	29			
36	7	-9	96	16	-5	156	52	25	216	70	46	276	74	50	336	56	29			
37	7	-9	97	16	-5	157	52	25	217	70	46	277	74	50	337	56	29			
38	7	-9	98	16	-5	158	52	25	218	70	46	278	74	50	338	56	29			
39	7	-9	99	16	-5	159	52	25	219	70	46	279	74	50	339	56	29			
40	7	-9	100	16	-5	160	52	25	220	70	46	280	74	50	340	56	29			
41	7	-9	101	16	-5	161	52	25	221	70	46	281	74	50	341	56	29			
42	7	-9	102	16	-5	162	52	25	222	70	46	282	74	50	342	56	29			
43	7	-9	103	16	-5	163	52	25	223	70	46	283	74	50	343	56	29			
44	7	-9	104	16	-5	164	52	25	224	70	46	284	74	50	344	56	29			
45	7	-9	105	16	-5	165	52	25	225	70	46	285	74	50	345	56	29			
46	7	-9	106	16	-5	166	52	25	226	70	46	286	74	50	346	56	29			
47	7	-9	107	16	-5	167	52	25	227	70	46	287	74	50	347	56	29			
48	7	-9	108	16	-5	168	52	25	228	70	46	288	74	50	348	56	29			
49	7	-9	109	16	-5	169	52	25	229	70	46	289	74	50	349	56	29			
50	7	-9	110	16	-5	170	52	25	230	70	46	290	74	50	350	56	29			
51	7	-9	111	16	-5	171	52	25	231	70	46	291	74	50	351	56	29			
52	7	-9	112	16	-5	172	52	25	232	70	46	292	74	50	352	56	29			
53	7	-9	113	16	-5	173	52	25	233	70	46	293	74	50	353	56	29			
54	7	-9	114	16	-5	174	52	25	234	70	46	294	74	50	354	56	29			
55	7	-9	115	16	-5	175	52	25	235	70	46	295	74	50	355	56	29			
56	7	-9	116	16	-5	176	52	25	236	70	46	296	74	50	356	56	29			
57	7	-9	117	16	-5	177	52	25	237	70	46	297	74	50	357	56	29			
58	7	-9	118	16	-5	178	52	25	238	70	46	298	74	50	358	56	29			
59	7	-9	119	16	-5	179	52	25	239	70	46	299	74	50	359	56	29			
60	7	-9	120	16	-5	180	52	25	240	70	46	300	74	50	360	56	29			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: WESTCE
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8245 0.0000 0.8240 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	10.9	16.9	28.2	49.6	65.1	72.0	79.5	77.0	65.1	53.2	31.3	18.0
T-MIN:	-8.1	-3.6	8.1	26.1	37.8	45.9	51.1	48.2	38.8	28.2	12.6	-0.2

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	13	-4	61	20	0	121	54	28	181	81	52	241	76	48	301	42	21	361	14	-3
2	13	-4	62	20	0	122	54	28	182	81	52	242	75	48	302	42	20	362	14	-3
3	13	-4	63	21	0	123	55	29	183	81	52	243	75	48	303	41	20	363	14	-3
4	12	-5	64	21	1	124	55	29	184	82	53	244	74	47	304	41	19	364	13	-4
5	12	-5	65	22	1	125	56	30	185	82	53	245	74	47	305	40	19	365	13	-4
6	12	-5	66	22	2	126	57	31	186	82	53	246	74	47	306	39	18			
7	12	-5	67	22	2	127	57	31	187	82	53	247	73	46	307	39	18			
8	12	-5	68	23	3	128	58	32	188	82	53	248	73	46	308	38	17			
9	12	-5	69	23	3	129	58	32	189	83	53	249	72	46	309	38	17			
10	12	-6	70	24	3	130	59	33	190	83	53	250	72	45	310	37	16			
11	11	-5	71	24	3	131	60	33	191	83	54	251	71	45	311	36	16			
12	11	-6	72	25	4	132	60	34	192	83	54	252	71	45	312	36	15			
13	11	-6	73	25	4	133	61	34	193	83	54	253	70	44	313	35	15			
14	11	-6	74	26	5	134	61	35	194	83	54	254	70	44	314	35	14			
15	11	-6	75	26	5	135	62	35	195	83	54	255	69	43	315	34	14			
16	11	-6	76	27	5	136	62	36	196	83	54	256	69	43	316	33	13			
17	11	-6	77	27	6	137	63	36	197	83	54	257	68	43	317	33	13			
18	11	-6	78	28	6	138	64	37	198	83	54	258	68	42	318	32	12			
19	11	-6	79	28	7	139	64	37	199	83	54	259	67	42	319	32	12			
20	11	-6	80	29	7	140	65	37	200	83	54	260	67	41	320	31	11			
21	11	-6	81	29	8	141	65	38	201	83	54	261	66	41	321	31	11			
22	11	-6	82	30	8	142	66	38	202	83	54	262	66	40	322	30	10			
23	11	-6	83	31	9	143	66	39	203	83	54	263	65	40	323	30	10			
24	11	-6	84	31	9	144	67	39	204	83	54	264	65	40	324	29	9			
25	11	-6	85	32	9	145	67	40	205	83	54	265	64	39	325	28	9			
26	11	-6	86	32	10	146	68	40	206	83	54	266	64	39	326	28	8			
27	11	-6	87	33	10	147	68	41	207	83	54	267	63	38	327	27	8			
28	11	-6	88	33	11	148	69	41	208	83	54	268	63	38	328	27	7			
29	12	-6	89	34	11	149	69	42	209	83	54	269	62	37	329	26	7			
30	12	-6	90	35	12	150	70	42	210	83	54	270	61	37	330	26	7			
31	12	-6	91	35	12	151	70	42	211	83	54	271	61	36	331	25	6			
32	12	-5	92	36	13	152	71	43	212	83	54	272	60	36	332	25	6			
33	12	-5	93	36	13	153	71	43	213	83	54	273	60	35	333	24	5			
34	12	-5	94	37	14	154	72	44	214	83	54	274	59	35	334	24	5			
35	12	-5	95	37	14	155	72	44	215	83	54	275	58	34	335	23	4			
36	12	-5	96	38	15	156	73	44	216	82	54	276	58	34	336	23	4			
37	13	-5	97	39	15	157	73	45	217	82	54	277	57	33	337	23	4			
38	13	-5	98	39	16	158	73	45	218	82	54	278	57	33	338	22	3			
39	13	-5	99	40	16	159	74	46	219	82	53	279	56	32	339	22	3			
40	13	-4	100	41	17	160	74	46	220	82	53	280	55	32	340	21	2			
41	13	-4	101	41	17	161	75	46	221	82	53	281	55	31	341	21	2			
42	14	-4	102	42	18	162	75	47	222	81	53	282	54	31	342	20	2			
43	14	-4	103	42	18	163	76	47	223	81	53	283	54	30	343	20	1			
44	14	-4	104	43	19	164	76	47	224	81	53	284	53	30	344	20	1			
45	14	-4	105	44	20	165	76	48	225	81	53	285	52	29	345	19	1			
46	15	-3	106	44	20	166	77	48	226	80	52	286	52	29	346	19	0			
47	15	-3	107	45	21	167	77	48	227	80	52	287	51	28	347	18	0			
48	15	-3	108	45	21	168	77	49	228	80	52	288	51	28	348	18	0			
49	16	-3	109	46	22	169	78	49	229	80	52	289	50	27	349	18	0			
50	16	-2	110	47	22	170	78	49	230	79	51	290	49	27	350	17	0			
51	16	-2	111	47	23	171	79	50	231	79	51	291	49	26	351	17	0			
52	17	-2	112	48	23	172	79	50	232	79	51	292	48	26	352	17	-1			
53	17	-2	113	49	24	173	79	50	233	78	51	293	47	25	353	16	-1			
54	17	-1	114	49	24	174	79	50	234	78	50	294	47	25	354	16	-1			
55	18	-1	115	50	25	175	80	51	235	78	50	295	46	24	355	16	-1			
56	18	-1	116	50	25	176	80	51	236	77	50	296	46	23	356	15	-2			
57	18	0	117	51	26	177	80	51	237	77	50	297	45	23	357	15	-2			
58	19	0	118	52	26	178	80	51	238	77	49	298	44	22	358	15	-2			
59	19	0	119	52	27	179	81	52	239	76	49	299	44	22	359	15	-3			
60	19	0	120	53	27	180	81	52	240	76	49	300	43	21	360	14	-3			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: CENTRA
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8249 0.0000 0.8191 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	9.7	15.8	27.5	49.3	65.1	72.3	79.5	77.4	63.5	52.9	30.7	17.1
T-MIN:	-9.4	-4.5	7.5	26.8	38.5	46.8	52.2	48.6	34.7	29.1	13.1	-0.9

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	12	-5	61	19	0	121	53	28	181	81	53	241	76	50	301	42	21	361	13	-4
2	12	-5	62	19	0	122	54	28	182	82	53	242	76	50	302	41	21	362	13	-4
3	11	-5	63	20	0	123	55	29	183	82	54	243	75	49	303	41	20	363	12	-4
4	11	-5	64	20	0	124	55	29	184	82	54	244	75	49	304	40	20	364	12	-4
5	11	-6	65	21	0	125	56	30	185	82	54	245	74	49	305	40	19	365	12	-5
6	11	-6	66	21	0	126	56	31	186	82	54	246	74	48	306	39	19			
7	11	-6	67	21	1	127	57	31	187	83	54	247	73	48	307	38	18			
8	11	-6	68	22	1	128	57	32	188	83	55	248	73	48	308	38	18			
9	10	-6	69	22	2	129	58	32	189	83	55	249	73	47	309	37	17			
10	10	-5	70	23	2	130	59	33	190	83	55	250	72	47	310	36	17			
11	10	-6	71	23	2	131	59	33	191	83	55	251	72	46	311	36	16			
12	10	-6	72	24	3	132	60	34	192	83	55	252	71	46	312	35	15			
13	10	-7	73	24	3	133	61	34	193	83	55	253	71	46	313	35	15			
14	10	-7	74	25	4	134	61	35	194	84	55	254	70	45	314	34	14			
15	10	-7	75	25	4	135	62	35	195	84	55	255	70	45	315	33	14			
16	10	-7	76	26	5	136	62	36	196	84	56	256	69	44	316	33	13			
17	10	-7	77	26	5	137	63	36	197	84	56	257	69	44	317	32	13			
18	10	-7	78	27	5	138	64	37	198	84	56	258	68	44	318	32	12			
19	10	-7	79	28	6	139	64	37	199	84	56	259	68	43	319	31	12			
20	10	-7	80	28	6	140	65	38	200	84	56	260	67	43	320	31	11			
21	10	-7	81	29	7	141	65	38	201	84	56	261	67	42	321	30	11			
22	10	-7	82	29	7	142	66	39	202	84	56	262	66	42	322	29	11			
23	10	-7	83	30	8	143	66	39	203	84	56	263	65	41	323	29	10			
24	10	-7	84	30	8	144	67	40	204	84	56	264	65	41	324	28	9			
25	10	-7	85	31	9	145	67	40	205	84	56	265	64	40	325	28	9			
26	10	-7	86	31	9	146	68	41	206	84	56	266	64	40	326	27	8			
27	10	-7	87	32	10	147	68	41	207	84	56	267	63	39	327	27	8			
28	10	-7	88	33	10	148	69	42	208	84	56	268	63	39	328	26	7			
29	10	-7	89	33	11	149	69	42	209	84	56	269	62	38	329	26	7			
30	10	-7	90	34	11	150	70	43	210	84	56	270	62	38	330	25	6			
31	11	-7	91	34	12	151	70	43	211	84	56	271	61	37	331	25	6			
32	11	-7	92	35	12	152	71	43	212	83	56	272	61	37	332	24	5			
33	11	-7	93	35	13	153	71	44	213	83	56	273	60	36	333	24	5			
34	11	-6	94	36	13	154	72	44	214	83	56	274	59	36	334	23	4			
35	11	-6	95	37	14	155	72	45	215	83	55	275	58	35	335	23	4			
36	11	-6	96	37	14	156	73	45	216	83	55	276	58	35	336	22	3			
37	11	-6	97	38	15	157	73	46	217	83	55	277	57	34	337	22	3			
38	12	-6	98	39	15	158	74	46	218	83	55	278	57	34	338	21	2			
39	12	-6	99	39	16	159	74	47	219	83	55	279	56	33	339	21	2			
40	12	-6	100	40	16	160	75	47	220	83	55	280	55	33	340	20	2			
41	12	-5	101	41	17	161	75	47	221	83	55	281	55	32	341	20	1			
42	13	-5	102	41	17	162	75	48	222	83	55	282	54	32	342	19	1			
43	13	-5	103	42	18	163	76	48	223	83	54	283	54	31	343	19	1			
44	13	-5	104	42	18	164	76	48	224	83	54	284	53	31	344	19	1			
45	13	-5	105	43	19	165	77	49	225	83	54	285	53	30	345	18	0			
46	14	-4	106	44	20	166	77	49	226	83	54	286	52	30	346	18	0			
47	14	-4	107	44	20	167	77	49	227	83	54	287	52	29	347	17	0			
48	14	-4	108	45	21	168	78	50	228	83	53	288	51	29	348	17	0			
49	14	-4	109	46	21	169	78	50	229	83	53	289	50	28	349	17	0			
50	15	-4	110	46	22	170	78	50	230	80	53	290	50	27	350	16	-1			
51	15	-3	111	47	22	171	79	51	231	79	53	291	49	27	351	16	-1			
52	15	-3	112	47	23	172	79	51	232	79	53	292	48	26	352	15	-1			
53	16	-3	113	48	23	173	79	51	233	79	52	293	48	26	353	15	-2			
54	16	-2	114	49	24	174	80	51	234	79	52	294	47	25	354	15	-2			
55	16	-2	115	49	25	175	80	52	235	78	52	295	46	25	355	14	-2			
56	17	-2	116	50	25	176	80	52	236	78	52	296	46	24	356	14	-2			
57	17	-2	117	51	26	177	80	52	237	77	51	297	45	24	357	14	-3			
58	18	-1	118	51	26	178	81	52	238	77	51	298	44	23	358	14	-3			
59	18	-1	119	52	27	179	81	53	239	77	51	299	44	23	359	13	-3			
60	18	-1	120	53	27	180	81	53	240	76	50	300	43	22	360	13	-3			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: EASTCE
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8267 0.0000 0.8175 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	7.7	14.0	25.7	46.2	62.8	70.5	77.4	75.0	63.7	51.1	28.6	14.9
T-MIN:	-11.7	-7.2	4.6	25.0	37.4	46.0	51.6	48.6	39.2	29.1	12.2	-2.7

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	10	-7	61	17	-3	121	51	26	181	79	53	241	74	50	301	40	21	361	11	-6
2	10	-7	62	17	-3	122	52	26	182	79	53	242	73	50	302	39	20	362	11	-6
3	9	-7	63	18	-2	123	52	27	183	80	53	243	73	50	303	39	20	363	10	-6
4	9	-6	64	18	-2	124	53	28	184	80	53	244	73	49	304	38	19	364	10	-6
5	9	-8	65	19	-2	125	54	28	185	80	54	245	72	49	305	38	19	365	10	-7
6	9	-8	66	19	-1	126	54	29	186	80	54	246	72	49	306	37	18			
7	9	-8	67	19	-1	127	55	29	187	80	54	247	71	48	307	36	18			
8	9	-8	68	20	-1	128	55	30	188	81	54	248	71	48	308	36	17			
9	9	-8	69	20	0	129	56	30	189	81	54	249	70	47	309	35	16			
10	8	-9	70	21	0	130	57	31	190	81	54	250	70	47	310	34	16			
11	8	-9	71	21	0	131	57	31	191	81	55	251	69	47	311	34	15			
12	8	-9	72	22	0	132	58	32	192	81	55	252	69	46	312	33	15			
13	8	-9	73	22	1	133	58	33	193	81	55	253	68	46	313	33	14			
14	8	-9	74	23	1	134	59	33	194	81	55	254	68	45	314	32	14			
15	8	-9	75	23	1	135	60	34	195	81	55	255	68	45	315	31	13			
16	8	-9	76	24	2	136	60	34	196	81	55	256	67	45	316	31	13			
17	9	-9	77	24	2	137	61	35	197	82	55	257	66	44	317	30	12			
18	9	-9	78	25	3	138	61	35	198	82	55	258	66	44	318	30	11			
19	8	-9	79	25	3	139	62	36	199	82	56	259	65	43	319	29	11			
20	8	-9	80	26	4	140	62	36	200	82	56	260	65	43	320	29	10			
21	8	-9	81	27	4	141	63	37	201	82	56	261	64	42	321	28	10			
22	8	-9	82	27	5	142	64	37	202	82	56	262	64	42	322	27	9			
23	8	-9	83	28	5	143	64	38	203	82	56	263	63	41	323	27	9			
24	8	-9	84	28	6	144	65	38	204	82	56	264	63	41	324	26	8			
25	8	-9	85	29	6	145	65	39	205	82	56	265	62	41	325	26	8			
26	8	-9	86	29	7	146	66	39	206	82	56	266	62	40	326	25	7			
27	8	-9	87	30	7	147	66	40	207	82	56	267	61	40	327	25	7			
28	8	-9	88	31	8	148	67	40	208	82	56	268	60	39	328	24	6			
29	8	-9	89	31	8	149	67	41	209	81	56	269	60	39	329	24	5			
30	8	-9	90	32	9	150	68	41	210	81	56	270	59	38	330	23	5			
31	9	-9	91	32	9	151	68	42	211	81	56	271	59	38	331	23	5			
32	9	-9	92	33	10	152	69	42	212	81	56	272	58	37	332	22	4			
33	9	-9	93	34	10	153	69	43	213	81	56	273	58	37	333	22	4			
34	9	-9	94	34	11	154	70	43	214	81	56	274	57	36	334	21	3			
35	9	-9	95	35	11	155	70	44	215	81	56	275	56	35	335	21	3			
36	9	-9	96	35	12	156	71	44	216	81	55	276	56	35	336	20	2			
37	9	-9	97	36	12	157	71	44	217	81	55	277	55	34	337	20	2			
38	10	-9	98	37	13	158	72	45	218	80	55	278	55	34	338	19	2			
39	10	-8	99	37	13	159	72	45	219	80	55	279	54	33	339	19	1			
40	10	-8	100	38	14	160	73	46	220	80	55	280	53	33	340	18	1			
41	10	-8	101	38	14	161	73	46	221	80	55	281	53	32	341	18	0			
42	11	-8	102	39	15	162	73	46	222	80	55	282	52	32	342	17	0			
43	11	-8	103	40	15	163	74	47	223	79	55	283	51	31	343	17	0			
44	11	-8	104	40	16	164	74	47	224	79	54	284	51	31	344	17	0			
45	11	-7	105	41	17	165	74	48	225	79	54	285	50	30	345	16	0			
46	12	-7	106	42	17	166	75	48	226	79	54	286	50	29	346	16	-1			
47	12	-7	107	43	18	167	75	48	227	78	54	287	49	29	347	15	-1			
48	12	-7	108	43	18	168	75	49	228	78	54	288	48	28	348	15	-1			
49	12	-7	109	44	19	169	76	49	229	78	53	289	48	28	349	15	-2			
50	13	-6	110	44	20	170	76	49	230	78	53	290	47	27	350	14	-2			
51	13	-6	111	45	20	171	76	50	231	77	53	291	46	27	351	14	-3			
52	13	-6	112	45	21	172	77	50	232	77	53	292	46	26	352	14	-3			
53	14	-6	113	46	21	173	77	50	233	77	53	293	45	26	353	13	-3			
54	14	-5	114	47	22	174	77	51	234	76	52	294	44	25	354	13	-4			
55	14	-5	115	47	22	175	78	51	235	76	52	295	44	24	355	13	-4			
56	15	-5	116	48	23	176	78	51	236	76	52	296	43	24	356	12	-4			
57	15	-4	117	49	24	177	78	52	237	75	51	297	43	23	357	12	-5			
58	16	-4	118	49	24	178	79	52	238	75	51	298	42	23	358	12	-5			
59	16	-4	119	50	25	179	79	52	239	75	51	299	41	22	359	11	-5			
60	16	-3	120	50	25	180	79	52	240	74	51	300	41	22	360	11	-5			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: SOUTHW
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUARES: 0.8281 0.0000 0.6646 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	18.9	23.7	33.6	51.8	65.1	72.0	81.1	79.0	67.5	55.9	36.7	25.5
T-MIN:	-2.6	1.9	12.2	27.1	37.4	45.5	50.2	47.3	36.5	1.4	14.9	4.6

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	21	0	51	27	10	121	56	33	181	71	46	241	76	37	301	47	14	361	22	0
2	22	0	52	27	11	122	57	34	182	71	46	242	76	36	302	46	14	362	21	0
3	22	0	53	27	11	123	58	34	183	71	46	243	75	36	303	46	13	363	21	0
4	22	0	54	28	11	124	58	34	184	71	46	244	75	36	304	45	13	364	21	0
5	22	0	55	28	12	125	59	35	185	72	46	245	75	35	305	45	13	365	21	0
6	22	0	56	28	12	126	59	35	186	72	46	246	74	35	306	44	13			
7	22	0	57	29	12	127	60	35	187	72	46	247	74	35	307	44	12			
8	22	0	58	29	13	128	60	35	188	73	46	248	73	34	308	43	12			
9	22	0	59	30	13	129	61	35	189	73	46	249	73	34	309	43	12			
10	22	0	60	30	13	130	61	36	190	73	46	250	73	34	310	42	11			
11	22	0	61	30	14	131	62	36	191	73	46	251	72	33	311	42	11			
12	22	0	62	31	14	132	62	36	192	74	46	252	72	33	312	41	11			
13	22	0	63	31	14	133	63	37	193	74	46	253	72	33	313	41	10			
14	22	0	64	31	15	134	63	37	194	74	46	254	71	32	314	40	10			
15	22	0	65	32	15	135	64	37	195	74	46	255	71	32	315	40	10			
16	22	0	66	32	15	136	64	38	196	75	46	256	71	32	316	39	9			
17	22	0	67	33	16	137	65	38	197	75	46	257	70	31	317	39	9			
18	22	0	68	33	16	138	65	38	198	75	46	258	70	31	318	38	9			
19	22	0	69	33	16	139	66	39	199	75	46	259	69	30	319	38	8			
20	22	0	70	34	17	140	66	39	200	75	46	260	69	30	320	37	8			
21	22	0	71	34	17	141	67	40	201	75	46	261	68	30	321	37	8			
22	22	0	72	35	17	142	67	40	202	75	46	262	68	29	322	36	7			
23	22	0	73	35	18	143	68	40	203	75	46	263	67	29	323	36	7			
24	22	0	74	35	18	144	68	41	204	75	46	264	67	28	324	35	7			
25	22	0	75	36	18	145	69	41	205	75	46	265	66	28	325	35	6			
26	22	0	76	36	19	146	69	41	206	75	46	266	66	28	326	34	6			
27	22	0	77	36	19	147	70	42	207	75	46	267	65	27	327	34	6			
28	22	0	78	37	19	148	70	42	208	75	46	268	65	27	328	33	5			
29	22	0	79	37	20	149	71	42	209	75	46	269	64	27	329	33	5			
30	22	0	80	38	20	150	71	43	210	75	46	270	64	26	330	32	5			
31	22	0	81	38	20	151	72	43	211	75	46	271	63	26	331	32	4			
32	22	0	82	38	21	152	72	43	212	75	46	272	63	26	332	31	4			
33	22	0	83	39	21	153	73	44	213	75	46	273	62	25	333	31	4			
34	22	0	84	39	21	154	73	44	214	75	46	274	62	25	334	30	3			
35	22	0	85	40	22	155	73	44	215	75	46	275	61	25	335	30	3			
36	22	0	86	40	22	156	74	45	216	75	46	276	61	24	336	29	3			
37	22	0	87	41	22	157	74	45	217	75	46	277	60	24	337	29	2			
38	22	0	88	41	23	158	74	45	218	75	46	278	60	24	338	28	2			
39	22	0	89	41	23	159	75	45	219	75	46	279	59	23	339	28	2			
40	22	0	90	42	23	160	75	46	220	75	46	280	59	23	340	27	2			
41	22	0	91	42	24	161	76	46	221	75	46	281	58	23	341	27	1			
42	22	0	92	43	24	162	76	46	222	75	46	282	58	22	342	26	1			
43	22	0	93	43	24	163	76	46	223	75	46	283	57	22	343	26	1			
44	22	0	94	43	25	164	77	46	224	75	46	284	57	22	344	25	1			
45	22	0	95	44	25	165	77	46	225	75	46	285	56	21	345	25	0			
46	22	0	96	44	25	166	77	46	226	75	46	286	56	21	346	24	0			
47	22	0	97	45	26	167	78	46	227	75	46	287	55	21	347	24	0			
48	22	0	98	45	26	168	78	46	228	75	46	288	55	20	348	23	0			
49	22	0	99	46	26	169	78	46	229	75	46	289	54	20	349	23	0			
50	22	0	100	46	27	170	78	46	230	75	46	290	54	20	350	22	0			
51	22	0	101	47	27	171	78	46	231	75	46	291	53	19	351	22	0			
52	22	0	102	47	27	172	78	46	232	75	46	292	53	19	352	21	0			
53	22	0	103	48	28	173	78	46	233	75	46	293	52	19	353	21	0			
54	22	0	104	48	28	174	78	46	234	75	46	294	52	18	354	20	0			
55	22	0	105	49	28	175	78	46	235	75	46	295	51	18	355	20	0			
56	22	0	106	49	29	176	78	46	236	75	46	296	51	18	356	19	0			
57	22	0	107	50	29	177	78	46	237	75	46	297	50	17	357	19	0			
58	22	0	108	50	29	178	78	46	238	75	46	298	50	17	358	18	0			
59	22	0	109	51	30	179	78	46	239	75	46	299	49	17	359	18	0			
60	22	0	110	51	30	180	78	46	240	76	46	300	49	16	360	17	0			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: SOUTHC
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8293 0.0000 0.8289 0.0000

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	16.7	21.5	31.0	50.9	64.9	72.0	81.0	78.6	67.1	54.5	35.1	23.5
T-MIN:	-3.3	1.0	11.8	27.7	38.8	47.1	52.3	49.5	40.1	30.0	15.4	4.5

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	17	4	61	25	4	121	56	30	181	81	52	241	76	49	301	45	23	361	19	1
2	18	4	62	25	4	122	56	31	182	81	53	242	75	49	302	45	23	362	19	1
3	18	4	63	26	5	123	57	31	183	81	53	243	75	48	303	44	23	363	19	1
4	18	4	64	26	5	124	57	32	184	81	53	244	75	48	304	44	22	364	19	0
5	18	4	65	26	5	125	58	32	185	81	53	245	74	48	305	43	22	365	19	0
6	18	4	66	27	6	126	58	33	186	82	53	246	74	47	306	43	22			
7	18	4	67	27	6	127	59	33	187	82	53	247	73	47	307	43	22			
8	17	4	68	28	7	128	60	34	188	82	53	248	73	47	308	42	21			
9	17	4	69	28	7	129	60	34	189	82	54	249	73	46	309	42	21			
10	17	4	70	29	8	130	61	35	190	82	54	250	72	46	310	42	21			
11	17	4	71	29	8	131	61	35	191	82	54	251	72	46	311	41	20			
12	17	4	72	29	8	132	62	36	192	82	54	252	71	45	312	41	20			
13	17	4	73	30	9	133	62	36	193	82	54	253	71	45	313	41	20			
14	17	4	74	30	9	134	63	36	194	82	54	254	70	45	314	41	19			
15	17	4	75	31	10	135	63	37	195	82	54	255	70	44	315	40	19			
16	17	4	76	31	10	136	64	37	196	82	54	256	70	44	316	40	19			
17	17	4	77	32	11	137	64	38	197	82	54	257	69	44	317	40	19			
18	17	4	78	32	11	138	65	38	198	83	54	258	69	43	318	40	18			
19	17	4	79	33	11	139	65	39	199	83	54	259	68	43	319	39	18			
20	17	4	80	33	11	140	66	39	200	83	54	260	68	43	320	39	18			
21	17	4	81	34	12	141	66	40	201	83	54	261	67	42	321	39	18			
22	17	4	82	34	12	142	67	40	202	83	54	262	67	42	322	38	17			
23	17	4	83	35	13	143	67	40	203	83	54	263	66	42	323	38	17			
24	17	4	84	35	13	144	68	41	204	83	54	264	66	41	324	38	17			
25	17	4	85	36	13	145	68	41	205	83	54	265	65	41	325	37	16			
26	17	4	86	36	14	146	69	42	206	83	54	266	65	40	326	37	16			
27	17	4	87	37	14	147	69	42	207	83	54	267	64	40	327	37	16			
28	17	4	88	37	15	148	70	43	208	83	54	268	64	40	328	36	15			
29	17	4	89	38	15	149	70	43	209	83	54	269	63	39	329	36	15			
30	17	4	90	38	16	150	70	43	210	83	54	270	63	39	330	36	15			
31	17	4	91	39	16	151	71	44	211	82	54	271	62	39	331	35	14			
32	17	4	92	39	17	152	71	44	212	82	54	272	62	38	332	35	14			
33	18	4	93	40	17	153	72	45	213	82	54	273	61	38	333	35	14			
34	18	4	94	40	17	154	72	45	214	82	54	274	61	38	334	34	13			
35	18	4	95	41	18	155	73	45	215	82	54	275	60	37	335	34	13			
36	18	4	96	41	18	156	73	45	216	82	54	276	59	37	336	34	13			
37	18	4	97	42	19	157	74	46	217	82	54	277	59	37	337	33	12			
38	18	4	98	42	19	158	74	46	218	82	54	278	58	36	338	33	12			
39	19	4	99	43	20	159	74	46	219	82	54	279	58	36	339	33	12			
40	19	4	100	43	20	160	75	47	220	82	54	280	57	36	340	32	11			
41	19	4	101	44	21	161	75	47	221	82	53	281	57	35	341	32	11			
42	19	4	102	45	21	162	75	47	222	82	53	282	56	35	342	32	11			
43	19	4	103	45	22	163	76	48	223	82	53	283	56	35	343	31	10			
44	20	4	104	46	22	164	76	48	224	82	53	284	55	34	344	31	10			
45	20	4	105	46	23	165	76	48	225	82	53	285	55	34	345	31	10			
46	20	4	106	47	23	166	77	49	226	82	53	286	54	34	346	30	9			
47	20	4	107	47	24	167	77	49	227	82	53	287	54	33	347	30	9			
48	21	4	108	48	24	168	77	49	228	82	53	288	53	33	348	30	9			
49	21	4	109	48	25	169	78	50	229	82	53	289	53	33	349	29	8			
50	21	4	110	49	25	170	78	50	230	82	52	290	52	32	350	29	8			
51	22	4	111	49	26	171	79	50	231	82	52	291	52	32	351	29	8			
52	22	4	112	50	26	172	79	51	232	82	52	292	51	32	352	28	7			
53	22	4	113	50	27	173	79	51	233	82	52	293	51	31	353	28	7			
54	22	4	114	51	27	174	80	51	234	82	52	294	50	31	354	28	7			
55	23	4	115	51	28	175	80	52	235	82	52	295	50	31	355	27	6			
56	23	4	116	52	28	176	80	52	236	82	52	296	49	30	356	27	6			
57	23	4	117	52	29	177	81	52	237	82	52	297	49	30	357	27	6			
58	24	4	118	53	29	178	81	52	238	82	52	298	48	30	358	26	5			
59	24	4	119	53	30	179	81	52	239	82	52	299	48	29	359	26	5			
60	24	4	120	54	30	180	81	52	240	82	52	300	48	29	360	26	5			

SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN:REGINA-W
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUARES: 0.9262 0.0000 0.9248 0.0000

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	11.8	17.2	28.5	44.8	64.9	72.3	80.2	78.3	66.7	54.0	32.4	19.2
T-MIN:	-7.2	-2.0	9.0	27.0	38.3	47.3	52.7	50.0	40.1	29.5	14.2	1.0

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	14	-3	61	20	1	121	54	29	181	82	53	241	77	50	301	44	22	361	15	-2
2	14	-3	62	21	1	122	54	29	182	82	53	242	76	50	302	43	22	362	15	-2
3	13	-3	63	21	2	123	55	30	183	82	54	243	76	49	303	42	21	363	14	-2
4	13	-3	64	22	2	124	55	30	184	82	54	244	75	49	304	42	21	364	14	-2
5	13	-4	65	22	2	125	56	31	185	82	54	245	75	49	305	41	20	365	14	-3
6	13	-4	66	23	3	126	56	31	186	83	54	246	75	48	306	41	20			
7	13	-4	67	23	3	127	57	32	187	83	54	247	74	48	307	40	19			
8	13	-4	68	24	4	128	57	32	188	83	54	248	74	48	308	39	19			
9	12	-4	69	24	4	129	58	33	189	83	55	249	73	47	309	39	18			
10	12	-4	70	25	4	130	59	34	190	83	55	250	73	47	310	38	18			
11	12	-4	71	25	5	131	60	34	191	83	55	251	72	46	311	38	17			
12	12	-4	72	26	5	132	60	35	192	83	55	252	72	46	312	37	17			
13	12	-4	73	26	5	133	61	35	193	84	55	253	71	46	313	36	16			
14	12	-4	74	26	6	134	62	36	194	84	55	254	71	45	314	36	16			
15	12	-5	75	27	6	135	62	36	195	84	55	255	70	45	315	35	15			
16	12	-5	76	27	6	136	63	37	196	84	55	256	70	45	316	35	15			
17	12	-5	77	28	7	137	63	37	197	84	55	257	69	44	317	34	14			
18	12	-5	78	28	7	138	64	38	198	84	56	258	69	44	318	33	14			
19	12	-5	79	29	8	139	64	38	199	84	56	259	68	44	319	33	13			
20	12	-5	80	29	8	140	65	38	200	84	56	260	68	43	320	32	13			
21	12	-5	81	30	9	141	66	39	201	84	56	261	67	43	321	32	12			
22	12	-5	82	30	9	142	66	39	202	84	56	262	67	43	322	31	12			
23	12	-5	83	31	9	143	67	40	203	84	56	263	66	42	323	31	11			
24	12	-5	84	31	10	144	67	40	204	84	56	264	66	42	324	30	11			
25	12	-5	85	32	10	145	68	41	205	84	56	265	65	42	325	30	10			
26	12	-5	86	32	11	146	68	41	206	84	56	266	65	41	326	29	10			
27	12	-5	87	33	11	147	69	42	207	84	56	267	64	41	327	29	9			
28	12	-5	88	33	12	148	69	42	208	84	56	268	64	41	328	28	9			
29	12	-5	89	34	12	149	70	43	209	84	56	269	63	40	329	28	8			
30	12	-5	90	34	13	150	70	43	210	84	56	270	63	40	330	27	8			
31	12	-5	91	35	13	151	71	43	211	84	56	271	62	40	331	26	7			
32	13	-4	92	36	14	152	71	44	212	84	55	272	62	39	332	26	7			
33	13	-4	93	37	14	153	72	44	213	84	55	273	61	39	333	25	7			
34	13	-4	94	37	15	154	72	45	214	83	55	274	60	38	334	25	6			
35	13	-4	95	38	15	155	73	45	215	83	55	275	60	38	335	24	6			
36	13	-4	96	38	16	156	73	45	216	83	55	276	59	38	336	24	5			
37	13	-4	97	39	16	157	74	46	217	83	55	277	59	37	337	24	5			
38	14	-4	98	40	17	158	74	46	218	83	55	278	58	37	338	23	5			
39	14	-4	99	40	17	159	74	47	219	83	55	279	57	37	339	23	4			
40	14	-4	100	41	18	160	75	47	220	83	55	280	57	36	340	22	4			
41	14	-3	101	41	18	161	75	47	221	82	55	281	56	36	341	22	3			
42	14	-3	102	42	19	162	76	48	222	82	54	282	56	36	342	21	3			
43	14	-3	103	42	19	163	76	48	223	82	54	283	55	35	343	21	3			
44	15	-3	104	43	20	164	77	49	224	82	54	284	54	35	344	21	2			
45	15	-3	105	43	20	165	77	49	225	82	54	285	54	35	345	20	2			
46	15	-3	106	44	21	166	77	49	226	81	54	286	53	34	346	20	2			
47	15	-2	107	44	21	167	77	50	227	81	54	287	52	34	347	19	1			
48	15	-2	108	45	22	168	78	50	228	81	53	288	52	34	348	19	1			
49	15	-2	109	45	22	169	78	50	229	81	53	289	51	33	349	18	1			
50	15	-2	110	46	23	170	79	50	230	81	53	290	50	33	350	18	0			
51	16	-2	111	46	23	171	79	51	231	81	53	291	50	33	351	17	0			
52	16	-2	112	47	24	172	79	51	232	81	52	292	49	32	352	17	0			
53	16	-1	113	47	25	173	80	51	233	81	52	293	48	32	353	17	0			
54	16	-1	114	48	25	174	80	52	234	81	52	294	48	32	354	16	0			
55	16	-1	115	48	26	175	81	52	235	81	52	295	47	31	355	16	0			
56	16	-1	116	49	26	176	81	52	236	81	51	296	47	31	356	15	-1			
57	16	-1	117	49	27	177	81	52	237	81	51	297	46	31	357	15	-1			
58	16	-1	118	50	27	178	81	53	238	81	51	298	45	30	358	15	-1			
59	16	-1	119	50	28	179	81	53	239	81	51	299	45	30	359	15	-1			
60	16	-1	120	51	28	180	81	53	240	77	50	300	44	29	360	15	-2			

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SIMULATED DAILY TEMPERATURES FOR: SASKATCHEWAN: SOUTHE
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.9278 0.0000 0.9231 0.0000

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	10.8	15.2	27.7	44.0	63.3	71.4	79.0	76.5	63.1	52.9	30.4	18.0
T-MIN:	-8.1	-4.0	7.9	26.6	38.1	47.3	52.9	50.0	39.7	29.8	13.8	0.3

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	13	-4	61	19	0	121	53	28	181	80	53	241	75	50	301	42	22	361	14	-3
2	13	-4	62	20	0	122	53	29	182	80	53	242	75	50	302	42	22	362	14	-3
3	13	-4	63	20	0	123	54	29	183	80	54	243	74	50	303	41	21	363	13	-3
4	12	-4	64	21	1	124	54	30	184	81	54	244	74	49	304	40	21	364	13	-3
5	12	-5	65	21	1	125	55	30	185	81	54	245	73	49	305	40	20	365	13	-3
6	12	-5	66	22	1	126	55	31	186	81	54	246	73	49	306	39	20			
7	12	-5	67	22	2	127	56	31	187	81	54	247	73	48	307	39	19			
8	12	-5	68	23	2	128	56	32	188	81	55	248	72	48	308	38	19			
9	11	-5	69	23	2	129	57	32	189	82	55	249	72	48	309	38	18			
10	11	-5	70	24	3	130	57	33	190	82	55	250	71	47	310	37	18			
11	11	-5	71	24	3	131	58	33	191	82	55	251	71	47	311	37	17			
12	11	-5	72	24	4	132	58	34	192	82	55	252	70	46	312	36	17			
13	11	-5	73	25	4	133	59	34	193	82	55	253	70	46	313	35	16			
14	11	-5	74	25	5	134	59	35	194	82	55	254	69	46	314	35	16			
15	11	-5	75	26	5	135	60	35	195	82	55	255	69	45	315	34	15			
16	11	-5	76	26	6	136	61	36	196	82	55	256	68	45	316	34	15			
17	11	-5	77	27	6	137	62	37	197	82	55	257	68	44	317	33	14			
18	11	-5	78	27	7	138	63	37	198	82	56	258	67	44	318	33	14			
19	11	-6	79	28	7	139	63	38	199	82	56	259	67	44	319	32	13			
20	11	-6	80	28	7	140	64	38	200	82	56	260	66	43	320	32	13			
21	11	-6	81	29	8	141	64	38	201	82	56	261	66	43	321	31	12			
22	11	-6	82	29	8	142	65	39	202	82	56	262	65	42	322	31	12			
23	11	-6	83	30	9	143	65	39	203	82	56	263	65	42	323	30	11			
24	11	-6	84	30	9	144	66	40	204	82	56	264	64	41	324	30	11			
25	11	-6	85	31	10	145	66	40	205	82	56	265	64	41	325	29	10			
26	11	-6	86	31	10	146	67	41	206	82	56	266	63	40	326	28	10			
27	11	-6	87	32	11	147	67	41	207	82	56	267	63	40	327	28	9			
28	11	-6	88	33	11	148	68	42	208	82	56	268	62	39	328	27	9			
29	11	-6	89	33	12	149	68	42	209	82	56	269	62	39	329	27	8			
30	11	-6	90	34	12	150	69	43	210	82	56	270	61	38	330	26	8			
31	11	-6	91	34	12	151	69	43	211	82	56	271	60	38	331	25	7			
32	12	-5	92	35	13	152	70	44	212	82	56	272	60	37	332	25	7			
33	12	-5	93	35	13	153	70	44	213	82	56	273	59	37	333	24	6			
34	12	-5	94	36	14	154	71	44	214	82	56	274	59	36	334	24	6			
35	12	-5	95	37	14	155	71	45	215	82	56	275	58	36	335	23	5			
36	12	-5	96	37	15	156	72	45	216	82	56	276	57	35	336	23	5			
37	12	-5	97	38	15	157	72	46	217	81	55	277	57	35	337	22	4			
38	12	-5	98	38	16	158	73	46	218	81	55	278	56	34	338	22	4			
39	13	-5	99	39	16	159	73	47	219	81	55	279	55	34	339	21	3			
40	13	-5	100	39	17	160	73	47	220	81	55	280	55	33	340	21	3			
41	13	-4	101	40	17	161	74	47	221	81	55	281	55	33	341	21	2			
42	13	-4	102	41	18	162	74	48	222	81	55	282	54	32	342	20	2			
43	14	-4	103	41	18	163	74	48	223	80	55	283	53	32	343	20	1			
44	14	-4	104	42	19	164	75	48	224	80	54	284	53	31	344	19	1			
45	14	-4	105	43	20	165	75	49	225	80	54	285	52	31	345	19	0			
46	14	-3	106	43	20	166	75	49	226	80	54	286	51	30	346	18	0			
47	15	-3	107	44	21	167	76	49	227	79	54	287	51	30	347	18	-1			
48	15	-3	108	44	21	168	76	50	228	79	54	288	50	29	348	17	-1			
49	15	-3	109	45	22	169	77	50	229	79	53	289	50	29	349	17	-2			
50	15	-3	110	45	22	170	77	50	230	79	53	290	49	28	350	17	-2			
51	16	-3	111	46	23	171	77	51	231	78	53	291	49	28	351	16	-3			
52	16	-2	112	46	23	172	78	51	232	78	53	292	48	27	352	16	-3			
53	16	-2	113	47	24	173	78	51	233	78	53	293	48	27	353	15	-4			
54	17	-1	114	47	24	174	78	52	234	77	52	294	47	26	354	15	-4			
55	17	-1	115	48	25	175	79	52	235	77	52	295	47	26	355	14	-4			
56	17	-1	116	48	25	176	79	52	236	77	52	296	46	25	356	14	-4			
57	18	0	117	49	26	177	79	52	237	76	51	297	46	25	357	13	-4			
58	18	0	118	49	26	178	80	53	238	76	51	298	45	24	358	13	-4			
59	19	0	119	50	27	179	80	53	239	76	51	299	45	24	359	12	-5			
60	19	0	120	50	27	180	80	53	240	75	51	300	44	23	360	12	-5			

SIMULATED DAILY TEMPERATURES FOR: ALBERTA: NORTHERN
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUARED'S: 0.8165 0.0001 0.8133 0.0002

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	9.1	17.9	29.3	47.1	61.5	67.6	71.1	69.6	60.1	48.4	27.7	14.4
T-MIN:	-10.3	-3.4	6.6	24.6	36.7	43.5	47.8	45.3	37.2	28.2	10.8	-3.5

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	11	-6	61	19	-1	121	52	26	181	76	51	241	69	47	301	37	19	361	12	-5
2	11	-7	62	20	-1	122	52	27	182	76	51	242	69	47	302	37	18	362	11	-6
3	10	-7	63	20	-1	123	53	27	183	77	51	243	68	46	303	36	18	363	11	-6
4	10	-7	64	20	0	124	53	28	184	77	51	244	68	46	304	35	17	364	11	-6
5	10	-7	65	21	0	125	54	28	185	77	51	245	68	46	305	35	17	365	11	-6
6	10	-7	66	21	0	126	54	29	186	77	52	246	67	45	306	34	16			
7	10	-7	67	22	0	127	55	29	187	77	52	247	67	45	307	34	16			
8	10	-7	68	22	0	128	55	30	188	77	52	248	66	45	308	33	15			
9	10	-8	69	23	1	129	56	31	189	77	52	249	66	44	309	33	15			
10	10	-8	70	23	1	130	57	31	190	77	52	250	65	44	310	32	14			
11	10	-8	71	24	1	131	57	32	191	77	52	251	65	44	311	32	14			
12	10	-8	72	24	2	132	58	32	192	78	52	252	64	43	312	31	13			
13	10	-8	73	25	2	133	58	33	193	78	53	253	64	43	313	30	13			
14	10	-8	74	25	3	134	59	33	194	78	53	254	63	42	314	30	12			
15	9	-8	75	26	3	135	59	34	195	78	53	255	63	42	315	29	12			
16	9	-8	76	26	3	136	60	34	196	78	53	256	62	41	316	29	11			
17	9	-8	77	27	4	137	60	35	197	78	53	257	62	41	317	28	11			
18	9	-8	78	27	4	138	61	35	198	78	53	258	62	41	318	28	10			
19	10	-8	79	28	5	139	61	36	199	78	53	259	61	40	319	27	10			
20	10	-8	80	28	5	140	62	36	200	78	53	260	61	40	320	27	9			
21	10	-8	81	29	6	141	62	36	201	78	53	261	60	39	321	26	9			
22	10	-8	82	29	6	142	63	37	202	78	53	262	59	39	322	26	8			
23	10	-8	83	30	7	143	63	37	203	78	53	263	59	38	323	25	8			
24	10	-8	84	30	7	144	64	38	204	78	53	264	58	38	324	25	7			
25	10	-8	85	31	8	145	64	38	205	78	53	265	58	37	325	24	7			
26	10	-8	86	31	8	146	65	39	206	78	53	266	57	37	326	24	6			
27	10	-8	87	32	9	147	65	39	207	77	53	267	57	37	327	23	6			
28	10	-8	88	32	9	148	66	40	208	77	53	268	56	36	328	23	5			
29	10	-8	89	33	9	149	66	40	209	77	53	269	56	36	329	22	5			
30	10	-8	90	34	10	150	66	41	210	77	53	270	55	35	330	22	4			
31	11	-8	91	34	10	151	67	41	211	77	53	271	55	35	331	21	4			
32	11	-8	92	35	11	152	67	41	212	77	53	272	54	34	332	21	4			
33	11	-8	93	35	11	153	68	42	213	77	53	273	53	34	333	21	3			
34	11	-8	94	36	12	154	68	42	214	77	53	274	53	33	334	20	3			
35	11	-7	95	36	13	155	69	43	215	76	53	275	52	33	335	20	2			
36	11	-7	96	37	13	156	69	43	216	76	52	276	52	32	336	19	2			
37	12	-7	97	38	14	157	69	43	217	76	52	277	51	32	337	19	1			
38	12	-7	98	38	14	158	70	44	218	76	52	278	51	31	338	18	1			
39	12	-7	99	39	15	159	70	44	219	76	52	279	50	31	339	18	0			
40	12	-7	100	39	15	160	70	45	220	76	52	280	49	30	340	18	0			
41	13	-7	101	40	16	161	71	45	221	75	52	281	49	30	341	17	0			
42	13	-6	102	40	16	162	71	45	222	75	52	282	48	29	342	17	0			
43	13	-6	103	41	17	163	72	46	223	75	52	283	48	29	343	17	0			
44	13	-6	104	42	17	164	72	46	224	75	51	284	47	28	344	16	0			
45	14	-6	105	42	18	165	72	46	225	74	51	285	47	27	345	16	-1			
46	14	-6	106	43	18	166	73	47	226	74	51	286	46	27	346	15	-1			
47	14	-5	107	43	19	167	73	47	227	74	51	287	45	26	347	15	-1			
48	14	-5	108	44	19	168	73	47	228	74	51	288	45	26	348	15	-2			
49	15	-5	109	45	20	169	73	48	229	73	50	289	44	25	349	15	-2			
50	15	-5	110	45	20	170	74	48	230	73	50	290	44	25	350	14	-2			
51	15	-4	111	46	21	171	74	48	231	73	50	291	43	24	351	14	-3			
52	16	-4	112	46	22	172	74	49	232	72	50	292	42	24	352	14	-3			
53	16	-4	113	47	22	173	74	49	233	72	49	293	42	23	353	13	-3			
54	16	-4	114	47	23	174	75	49	234	72	49	294	41	23	354	13	-4			
55	17	-3	115	48	23	175	75	49	235	71	49	295	41	22	355	13	-4			
56	17	-3	116	49	24	176	75	50	236	71	49	296	40	22	356	13	-4			
57	18	-3	117	49	24	177	75	50	237	71	48	297	40	21	357	12	-4			
58	18	-2	118	50	25	178	76	50	238	70	48	298	39	20	358	12	-5			
59	18	-2	119	50	25	179	76	50	239	70	48	299	38	20	359	12	-5			
60	19	-2	120	51	26	180	76	51	240	70	47	300	38	19	360	12	-5			

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SIMULATED DAILY TEMPERATURES FOR: ALBERTA: CENTRAL
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE R-SQUAREDS: 0.8205 0.0001 0.5183 0.0001

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	12.4	20.3	30.6	44.6	62.2	69.2	73.6	70.7	61.3	50.4	30.6	18.0
T-MIN:	-7.6	-2.0	8.1	25.5	36.7	43.5	48.4	45.7	37.4	28.0	12.7	-0.6

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	14	-4	61	22		121	53	27	181	77	50	241	70	47	301	40	20	361	15	-3
2	14	-4	62	22		122	53	28	182	77	50	242	70	46	302	39	20	362		
3	14	-4	63	23		123	54	28	183	77	50	243	70	46	303	39	19	363		
4	14	-4	64	23		124	54	29	184	77	51	244	69	46	304	38	19	364		
5	14	-4	65	23		125	55	29	185	77	51	245	69	45	305	38	19	365	14	-3
6	14	-4	66	24		126	55	30	186	77	51	246	68	45	306	37	18			
7	13	-4	67	24		127	56	30	187	77	51	247	68	45	307	37	17			
8	13	-5	68	25		128	56	31	188	77	51	248	67	44	308	36	17			
9	13	-5	69	25		129	57	31	189	78	52	249	67	44	309	35	16			
10	13	-5	70	26		130	57	32	190	78	52	250	67	44	310	35	16			
11	13	-5	71	26		131	58	32	191	78	52	251	66	43	311	34	15			
12	13	-5	72	26		132	58	33	192	78	52	252	66	43	312	34	15			
13	13	-5	73	27		133	59	33	193	78	52	253	66	43	313	33	14			
14	13	-5	74	27		134	59	34	194	78	52	254	65	42	314	33	14			
15	13	-5	75	28		135	60	34	195	78	52	255	65	42	315	32	13			
16	13	-5	76	28		136	60	35	196	78	52	256	64	42	316	32	13			
17	13	-5	77	29		137	61	35	197	78	52	257	64	41	317	31	12			
18	13	-5	78	29		138	61	36	198	78	52	258	64	41	318	31	12			
19	13	-5	79	30		139	62	36	199	78	52	259	63	41	319	30	11			
20	13	-5	80	30		140	62	37	200	78	52	260	63	40	320	30	11			
21	13	-5	81	31		141	63	37	201	78	52	261	62	40	321	29	10			
22	13	-5	82	31		142	63	37	202	78	52	262	62	39	322	29	10			
23	13	-5	83	32		143	64	38	203	78	52	263	61	39	323	28	9			
24	13	-5	84	32		144	64	38	204	78	52	264	61	39	324	28	9			
25	13	-5	85	33		145	65	39	205	78	52	265	60	38	325	27	8			
26	13	-5	86	33		146	65	39	206	78	52	266	59	38	326	27	7			
27	13	-5	87	34		147	66	40	207	78	52	267	59	37	327	27	7			
28	13	-5	88	34		148	66	40	208	78	52	268	58	37	328	26	7			
29	13	-5	89	35		149	67	41	209	78	52	269	58	36	329	26	6			
30	13	-5	90	35		150	67	41	210	78	52	270	57	36	330	25	5			
31	13	-5	91	36		151	67	42	211	78	52	271	57	35	331	25	5			
32	13	-5	92	36		152	68	42	212	77	52	272	56	35	332	24	4			
33	13	-5	93	37		153	68	43	213	77	52	273	55	34	333	24	4			
34	13	-5	94	37		154	69	43	214	77	52	274	55	34	334	23	3			
35	13	-5	95	38		155	69	44	215	77	52	275	54	33	335	23	3			
36	13	-5	96	38		156	69	44	216	77	52	276	54	33	336	22	2			
37	14	-4	97	39		157	70	45	217	77	52	277	53	32	337	22	2			
38	14	-4	98	39		158	70	45	218	77	52	278	53	32	338	21	1			
39	14	-4	99	40		159	71	46	219	77	52	279	52	31	339	21	1			
40	14	-4	100	40		160	71	46	220	77	52	280	52	31	340	20	0			
41	14	-4	101	41		161	71	47	221	76	51	281	51	30	341	20	0			
42	14	-4	102	41		162	72	47	222	76	51	282	51	30	342	19	0			
43	14	-4	103	42		163	72	48	223	76	51	283	50	29	343	19	0			
44	14	-4	104	42		164	72	48	224	76	51	284	50	29	344	18	0			
45	14	-4	105	43		165	73	49	225	76	51	285	49	28	345	18	0			
46	14	-4	106	43		166	73	49	226	76	51	286	49	28	346	17	0			
47	14	-4	107	44		167	73	50	227	76	51	287	48	27	347	17	0			
48	14	-4	108	44		168	74	50	228	76	51	288	48	27	348	16	0			
49	14	-4	109	45		169	74	51	229	76	51	289	47	26	349	16	0			
50	14	-4	110	45		170	74	51	230	75	51	290	47	26	350	15	0			
51	14	-4	111	46		171	75	52	231	75	51	291	46	25	351	15	0			
52	14	-4	112	46		172	75	52	232	75	51	292	46	25	352	14	0			
53	14	-4	113	47		173	75	53	233	75	51	293	45	24	353	14	0			
54	14	-4	114	47		174	75	53	234	75	51	294	45	24	354	13	0			
55	14	-4	115	48		175	75	54	235	74	51	295	44	23	355	13	0			
56	14	-4	116	48		176	75	54	236	74	51	296	44	23	356	12	0			
57	14	-4	117	49		177	75	55	237	74	51	297	43	22	357	12	0			
58	14	-4	118	49		178	75	55	238	74	51	298	43	22	358	11	0			
59	14	-4	119	50		179	75	56	239	74	51	299	42	21	359	11	0			
60	14	-4	120	50		180	75	56	240	74	51	300	42	21	360	10	0			

SIMULATED DAILY TEMPERATURES FOR: ALBERTA: SOUTHERN
BASED UPON 1ST AND 2ND HARMONICS OF MONTHLY NORMALS:

RESPECTIVE C-SQUARES: 0.4275 0.0000 0.8249 0.0000

	J	F	M	A	M	J	J	A	S	O	N	D
T-MAX:	21.2	27.1	34.9	50.5	62.6	68.5	78.5	74.1	64.9	54.1	37.0	27.0
T-MIN:	0.5	5.0	13.1	26.8	36.7	43.5	48.0	45.5	37.9	29.5	16.5	7.0

DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN	DAY	TX	TN
1	23	3	61	29	7	121	55	29	181	76	48	241	72	45	301	45	23	361	24	4
2	23	3	62	29	7	122	56	30	182	77	48	242	71	45	302	45	23	362	24	4
3	23	3	63	29	8	123	56	30	183	77	48	243	71	45	303	45	23	363	23	4
4	23	3	64	30	8	124	57	31	184	77	49	244	71	44	304	44	23	364	23	3
5	23	3	65	30	8	125	57	31	185	77	49	245	70	44	305	44	23	365	23	3
6	23	3	66	31	8	126	58	31	186	77	49	246	70	44	306	43	23			
7	23	3	67	31	8	127	58	32	187	77	49	247	70	44	307	43	23			
8	23	3	68	31	8	128	59	32	188	77	49	248	69	43	308	42	23			
9	23	3	69	32	8	129	59	33	189	77	49	249	69	43	309	42	23			
10	23	3	70	32	9	130	59	33	190	78	49	250	69	43	310	41	23			
11	23	3	71	32	9	131	60	33	191	78	49	251	68	42	311	41	19			
12	23	3	72	33	9	132	60	34	192	78	50	252	68	42	312	40	19			
13	23	3	73	33	9	133	61	34	193	78	50	253	68	42	313	40	18			
14	23	3	74	34	10	134	61	35	194	78	50	254	67	41	314	40	18			
15	23	3	75	34	10	135	62	35	195	78	50	255	67	41	315	39	17			
16	23	3	76	34	10	136	62	35	196	78	50	256	66	41	316	39	17			
17	22	3	77	35	10	137	63	36	197	78	50	257	66	40	317	38	17			
18	22	3	78	35	10	138	63	36	198	78	50	258	66	40	318	38	17			
19	22	3	79	35	11	139	63	36	199	78	50	259	65	40	319	37	16			
20	22	3	80	36	11	140	64	37	200	78	50	260	65	40	320	37	16			
21	22	3	81	36	11	141	64	37	201	78	50	261	64	39	321	36	16			
22	22	3	82	37	11	142	65	38	202	78	50	262	64	39	322	36	15			
23	22	3	83	37	12	143	65	38	203	78	50	263	64	38	323	35	15			
24	22	3	84	38	12	144	66	39	204	78	50	264	63	38	324	35	14			
25	22	3	85	38	12	145	66	39	205	78	50	265	63	38	325	34	14			
26	22	3	86	39	12	146	66	39	206	78	50	266	62	37	326	34	14			
27	22	3	87	39	13	147	67	40	207	78	50	267	62	37	327	33	13			
28	22	3	88	40	13	148	67	40	208	78	50	268	61	37	328	33	13			
29	22	3	89	40	13	149	67	40	209	78	50	269	61	36	329	32	13			
30	22	3	90	40	13	150	68	40	210	78	50	270	60	36	330	32	12			
31	22	3	91	41	14	151	68	41	211	78	50	271	60	36	331	31	12			
32	22	3	92	41	14	152	69	41	212	78	50	272	60	35	332	31	12			
33	22	3	93	42	14	153	69	41	213	77	50	273	59	35	333	30	11			
34	22	3	94	42	14	154	69	42	214	77	50	274	59	34	334	30	11			
35	22	3	95	43	15	155	70	42	215	77	50	275	58	34	335	29	11			
36	22	3	96	43	15	156	70	42	216	77	49	276	58	34	336	29	10			
37	22	3	97	44	15	157	70	43	217	77	49	277	57	33	337	28	10			
38	23	3	98	44	15	158	71	43	218	77	49	278	57	33	338	28	10			
39	23	3	99	45	16	159	71	43	219	77	49	279	56	33	339	27	9			
40	23	3	100	45	16	160	71	43	220	77	49	280	56	32	340	27	9			
41	24	3	101	45	16	161	72	44	221	76	49	281	55	32	341	26	9			
42	24	3	102	46	16	162	72	44	222	76	49	282	55	31	342	26	8			
43	24	3	103	46	17	163	72	44	223	76	49	283	54	31	343	25	8			
44	24	3	104	47	17	164	73	45	224	76	49	284	54	31	344	25	8			
45	24	3	105	47	17	165	73	45	225	75	49	285	53	30	345	24	7			
46	25	4	106	47	17	166	73	45	226	75	48	286	53	30	346	24	7			
47	25	4	107	48	18	167	73	45	227	75	48	287	52	29	347	23	7			
48	25	4	108	48	18	168	74	46	228	75	48	288	52	29	348	23	7			
49	25	4	109	49	18	169	74	46	229	75	48	289	51	29	349	22	7			
50	26	5	110	49	18	170	74	46	230	75	48	290	51	28	350	22	6			
51	26	5	111	50	19	171	74	46	231	74	47	291	50	28	351	21	6			
52	26	5	112	50	19	172	75	47	232	74	47	292	50	27	352	21	6			
53	26	5	113	51	19	173	75	47	233	74	47	293	49	27	353	20	6			
54	27	5	114	51	19	174	75	47	234	74	47	294	49	27	354	20	5			
55	27	5	115	52	20	175	75	47	235	73	47	295	48	26	355	19	5			
56	27	5	116	52	20	176	75	47	236	73	46	296	48	26	356	19	5			
57	28	6	117	53	20	177	75	47	237	73	46	297	47	25	357	18	5			
58	28	6	118	53	20	178	76	48	238	73	46	298	47	25	358	18	4			
59	28	6	119	54	21	179	76	48	239	72	46	299	47	24	359	17	4			
60	29	7	120	55	21	180	76	48	240	72	45	300	46	24	360	17	4			

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APPENDIX C

PHENOLOGY MODEL OUTPUT FOR SPRING WHEAT

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: ALBERTA SOUTH
LATITUDE: 51.00

OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.5 62.6 68.5 76.5 74.1 64.0 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.8 36.7 43.5 48.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.6 34.3 48.2 62.5 73.4 78.0 75.1 65.4 51.5 37.2 26.3
NORMAL MIN: 1.9 3.8 11.7 23.3 35.7 45.4 49.8 47.9 40.0 28.3 16.0 6.3

P	E	J	M	S	R
85	120	155	184	206	221
86	120	155	184	206	221
87	120	155	184	206	221
88	120	155	184	206	221
89	120	155	184	206	221
90	120	155	184	206	221
91	120	155	184	206	221
92	120	155	184	206	221
93	120	155	184	206	221
94	120	155	184	206	221
95	120	155	184	206	221
96	120	155	184	206	221
97	120	155	184	206	221
98	120	155	184	206	221
99	120	155	184	206	221
100	120	155	184	206	221
101	120	155	184	207	221
102	120	155	184	207	221
103	120	155	184	207	221
104	121	155	184	207	221
105	121	156	185	207	221
106	121	156	185	207	221
107	122	156	185	207	221
108	122	156	185	207	222
109	123	156	185	207	222
110	123	156	185	207	222
111	124	157	185	207	222
112	124	157	185	208	222
113	125	157	185	208	222
114	126	157	186	208	222

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: ALBERTA SOUTH
LATITUDE: 51.00
OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.5 62.6 68.5 76.5 74.1 64.0 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.8 36.7 43.5 46.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.6 34.3 44.2 62.5 73.4 78.0 75.1 63.4 51.5 37.2 26.3
NORMAL MIN: 1.9 3.8 11.7 23.3 35.7 45.4 49.8 47.9 40.0 28.3 16.0 6.3

P	E	J	M	S	R
115	126	158	186	208	223
116	127	158	186	208	223
117	128	158	186	209	223
118	129	159	186	209	223
119	129	159	187	209	224
120	130	159	187	209	224
121	131	160	187	210	224
122	132	160	188	210	224
123	133	161	188	210	225
124	134	161	188	211	225
125	134	161	188	211	226
126	135	162	189	211	226
127	136	162	189	212	226
128	137	163	190	212	227
129	138	164	190	213	227
130	139	164	190	213	228
131	140	165	191	214	228
132	141	165	191	214	229
133	142	166	192	215	229
134	142	167	192	215	230
135	143	167	193	216	230
136	144	168	193	216	231
137	145	169	194	217	232
138	146	169	194	218	232
139	147	170	195	218	233
140	148	171	196	219	234
141	149	171	196	220	235
142	150	172	197	221	236
143	151	173	198	221	236
144	152	174	198	222	237

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: ALBERTA SOUTH
LATITUDE: 51.00

OBSERVED													
NORMAL MAX:	21.2	27.1	34.9	50.5	62.6	68.5	76.5	74.1	64.6	54.1	37.0	27.0	
NORMAL MIN:	0.5	5.0	13.1	26.8	36.7	43.5	48.0	45.5	37.9	29.5	16.5	7.0	
ESTIMATED													
NORMAL MAX:	21.7	24.6	34.3	48.2	62.5	73.4	78.0	75.1	65.4	51.5	37.2	26.3	
NORMAL MIN:	1.9	3.8	11.7	23.3	35.7	45.4	49.8	47.9	40.0	28.3	16.0	6.3	

P	E	J	H	S	R
145	153	174	199	223	238
146	154	175	200	224	239
147	155	176	200	225	240
148	156	177	201	226	242
149	157	178	202	227	243
150	158	179	203	228	244
151	159	180	204	229	245
152	160	180	204	230	247
153	161	181	205	231	248
154	162	182	206	233	250
155	163	183	207	234	252
156	164	184	208	235	254
157	165	185	209	237	256
158	166	186	210	238	258
159	167	187	211	240	261
160	168	188	212	241	264
161	169	188	213	243	268
162	170	189	214	245	272
163	171	190	214	247	277
164	172	191	215	249	283
165	173	192	216	251	290
166	174	193	217	253	299
167	175	194	218	256	96
168	175	195	220	260	113
169	176	196	221	265	125
170	177	197	222	273	137
171	178	197	223	107	161
172	179	198	224	113	162
173	180	199	226	117	163
174	181	200	227	121	164

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMIS MODEL

LOCATION: ALBERTA SOUTH LETHBRIDGE
LATITUDE: 49.70
OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.5 62.0 68.5 76.5 74.1 64.0 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.6 36.7 43.5 48.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 29.0 34.3 48.2 62.5 73.4 78.0 75.1 63.4 51.5 37.2 26.3
NORMAL MIN: 1.9 3.8 11.7 23.3 35.7 45.4 49.6 47.9 40.0 28.3 16.0 8.3

P	E	J	M	S	M
95	129	156	185	208	222
96	129	156	185	208	222
97	129	156	185	208	222
98	129	156	185	208	222
99	129	156	185	208	222
100	129	156	185	208	222
101	129	156	185	208	222
102	129	156	185	208	222
103	129	156	185	208	222
104	129	156	185	208	222
105	129	156	185	208	222
106	129	156	185	208	222
107	129	156	185	208	222
108	129	157	186	208	222
109	129	157	186	208	222
110	129	157	186	208	222
111	129	157	186	208	222
112	129	157	186	208	222
113	129	157	186	208	222
114	129	157	186	208	222
115	129	158	187	208	222
116	129	158	187	208	222
117	129	158	187	208	222
118	129	158	187	208	222
119	129	158	187	208	222
120	129	158	187	208	222
121	131	160	188	211	223
122	132	161	188	212	223
123	133	161	189	212	223
124	134	162	189	212	223

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: ALBERTA SOUTH LETHBRIDGE
LATITUDE: 49.70

OBSERVED													
NORMAL MAX:	21.2	27.1	34.9	50.5	62.6	68.5	76.5	74.1	64.6	54.1	37.0	27.0	
NORMAL MIN:	0.5	5.0	13.1	26.8	36.7	43.5	48.0	45.5	37.9	29.5	16.5	7.0	
ESTIMATED													
NORMAL MAX:	21.7	24.6	34.3	48.2	62.5	73.4	78.0	75.1	65.4	51.5	37.2	20.3	
NORMAL MIN:	1.9	3.8	11.7	23.3	35.7	45.4	49.8	47.9	40.0	28.3	16.0	6.3	

P	E	J	M	S	R
125	134	182	189	213	227
126	135	183	190	213	227
127	136	183	190	213	226
128	137	184	191	214	228
129	138	184	191	214	229
130	139	185	191	215	229
131	140	185	192	215	230
132	141	186	192	216	230
133	142	187	193	216	231
134	142	187	193	217	231
135	143	188	194	217	232
136	144	188	194	218	233
137	145	189	195	219	233
138	146	190	195	219	234
139	147	191	196	220	235
140	148	191	197	221	236
141	149	192	197	222	237
142	150	193	198	222	237
143	151	194	199	223	238
144	152	194	199	224	239
145	153	195	200	225	240
146	154	196	201	226	242
147	155	197	201	227	243
148	156	198	202	228	244
149	157	199	203	229	245
150	158	199	204	230	247
151	159	200	205	231	248
152	160	201	205	233	250
153	161	202	206	234	251
154	162	203	207	235	253

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMTS MODEL

LOCATION: ALBERTA SOUTH LACOMBE
LATITUDE: 52.50
OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.5 62.6 68.5 76.5 74.1 64.6 54.1 37.9 27.0
NORMAL MIN: 0.5 5.0 13.1 26.8 36.7 43.5 48.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.6 34.3 48.2 62.5 73.4 78.0 75.1 65.4 51.5 37.2 26.3
NORMAL MIN: 1.9 3.8 11.7 23.3 35.7 45.4 49.8 47.9 40.0 28.3 16.0 6.3

P	E	J	M	S	R
100	120	154	183	205	220
101	120	154	183	205	220
102	120	154	183	205	220
103	120	155	183	205	220
104	121	155	183	205	220
105	121	155	183	205	220
106	121	155	184	205	220
107	122	155	184	205	220
108	122	155	184	205	220
109	123	155	184	205	220
110	123	156	184	205	220
111	124	156	184	206	221
112	124	156	184	206	221
113	125	156	184	206	221
114	126	156	185	206	221
115	126	157	185	206	221
116	127	157	185	207	221
117	128	157	185	207	222
118	129	158	185	207	222
119	129	158	186	207	222
120	130	158	186	208	222
121	131	159	186	208	223
122	132	159	186	208	223
123	133	159	187	208	223
124	134	160	187	209	224
125	134	161	187	209	224
126	135	161	188	210	224
127	136	162	188	210	225
128	137	162	189	210	225
129	138	163	189	211	226

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMIS MODEL

LOCATION: ALBERTA SOUTH LACOMBE
LATITUDE: 52.50
OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.5 62.6 68.5 76.5 74.1 64.6 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.8 36.7 43.5 48.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.6 34.3 48.2 62.5 73.4 78.0 75.1 65.4 51.5 37.2 20.3
NORMAL MIN: 1.9 3.8 11.7 23.3 35.7 45.4 49.8 47.9 40.0 28.3 16.0 6.3

P	E	J	M	S	R
130	139	163	189	211	226
131	140	164	190	212	227
132	141	165	190	212	227
133	142	165	191	213	228
134	142	166	191	213	228
135	143	166	192	214	229
136	144	167	192	214	229
137	145	168	193	215	230
138	146	168	193	216	231
139	147	169	194	216	231
140	148	170	195	217	232
141	149	171	195	218	233
142	150	171	196	218	234
143	151	172	196	219	234
144	152	173	197	220	235
145	153	174	198	221	236
146	154	175	199	222	237
147	155	175	199	223	238
148	156	176	200	224	239
149	157	177	201	225	240
150	158	178	202	226	241
151	159	179	202	227	243
152	160	180	203	228	244
153	161	181	204	229	245
154	162	181	205	230	247
155	163	182	206	231	248
156	164	183	207	232	250
157	165	184	208	234	252
158	166	185	208	235	253
159	167	186	209	236	255

CROP STAGE JULIAN DATES FOR CROP: SA DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMIS MODEL

LOCATION: ALBERTA CENTRAL
LATITUDE: 56.00
OBSERVED
NORMAL MAX: 12.4 20.3 30.6 48.0 62.2 68.2 73.6 70.7 61.3 50.4 30.0 16.0
NORMAL MIN: -7.6 -2.0 6.1 25.5 36.7 43.5 48.4 45.7 37.4 28.0 12.7 -0.6
ESTIMATE)
NORMAL MAX: 12.9 10.8 28.3 44.5 60.9 73.3 78.2 74.4 62.8 46.6 30.2 17.8
NORMAL MIN: -6.2 -4.0 5.5 19.7 34.7 46.6 52.2 50.0 40.5 26.3 11.2 -0.7

P	E	J	M	S	K
105	126	155	182	202	217
106	126	155	182	202	217
107	126	155	182	202	217
108	126	155	182	202	217
109	126	156	182	202	217
110	127	156	182	202	217
111	127	156	182	202	217
112	127	156	182	202	217
113	128	156	182	202	217
114	128	156	182	202	217
115	128	156	182	202	217
116	129	157	183	203	217
117	130	157	183	203	217
118	130	157	183	203	217
119	131	157	183	203	218
120	131	158	183	203	218
121	132	158	183	203	218
122	133	158	184	204	218
123	134	159	184	204	218
124	134	159	184	204	218
125	135	159	184	204	218
126	135	160	185	205	219
127	137	160	185	205	219
128	138	161	186	205	220
129	138	161	186	206	220
130	139	162	186	206	220
131	140	162	186	206	221
132	141	163	187	207	221
133	142	163	187	207	222
134	143	164	188	208	222

CROP STAGE JULIAN DATES FOR CROP: 54 DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RNTS MODEL

LOCATION: ALBERTA CENTRAL
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 12.4 20.3 30.6 48.6 62.2 68.2 73.6 70.7 61.3 50.4 30.6 18.0
NORMAL MIN: -7.6 -2.0 8.1 25.5 36.7 43.5 48.4 45.7 37.4 28.0 12.7 -0.6
ESTIMATED
NORMAL MAX: 12.9 16.8 28.3 44.5 60.9 73.3 78.2 74.4 62.8 46.6 30.2 17.8
NORMAL MIN: -6.2 -4.0 5.5 19.7 34.7 46.6 52.2 50.0 40.5 26.3 11.2 -0.7

P	E	J	M	S	R
135	144	164	186	208	222
136	145	165	188	209	223
137	145	166	189	209	223
138	146	166	189	210	224
139	147	167	190	210	224
140	148	168	191	211	225
141	149	168	191	211	225
142	150	169	192	212	226
143	151	170	192	213	227
144	152	171	193	213	227
145	153	171	193	214	228
146	154	172	194	215	229
147	155	173	195	215	230
148	156	174	195	216	231
149	157	175	196	217	231
150	158	176	197	218	232
151	159	176	198	219	233
152	160	177	198	220	234
153	161	178	199	221	235
154	162	179	200	222	236
155	163	180	201	223	237
156	164	181	202	223	238
157	165	182	202	224	239
158	166	182	203	225	240
159	167	183	204	226	242
160	168	184	205	227	243
161	168	185	205	229	244
162	169	186	206	230	245
163	170	187	207	231	247
164	171	187	208	232	248

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: ALBERTA CENTRAL EDMONTON
LATITUDE: 53.50
OBSERVED
NORMAL MAX: 12.4 20.3 30.6 48.6 62.2 68.2 73.6 70.7 61.3 50.4 30.6 18.0
NORMAL MIN: -7.6 -2.0 8.1 25.5 36.7 43.5 48.4 45.7 37.4 26.0 12.7 -0.6
ESTIMATED
NORMAL MAX: 12.9 19.8 28.3 44.5 60.9 73.3 78.2 74.4 62.8 46.6 30.2 17.8
NORMAL MIN: -6.2 -4.0 5.5 19.7 34.7 46.6 52.2 50.0 40.5 26.3 11.2 -0.7

P	E	J	M	S	R
95	126	157	183	204	218
96	126	157	183	204	218
97	126	157	183	204	218
98	126	157	183	204	218
99	126	157	183	204	218
100	126	157	183	204	218
101	126	157	183	204	218
102	126	157	183	204	218
103	126	157	183	204	218
104	126	157	183	204	218
105	126	157	183	204	218
106	126	157	183	204	218
107	126	157	183	204	218
108	126	157	183	204	218
109	126	157	183	204	218
110	127	157	184	204	218
111	127	157	184	204	218
112	127	157	184	205	218
113	128	157	184	205	218
114	128	158	184	205	218
115	128	158	184	205	218
116	129	158	184	205	219
117	130	158	184	205	219
118	130	158	184	205	219
119	131	159	185	205	219
120	131	159	185	206	219
121	132	159	185	206	219
122	133	160	185	206	220
123	134	160	185	206	220
124	134	160	186	207	220

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: ALBERTA CENTRAL EDMONTON
LATITUDE: 53.50

OBSERVED												
NORMAL MAX:	12.4	20.3	30.6	48.6	62.2	68.2	73.6	70.7	61.3	50.4	30.6	18.0
NORMAL MIN:	-7.6	-2.0	8.1	25.5	36.7	43.5	48.4	45.7	37.4	28.0	12.7	-0.6
ESTIMATED												
NORMAL MAX:	12.9	16.8	28.3	44.5	60.9	73.3	76.2	74.4	62.8	46.6	30.2	17.8
NORMAL MIN:	-6.2	-4.0	5.5	19.7	34.7	46.6	52.2	50.0	40.5	26.3	11.2	-0.7

P	E	J	M	S	R
125	135	161	186	207	220
126	136	161	186	207	221
127	137	162	186	207	221
128	138	162	187	208	221
129	138	162	187	208	222
130	139	163	188	209	222
131	140	163	188	209	222
132	141	164	188	209	223
133	142	165	189	210	223
134	143	165	189	210	224
135	144	166	190	211	224
136	145	166	190	211	225
137	145	167	191	212	225
138	146	168	191	212	226
139	147	168	192	213	227
140	148	169	192	214	227
141	149	170	193	214	228
142	150	170	193	215	228
143	151	171	194	216	229
144	152	172	195	216	230
145	153	173	195	217	231
146	154	174	196	218	232
147	155	174	197	219	232
148	156	175	197	219	233
149	157	176	198	220	234
150	158	177	199	221	235
151	159	178	199	222	236
152	160	179	200	223	237
153	161	179	201	224	238
154	162	180	202	225	240

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BATS MODEL

LOCATION: ALBERTA NORTH
LATITUDE: 57.00
OBSERVED
NORMAL MAX: 9.1 17.8 29.3 47.1 61.5 67.0 71.1 69.0 60.1 48.4 27.7 14.4
NORMAL MIN:-10.3 -3.8 5.0 24.0 36.7 43.5 47.8 45.3 37.2 28.2 10.8 -3.5
ESTIMATED
NORMAL MAX: 9.5 13.8 26.0 43.0 60.2 72.9 77.8 73.5 61.2 44.2 27.1 14.4
NORMAL MIN: -9.1 -6.6 3.5 16.5 34.5 47.1 53.0 50.5 40.4 25.3 9.4 -3.2

P	E	J	M	S	R
120	132	157	183	203	217
121	133	158	183	203	217
122	134	159	184	204	218
123	134	159	184	204	218
124	135	159	184	204	218
125	135	159	184	204	218
126	136	159	184	204	218
127	137	160	184	204	219
128	138	160	185	204	219
129	139	161	185	205	219
130	139	161	185	205	220
131	140	162	186	205	220
132	141	162	186	205	220
133	142	163	186	206	221
134	143	163	187	207	221
135	144	164	187	207	221
136	145	164	188	208	222
137	146	165	188	208	222
138	147	166	189	208	223
139	147	166	189	209	223
140	148	167	190	210	224
141	149	168	190	210	224
142	150	168	191	211	225
143	151	169	191	211	225
144	152	170	192	212	226
145	153	171	193	213	227
146	154	172	193	213	228
147	155	172	194	214	228
148	156	173	194	215	229
149	157	174	195	216	230

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A.ROBERTSON RMTS MODEL

LOCATION: ALBERTA NORTH
LATITUDE: 57.00
OBSERVED
NORMAL MAX: 9.1 17.8 29.3 47.1 61.5 67.0 71.1 69.6 60.1 48.4 27.7 14.9
NORMAL MIN:-10.3 -3.8 6.6 24.6 36.7 43.5 47.8 45.3 37.2 26.2 10.8 -3.5
ESTIMATED
NORMAL MAX: 9.5 18.8 26.0 43.0 60.2 72.9 77.8 73.5 61.2 44.6 27.1 14.4
NORMAL MIN: -9.1 -6.6 3.5 18.5 34.5 47.1 53.0 50.5 40.4 25.3 9.4 -3.2

P	E	J	M	S	R
150	158	175	196	217	231
151	159	176	197	217	232
152	160	177	197	218	233
153	161	177	198	219	233
154	162	178	199	220	234
155	163	179	200	221	235
156	164	180	200	222	236
157	165	181	201	223	237
158	166	182	202	224	238
159	167	182	203	225	239
160	167	183	203	226	240
161	168	184	204	227	242
162	169	185	205	228	243
163	170	186	206	229	244
164	171	187	207	230	246
165	172	187	207	231	247
166	173	188	208	232	249
167	174	189	209	234	251
168	175	190	210	235	253
169	176	191	211	237	255
170	177	192	212	238	257
171	178	193	213	240	261
172	179	194	214	242	265
173	179	195	215	244	272
174	180	196	216	246	281
175	181	197	217	248	104
176	182	198	219	251	125
177	183	199	220	255	138
178	184	200	221	259	149
179	185	201	222	266	156

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A RUBENTSON BMIS MODEL

LOCATION: ALBERTA NORTH:BEAVER LODGE
LATITUDE: 55.20
UNSERVED

NORMAL MAX:	9.1	17.8	24.3	47.1	61.5	67.6	71.1	69.0	60.1	48.4	27.7	14.4
NORMAL MIN:	-10.3	-3.8	6.6	24.6	36.7	43.5	47.8	45.3	37.2	28.2	10.8	-3.5

ESTIMATED

NORMAL MAX:	9.5	13.8	20.0	43.0	60.2	72.4	77.8	73.5	61.2	44.2	27.1	14.4
NORMAL MIN:	-9.1	-6.6	3.5	16.5	34.5	47.1	53.0	50.5	40.4	25.3	9.4	-3.2

P	E	J	M	S	R
95	128	157	183	203	217
96	128	157	183	203	217
97	128	157	183	203	217
98	128	157	183	203	217
99	128	157	183	203	217
100	128	157	183	203	217
101	128	157	183	203	217
102	128	157	183	203	217
103	128	157	183	203	217
104	128	157	183	203	217
105	128	157	183	203	217
106	128	157	183	203	217
107	128	157	183	203	217
108	128	157	183	203	217
109	128	157	183	203	217
110	128	157	183	203	217
111	128	157	183	203	217
112	129	157	183	203	217
113	129	157	183	203	217
114	129	157	183	203	217
115	130	157	183	203	217
116	130	157	183	203	217
117	130	158	183	204	218
118	131	158	183	204	218
119	131	158	184	204	218
120	131	158	184	204	218
121	132	158	184	204	218
122	133	159	184	205	218
123	134	159	184	205	219
124	135	160	185	205	219

CROP STAGE JULIAN DATES FOR CROPS DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON EMIS MODEL

LOCATION: ALBERTA NORTH:BEAVER LODGE
LATITUDE: 55.20
OBSERVED
NORMAL MAX: 9.1 17.8 29.3 47.1 61.5 67.8 71.1 69.0 60.1 48.4 27.7 14.4
NORMAL MIN:-10.3 -3.8 6.6 24.6 36.7 43.5 47.5 45.3 37.2 28.2 10.6 -3.5
ESTIMATED
NORMAL MAX: 9.5 13.4 28.0 43.0 60.2 72.9 77.0 73.5 61.2 44.6 27.1 14.4
NORMAL MIN: -4.1 -0.6 3.5 18.5 34.5 47.1 53.0 50.5 40.4 25.3 7.4 -3.2

P	E	J	M	S	R
125	136	160	185	205	219
126	136	160	185	205	219
127	137	161	185	206	220
128	138	161	186	206	220
129	139	162	186	206	220
130	139	162	186	207	220
131	140	163	187	207	221
132	141	163	187	208	221
133	142	164	187	208	222
134	143	164	188	208	222
135	144	165	188	209	222
136	145	165	189	209	223
137	145	166	189	210	223
138	146	167	190	210	224
139	147	167	190	211	225
140	148	168	191	211	225
141	149	169	191	212	226
142	150	169	192	213	226
143	151	170	192	213	227
144	152	171	193	214	228
145	153	172	194	215	228
146	154	173	194	215	229
147	155	173	195	216	230
148	156	174	196	217	231
149	157	175	196	218	232
150	158	176	197	219	233
151	159	177	198	220	233
152	160	177	199	220	234
153	161	178	199	221	235
154	162	179	200	222	236

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL.

LOCATION: SASKATCHEWAN SE
LATITUDE: 49.70
OBSERVED
NORMAL MAX: 10.8 16.2 27.7 48.0 63.3 71.4 79.0 76.5 65.1 52.9 30.9 18.0
NORMAL MIN: -8.1 -4.0 7.9 26.6 38.1 47.3 52.9 50.0 39.7 29.8 13.8 0.3
ESTIMATED
NORMAL MAX: 10.9 14.2 26.2 43.6 61.9 76.1 82.4 79.1 67.1 49.7 31.4 17.2
NORMAL MIN: -6.6 -4.5 5.4 20.3 36.5 49.4 55.6 53.6 43.7 28.7 12.6 -0.3

P	E	J	M	S	R
90	127	157	181	201	212
91	127	157	181	201	212
92	127	157	181	201	212
93	127	157	181	201	212
94	127	157	181	201	212
95	127	157	181	201	212
96	127	157	181	201	212
97	127	157	181	201	212
98	127	157	181	201	212
99	127	157	181	201	212
100	127	157	181	201	212
101	127	157	181	201	212
102	127	157	181	201	212
103	127	157	181	201	212
104	127	157	181	201	212
105	127	157	181	201	212
106	127	157	181	201	212
107	127	157	181	201	212
108	127	157	181	201	212
109	127	157	181	201	212
110	127	157	181	201	212
111	127	157	181	201	212
112	127	157	181	201	212
113	128	157	181	201	212
114	128	157	181	201	212
115	128	157	181	201	212
116	129	158	182	202	212
117	129	158	182	202	212
118	130	158	182	202	213
119	131	158	182	202	213

Cdc

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SE
LATITUDE: 49.70

OBSERVED												
NORMAL MAX:	10.8	16.2	27.7	48.0	63.3	71.4	79.0	76.5	65.1	52.9	30.9	16.0
NORMAL MIN:	-8.1	-4.0	7.9	26.6	38.1	47.3	52.9	50.0	39.7	29.8	13.8	0.3
ESTIMATED												
NORMAL MAX:	10.9	14.2	26.2	43.6	61.9	76.1	82.4	79.1	67.1	49.7	31.4	17.2
NORMAL MIN:	-6.6	-4.5	5.4	20.3	36.5	49.4	55.6	53.6	43.7	28.7	12.6	-0.3

P	E	J	M	S	R
120	131	159	182	202	213
121	132	159	182	202	213
122	133	159	183	203	213
123	133	160	183	203	214
124	134	160	183	203	214
125	135	160	183	203	214
126	136	161	184	204	214
127	137	161	184	204	215
128	137	162	184	204	215
129	138	162	185	205	215
130	139	163	185	205	216
131	140	163	186	206	216
132	141	164	186	206	217
133	142	165	186	207	217
134	142	165	187	207	218
135	143	166	187	207	218
136	144	166	188	208	219
137	145	167	188	209	219
138	146	168	189	209	220
139	147	169	190	210	220
140	148	169	190	210	221
141	149	170	191	211	221
142	150	171	191	212	222
143	151	171	192	212	223
144	152	172	193	213	224
145	153	173	193	214	224
146	154	174	194	215	225
147	155	175	195	215	226
148	156	175	195	216	227
149	157	176	196	217	228

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A.ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN SE
LATITUDE: 49.70

OBSERVED													
NORMAL MAX:	10.8	10.2	27.7	46.0	63.3	71.4	79.0	76.5	65.1	56.9	30.9	18.0	
NORMAL MIN:	-8.1	-4.0	7.9	20.6	38.1	47.3	52.9	50.0	39.7	29.8	13.8	-0.3	
ESTIMATED													
NORMAL MAX:	10.9	14.2	26.2	43.6	61.9	76.1	82.4	79.1	67.1	49.7	31.4	17.2	
NORMAL MIN:	-6.6	-4.5	5.4	20.3	36.5	49.4	55.6	53.6	43.7	28.7	12.6	-0.3	

P	E	J	M	S	R
150	158	177	197	216	228
151	159	178	198	219	229
152	160	179	198	219	230
153	161	179	199	220	231
154	161	180	200	221	232
155	162	181	200	222	233
156	163	182	201	223	234
157	164	183	202	224	235
158	165	183	203	225	236
159	166	184	203	226	237
160	167	185	204	227	238
161	168	186	205	228	239
162	169	187	206	229	241
163	170	188	207	230	242
164	171	189	208	232	243
165	172	190	209	233	245
166	173	190	210	234	246
167	173	191	211	236	248
168	174	192	212	237	250
169	175	193	213	239	252
170	176	194	214	241	254
171	177	195	215	243	257
172	178	196	216	245	260
173	179	197	217	247	263
174	180	198	218	249	268
175	181	199	219	252	275
176	182	200	221	255	287
177	183	201	222	259	314
178	184	202	223	264	134
179	185	203	224	273	147

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMTS MODEL

LOCATION: SASKATCHEWAN SE:INDIAN HEAD
LATITUDE: 50.60
OBSERVED
NORMAL MAX: 10.8 16.2 27.7 48.0 63.3 71.4 79.0 76.5 65.1 52.9 30.9 18.0
NORMAL MIN: -8.1 -4.0 7.9 26.6 38.1 47.3 52.9 50.0 39.7 29.8 13.8 0.3
ESTIMATED
NORMAL MAX: 10.9 14.2 26.2 43.6 61.9 76.1 82.4 79.1 67.1 49.7 31.4 17.2
NORMAL MIN: -6.6 -4.5 5.4 20.3 36.5 49.4 55.6 53.6 43.7 28.7 12.6 -0.3

P	E	J	M	S	H
100	127	156	180	200	211
101	127	156	180	200	211
102	127	156	180	200	211
103	127	156	180	200	211
104	127	156	180	200	211
105	127	156	180	200	211
106	127	156	180	200	211
107	127	156	180	200	211
108	127	156	180	200	211
109	127	156	180	200	211
110	127	156	180	200	211
111	127	156	181	200	211
112	127	157	181	200	211
113	128	157	181	200	211
114	128	157	181	200	211
115	128	157	181	201	211
116	129	157	181	201	212
117	129	157	181	201	212
118	130	158	181	201	212
119	131	158	181	201	212
120	131	158	182	201	212
121	132	159	182	202	212
122	133	159	182	202	213
123	133	159	182	202	213
124	134	160	183	202	213
125	135	160	183	203	213
126	136	161	183	203	214
127	137	161	184	203	214
128	137	161	184	204	214
129	138	162	184	204	215

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A.ROBERTSON.BMTS MODEL

LOCATION: SASKATCHEWAN SE:INDIAN HEAD
LATITUDE: 50.60

OBSERVED												
NORMAL MAX:	10.8	16.2	27.7	48.0	63.3	71.4	79.0	76.5	65.1	52.9	30.9	18.0
NORMAL MIN:	-8.1	-4.0	7.9	26.6	38.1	47.3	52.9	50.0	34.7	29.8	13.8	0.3
ESTIMATED												
NORMAL MAX:	10.9	14.2	26.2	43.6	61.9	76.1	82.4	79.1	67.1	49.7	31.4	17.2
NORMAL MIN:	-6.6	-4.5	5.4	20.3	36.5	49.4	55.6	53.6	43.7	28.7	12.6	-0.3

P	E	J	M	S	R
130	139	162	185	204	215
131	140	163	185	205	216
132	141	164	185	205	216
133	142	164	186	206	216
134	143	165	186	206	217
135	143	165	187	207	217
136	144	166	187	207	218
137	145	167	188	208	218
138	146	167	188	208	219
139	147	168	189	209	219
140	148	169	190	209	220
141	149	170	190	210	221
142	150	170	191	211	221
143	151	171	191	211	222
144	152	172	192	212	223
145	153	173	193	213	223
146	154	174	193	214	224
147	155	174	194	214	225
148	156	175	195	215	226
149	157	176	196	216	227
150	158	177	196	217	227
151	159	178	197	218	228
152	160	178	198	218	229
153	161	179	198	219	230
154	161	180	199	220	231
155	162	181	200	221	232
156	163	181	201	222	233
157	164	182	201	223	234
158	165	183	202	224	235
159	166	184	203	225	236

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMIS MODEL

LOCATION: SASKATCHEWAN RM
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 11.8 17.2 28.6 49.8 64.9 72.3 80.2 78.3 66.7 54.0 32.4 19.2
NORMAL MIN: -7.2 -2.9 9.0 27.0 38.3 47.3 52.7 50.0 40.1 29.5 14.2 1.0
ESTIMATED
NORMAL MAX: 12.0 15.2 27.3 44.8 63.3 77.6 84.0 80.7 68.7 51.1 32.7 18.3
NORMAL MIN: -5.7 -3.5 6.4 21.2 37.0 49.5 55.5 53.3 43.4 28.6 12.8 0.3

P	E	J	M	S	R
90	124	155	179	198	209
91	124	155	179	198	209
92	124	155	179	198	209
93	124	155	179	198	209
94	124	155	179	198	209
95	124	155	179	198	209
96	124	155	179	198	209
97	124	155	179	198	209
98	124	155	179	198	209
99	124	155	179	198	209
100	124	155	179	198	209
101	124	155	179	198	209
102	124	155	179	198	209
103	124	155	179	198	209
104	124	155	179	198	209
105	124	155	179	198	209
106	125	155	179	198	209
107	125	155	179	198	209
108	125	155	179	198	209
109	125	155	179	198	209
110	125	155	179	198	209
111	126	156	179	199	209
112	126	156	179	199	210
113	126	156	180	199	210
114	127	156	180	199	210
115	127	156	180	199	210
116	128	157	180	199	210
117	129	157	180	199	210
118	129	157	180	200	210
119	130	157	181	200	211

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMIS MODEL

LOCATION: SASKATCHEWAN RW
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 11.6 17.2 28.6 49.8 64.9 72.3 80.2 78.3 66.7 54.0 32.4 19.2
NORMAL MIN: -7.2 -2.9 9.0 27.0 38.3 47.3 52.7 50.0 40.1 29.5 14.2 1.0
ESTIMATED
NORMAL MAX: 12.0 15.2 27.3 44.8 63.3 77.6 84.0 80.7 68.7 51.1 32.7 18.3
NORMAL MIN: -5.7 -3.5 6.4 21.2 37.0 49.5 55.5 53.3 43.4 28.6 12.8 0.3

P	E	J	H	S	R
120	131	158	181	200	211
121	131	158	181	200	211
122	132	158	181	200	211
123	133	159	182	201	211
124	134	159	182	201	212
125	134	160	182	201	212
126	135	160	183	202	212
127	136	161	183	202	213
128	137	161	183	202	213
129	138	162	184	203	213
130	139	162	184	203	214
131	140	163	184	204	214
132	141	163	185	204	215
133	141	164	185	205	215
134	142	165	186	205	216
135	143	165	186	206	216
136	144	166	187	206	217
137	145	167	187	207	217
138	146	167	188	207	218
139	147	168	189	208	218
140	148	169	189	208	219
141	149	170	190	209	220
142	150	170	190	210	220
143	151	171	191	211	221
144	152	172	192	211	222
145	153	173	192	212	223
146	154	174	193	213	223
147	155	175	194	214	224
148	156	175	195	214	225
149	157	176	195	215	226

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CROP STAGE JULIAN DATES FOR CROP: Sw DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN RW
LATITUDE: 50.00

OBSERVED

NORMAL MAX:	11.8	17.2	28.6	49.8	64.9	72.3	80.2	78.3	66.7	54.0	32.4	19.2
NORMAL MIN:	-7.2	-2.9	9.0	27.0	38.3	47.3	52.7	50.0	40.1	29.5	14.2	1.0

ESTIMATED

NORMAL MAX:	12.0	15.2	27.3	44.8	63.3	77.6	84.0	80.7	68.7	51.1	32.7	18.3
NORMAL MIN:	-5.7	-3.5	6.4	21.2	37.0	49.5	55.5	53.3	43.4	28.6	12.8	0.3

P	E	J	H	S	R
150	158	177	196	216	227
151	159	178	197	217	227
152	160	178	197	218	228
153	161	179	198	218	229
154	161	180	199	219	230
155	162	181	200	220	231
156	163	182	200	221	232
157	164	182	201	222	233
158	165	183	202	223	234
159	166	184	203	224	235
160	167	185	204	225	236
161	168	186	205	226	237
162	169	187	205	227	238
163	170	188	206	229	240
164	171	189	207	230	241
165	172	190	208	231	243
166	173	191	209	232	244
167	174	191	210	234	246
168	175	192	211	235	247
169	176	193	212	237	249
170	177	194	213	238	251
171	178	195	214	240	254
172	179	196	216	242	256
173	180	197	217	244	259
174	181	198	218	246	262
175	182	199	219	249	266
176	183	200	220	251	273
177	184	201	221	254	282
178	185	203	223	258	298
179	186	204	224	262	123

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON GMTS MODEL

LOCATION: SASKATCHEWAN RW:REGINA
LATITUDE: 50.47
OBSERVED
NORMAL MAX: 11.8 17.2 28.6 49.8 64.9 72.3 80.2 78.3 66.7 54.0 32.4 19.2
NORMAL MIN: -7.2 -2.9 9.0 27.0 38.3 47.3 52.7 50.0 40.1 29.5 14.2 1.0
ESTIMATED
NORMAL MAX: 12.0 15.2 27.3 44.8 63.3 77.6 84.0 80.7 68.7 51.1 32.7 18.3
NORMAL MIN: -5.7 -3.5 6.4 21.2 37.0 49.5 55.5 53.3 43.4 28.6 12.8 0.3

P	E	J	H	S	R
90	124	155	179	198	209
91	124	155	179	198	209
92	124	155	179	198	209
93	124	155	179	198	209
94	124	155	179	198	209
95	124	155	179	198	209
96	124	155	179	198	209
97	124	155	179	198	209
98	124	155	179	198	209
99	124	155	179	198	209
100	124	155	179	198	209
101	124	155	179	198	209
102	124	155	179	198	209
103	124	155	179	198	209
104	124	155	179	198	209
105	124	155	179	198	209
106	125	155	179	198	209
107	125	155	179	198	209
108	125	155	179	198	209
109	125	155	179	198	209
110	125	155	179	198	209
111	126	155	179	198	209
112	126	156	179	198	209
113	126	156	179	198	209
114	127	156	179	198	209
115	127	156	180	199	210
116	128	156	180	199	210
117	129	157	180	199	210
118	129	157	180	199	210
119	130	157	180	199	210

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN KM:REGINA
LATITUDE: 50.47

OBSERVED												
NORMAL MAX:	11.8	17.2	28.6	49.8	64.9	72.3	80.2	78.3	66.7	54.0	32.4	19.2
NORMAL MIN:	-7.2	-2.9	9.0	27.0	38.3	47.3	52.7	50.0	40.1	29.5	14.2	1.0
ESTIMATED												
NORMAL MAX:	12.0	15.2	27.3	44.8	63.3	77.6	84.0	80.7	68.7	51.1	32.7	18.3
NORMAL MIN:	-5.7	-3.5	6.4	21.2	37.0	49.5	55.5	53.3	43.4	28.6	12.8	0.3

P	E	J	H	S	R
120	131	158	181	200	210
121	131	158	181	200	211
122	132	158	181	200	211
123	133	159	181	200	211
124	134	159	182	201	211
125	134	160	182	201	212
126	135	160	182	201	212
127	136	161	183	202	212
128	137	161	183	202	213
129	138	162	183	202	213
130	139	162	184	203	213
131	140	163	184	203	214
132	141	163	185	204	214
133	141	164	185	204	215
134	142	165	186	205	215
135	143	165	186	205	216
136	144	166	187	206	216
137	145	167	187	206	217
138	146	167	188	207	217
139	147	168	188	207	218
140	148	169	189	208	219
141	149	169	189	209	219
142	150	170	190	209	220
143	151	171	191	210	221
144	152	172	191	211	221
145	153	173	192	212	222
146	154	173	193	212	223
147	155	174	194	213	224
148	156	175	194	214	224
149	157	176	195	215	225

CROP STAGE JULIAN DATES FOR CROP: Sw DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SC
LATITUDE: 50.40
OBSERVED
NORMAL MAX: 16.7 21.6 31.6 50.9 64.9 72.0 81.0 78.6 67.1 55.0 35.1 23.5
NORMAL MIN: -9.3 1.0 11.8 27.7 38.8 47.1 52.3 49.5 40.1 30.0 15.4 4.5
ESTIMATED
NORMAL MAX: 14.8 19.9 31.1 47.2 64.1 77.1 82.9 79.8 68.6 52.4 35.6 22.5
NORMAL MIN: -1.8 0.5 9.7 23.4 37.8 49.1 54.3 52.0 42.8 29.1 14.7 3.4

P	E	J	H	S	R
90	121	153	178	198	209
91	121	153	178	198	209
92	121	153	178	198	209
93	121	153	178	198	209
94	121	153	178	198	209
95	121	153	178	198	209
96	121	153	178	198	209
97	121	153	178	198	209
98	121	153	178	198	209
99	121	153	178	198	209
100	121	153	178	198	209
101	121	153	178	198	209
102	121	153	178	198	209
103	121	153	178	198	209
104	121	153	178	198	209
105	121	153	178	198	209
106	122	153	178	198	209
107	122	153	178	198	209
108	122	153	178	198	210
109	123	154	178	198	210
110	123	154	179	198	210
111	124	154	179	198	210
112	124	154	179	198	210
113	125	154	179	199	210
114	126	155	179	199	210
115	126	155	179	199	210
116	127	155	180	199	211
117	128	156	180	199	211
118	128	156	180	200	211
119	129	156	180	200	211

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SC
LATITUDE: 50.40

OBSERVED													
NORMAL MAX:	16.7	21.6	31.6	50.9	64.9	72.0	81.0	78.6	67.1	55.0	35.1	23.5	
NORMAL MIN:	-3.3	1.0	11.8	27.7	38.8	47.1	52.3	49.5	40.1	30.0	15.4	4.5	
ESTIMATED													
NORMAL MAX:	16.8	19.9	31.1	47.2	64.1	77.1	82.9	79.8	68.6	52.4	35.6	22.5	
NORMAL MIN:	-1.8	0.5	9.7	23.4	37.8	49.1	54.3	52.0	42.8	29.1	14.7	3.4	

P	E	J	H	S	R
120	130	157	181	200	212
121	131	157	181	200	212
122	132	158	181	200	212
123	132	158	181	200	212
124	133	159	182	200	213
125	134	159	182	200	213
126	135	160	183	200	214
127	136	160	183	200	214
128	137	161	183	200	214
129	138	161	184	200	215
130	139	162	184	200	215
131	139	162	185	200	216
132	140	163	185	200	216
133	141	164	186	200	217
134	142	164	186	200	217
135	143	165	187	200	218
136	144	166	187	200	218
137	145	167	188	200	219
138	146	167	188	200	219
139	147	168	189	200	220
140	148	169	190	200	221
141	149	170	190	200	221
142	150	170	191	200	222
143	151	171	192	200	223
144	152	172	192	200	224
145	153	173	193	200	224
146	154	174	194	200	225
147	155	174	195	200	226
148	156	175	195	200	227
149	157	176	196	200	228

CROP STAGE JULIAN DATES FOR CROP: Sw DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMTS MODEL

LOCATION: SASKATCHEWAN SC
LATITUDE: 50.40

OBSERVED												
NORMAL MAX:	16.7	21.6	31.6	50.9	64.9	72.0	81.0	78.6	67.1	55.0	35.1	23.5
NORMAL MIN:	-3.3	1.0	11.8	27.7	38.4	47.1	52.3	49.5	40.1	30.0	15.4	4.5
ESTIMATED												
NORMAL MAX:	16.8	19.9	31.1	47.2	64.1	77.1	82.9	79.8	68.6	52.4	35.6	22.5
NORMAL MIN:	-1.8	0.5	9.7	23.4	37.8	49.1	54.3	52.0	42.8	29.1	14.7	3.4

P	E	J	H	S	R
150	158	177	197	217	229
151	159	178	197	218	229
152	160	179	198	219	230
153	161	179	199	220	231
154	162	180	200	221	232
155	162	181	200	222	233
156	163	182	201	223	234
157	164	183	202	224	235
158	165	183	203	225	236
159	166	184	204	226	237
160	167	185	205	227	238
161	168	186	206	228	240
162	169	187	206	229	241
163	170	188	207	230	243
164	171	189	208	232	244
165	172	190	209	233	246
166	173	191	210	234	247
167	174	192	211	236	249
168	175	193	212	238	251
169	176	194	213	239	253
170	177	195	214	241	256
171	178	196	216	243	258
172	179	197	217	245	261
173	180	198	218	247	265
174	181	199	219	249	270
175	182	200	220	252	277
176	183	201	221	255	287
177	184	202	222	259	304
178	185	203	224	264	119
179	186	204	225	272	136

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN SCISWIFT CURRENT
LATITUDE: 50.40
OBSERVED
NORMAL MAX: 16.7 21.6 31.6 50.9 64.9 72.0 81.0 78.6 67.1 55.0 35.1 23.5
NORMAL MIN: -3.3 1.0 11.8 27.7 38.8 47.1 52.3 49.5 40.1 30.0 15.4 4.5
ESTIMATED
NORMAL MAX: 16.8 19.9 31.1 47.2 64.1 77.1 82.9 79.8 68.6 52.4 35.6 22.5
NORMAL MIN: -1.8 0.5 9.7 23.4 37.6 49.1 54.3 52.0 42.8 29.1 14.7 3.4

P	E	J	H	S	R
100	121	153	178	198	209
101	121	153	178	198	209
102	121	153	178	198	209
103	121	153	178	198	209
104	121	153	178	198	209
105	121	153	178	198	209
106	122	153	178	198	209
107	122	153	178	198	209
108	123	153	178	198	210
109	123	154	178	198	210
110	123	154	179	198	210
111	124	154	179	198	210
112	124	154	179	198	210
113	125	154	179	199	210
114	126	155	179	199	210
115	126	155	179	199	210
116	127	155	180	199	211
117	128	156	180	199	211
118	128	156	180	200	211
119	129	156	180	200	211
120	130	157	181	200	212
121	131	157	181	200	212
122	132	158	181	201	212
123	132	158	181	201	212
124	133	159	182	201	213
125	134	159	182	202	213
126	135	160	183	202	213
127	136	160	183	202	214
128	137	161	183	203	214
129	138	161	184	203	215

FILE: SC ... STAGES ... AGRIDOE/LARS 3031

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RATE MODEL

LOCATION: SASKATCHEWAN SC:SWIFT CURRENT
LATITUDE: 50.41
OBSERVED
NORMAL MAX: 16.7 21.5 31.0 50.9 64.9 72.0 81.0 79.5 67.1 55.0 35.1 23.4
NORMAL MIN: -3.3 1.0 11.8 27.7 38.8 47.1 52.3 49.5 40.1 30.0 15.4 4.5
ESTIMATED
NORMAL MAX: 16.0 14.9 31.1 47.2 64.1 77.2 82.9 79.7 68.6 52.4 35.5 22.5
NORMAL MIN: -1.8 0.5 9.7 23.3 37.7 49.1 54.3 52.0 42.8 29.1 14.7 3.4

P	E	J	M	S	F
130	134	152	184	204	215
131	139	152	185	204	215
132	140	163	186	205	215
133	141	164	186	205	217
134	142	164	186	206	217
135	143	165	187	206	218
136	144	166	187	207	218
137	145	167	188	207	219
138	146	167	188	208	219
139	147	168	189	209	220
140	148	169	190	209	221
141	149	170	190	210	221
142	150	170	191	211	222
143	151	171	192	212	223
144	152	172	192	212	224
145	153	173	193	213	224
146	154	174	194	214	225
147	155	175	195	215	226
148	156	175	195	216	227
149	157	176	196	216	228
150	158	177	197	217	229
151	159	178	197	218	229
152	160	179	198	218	230
153	161	179	199	220	231
154	162	180	200	221	232
155	162	181	200	222	233
156	163	182	201	223	234
157	164	183	202	224	235
158	165	183	203	225	236
159	166	184	204	226	238

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SW
LATITUDE: 49.80
OBSERVED
NORMAL MAX: 18.9 23.7 33.6 51.8 65.1 72.0 81.1 79.0 67.5 55.9 36.7 25.5
NORMAL MIN: -2.6 1.9 12.2 27.1 37.4 45.5 50.2 47.3 38.5 28.9 14.9 5.0
ESTIMATED
NORMAL MAX: 19.0 22.1 32.9 48.5 64.8 77.3 82.8 79.7 68.9 53.3 37.0 24.5
NORMAL MIN: -1.0 1.4 10.2 23.1 36.7 47.3 52.0 49.7 40.9 28.0 14.4 3.8

P	E	J	H	S	R
90	119	154	180	200	212
91	119	154	180	200	212
92	119	154	180	200	212
93	119	154	180	200	212
94	119	154	180	200	212
95	119	154	180	200	212
96	119	154	180	200	212
97	119	154	180	200	212
98	119	154	180	200	212
99	119	154	180	200	212
100	119	154	180	200	212
101	119	154	180	200	212
102	119	154	180	200	213
103	119	154	180	200	213
104	120	154	180	200	213
105	120	154	180	200	213
106	120	154	180	200	213
107	121	155	180	200	213
108	121	155	181	200	213
109	122	155	181	201	213
110	123	155	181	201	213
111	123	155	181	201	213
112	124	156	181	201	213
113	124	156	181	201	214
114	125	156	181	201	214
115	126	156	182	201	214
116	127	157	182	202	214
117	127	157	182	202	214
118	128	157	182	202	215
119	129	158	183	202	215

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A.ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SW
LATITUDE: 49.80
OBSERVED
NORMAL MAX: 18.9 23.7 33.6 51.8 65.1 72.0 81.1 79.0 67.5 55.9 36.7 25.5
NORMAL MIN: -2.6 1.9 12.2 27.1 37.4 45.5 50.2 47.3 39.5 28.9 14.9 5.0
ESTIMATED
NORMAL MAX: 19.0 22.1 32.9 48.5 64.8 77.3 82.8 79.7 68.9 53.3 37.0 24.5
NORMAL MIN: -1.0 1.4 10.2 23.1 36.7 47.3 52.0 49.7 40.9 28.0 14.4 3.8

P	E	J	H	S	R
120	130	158	183	203	215
121	130	159	183	203	215
122	131	159	183	203	215
123	132	159	184	204	216
124	133	160	184	204	216
125	134	160	184	204	217
126	135	161	185	205	217
127	136	161	185	205	217
128	137	162	186	206	218
129	138	163	186	206	218
130	138	163	186	206	219
131	139	164	187	207	219
132	140	164	187	207	220
133	141	165	188	208	220
134	142	166	188	209	221
135	143	166	189	209	221
136	144	167	189	210	222
137	145	168	190	210	223
138	146	168	191	211	223
139	147	169	191	212	224
140	148	170	192	212	225
141	149	171	193	213	225
142	150	172	193	214	226
143	151	172	194	215	227
144	152	173	195	215	228
145	153	174	195	216	229
146	154	175	196	217	230
147	155	176	197	218	230
148	156	177	198	219	231
149	157	177	198	220	232

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN SW
LATITUDE: 49.80
OBSERVED
NORMAL MAX: 18.9 23.7 33.6 51.8 65.1 72.0 81.1 79.0 67.5 55.9 36.7 25.5
NORMAL MIN: -2.6 1.9 12.2 27.1 37.4 45.5 50.2 47.3 38.5 28.9 14.9 5.0
ESTIMATED
NORMAL MAX: 19.0 22.1 32.9 48.5 64.8 77.3 82.8 79.7 68.9 53.3 37.0 24.5
NORMAL MIN: -1.0 1.4 10.2 23.1 36.7 47.3 52.0 49.7 40.9 28.0 14.4 3.8

P	E	J	H	S	R
150	158	178	199	221	233
151	159	179	200	222	235
152	160	180	201	223	236
153	161	181	202	224	237
154	162	182	203	225	238
155	163	183	203	226	239
156	164	183	204	227	240
157	165	184	205	228	241
158	166	185	206	229	242
159	167	186	207	230	244
160	168	187	208	231	245
161	169	188	208	233	247
162	170	189	209	234	249
163	171	190	210	235	250
164	172	190	211	237	252
165	172	191	212	238	254
166	173	192	213	240	257
167	174	193	214	242	259
168	175	194	216	244	263
169	176	195	217	246	267
170	177	196	218	248	272
171	178	197	219	250	279
172	179	198	220	253	286
173	180	199	221	256	296
174	181	200	222	260	97
175	182	201	224	265	117
176	183	202	225	273	132
177	184	203	226	108	157
178	185	204	228	114	158
179	186	205	229	119	159

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A.ROBERTSON BMTS MODEL.

LOCATION: SASKATCHEWAN EC
LATITUDE: 51.2
OBSERVED
NORMAL MAX: 7.7 14.0 25.7 46.2 62.8 70.5 77.4 75.0 63.7 51.1 28.6 14.9
NORMAL MIN:-11.7 -7.2 4.6 25.0 37.4 46.0 51.6 48.6 39.2 29.1 12.2 -2.7
ESTIMATED
NORMAL MAX: 8.0 11.5 23.9 41.9 60.7 75.2 81.6 78.1 65.7 47.7 28.9 14.4
NORMAL MIN:-10.1 -8.3 1.8 17.5 34.6 48.5 55.4 53.6 43.5 27.8 10.7 -3.1

P	E	J	H	S	R
105	129	159	183	203	214
106	129	159	183	203	214
107	129	159	183	203	214
108	129	159	183	203	214
109	129	159	183	203	214
110	129	159	183	203	214
111	129	159	183	203	214
112	129	159	183	203	214
113	129	159	183	203	214
114	130	159	183	203	214
115	130	159	183	203	214
116	130	159	183	203	214
117	131	159	183	203	214
118	131	160	183	203	214
119	132	160	183	203	214
120	132	160	184	203	214
121	133	160	184	204	215
122	133	160	184	204	215
123	134	161	184	204	215
124	135	161	184	204	215
125	135	161	185	204	215
126	136	162	185	205	216
127	137	162	185	205	216
128	138	163	185	205	216
129	139	163	186	205	216
130	139	164	186	206	217
131	140	164	186	206	217
132	141	164	187	207	217
133	142	165	187	207	218
134	143	166	187	207	218

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN EC
LATITUDE: 51.20
OBSERVED
NORMAL MAX: 7.7 14.0 25.7 46.2 62.8 70.5 77.4 75.0 63.7 51.1 28.6 14.9
NORMAL MIN:-11.7 -7.2 4.6 25.0 37.4 46.0 51.6 48.6 39.2 29.1 12.2 -2.7
ESTIMATED
NORMAL MAX: 8.0 11.5 23.9 41.9 60.7 75.2 81.6 78.1 65.7 47.7 28.9 14.4
NORMAL MIN:-10.1 -8.3 1.8 17.5 34.6 48.5 55.4 53.6 43.5 27.8 10.7 -3.1

P	E	J	H	S	R
135	144	166	188	208	219
136	145	167	188	208	219
137	145	167	189	209	220
138	146	168	189	209	220
139	147	169	190	210	221
140	148	169	190	210	221
141	149	170	191	211	222
142	150	171	191	212	223
143	151	171	192	212	223
144	152	172	193	213	224
145	153	173	193	214	224
146	154	174	194	214	225
147	155	175	195	215	226
148	156	175	195	216	227
149	157	176	196	217	228
150	158	177	197	218	228
151	159	178	197	218	229
152	160	179	198	219	230
153	161	179	199	220	231
154	162	180	200	221	232
155	163	181	200	222	233
156	164	182	201	223	234
157	164	183	202	224	235
158	165	183	203	225	236
159	166	184	203	225	237
160	167	185	204	226	238
161	168	186	205	228	239
162	169	187	206	229	240
163	170	187	207	230	241
164	171	188	207	231	243

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC
LATITUDE: 51.50
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.8 49.8 30.9 16.4
NORMAL MIN: -7.8 -5.6 4.6 20.0 36.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
105	126	155	179	198	209
106	126	155	179	198	209
107	126	155	179	198	209
108	126	155	179	198	209
109	126	155	179	198	209
110	126	156	179	198	209
111	126	156	179	198	209
112	127	156	179	198	209
113	127	156	179	198	209
114	127	156	179	198	209
115	128	156	179	198	209
116	128	156	180	198	209
117	129	157	180	198	209
118	130	157	180	199	210
119	130	157	180	199	210
120	131	158	180	199	210
121	132	158	180	199	210
122	132	158	181	199	210
123	133	159	181	200	211
124	134	159	181	200	211
125	135	159	182	200	211
126	135	160	182	200	211
127	136	160	182	201	212
128	137	161	183	201	212
129	138	161	183	202	212
130	139	162	183	202	213
131	140	162	184	202	213
132	141	163	184	203	214
133	141	164	185	203	214
134	142	164	185	204	214

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC
LATITUDE: 51.50
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.8 49.8 30.9 16.4
NORMAL MIN: -7.8 -5.6 4.6 20.0 36.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
135	143	165	185	204	215
136	144	166	186	205	215
137	145	166	187	205	216
138	146	167	187	206	216
139	147	168	188	206	217
140	148	168	188	207	218
141	149	169	189	208	218
142	150	170	189	208	219
143	151	171	190	209	220
144	152	171	191	210	220
145	153	172	191	210	221
146	154	173	192	211	222
147	155	174	193	212	223
148	156	175	194	213	223
149	157	175	194	213	224
150	158	176	195	214	225
151	159	177	196	215	226
152	160	178	196	216	226
153	161	179	197	217	227
154	161	179	198	217	228
155	162	180	199	218	229
156	163	181	199	219	230
157	164	182	200	220	231
158	165	183	201	221	232
159	166	184	202	222	233
160	167	184	203	223	234
161	168	185	203	224	235
162	169	186	204	225	236
163	170	187	205	226	237
164	171	188	206	227	239

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A. ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC:SASKATOON
LATITUDE: 52.2°
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.8 49.8 30.9 16.4
NORMAL MIN: -7.8 -5.6 4.6 20.0 36.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
100	126	155	178	197	208
101	126	155	178	197	208
102	126	155	178	197	208
103	126	155	178	197	208
104	126	155	178	197	208
105	126	155	178	197	208
106	126	155	178	197	208
107	126	155	178	197	208
108	126	155	178	197	208
109	126	155	178	197	208
110	126	155	179	197	208
111	126	155	179	197	208
112	127	156	179	197	208
113	127	156	179	197	209
114	127	156	179	197	209
115	128	156	179	197	209
116	128	156	179	198	209
117	129	156	179	198	209
118	130	157	179	198	209
119	130	157	180	198	209
120	131	157	180	198	209
121	132	158	180	198	210
122	132	158	180	199	210
123	133	158	181	199	210
124	134	159	181	199	210
125	135	159	181	200	211
126	135	160	181	200	211
127	136	160	182	200	211
128	137	161	182	200	212
129	138	161	182	201	212

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC:SASKATOON
LATITUDE: 52.2
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.8 49.8 30.9 16.4
NORMAL MIN: -7.8 -5.6 4.6 20.0 36.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
130	139	162	183	201	212
131	140	162	183	202	213
132	141	163	184	202	213
133	141	163	184	203	214
134	142	164	185	203	214
135	143	165	185	203	214
136	144	165	186	204	215
137	145	166	186	205	215
138	146	167	187	205	216
139	147	167	187	206	217
140	148	168	188	206	217
141	149	169	188	207	218
142	150	170	189	208	218
143	151	170	190	208	219
144	152	171	190	209	220
145	153	172	191	210	220
146	154	173	192	210	221
147	155	174	192	211	222
148	156	174	193	212	223
149	157	175	194	213	223
150	158	176	195	213	224
151	159	177	195	214	225
152	160	178	196	215	226
153	161	178	197	216	227
154	161	179	197	217	227
155	162	180	198	217	228
156	163	181	199	218	229
157	164	182	200	219	230
158	165	182	200	220	231
159	166	183	201	221	232

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMIS MODEL

LOCATION: SASKATCHEWAN WC
LATITUDE: 51.60

OBSERVED												
NORMAL MAX:	10.9	16.9	28.2	49.6	65.1	72.0	79.5	77.0	65.1	53.2	31.3	18.0
NORMAL MIN:	-8.1	-3.6	8.1	26.1	37.8	45.9	51.1	48.2	38.8	28.2	12.6	-0.2
ESTIMATED												
NORMAL MAX:	11.2	14.6	26.8	44.5	62.9	77.1	83.3	79.8	67.6	50.0	31.6	17.4
NORMAL MIN:	-6.8	-4.4	5.5	20.3	36.0	48.4	54.2	51.8	41.9	27.2	11.5	-1.0

P	E	J	H	S	R
105	125	156	180	199	211
106	125	156	180	199	211
107	125	156	180	199	211
108	125	156	180	199	211
109	125	156	180	199	211
110	126	156	180	199	211
111	126	156	181	199	211
112	126	156	181	199	211
113	127	156	181	199	211
114	127	157	181	199	211
115	128	157	181	200	211
116	128	157	181	200	211
117	129	157	181	200	212
118	129	158	181	200	212
119	130	158	181	200	212
120	131	158	181	200	212
121	131	158	182	201	212
122	132	159	182	201	213
123	133	159	182	201	213
124	134	160	182	201	213
125	135	160	183	202	213
126	135	160	183	202	214
127	136	161	183	202	214
128	137	161	184	203	214
129	138	162	184	203	215
130	139	162	184	203	215
131	140	163	185	204	215
132	141	164	185	204	216
133	141	164	186	205	216
134	142	165	186	205	217

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN WC
LATITUDE: 51.60
OBSERVED
NORMAL MAX: 10.9 16.9 28.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 18.0
NORMAL MIN: -8.1 -3.6 8.1 26.1 37.4 45.9 51.1 48.2 38.4 28.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 14.6 26.8 44.5 62.9 77.1 83.3 79.8 67.6 50.0 31.6 17.4
NORMAL MIN: -6.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.8 41.9 27.2 11.5 -1.0

P	E	J	H	S	R
135	143	165	187	206	217
136	144	166	187	206	218
137	145	167	188	207	219
138	146	167	188	207	219
139	147	168	189	208	219
140	148	169	189	209	220
141	149	170	190	209	221
142	150	170	191	210	221
143	151	171	191	211	222
144	152	172	192	211	223
145	153	173	193	212	223
146	154	174	193	213	224
147	155	174	194	214	225
148	156	175	195	214	226
149	157	176	196	215	227
150	158	177	196	216	228
151	159	178	197	217	228
152	160	179	198	218	229
153	161	179	199	219	230
154	162	180	199	220	231
155	163	181	200	220	232
156	164	182	201	221	233
157	165	183	202	222	234
158	165	183	202	223	235
159	166	184	203	224	236
160	167	185	204	225	237
161	168	186	205	226	238
162	169	187	206	228	240
163	170	188	207	229	241
164	171	189	208	230	242

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: SASKATCHEWAN WC:SCOTT
LATITUDE: 52.4[illegible]
OBSERVED
NORMAL MAX: 10.9 16.9 28.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 18.0
NORMAL MIN: -8.1 -3.6 8.1 26.1 37.8 45.9 51.1 48.2 38.8 28.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 14.6 26.8 44.5 62.9 77.1 83.3 79.8 67.6 50.0 31.6 17.4
NORMAL MIN: -5.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.8 41.9 27.2 11.5 -1.0

P	E	J	H	S	R
90	125	155	180	198	210
91	125	155	180	198	210
92	125	155	180	198	210
93	125	155	180	198	210
94	125	155	180	198	210
95	125	155	180	198	210
96	125	155	180	198	210
97	125	155	180	198	210
98	125	155	180	198	210
99	125	155	180	198	210
100	125	155	180	198	210
101	125	155	180	198	210
102	125	155	180	198	210
103	125	155	180	198	210
104	125	155	180	198	210
105	125	155	180	198	210
106	125	155	180	198	210
107	125	155	180	198	210
108	125	156	180	198	210
109	125	156	180	198	210
110	126	156	180	198	210
111	126	156	180	198	210
112	126	156	180	198	210
113	127	156	180	199	211
114	127	156	180	199	211
115	128	156	180	199	211
116	128	157	180	199	211
117	129	157	180	199	211
118	129	157	181	199	211
119	130	157	181	199	211

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CROP STAGE JULIAN DATES FOR CROP: Sx DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: SASKATCHEWAN JC:SCOTT
LATITUDE: 52.4
OBSERVED
NORMAL MAX: 10.9 16.9 29.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 18.0
NORMAL MIN: -8.1 -3.6 4.1 26.1 37.8 45.9 51.1 48.2 38.8 26.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 14.6 25.8 44.5 62.9 77.1 83.3 79.3 67.6 50.0 31.2 17.4
NORMAL MIN: -5.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.3 41.8 27.2 11.5 -1.0

P	E	J	M	S	R
120	131	158	181	200	212
121	131	158	181	200	212
122	132	158	181	200	212
123	132	159	182	200	213
124	134	159	182	201	212
125	135	160	182	201	213
126	135	160	183	201	213
127	136	161	183	202	213
128	137	161	183	202	214
129	138	162	184	202	214
130	139	162	184	203	214
131	140	163	184	203	215
132	141	163	185	203	215
133	141	164	185	204	215
134	142	164	186	204	216
135	143	165	186	205	217
136	144	166	187	205	217
137	145	166	187	206	218
138	146	167	188	206	218
139	147	168	188	207	219
140	148	168	189	208	219
141	149	169	190	208	220
142	150	170	190	209	221
143	151	171	191	210	221
144	152	172	191	211	222
145	153	172	192	211	223
146	154	173	193	212	223
147	155	174	194	213	224
148	156	175	194	213	225
149	157	176	195	214	226

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN NF
LATITUDE: 52.70
OBSERVED
NORMAL MAX: 5.7 13.5 25.9 46.2 63.3 71.1 77.4 74.8 63.1 50.2 27.3 12.9
NORMAL MIN:-13.5 -8.3 3.2 24.4 37.0 45.9 51.6 48.6 39.0 28.8 11.3 -4.7
ESTIMATED
NORMAL MAX: 6.3 18.3 23.4 42.1 61.4 76.1 82.2 74.2 65.2 46.5 27.2 12.5
NORMAL MIN:-11.9-10.0 -0.5 16.7 34.3 48.6 55.4 53.9 43.4 27.2 9.5 -4.4

P	E	J	H	S	D
110	128	158	181	200	212
111	128	158	181	200	212
112	129	158	181	200	212
113	129	158	181	200	212
114	129	158	182	200	212
115	129	158	182	201	212
116	130	158	182	201	212
117	130	159	182	201	212
118	131	159	182	201	212
119	131	159	182	201	212
120	132	159	182	201	212
121	132	159	182	201	213
122	133	160	182	201	213
123	134	160	183	202	213
124	134	160	183	202	213
125	135	161	183	202	213
126	136	161	183	202	214
127	137	161	184	203	214
128	138	162	184	203	214
129	138	162	184	203	214
130	139	163	185	204	215
131	140	163	185	204	215
132	141	164	185	204	215
133	142	164	186	205	216
134	143	165	186	205	216
135	144	165	186	205	217
136	144	166	187	206	217
137	145	167	187	206	217
138	146	167	188	207	218
139	147	168	188	207	218

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CROP STAGE JULIAN DATES FOR CROP: S[illegible] (SPRING WHT)
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: SASKATCHEWAN NE
LATITUDE: 52.7[illegible]
OBSERVED
NORMAL MAX: [illegible]
NORMAL MIN: [illegible]
ESTIMATED
NORMAL MAX: [illegible]
NORMAL MIN: [illegible]

P	E	J	M	S	H
140	148	169	180	208	219
141	149	169	180	209	221
142	150	170	190	209	220
143	151	171	191	[illegible]	221
144	152	171	191	[illegible]	221
145	153	172	192	[illegible]	222
146	154	173	193	[illegible]	223
147	155	174	193	[illegible]	224
148	156	175	194	[illegible]	224
149	157	175	195	[illegible]	225
150	158	176	196	[illegible]	225
151	159	177	196	[illegible]	226
152	160	178	197	[illegible]	226
153	161	179	198	[illegible]	227
154	162	180	198	[illegible]	228
155	163	180	199	[illegible]	228
156	164	181	200	[illegible]	229
157	164	182	201	[illegible]	230
158	165	183	201	[illegible]	230
159	166	183	202	[illegible]	231
160	167	184	203	[illegible]	231
161	168	185	203	[illegible]	232
162	169	186	204	[illegible]	232
163	170	187	205	[illegible]	233
164	171	188	206	[illegible]	233
165	172	189	207	[illegible]	234
166	173	190	208	[illegible]	234
167	174	190	209	[illegible]	234
168	175	191	210	[illegible]	235
169	176	192	211	[illegible]	235

CROP STAGE JULIAN DATES FOR CROP: SW (DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN NF:MELFORT
LATITUDE: 52.85
OBSERVED
NORMAL MAX: 5.7 13.5 25.9 46.2 63.3 71.1 77.4 74.8 63.1 50.2 27.3 12.9
NORMAL MIN:-13.5 -8.3 3.2 24.4 37.0 45.9 51.6 48.6 34.0 25.8 11.1 -4.7
ESTIMATED
NORMAL MAX: 6.2 10.3 23.4 42.1 61.4 75.1 82.2 78.2 65.2 46.5 27.2 12.5
NORMAL MIN:-11.9-10.0 0.5 16.7 34.3 49.6 55.8 53.9 43.4 27.2 4.5 -4.8

P	E	J	H	S	R
90	128	158	181	200	212
91	128	158	181	200	212
92	128	158	181	200	212
93	128	158	181	200	212
94	128	158	181	200	212
95	128	158	181	200	212
96	128	158	181	200	212
97	128	158	181	200	212
98	128	158	181	200	212
99	128	158	181	200	212
100	128	158	181	200	212
101	128	158	181	200	212
102	128	158	181	200	212
103	128	158	181	200	212
104	128	158	181	200	212
105	128	158	181	200	212
106	128	158	181	200	212
107	128	158	181	200	212
108	128	158	181	200	212
109	128	158	181	200	212
110	128	158	181	200	212
111	128	158	181	200	212
112	129	158	181	200	212
113	129	158	181	200	212
114	129	158	181	200	212
115	129	158	182	200	212
116	130	158	182	200	212
117	130	159	182	201	212
118	131	159	182	201	212
119	131	159	182	201	212

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CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN MELFORT
LATITUDE: 52.85

OBSERVED													
NORMAL MAX:	5.7	13.5	25.9	46.2	63.3	71.1	77.4	74.8	63.1	50.2	27.3	12.9	
NORMAL MIN:	-13.5	-8.3	3.2	24.4	37.0	45.9	51.6	48.6	39.0	28.8	11.3	-4.7	
ESTIMATED													
NORMAL MAX:	6.3	10.3	23.4	42.1	61.4	76.1	82.2	78.2	65.2	46.5	27.2	12.5	
NORMAL MIN:	-11.9	-10.0	1.5	16.7	34.3	48.6	55.8	53.9	43.4	27.2	9.5	-4.8	

P	E	J	H	S	R
120	132	159	192	201	212
121	133	159	193	201	212
122	133	160	193	202	213
123	134	160	193	202	213
124	134	160	193	202	213
125	135	161	193	202	213
126	136	161	193	202	213
127	137	161	194	202	214
128	138	162	194	203	214
129	138	162	194	203	214
130	139	163	194	203	215
131	140	163	195	204	215
132	141	164	195	204	215
133	142	164	195	204	215
134	143	165	196	205	216
135	144	165	196	205	216
136	144	166	197	206	217
137	145	167	197	206	217
138	146	167	198	207	218
139	147	168	198	207	218
140	148	169	199	208	219
141	149	169	199	208	219
142	150	170	200	209	220
143	151	171	201	210	221
144	152	171	201	210	221
145	153	172	202	211	222
146	154	173	202	211	222
147	155	174	203	212	223
148	156	175	204	213	224
149	157	175	205	214	225

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMIS MODEL

LOCATION: SASKATCHEWAN NF:MELFORT
LATITUDE: 52.85
OBSERVED
NORMAL MAX: 5.7 13.5 25.9 46.2 63.3 71.1 77.4 74.8 63.1 50.2 27.3 12.4
NORMAL MIN:-13.5 -9.3 3.2 24.4 37.0 45.9 51.6 48.6 39.0 28.8 11.3 -4.7
ESTIMATED
NORMAL MAX: 5.7 10.3 23.4 42.1 61.4 76.1 82.2 79.2 65.2 46.5 27.2 12.5
NORMAL MIN:-11.9-10.0 0.5 16.7 34.3 48.6 55.8 53.9 43.4 27.2 9.5 -4.2

P	F	J	H	S	R
120	131	146	160	185	193
121	131	147	160	185	193
122	132	147	17[illegible]	186	194
123	133	148	17[illegible]	187	194
124	134	149	171	187	195
125	135	149	171	188	195
126	136	150	172	188	196
127	136	150	172	189	197
128	137	151	173	190	197
129	138	152	174	191	198
130	139	153	174	191	199
131	140	154	175	192	200
132	141	154	176	193	200
133	142	155	177	194	201
134	143	156	177	195	202
135	144	157	178	196	203
136	145	158	179	197	204
137	146	159	180	198	205
138	147	160	181	199	206
139	147	161	182	200	207
140	148	162	183	201	208
141	149	163	184	202	209
142	150	164	185	203	211
143	151	165	186	204	212
144	152	166	187	205	213
145	153	167	188	206	214
146	154	168	189	207	215
147	155	169	190	208	216
148	156	171	191	211	217
149	156	172	192	211	219

CROP STAGE JULIAN DATES FOR CROP: SM DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMTS MODEL

LOCATION: SASKATCHEWAN NE:MELFORT
LATITUDE: 52.85
OBSERVED
NORMAL MAX: 5.7 13.5 25.9 46.2 63.3 71.1 77.4 74.8 63.1 50.2 27.3 12.9
NORMAL MIN:-13.5 -8.3 3.2 24.4 37.0 45.9 51.6 48.6 39.0 28.8 11.3 -4.7
ESTIMATED
NORMAL MAX: 4.3 10.3 23.4 42.1 61.4 76.1 82.2 79.2 65.2 46.5 27.2 12.5
NORMAL MIN:-11.9-10.0 0.5 19.7 34.3 48.6 55.8 53.9 43.4 27.2 4.5 -4.8

P	E	J	H	S	R
150	157	173	191	212	220
151	158	174	194	213	221
152	159	175	195	214	222
153	160	176	196	215	223
154	161	177	198	216	225
155	162	179	199	218	226
156	163	180	200	219	227
157	164	181	201	220	228
158	165	182	202	221	229
159	166	183	203	222	230
160	166	184	204	223	232
161	167	185	205	224	233
162	168	186	206	225	234
163	169	187	207	226	235
164	170	188	208	227	236
165	171	189	209	228	237
166	172	190	210	229	238
167	173	191	211	230	240
168	174	192	212	231	241
169	175	193	213	232	242
170	176	194	214	233	243
171	177	195	216	234	245
172	178	196	217	235	246
173	179	197	218	237	247
174	180	198	219	238	249
175	181	199	220	239	251
176	182	200	221	240	253
177	183	201	222	241	255
178	184	202	223	243	257
179	185	203	225	244	260

CROP STAGE JULIAN DATES FOR CROP: SP DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMTS MODEL

LOCATION: SASKATCHEWAN NW
LATITUDE: 53.00
OBSERVED
NORMAL MAX: 7.5 14.9 25.6 46.9 63.3 70.2 76.3 73.4 62.6 50.0 24.0 14.0
NORMAL MIN:-13.0 -7.8 3.7 24.6 36.5 44.2 49.5 46.4 37.2 27.5 10.9 -4.5
ESTIMATED
NORMAL MAX: 7.9 11.8 24.5 42.5 61.0 75.2 81.1 77.2 64.5 46.5 27.9 13.8
NORMAL MIN:-11.4 -9.4 0.9 16.5 33.5 47.2 53.9 51.9 41.7 26.0 9.1 -4.6

P	E	J	H	S	R
110	128	159	183	203	215
111	128	159	183	203	215
112	128	159	183	203	215
113	129	159	183	203	215
114	129	159	183	203	215
115	129	159	184	203	215
116	130	159	184	203	215
117	130	160	184	203	215
118	131	160	184	203	216
119	131	160	184	204	216
120	132	160	184	204	216
121	132	160	184	204	216
122	133	161	184	204	216
123	134	161	185	204	216
124	135	161	185	204	216
125	135	162	185	205	217
126	136	162	185	205	217
127	137	162	186	205	217
128	138	163	186	205	217
129	138	163	186	206	218
130	139	164	186	206	218
131	140	164	187	206	218
132	141	165	187	207	219
133	143	165	187	207	219
134	143	166	188	207	219
135	144	166	188	208	220
136	145	167	189	208	220
137	145	167	189	209	221
138	146	168	190	209	221
139	147	169	190	210	222

CROP STAGE JULIAN DATES FOR CWOR: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: SASKATCHEWAN NW
LATITUDE: 53.00
OBSERVED
NORMAL MAX: 7.5 14.9 29.6 46.9 63.3 70.2 76.3 73.4 62.6 50.0 28.0 14.0
NORMAL MIN: -13.0 -7.8 3.7 24.6 36.5 44.2 49.5 46.4 37.2 27.5 10.9 -4.5
ESTIMATED
NORMAL MAX: 7.9 11.8 24.5 42.5 61.0 75.2 81.1 77.2 64.5 46.5 27.9 13.8
NORMAL MIN: -11.4 -9.4 0.9 16.5 33.5 47.2 53.9 51.9 41.7 26.0 9.1 -4.6

P	E	J	H	S	R
140	148	169	191	210	222
141	149	170	191	211	223
142	150	171	192	212	224
143	151	171	192	212	224
144	152	172	193	213	225
145	153	173	194	214	226
146	154	174	194	214	226
147	155	174	195	215	227
148	156	175	196	216	228
149	157	176	196	217	229
150	158	177	197	217	229
151	159	178	198	218	230
152	160	179	198	219	231
153	161	179	199	220	232
154	162	180	200	221	233
155	163	181	201	222	234
156	164	182	202	223	235
157	165	183	202	224	236
158	166	184	203	225	237
159	167	184	204	226	238
160	168	185	205	227	240
161	169	186	205	228	241
162	169	187	206	229	242
163	170	188	207	230	243
164	171	188	208	231	245
165	172	189	209	232	246
166	173	190	210	234	248
167	174	191	211	235	250
168	175	192	212	237	251
169	176	193	213	238	254

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: MANITOBA SE
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 9.5 15.3 24.6 47.5 63.5 73.0 79.5 77.2 65.7 53.1 31.5 16.9
NORMAL MIN: -9.9 -4.5 7.2 27.3 39.6 50.4 56.1 53.6 43.7 33.3 16.5 -0.4
ESTIMATED
NORMAL MAX: 10.0 13.1 25.6 43.6 62.4 77.0 83.5 80.2 67.9 49.9 31.1 16.3
NORMAL MIN: -8.7 -4.9 3.3 19.6 37.5 52.3 60.1 58.7 44.5 32.2 14.3 -0.5

D	E	J	M	S	W
90	124	155	178	197	206
91	124	155	178	197	206
92	124	155	178	197	206
93	124	155	178	197	206
94	124	155	178	197	206
95	124	155	178	197	206
96	124	155	178	197	206
97	124	155	178	197	206
98	124	155	178	197	206
99	124	155	178	197	206
100	124	155	178	197	206
101	124	155	178	197	206
102	124	155	178	197	206
103	124	155	178	197	206
104	124	155	178	197	206
105	124	155	178	197	206
106	124	155	178	197	206
107	124	155	178	197	206
108	124	155	178	197	206
109	124	155	178	197	206
110	127	155	178	197	206
111	127	155	178	197	206
112	127	156	178	197	206
113	127	155	178	197	207
114	128	156	178	197	207
115	128	156	178	197	207
116	129	156	178	198	207
117	129	156	178	198	207
118	130	157	179	198	207
119	130	157	179	198	207

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: MANITOWA SF
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 9.5 15.3 24.6 47.5 63.5 73.0 79.5 77.2 65.7 53.1 31.5 16.9
NORMAL MIN: -9.0 -6.5 7.2 27.3 39.6 50.4 56.1 53.6 43.7 33.3 16.5 -0.4
ESTIMATED
NORMAL MAX: 10.0 3.3 25.6 43.6 62.4 77.0 83.5 80.2 67.9 49.9 31.1 14.5
NORMAL MIN: -8.3 -4.9 1.3 19.6 37.5 52.3 60.1 58.7 48.5 32.2 14.3 -0.5

D	F	J	M	S	D
120	131	157	179	194	207
121	132	157	179	198	208
122	133	158	179	199	208
123	133	158	180	199	208
124	134	159	180	199	208
125	135	159	180	199	208
126	136	159	181	200	209
127	136	160	181	200	209
128	137	160	181	200	210
129	138	161	182	201	210
130	139	161	182	201	210
131	140	162	183	201	211
132	141	163	183	202	211
133	142	163	183	202	211
134	142	164	184	203	212
135	143	164	184	203	212
136	144	165	185	204	213
137	145	166	185	204	213
138	146	166	186	205	214
139	147	167	186	205	214
140	148	168	187	206	215
141	149	169	188	207	216
142	150	169	188	207	216
143	151	170	189	208	217
144	152	171	190	208	217
145	153	172	190	209	218
146	154	172	191	210	219
147	155	173	191	211	219
148	156	174	192	211	220
149	156	175	193	212	221

CROP STAGE JULIAN DATES FOR CROP: SX DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROMERTSON RMTS MODEL

LOCATION: MANITOBA SE
LATITUDE: 50.00

OBSERVED													
NORMAL MAX:	9.5	15.3	28.4	47.5	63.5	73.0	79.5	77.2	65.7	53.1	31.5	15.9	
NORMAL MIN:	-4.0	-6.5	7.2	27.3	39.6	50.4	56.1	53.6	43.7	33.3	16.5	-0.4	
ESTIMATED													
NORMAL MAX:	10.0	13.3	25.6	43.6	62.4	77.0	83.5	80.2	67.9	49.9	31.1	15.5	
NORMAL MIN:	-8.3	-6.9	3.3	19.6	37.5	52.3	60.1	58.7	48.5	32.2	14.3	-11.5	

P	E	J	M	S	W
150	157	175	193	213	221
151	158	176	194	214	222
152	159	177	194	214	223
153	160	178	195	215	224
154	161	178	196	216	224
155	162	179	197	217	225
156	163	180	197	217	226
157	163	181	198	218	227
158	164	182	199	219	228
159	165	183	200	220	229
160	166	183	201	221	230
161	167	184	201	222	231
162	168	185	202	223	232
163	169	186	203	224	233
164	170	187	204	225	234
165	171	188	205	227	236
166	172	189	206	228	237
167	173	190	207	229	238
168	174	191	208	230	240
169	175	192	209	232	241
170	176	193	210	233	242
171	177	194	211	235	244
172	178	195	213	236	246
173	179	196	214	238	248
174	180	197	216	240	250
175	181	198	218	241	252
176	182	199	219	243	254
177	183	200	218	244	254
178	184	201	219	244	254
179	185	202	220	250	263

FROM STAGE JULIAN DATES FOR CROP: S. DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOBA SELKIRK
LATITUDE: 49.N
OBSERVED
NORMAL MAX: 9.5 15.3 25.6 47.5 63.5 73.0 79.5 77.2 65.7 53.1 31.5 19.9
NORMAL MIN: -6.9 -4.5 7.2 27.3 39.6 50.4 56.1 53.6 43.7 33.3 16.5 -0.4
ESTIMATED
NORMAL MAX: 14.0 13.3 25.6 43.6 62.4 77.0 83.5 80.2 67.9 46.4 31.1 14.5
NORMAL MIN: -4.3 -6.9 3.3 19.6 37.5 52.3 60.1 58.7 48.5 32.2 14.3 -0.5

D	F	J	M	S	W
90	124	156	178	197	209
91	124	156	178	197	209
92	124	156	178	197	209
93	124	156	178	197	209
94	124	156	178	197	209
95	124	156	178	197	209
96	124	156	178	197	209
97	124	156	178	197	209
98	124	156	178	197	209
99	124	156	178	197	209
100	124	156	178	197	209
101	124	156	178	197	209
102	124	156	178	197	209
103	124	156	178	197	209
104	124	156	178	197	209
105	124	156	178	197	209
106	124	156	178	197	209
107	124	156	178	197	209
108	124	156	178	197	209
109	124	156	178	197	209
110	127	156	178	197	209
111	127	156	178	197	207
112	127	156	178	197	207
113	127	156	178	197	207
114	128	156	178	197	207
115	128	156	178	194	207
116	129	156	178	194	207
117	129	156	178	194	207
118	130	157	178	194	207
119	130	157	178	194	207

CROP STAGE JULIAN DATES FOR CROP: SB (DERIVED FROM
CLIMATIC NORMALS APPLIED TO A SUBROUTINE HMTS MODEL

LOCATION: MANITOWOC SEWAGE PLANT
LATITUDE: 44.4
OBSERVED
NORMAL MAX: 24.5 29.3 40.5 57.5 69.5 79.0 84.5 82.2 75.7 63.1 45.5 30.4
NORMAL MIN: 4.0 8.5 21.2 31.3 43.6 54.4 60.1 58.6 49.7 37.3 28.5 15.6
ESTIMATED
NORMAL MAX: 30.0 33.3 45.5 57.5 67.4 77.0 83.5 80.6 67.9 54.9 35.1 30.5
NORMAL MIN: 14.0 14.0 23.1 34.5 47.5 62.3 69.1 66.7 54.5 42.2 34.3 19.5

D	F	J	M	S	N
30	31	57	73	134	304
31	32	58	74	135	305
32	33	59	75	136	306
33	34	60	76	137	307
34	35	61	77	138	308
35	36	62	78	139	309
36	37	63	79	140	310
37	38	64	80	141	311
38	39	65	81	142	312
39	40	66	82	143	313
40	41	67	83	144	314
41	42	68	84	145	315
42	43	69	85	146	316
43	44	70	86	147	317
44	45	71	87	148	318
45	46	72	88	149	319
46	47	73	89	150	320
47	48	74	90	151	321
48	49	75	91	152	322
49	50	76	92	153	323
50	51	77	93	154	324
51	52	78	94	155	325
52	53	79	95	156	326
53	54	80	96	157	327
54	55	81	97	158	328
55	56	82	98	159	329
56	57	83	99	160	330
57	58	84	100	161	331
58	59	85	101	162	332
59	60	86	102	163	333
60	61	87	103	164	334

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON-EMIS MODEL

LOCATION: MANITOBA SC
LATITUDE: 49.7[illegible]
OBSERVED
NORMAL MAX: 9.5 15.3 28.3 47.8 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.6 -5.6 7.5 27.0 38.8 48.9 54.5 51.8 41.5 31.3 14.7 -0.3
ESTIMATED
NORMAL MAX: 4.9 13.2 25.5 43.5 62.4 77.0 83.6 80.2 67.9 49.9 31.1 16.4
NORMAL MIN: -8.[illegible] -6.1 4.1 20.0 37.1 51.1 58.0 56.1 45.9 30.1 12.9 -1.1

D	F	J	M	S	A
90	126	156	179	198	208
91	126	156	179	198	208
92	126	156	179	198	208
93	126	156	179	198	208
94	126	156	179	198	208
95	126	156	179	198	208
96	126	156	179	198	208
97	126	156	179	198	208
98	126	156	179	198	208
99	126	156	179	198	208
100	126	156	179	198	208
101	126	156	179	198	208
102	126	156	179	198	208
103	126	156	179	198	208
104	126	156	179	198	208
105	126	156	179	198	208
106	126	156	179	198	208
107	126	156	179	198	208
108	126	156	179	198	208
109	126	156	179	198	208
110	127	156	179	198	208
111	127	156	179	198	208
112	127	156	179	198	208
113	127	156	179	198	208
114	128	156	179	198	208
115	129	156	179	199	209
116	129	157	179	199	209
117	129	157	180	199	209
118	130	157	180	199	209
119	131	157	180	199	209

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OF POOR QUALITY

CROP STAGE JULIAN DATES FOR CROP: SP DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOBA SC
LATITUDE: 49.)
OBSERVED
NORMAL MAX: 9.5 15.3 29.0 47.4 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.4 -5.6 7.5 27.0 38.4 44.9 54.5 51.8 41.5 31.3 14.2 -0.4
ESTIMATED
NORMAL MAX: 9.9 17.2 29.5 43.5 62.4 77.0 83.6 80.2 67.9 49.9 31.1 16.4
NORMAL MIN: -4.6 -4.1 4.1 20.0 37.1 51.1 58.0 56.1 45.9 30.[illegible] 12.4 -1.1

D	E	J	M	S	N
120	131	158	180	190	204
121	132	158	180	200	210
122	132	158	181	200	210
123	133	159	181	200	210
124	134	159	181	200	210
125	135	159	181	201	211
126	136	159	182	201	211
127	136	160	182	201	211
128	137	160	182	202	212
129	138	161	183	202	212
130	139	162	183	203	213
131	140	163	184	203	213
132	141	163	184	203	213
133	142	164	184	204	214
134	142	164	185	204	214
135	143	165	185	205	215
136	144	166	186	205	215
137	145	166	186	206	216
138	146	167	187	206	216
139	147	168	188	207	217
140	148	168	188	208	217
141	149	169	189	208	218
142	150	170	189	209	218
143	151	171	190	210	219
144	152	172	191	211	220
145	153	172	191	211	220
146	154	173	192	212	221
147	155	174	193	212	222
148	156	175	193	213	223
149	157	175	194	214	223

CROP STAGE JULIAN DATES FOR CROP: SY DERIVED FROM
CLIMATIC NORMALS ADJUSTED TO R.ROBERTSON-AMTS-MODEL

LOCATION: MANITOBA SC
LATITUDE: 49.71

OBSERVED													
NORMAL MAX:	0.5	15.1	28.0	47.4	61.7	72.5	76.5	77.4	65.7	53.2	31.1	17.1	
NORMAL MIN:	-9.4	-5.6	7.5	27.0	38.2	44.0	54.2	51.8	41.5	31.3	14.7	-0.6	
ESTIMATED													
NORMAL MAX:	-1.9	17.2	25.5	41.5	52.4	77.0	83.6	80.2	67.9	49.4	31.1	10.4	
NORMAL MIN:	-13.0	-6.1	4.1	20.0	37.1	51.1	58.8	56.1	45.9	30.1	12.9	-1.1	

P	F	J	H	S	R
150	159	174	195	211	244
151	158	177	196	212	245
152	159	178	196	213	245
153	160	178	197	213	245
154	161	179	197	213	246
155	162	180	198	214	246
156	163	181	199	214	246
157	164	182	200	215	247
158	165	182	200	215	247
159	166	183	201	215	247
160	166	184	202	216	248
161	167	185	202	216	248
162	168	186	203	216	249
163	169	187	203	217	249
164	170	188	204	217	249
165	171	189	204	218	250
166	172	190	205	218	250
167	173	191	205	219	251
168	174	192	206	219	251
169	175	193	207	220	252
170	176	194	207	220	252
171	177	195	208	221	253
172	178	196	208	221	253
173	179	197	209	222	254
174	180	198	209	222	254
175	181	199	210	223	255
176	182	200	210	223	255
177	183	201	211	224	256
178	184	202	211	224	256
179	185	203	212	225	257

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON-AMES MODEL

LOCATION: MANITOBA SCHNORDEN
LATITUDE: 49.2
OBSERVED
NORMAL MAX: 9.5 15.1 25.0 47.8 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.4 -5.5 7.5 27.0 39.8 48.9 54.5 51.8 41.5 31.3 14.7 -0.8
ESTIMATED
NORMAL MAX: 9.9 17.2 25.5 43.5 62.4 77.1 83.6 80.2 67.9 44.9 31.1 19.4
NORMAL MIN: -8.1 -4.1 4.1 20.0 37.1 51.1 58.0 56.1 45.9 30.1 12.9 -1.1

P	E	J	M	S	H
90	126	156	170	190	204
91	126	156	170	190	204
92	126	156	170	190	204
93	126	156	170	190	204
94	126	156	170	190	204
95	126	156	170	190	204
96	126	156	170	190	204
97	126	156	170	190	204
98	126	156	170	190	204
99	126	156	170	190	204
100	126	156	170	190	204
101	126	156	170	190	204
102	126	156	170	190	204
103	126	156	170	190	204
104	126	156	170	190	204
105	126	156	170	190	204
106	126	156	170	190	204
107	126	156	170	190	204
108	126	156	170	190	204
109	126	156	170	190	204
110	127	156	170	190	204
111	127	156	170	190	204
112	127	156	170	190	204
113	127	156	170	190	204
114	128	156	170	190	204
115	128	157	170	190	204
116	129	157	170	190	204
117	130	157	170	190	204
118	130	157	170	190	204
119	131	158	170	190	204

CROP STAGE DATES FOR CROPS AS DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON DATE MODEL

LOCATION: MANITOBA SCHNORDEN
LATITUDE: 49.2

OBSERVED													
NORMAL MAX:	9.5	15.3	24.0	47.8	63.7	72.5	79.5	77.4	65.7	53.2	31.1	17.1	
NORMAL MIN:	-9.4	-5.6	7.5	27.0	38.4	44.9	54.5	51.8	41.5	31.3	14.7	-0.8	
ESTIMATED													
NORMAL MAX:	9.9	13.2	25.5	43.5	62.4	77.0	83.6	80.2	67.9	49.9	31.1	16.4	
NORMAL MIN:	-8.0	-6.1	4.1	20.0	37.1	51.1	58.0	56.1	45.9	30.1	12.9	-1.1	

D	F	J	H	S	R
130	131	158	180	200	210
131	132	158	181	200	210
132	133	159	181	200	210
133	133	159	181	201	211
134	134	159	181	201	211
135	135	160	182	201	211
136	136	160	182	201	211
137	136	161	182	202	212
138	137	161	183	202	212
139	138	162	183	203	213
130	139	162	183	203	213
131	140	163	184	203	213
132	141	163	184	204	214
133	142	164	185	204	214
134	142	165	185	205	214
135	143	165	186	205	215
136	144	166	186	206	215
137	145	167	187	206	216
138	146	167	187	207	216
139	147	168	188	207	217
140	148	169	188	208	217
141	149	169	189	209	218
142	150	170	190	209	219
143	151	171	190	210	219
144	152	172	191	211	220
145	153	173	192	211	221
146	154	173	192	212	222
147	155	174	193	213	222
148	156	175	194	214	223
149	157	176	194	214	224

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CROP STAGE JULIAN DATES FOR CORN: SCS DERIVED FROM
CLIMATIC NORMALS ADJUSTED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOWA SK
LATITUDE: 49.90
OBSERVED
NORMAL MAX: 9.3 15.3 27.9 48.2 63.7 72.1 79.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.3 25.8 38.7 48.4 54.0 51.1 40.9 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 9.7 13.2 25.5 43.6 62.4 77.0 83.5 81.0 67.7 49.6 30.4 10.2
NORMAL MIN: -7.9 -5.9 4.3 19.9 36.5 50.5 57.2 55.3 45.1 24.4 12.5 -1.1

D	E	J	M	S	W
90	124	156	179	199	209
91	124	156	179	199	209
92	124	156	179	199	209
93	124	156	179	199	209
94	124	156	179	199	209
95	124	156	179	199	209
96	124	156	179	199	209
97	124	156	179	199	209
98	124	156	179	199	209
99	124	156	179	199	209
100	124	156	179	199	209
101	124	156	179	199	209
102	124	156	179	199	209
103	124	156	179	199	209
104	124	156	179	199	209
105	124	156	179	199	209
106	124	156	179	199	209
107	124	156	179	199	209
108	124	156	179	199	209
109	124	156	179	199	209
110	127	156	179	199	209
111	127	156	179	199	209
112	127	156	180	199	209
113	127	156	180	199	209
114	129	157	180	199	209
115	129	157	180	199	209
116	129	157	180	199	210
117	129	157	180	200	210
118	130	157	180	200	210
119	130	158	180	200	210

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOBA SW
LATITUDE: 49.8
OBSERVED
NORMAL MAX: 9.3 15.3 27.9 48.2 63.7 72.1 79.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.3 26.8 38.7 48.4 54.0 51.1 40.8 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 9.7 13.2 25.5 43.6 62.4 77.0 83.5 80.0 67.7 49.6 30.8 16.2
NORMAL MIN: -7.9 -5.9 4.3 19.9 36.8 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

D	F	J	M	S	R
150	158	176	195	215	225
151	159	177	196	216	226
152	159	178	197	217	227
153	160	179	197	218	227
154	161	179	198	218	228
155	162	180	199	219	229
156	163	181	199	220	230
157	164	182	200	221	231
158	165	183	201	222	232
159	166	184	202	223	233
160	167	184	203	224	234
161	168	185	204	225	235
162	169	186	204	226	236
163	169	187	205	227	236
164	170	188	206	228	237
165	171	189	207	229	238
166	172	190	208	230	239
167	173	191	209	231	240
168	174	192	210	232	241
169	175	193	211	233	242
170	176	194	212	234	243
171	177	195	213	235	244
172	178	196	214	236	245
173	179	197	215	237	246
174	180	198	216	238	247
175	181	199	217	239	248
176	182	200	218	240	249
177	183	201	219	241	250
178	184	202	220	242	251
179	185	203	221	243	252

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMTS MODEL

LOCATION: MANITOBA SWINEHANDOON
LATITUDE: 49.85
OBSERVED
NORMAL MAX: 9.7 15.3 27.9 48.2 63.7 72.1 74.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.3 26.8 38.7 49.4 54.0 51.1 40.8 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 6.7 13.2 25.5 43.6 62.4 77.0 83.5 80.0 67.7 49.6 30.8 16.2
NORMAL MIN: -7.0 -5.9 4.3 19.9 36.4 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

D	F	J	M	S	N
101	126	154	170	193	219
101	126	156	170	193	209
102	126	156	170	193	209
103	126	156	170	193	209
104	126	156	170	193	209
105	126	156	170	193	209
106	126	156	170	193	209
107	126	156	170	193	209
108	126	156	170	193	209
109	126	156	170	193	209
110	127	156	170	193	209
111	127	156	170	193	209
112	127	156	170	193	209
113	127	156	170	193	209
114	128	157	170	193	209
115	128	157	170	193	209
116	128	157	170	193	209
117	128	157	170	193	209
118	128	157	170	193	209
119	128	157	170	193	209
120	131	158	171	193	209
121	132	158	171	193	210
122	132	159	171	193	211
123	132	159	171	193	211
124	134	159	172	193	211
125	135	160	172	193	211
126	135	160	172	193	212
127	136	161	173	193	212
128	137	161	173	193	212
129	138	162	173	193	213

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMIS MODEL

LOCATION: MANITOBA STATION
LATITUDE: 49.25
OBSERVED
NORMAL MAX: 9.7 15.3 27.9 44.2 63.7 72.1 74.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.1 26.8 38.7 48.4 54.0 51.1 40.8 30.6 14.2 -0.9
ESTIMATED
NORMAL MAX: 9.7 13.2 25.3 43.6 62.4 77.0 83.5 80.0 67.7 49.6 30.4 14.2
NORMAL MIN: -7.9 -5.9 4.3 19.9 36.8 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

P	E	J	M	S	W
130	139	162	194	203	213
131	140	163	194	203	213
132	141	163	194	204	214
133	142	164	195	204	214
134	142	165	195	204	215
135	143	165	196	205	215
136	144	166	196	205	216
137	145	167	197	205	216
138	146	167	197	206	216
139	147	168	198	206	217
140	148	169	198	206	217
141	149	169	199	207	217
142	150	170	199	207	218
143	151	171	199	208	218
144	152	172	191	211	221
145	153	173	192	211	221
146	154	173	192	212	222
147	155	174	193	213	223
148	156	175	194	214	223
149	157	176	194	214	224
150	158	176	195	215	225
151	159	177	196	216	226
152	159	178	197	217	227
153	160	179	197	217	227
154	161	179	198	218	228
155	162	180	198	218	229
156	163	181	199	229	230
157	164	182	200	231	231
158	165	183	201	232	232
159	166	184	202	233	233

CROP STAGE JULIAN DATES FOR CROP: SO DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MARITIMA SW
LATITUDE: 49.33
OBSERVED
NORMAL MAX: 9.3 15.3 27.9 48.2 63.7 72.1 79.5 77.0 65.7 52.7 30.9 15.9
NORMAL MIN: -9.4 -5.4 7.3 26.8 38.7 49.4 54.0 51.1 40.8 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 8.7 13.2 25.5 43.6 62.4 77.0 83.5 80.0 67.7 49.6 30.8 14.2
NORMAL MIN: -7.0 -5.9 4.3 19.9 36.8 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

D	F	J	M	S	Z
130	131	158	181	200	210
131	132	158	181	200	210
132	133	159	181	200	211
133	133	159	181	201	211
134	134	159	182	201	211
135	135	159	182	201	211
136	136	160	182	202	212
137	136	161	183	202	212
138	137	161	183	202	212
139	138	162	183	203	213
140	139	162	184	203	213
141	140	163	184	203	213
142	141	163	184	204	214
143	142	164	185	204	214
144	142	165	185	205	215
145	143	165	186	205	215
146	144	166	186	206	216
147	145	167	187	206	216
148	146	167	187	207	217
149	147	168	188	207	217
150	148	169	188	208	218
151	149	169	189	208	218
152	150	170	190	209	219
153	151	171	190	210	220
154	152	172	191	211	221
155	153	173	192	212	221
156	154	173	193	212	222
157	155	174	193	213	223
158	156	175	194	214	224
159	157	176	195	214	224

CROP STAGE JULIAN DATES FOR CORN: SW (DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROMERTSON HMIS MODEL

LOCATION: MANITOBA NORTH
LATITUDE: 50.50
OBSERVED
NORMAL MAX: 7.5 13.0 20.2 45.9 61.7 71.2 77.9 75.2 63.9 51.4 29.7 15.3
NORMAL MIN:-11.0 -7.4 5.2 25.7 38.1 48.6 54.7 52.0 42.1 32.2 14.7 -1.8
ESTIMATED
NORMAL MAX: 7.2 11.5 20.7 41.6 60.5 75.1 81.7 78.4 66.2 44.3 29.5 14.4
NORMAL MIN: -6.5 -4.1 2.0 18.1 35.9 50.7 58.4 57.0 46.8 30.7 12.0 -1.5

P	F	J	M	S	H
110	129	158	181	201	211
111	129	158	181	201	211
112	131	158	181	201	211
113	130	158	181	201	211
114	130	158	181	201	211
115	131	158	181	201	211
116	131	158	181	201	211
117	131	158	181	201	211
118	131	158	181	201	211
119	132	159	182	201	211
120	132	159	182	202	211
121	133	159	182	202	212
122	134	159	182	202	212
123	134	160	182	202	212
124	135	160	182	202	212
125	134	160	183	203	212
126	136	161	183	203	213
127	137	161	183	203	213
128	138	162	184	203	213
129	138	162	184	203	213
130	139	163	184	204	214
131	140	163	185	204	214
132	141	164	185	205	215
133	142	164	185	205	215
134	143	165	186	205	215
135	144	165	186	206	215
136	145	166	187	207	216
137	145	167	187	207	217
138	146	167	188	208	217
139	147	168	188	208	218

CROP STAGE JULIAN DATES FOR CROP: SB (DERIVED FROM
CLIMATIC NORMALS ADJUSTED TO A NONERTSON SMTS MODEL

LOCATION: [illegible]
LATITUDE: 50.5

OBSERVED

NORMAL MAX:	7.5	13.0	28.2	45.9	61.7	71.2	77.9	75.2	63.9	31.4	20.7	15.3
NORMAL MIN:	-11.0	-7.4	5.2	25.7	34.1	48.6	54.7	52.0	42.1	32.2	14.7	-1.8

ESTIMATED

NORMAL MAX:	-3.2	11.7	23.7	41.5	60.5	75.1	81.7	79.4	65.2	44.3	28.5	14.8
NORMAL MIN:	-23.5	-14.1	2.0	18.1	35.9	50.7	58.4	57.0	46.8	30.7	12.9	-1.8

D	F	J	M	S	A
140	148	169	183	209	213
141	149	169	186	[illegible]	214
142	150	170	190	211	214
143	151	171	191	211	221
144	152	172	191	211	221
145	153	172	192	212	221
146	154	173	192	213	222
147	155	174	193	213	223
148	156	175	194	214	224
149	157	175	194	215	224
150	158	176	195	215	225
151	159	177	196	216	225
152	159	178	196	217	225
153	160	178	197	217	227
154	161	179	198	218	228
155	162	180	198	219	228
156	163	181	199	220	231
157	164	181	200	221	231
158	165	182	200	222	231
159	166	183	201	223	232
160	166	184	202	224	233
161	167	185	203	225	235
162	168	186	204	226	236
163	169	187	205	227	237
164	170	187	205	228	238
165	171	188	206	229	239
166	172	189	207	231	241
167	173	190	208	232	242
168	174	191	209	233	243
169	175	192	210	235	245

APPENDIX D

PHENOLOGY MODEL OUTPUT FOR SPRING BARLEY

CROP STAGE JULIAN DATES FOR CROP: [illegible] DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON [illegible] MODEL

LOCATION: ALBERTA SOUTH LETHBRIDGE
LATITUDE: 49.70
OBSERVED
NORMAL MAX: 21.2 27.1 34.7 50.5 62.5 68.5 76.5 74.1 64.8 50.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.5 36.7 43.5 48.0 45.5 37.9 24.5 15.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.7 34.3 43.2 52.5 73.4 76.0 73.1 65.4 51.5 37.2 20.3
NORMAL MIN: 1.9 3.5 11.7 23.3 35.7 45.4 49.6 47.9 40.0 25.3 15.0 5.3

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
95	113	1[illegible]	164	181	191
96	113	136	164	181	191
97	114	136	164	181	191
98	114	136	164	181	191
99	115	136	164	181	191
100	115	136	164	181	191
101	115	137	164	181	191
102	116	137	164	181	191
103	117	139	164	181	191
104	117	139	164	181	191
105	118	139	165	182	192
106	118	139	165	182	192
107	119	140	165	182	192
108	120	140	165	182	192
109	121	140	165	182	192
110	122	141	166	183	193
111	122	141	166	183	193
112	123	142	166	183	193
113	124	142	167	184	194
114	125	142	167	184	194
115	125	143	168	184	194
116	126	143	168	185	195
117	127	144	168	185	195
118	128	145	169	185	195
119	129	145	169	186	195
120	130	145	170	187	195
121	131	146	170	187	197
122	131	147	171	188	198
123	132	148	172	188	198
124	133	148	172	189	199

CROP STAGE JULIAN DATES FOR CROP: SPRING WHEAT
CLIMATIC NORMALS APPLIED TO A ROBERTSON GMS MODEL

LOCATION: ALBERTA SOUTH LETHBRIDGE
LATITUDE: 49.70
OBSERVED
NORMAL MAX: 21.6 27.1 34.9 50.5 62.0 68.5 70.3 74.1 64.0 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 28.8 38.7 43.5 46.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 24.5 34.3 41.2 52.5 63.4 70.0 75.1 65.4 51.5 37.2 20.3
NORMAL MIN: 1.5 3.8 11.7 23.3 35.7 45.4 49.5 47.9 40.0 28.3 16.0 5.3

D	E	J	M	S	A
125	134	149	173	190	199
126	135	150	174	191	200
127	136	151	174	191	201
128	137	152	175	192	201
129	138	152	175	192	202
130	139	153	175	193	203
131	140	154	177	194	204
132	141	155	178	195	204
133	142	156	179	195	205
134	143	157	180	196	206
135	144	158	180	197	207
136	145	159	181	198	208
137	146	160	182	199	209
138	146	161	183	200	210
139	147	162	184	201	211
140	148	163	185	202	212
141	149	164	186	203	213
142	150	165	187	204	214
143	151	166	188	205	215
144	152	167	189	206	216
145	153	168	190	207	217
146	154	169	191	208	218
147	155	170	192	209	219
148	156	171	193	210	220
149	157	172	194	211	221
150	158	173	195	212	223
151	159	174	196	213	224
152	159	175	197	214	225
153	160	176	198	215	226
154	161	177	199	217	228

121

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON GDIS MODEL

LOCATION: [illegible]
LATITUDE: 52.50
OBSERVED
NORMAL MAX: 21.2 27.1 34.9 50.3 62.0 68.5 70.5 74.1 64.7 54.1 37.0 27.0
NORMAL MIN: 0.5 5.0 13.1 26.8 36.7 43.5 46.0 45.5 37.9 29.5 16.5 7.0
ESTIMATED
NORMAL MAX: 21.7 29.5 34.3 48.2 62.5 73.4 76.0 73.1 65.4 51.5 37.2 26.3
NORMAL MI : 1.9 5.8 11.7 23.3 35.7 45.4 49.8 47.9 40.0 28.3 16.0 6.3

[illegible]	132	140	154	151	191
[illegible]	132	140	155	151	191
[illegible]	133	141	155	151	191
113	134	141	155	152	192
[illegible]	135	142	156	152	192
[illegible]	135	142	156	152	192
116	136	143	157	153	193
117	137	143	157	153	193
[illegible]	138	144	158	154	193
[illegible]	138	144	158	154	194
[illegible]	139	145	159	155	194
121	139	145	159	155	195
122	139	146	170	156	195
123	140	147	170	156	196
124	141	148	171	157	197
125	142	149	172	158	197
126	143	149	172	158	197
127	144	150	173	159	199
[illegible]	145	151	174	160	199
[illegible]	145	152	174	161	200
130	146	153	175	161	201
131	146	153	176	162	201
[illegible]	147	154	177	163	202
[illegible]	148	155	177	164	203
[illegible]	148	156	178	165	204
[illegible]	149	157	179	165	205
136	150	158	180	166	206
137	150	159	181	167	207
138	150	160	182	168	208
139	151	161	183	169	208

[illegible] DEGREE-DAYS PER CROP SEASON DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON'S UNITS MODEL

LOCATION: [illegible]
LATITUDE: 52.50

OBSERVED

NORMAL MAX:	61.6	67.1	84.4	90.3	92.6	94.5	78.5	74.1	64.5	54.1	37.0	27.0
NORMAL MIN:	0.5	5.0	13.1	28.8	36.7	43.5	46.0	45.5	37.4	29.5	19.5	7.0

ESTIMATED

NORMAL MAX:	61.7	64.5	84.3	88.4	92.5	73.4	78.0	75.1	63.4	51.5	37.4	20.3
NORMAL MIN:	1.4	3.8	11.7	23.3	35.7	45.4	44.8	47.4	40.0	28.3	16.0	0.3

140	164	182	194	210	209
141	164	183	195	211	210
142	165	184	196	212	211
143	161	183	196	213	212
144	162	185	197	214	213
145	163	187	198	215	214
146	164	188	199	216	215
147	165	189	200	217	216
148	166	190	201	218	217
149	167	191	202	219	218
150	168	192	203	220	219
151	169	193	204	221	220
152	170	194	205	222	221
153	171	195	206	223	222
154	172	196	207	224	223
155	173	197	208	225	224
156	174	198	209	226	225
157	175	199	210	227	226
158	176	200	211	228	227
159	177	201	212	229	228
160	178	202	213	230	229
161	179	203	214	231	230
162	180	204	215	232	231
163	181	205	216	233	232
164	182	206	217	234	233
165	183	207	218	235	234
166	184	208	219	236	235
167	185	209	220	237	236
168	186	210	221	238	237
169	187	211	222	239	238
170	188	212	223	240	239
171	189	213	224	241	240
172	190	214	225	242	241
173	191	215	226	243	242
174	192	216	227	244	243
175	193	217	228	245	244

CROP STAGE DURATION DATA FOR CROP: SPRING WHEAT
CLIMATIC NORMALS APPLIED TO A ROBERTSON PHTS MODEL

LOCATION: ALBERTA CENTRAL REGION
LATITUDE: 53.5C
(OBSERVED)
NORMAL MAX: 12.4 20.3 30.0 40.0 52.2 58.2 73.5 70.7 61.3 50.4 30.5 16.0
NORMAL MIN: -7.6 -2.0 3.1 25.5 36.7 43.5 46.4 45.7 37.4 25.0 12.7 -0.6
ESTIMATED
NORMAL MAX: 12.4 18.3 28.3 44.3 60.6 73.3 78.2 74.4 62.8 48.3 30.2 17.8
NORMAL MIN: -5.2 -4.0 5.5 19.7 34.7 46.0 52.2 50.0 40.5 26.3 11.2 -0.7

95	114	142	1[illegible]	1[illegible]	1[illegible]
96	115	142	1[illegible]	1[illegible]	1[illegible]
97	116	142	1[illegible]	1[illegible]	1[illegible]
98	117	142	1[illegible]	1[illegible]	1[illegible]
99	118	142	1[illegible]	1[illegible]	1[illegible]
100	119	142	1[illegible]	1[illegible]	1[illegible]
101	120	142	1[illegible]	1[illegible]	1[illegible]
102	120	142	1[illegible]	1[illegible]	1[illegible]
103	120	142	1[illegible]	1[illegible]	1[illegible]
104	121	142	1[illegible]	1[illegible]	1[illegible]
105	121	142	1[illegible]	1[illegible]	1[illegible]
106	122	142	1[illegible]	1[illegible]	1[illegible]
107	122	142	1[illegible]	1[illegible]	1[illegible]
108	123	142	1[illegible]	1[illegible]	1[illegible]
109	123	143	1[illegible]	1[illegible]	1[illegible]
110	124	143	1[illegible]	1[illegible]	1[illegible]
111	125	143	1[illegible]	1[illegible]	1[illegible]
112	125	143	1[illegible]	1[illegible]	1[illegible]
113	126	143	1[illegible]	1[illegible]	1[illegible]
114	127	144	1[illegible]	1[illegible]	1[illegible]
115	127	144	1[illegible]	1[illegible]	1[illegible]
116	127	144	1[illegible]	1[illegible]	1[illegible]
117	128	144	1[illegible]	1[illegible]	1[illegible]
118	129	144	1[illegible]	1[illegible]	1[illegible]
119	129	144	1[illegible]	1[illegible]	1[illegible]
120	130	144	1[illegible]	1[illegible]	1[illegible]
121	131	147	1[illegible]	1[illegible]	1[illegible]
122	132	147	1[illegible]	1[illegible]	1[illegible]
123	133	148	171	157	195
124	134	149	171	157	195

[illegible] STATE [illegible] VALUES FOR [illegible] DERIVED FROM
CLIMATIC NORMALS APPLIED TO A SUBDIVISION AREA MODEL

LOCATION: [illegible] NORMAL CONDITION
LATITUDE: 53.50
OBSERVED
NORMAL MAX: 12.4 20.3 30.5 43.0 62.2 [illegible] 73.5 70.7 61.3 50.4 30.0 13.0
NORMAL MIN: -7.6 -2.0 [illegible].1 25.5 38.7 43.5 48.4 45.7 37.4 25.0 12.7 -0.6
ESTIMATED
NORMAL MAX: 12.4 19.5 28.3 44.5 70.9 73.3 [illegible]0.2 74.4 62.0 49.0 30.2 17.4
NORMAL MIN: -5.2 -4.0 3.5 14.7 34.7 40.6 52.2 50.0 40.5 28.3 11.2 -0.7

135	135	144	172	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137	136	145	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140	139	148	175	141	145
141	140	149	176	142	206
142	142	150	177	143	201
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
147	145	154	181	147	209
148	146	155	182	148	208
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150	148	157	184	150	211
151	149	158	185	201	212
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
154	152	161	188	204	215
155	153	162	189	205	216
156	154	163	190	206	217
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160	158	167	194	210	221
161	159	168	195	211	222
162	160	169	196	212	223
163	161	170	197	213	224
164	162	171	198	214	225
165	163	172	199	215	226
166	164	173	200	216	227
167	165	174	201	217	228
168	166	175	202	218	229

CROP STAGE DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON UNITS MODEL

LOCATION: ALMENTA CENTRAL EDMONTON
LATITUDE: 53.55
OBSERVED
NORMAL MAX: 12.4 20.3 30.5 46.6 62.2 68.2 73.6 70.7 61.3 50.4 30.6 16.0
NORMAL MIN: -7.6 -2.6 3.1 25.5 36.7 43.5 46.4 45.7 37.4 28.0 12.7 -0.6
ESTIMATED
NORMAL MAX: 12.5 19.5 28.3 44.5 60.9 73.3 78.2 74.4 62.8 48.5 30.2 17.8
NORMAL MIN: -4.2 -4.0 -5.5 19.7 34.7 46.6 52.2 50.0 40.5 29.3 11.2 -0.7

P	E	J	M	S	K
155	182	170	197	214	223
156	183	171	198	215	224
157	184	172	199	216	225
158	185	173	200	217	226
159	186	174	201	218	227
160	187	175	202	219	228
161	188	183	204	221	230
162	189	184	205	222	232
163	190	185	206	223	233
164	191	186	207	224	234
165	192	187	208	225	235
166	193	188	209	226	236
167	194	190	210	228	238
168	194	191	211	229	241
169	195	192	212	230	243
170	196	193	214	232	244
171	197	194	215	233	246
172	198	195	216	234	248
173	199	196	217	235	251
174	200	197	218	237	254
175	201	198	219	238	200
176	202	199	220	239	154
177	203	200	221	241	155
178	204	201	222	242	156
179	205	201	223	244	160
180	205	202	224	245	162
181	207	203	225	247	163
182	208	204	227	249	164
183	209	205	228	251	165
184	210	206	229	254	167

LOCATION: ALBERTA (MOUNTAINS & FOOTHILLS)
LATITUDE: 55.2
OBSERVED
NORMAL MAX: 9.1 17.4 24.3 [illegible]
NORMAL MIN: -10.3 -3.6 0.6 24.6 30.1 43.5 47.0 42.3 37.7 20.2 10.6 -3.5
ESTIMATED
NORMAL MAX: 3.5 13.6 20.3 43.4 50.2 62.5 [illegible]
NORMAL MIN: -9.1 -2.6 3.5 18.5 34.5 47.1 53.0 50.5 40.4 25.3 9.4 -3.2

126	131	147	154	162	193
127	132	147	170	145	193
128	132	147	170	155	193
129	134	148	170	156	194
130	134	149	171	149	194
131	135	149	171	157	195
132	136	150	172	158	196
133	137	150	172	158	196
134	137	151	173	159	196
135	138	152	174	159	197
136	139	153	175	160	198
137	140	154	176	161	199
138	141	155	176	162	200
139	142	155	176	162	200
140	143	156	177	163	201
141	144	157	178	163	201
142	145	157	179	164	202
143	145	158	179	165	203
144	147	159	180	165	203
145	147	160	181	167	203
146	148	161	182	168	205
147	150	162	183	168	206
148	150	163	184	169	207
149	151	164	185	200	208
150	152	165	185	201	208
151	153	166	186	202	210
152	154	167	187	203	211
153	155	168	188	204	212
154	155	168	189	205	213
155	157	169	190	206	214

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CLIM STOR UVLIM: UNITS FOR GROWS TO BE DERIVED FROM
CLIMATIC NORMALS APPLIED TO A PARAMETRIC SHIS MODEL

LOCATION: ALBERTA NORTHWEST COAST
LATITUDE: 55.20
OBSERVED
NORMAL MAX: 4.1 17.5 24.3 47.1 61.5 67.0 71.1 64.0 54.1 48.4 27.7 14.4
NORMAL MIN:-10.3 -3.4 0.0 24.3 36.7 43.5 47.8 45.3 37.2 28.2 10.3 -3.5
ESTIMATED
NORMAL MAX: 4.5 13.7 26.0 43.0 60.2 67.4 77.1 63.3 51.2 44.2 27.1 14.4
NORMAL MIN: -9.1 -0.0 3.5 10.5 34.5 47.1 53.0 50.5 40.4 25.3 9.4 -3.2

J	S	J	M	S	M
150	157	170	191	207	213
151	158	171	192	208	214
152	159	172	193	209	215
153	160	173	194	210	216
154	161	174	195	211	217
155	162	175	196	212	220
156	163	176	197	213	221
157	164	178	198	214	222
158	165	179	199	215	224
159	166	180	200	216	225
160	167	181	201	217	226
161	168	182	202	218	227
162	169	183	203	220	229
163	170	184	204	221	230
164	170	185	205	222	231
165	171	186	206	223	233
166	172	187	207	224	234
167	173	188	208	225	235
168	174	189	209	226	237
169	175	190	210	227	238
170	176	191	211	228	239
171	177	192	212	230	241
172	178	193	213	231	242
173	179	194	214	232	244
174	180	195	215	233	245
175	181	196	216	234	246
176	182	197	217	235	248
177	183	197	218	237	253
178	184	198	219	238	254
179	185	199	220	240	153

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMIS MODEL

LOCATION: BASKATONG (AT DEVILTOWN MEAD)
LATITUDE: 50.00
OBSERVED
NORMAL MAX: 10.8 10.2 27.7 43.0 63.3 71.4 79.0 70.5 65.1 52.9 30.9 14.0
NORMAL MIN: -8.1 -4.1 7.9 25.6 38.1 47.3 52.9 50.0 39.7 29.8 13.8 0.3
ESTIMATED
NORMAL MAX: 10.9 14.2 29.2 43.0 61.9 70.1 82.4 74.1 67.1 47.7 31.4 17.2
NORMAL MIN: -5.6 -4.5 5.4 20.3 36.5 49.4 55.6 53.6 43.7 28.7 12.6 -0.3

P	E	J	M	S	K
100	121	142	167	152	190
101	121	142	167	152	190
102	121	142	167	152	190
103	121	142	167	152	190
104	121	142	167	152	190
105	122	142	166	152	190
106	122	142	166	152	190
107	122	142	166	153	190
108	123	143	166	153	190
109	123	143	166	153	191
110	124	143	166	153	191
111	124	143	166	153	191
112	124	143	167	153	191
113	125	144	167	154	191
114	126	144	167	154	192
115	127	144	167	154	192
116	127	145	168	154	192
117	128	145	168	155	193
118	128	145	168	155	193
119	130	146	169	155	193
120	130	146	169	156	194
121	131	147	170	157	194
122	132	148	170	157	195
123	133	148	171	158	195
124	134	149	171	159	196
125	135	149	172	159	197
126	135	150	172	160	197
127	136	151	173	160	198
128	137	152	174	161	199
129	138	152	174	162	199

CROP STAGE JULIAN DATES FOR CROP: SG DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON-MAIS MODEL

LOCATION: SASKATOON-A / SASKATOON NEWO
LATITUDE: 52.60

OBSERVED

NORMAL MAX:	10.5	13.6	27.7	48.0	63.3	71.4	74.0	70.3	63.1	36.9	30.7	14.0
NORMAL MIN:	-8.1	-4.0	7.7	20.8	38.1	47.3	52.9	50.0	39.7	29.8	13.8	0.3

ESTIMATED

NORMAL MAX:	10.9	14.2	29.2	49.0	61.9	70.1	82.4	74.1	67.1	49.7	31.4	17.2
NORMAL MIN:	-8.6	-4.5	5.4	20.3	38.5	49.4	55.6	53.6	43.7	28.7	12.6	-0.3

P	E	J	M	S	N
130	154	153	175	193	200
131	155	154	176	194	201
132	156	155	176	194	202
133	157	156	177	195	203
134	158	157	178	196	204
135	159	158	179	197	205
136	160	159	180	198	206
137	160	160	181	199	207
138	161	161	182	200	208
139	162	161	183	201	209
140	163	162	184	202	210
141	164	163	184	203	211
142	165	164	185	204	212
143	166	165	186	205	213
144	167	166	187	206	214
145	168	167	188	207	215
146	169	168	189	208	216
147	170	170	190	210	218
148	171	171	191	211	219
149	172	172	192	212	220
150	173	173	193	213	221
151	174	174	195	214	223
152	175	175	196	215	224
153	176	176	197	217	225
154	177	178	198	218	226
155	178	179	199	219	227
156	179	180	200	220	228
157	180	181	201	221	230
158	181	182	203	222	231
159	182	183	204	223	232

[illegible] STAR [illegible] FOR [illegible] BY [illegible]
CLIMATIC [illegible] APPLIED TO [illegible] HAIS MODEL

LOCATION: [illegible]
LATITUDE: 50.47
OBSERVED
NORMAL MAX: 11.8 17.2 25.0 44.4 59.4 72.1 80.6 78.4 68.7 54.0 32.4 14.2
NORMAL MIN: -7.2 -2.4 3.0 27.0 38.3 47.3 52.7 50.0 40.1 29.3 14.2 1.0
ESTIMATED
NORMAL MAX: 12.0 15.6 27.4 44.1 63.3 77.5 89.0 80.7 64.7 51.1 32.7 15.1
NORMAL MIN: -5.7 -3.5 3.4 21.2 37.0 44.5 55.5 53.3 43.4 29.6 12.4 0.3

M	E	J	M	S	N
[illegible]					

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMIS MODEL

LOCATION: SASKATCHEWAN MANITOBA
LATITUDE: 50.47

OBSERVED
NORMAL MAX: 11.8 17.2 28.0 44.8 64.9 72.3 80.2 78.3 68.7 54.0 32.9 14.2
NORMAL MIN: -7.2 -2.9 9.0 27.0 38.3 47.3 52.7 50.0 40.1 29.5 14.2 1.0
ESTIMATED
NORMAL MAX: 12.9 15.2 27.3 44.8 63.3 77.6 84.0 80.7 68.7 51.1 32.7 16.3
NORMAL MIN: -5.7 -3.5 6.4 21.2 37.0 49.5 55.5 53.3 43.4 28.6 12.8 0.3

P	E	J	M	S	W
120	130	146	166	195	194
121	131	140	164	196	194
122	132	147	164	197	195
123	132	147	170	198	195
124	133	148	171	198	196
125	134	149	171	199	197
126	135	150	172	199	198
127	136	150	173	199	199
128	137	151	173	199	199
129	138	152	174	199	200
130	139	153	175	199	201
131	140	154	176	199	202
132	141	155	176	199	203
133	142	156	177	199	204
134	143	157	178	199	205
135	144	158	179	199	207
136	144	159	180	200	208
137	145	160	181	201	209
138	146	161	182	202	210
139	147	162	183	204	211
140	148	163	184	205	213
141	149	164	185	206	214
142	150	165	186	207	215
143	151	166	187	208	216
144	151	167	188	210	218
145	152	169	190	211	219
146	153	170	191	212	220
147	154	171	192	213	222
148	155	172	193	215	223
149	156	174	195	216	224

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATOON[illegible] SC:SWIFT CURRENT
LATITUDE: 50.40
OBSERVED
NORMAL MAX: 16.7 21.0 31.5 50.9 64.9 72.0 81.0 79.6 67.1 55.0 35.1 23.5
NORMAL MIN: -3.3 1.0 11.8 27.7 38.8 49.1 52.3 49.5 40.1 30.0 15.4 4.5
ESTIMATED
NORMAL MAX: 16.8 19.9 31.1 47.2 64.1 77.1 82.9 79.8 68.0 52.4 35.5 22.5
NORMAL MIN: -3.8 0.5 9.7 23.4 37.8 49.1 54.3 52.0 42.8 29.1 14.7 3.4

P	E	J	H	S	W
100	116	138	162	179	197
101	116	138	162	179	197
102	117	138	162	179	197
103	117	138	162	179	197
104	117	138	162	179	197
105	118	138	162	179	197
106	119	139	163	179	198
107	120	139	163	181	198
108	120	139	163	180	198
109	121	139	163	180	198
110	122	140	164	181	199
111	122	140	164	181	199
112	123	141	164	181	199
113	124	141	165	181	199
114	125	141	165	182	199
115	125	142	165	182	199
116	126	142	166	183	199
117	127	143	166	183	199
118	128	144	167	184	199
119	129	144	167	184	199
120	130	145	168	185	199
121	130	146	168	186	199
122	131	146	169	186	199
123	132	147	170	187	199
124	133	148	170	188	199
125	134	149	171	188	199
126	135	149	172	189	199
127	136	150	172	190	199
128	137	151	173	191	199
129	138	152	174	192	200

CROP STAGE JULIAN DATES FOR CROP: SW (DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN SCISWIFT CURRENT
LATITUDE: 50.4[illegible]
OBSERVED
NORMAL MAX: 14.7 21.0 31.5 50.9 64.4 72.0 81.0 75.0 67.1 55.0 35.1 23.5
NORMAL MIN: -3.3 1.0 11.4 27.7 38.4 47.1 52.3 49.5 40.1 30.0 15.4 4.5
ESTIMATED
NORMAL MAX: 15.5 19.4 31.1 47.2 64.1 77.1 82.7 77.0 64.5 52.4 35.0 22.5
NORMAL MIN: -1.5 3.5 9.7 23.4 37.4 44.1 54.3 52.0 42.8 29.1 14.7 3.4

P	F	J	M	S	N
130	139	153	175	193	201
131	140	154	176	194	202
132	141	155	177	195	203
133	142	156	177	196	204
134	142	157	178	197	205
135	143	158	179	198	206
136	144	159	180	199	207
137	145	160	181	200	208
138	146	161	182	201	209
139	147	162	183	202	210
140	148	163	184	203	211
141	149	164	185	205	213
142	150	165	186	206	214
143	151	166	187	207	215
144	151	167	188	208	216
145	152	168	189	209	217
146	153	170	191	211	219
147	154	171	192	212	220
148	155	172	193	213	222
149	156	173	194	215	223
150	157	175	196	216	225
151	158	176	197	217	226
152	159	177	198	219	227
153	160	178	200	220	229
154	161	180	201	221	230
155	162	181	202	222	232
156	163	182	203	224	233
157	164	184	205	225	234
158	165	185	206	226	236
159	165	186	207	227	237

CROP STAGE JULIAN DATES FOR CROP: SH DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC:SASKATOON
LATITUDE: 52.20
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.8 49.8 30.9 16.4
NORMAL MIN: -7.8 -5.6 4.6 20.0 36.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
100	120	140	164	180	188
101	120	140	164	180	188
102	120	141	164	180	188
103	120	141	164	181	188
104	121	141	164	181	188
105	121	141	164	181	188
106	121	141	164	181	188
107	122	141	164	181	188
108	122	141	164	181	189
109	123	141	164	181	189
110	123	142	165	181	189
111	124	142	165	181	189
112	124	142	165	182	189
113	125	142	165	182	191
114	126	143	166	182	191
115	126	143	166	183	190
116	127	143	166	183	191
117	128	144	167	183	191
118	129	144	167	184	191
119	129	145	167	184	192
120	130	145	168	185	192
121	131	146	168	185	193
122	132	147	169	186	194
123	133	147	169	187	194
124	133	148	170	187	195
125	134	149	171	188	196
126	135	149	171	189	196
127	136	150	172	190	197
128	137	151	173	190	198
129	138	152	173	191	199

CROP STAGE JULIAN DATES FOR CROP: SH DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN CC:SASKATOON
LATITUDE: 52.20
OBSERVED
NORMAL MAX: 9.7 15.8 27.5 49.3 65.1 72.3 79.5 77.4 65.5 52.9 30.7 17.1
NORMAL MIN: -9.4 -4.5 7.5 26.8 38.5 46.8 52.2 49.5 39.7 29.1 13.1 -0.9
ESTIMATED
NORMAL MAX: 10.0 13.5 25.9 44.0 62.9 77.4 83.8 80.3 67.4 49.6 30.9 15.4
NORMAL MIN: -7.2 -5.5 4.6 20.0 34.5 49.6 55.9 53.6 43.4 28.0 11.6 -1.6

P	E	J	H	S	R
130	139	153	174	192	200
131	140	153	175	193	201
132	141	154	176	194	202
133	142	155	177	195	203
134	143	156	177	196	204
135	144	157	178	197	205
136	144	158	179	198	206
137	145	159	180	199	207
138	146	160	181	201	208
139	147	161	182	202	209
140	148	162	183	203	211
141	149	164	184	204	212
142	150	165	185	205	213
143	151	166	186	206	214
144	152	167	187	208	215
145	152	168	188	209	217
146	153	169	190	210	218
147	154	170	191	211	219
148	155	172	192	213	221
149	156	173	193	214	222
150	157	174	194	215	223
151	158	175	196	216	225
152	159	177	197	218	226
153	160	178	198	219	227
154	161	179	199	220	229
155	162	180	200	221	230
156	163	181	202	222	231
157	164	183	203	224	232
158	164	184	204	225	234
159	165	185	205	226	235

CROP STAGE JULIAN DATES FOR CROP: SB (DERIVED) FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN JC:SCOTT
LATITUDE: 52.40
OBSERVED
NORMAL MAX: 10.9 16.9 28.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 18.0
NORMAL MIN: -8.1 -3.6 8.1 26.1 37.8 45.9 51.1 48.2 38.8 28.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 16.5 26.8 44.5 62.9 77.1 83.3 77.8 67.5 50.0 31.6 17.4
NORMAL MIN: -6.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.8 41.9 27.2 11.5 -1.0

P	E	J	H	S	R
90	119	140	164	180	188
91	119	140	164	180	188
92	119	140	164	180	188
93	119	140	164	180	188
94	119	140	164	180	188
95	119	140	164	180	188
96	119	140	164	180	188
97	119	140	164	180	188
98	119	140	164	180	188
99	119	140	164	180	188
100	119	140	164	180	188
101	119	140	164	180	188
102	120	140	164	180	188
103	120	140	164	180	188
104	120	140	164	180	188
105	121	140	164	180	188
106	121	140	164	180	188
107	121	141	164	181	189
108	122	141	164	181	189
109	122	141	164	181	189
110	123	141	165	181	189
111	124	141	165	181	189
112	124	142	165	182	190
113	125	142	165	182	190
114	126	142	166	182	190
115	126	143	166	183	190
116	127	143	166	183	191
117	128	144	167	183	191
118	128	144	167	184	192
119	129	145	167	184	192

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON BMTS MODEL

LOCATION: SASKATCHEWAN WC:SCOTT
LATITUDE: 52.4[illegible]
OBSERVED
NORMAL MAX: 10.9 16.9 28.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 14.0
NORMAL MIN: -8.1 -3.6 3.1 25.1 37.8 45.9 51.1 48.2 38.8 28.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 14.6 25.4 44.5 62.9 77.1 83.3 79.8 67.6 50.0 31.6 17.4
NORMAL MIN: -6.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.8 41.9 27.2 11.5 -1.0

P	F	J	M	S	R
120	130	145	168	185	193
121	131	146	168	185	193
122	132	146	169	186	194
123	133	147	17[illegible]	187	194
124	133	148	17[illegible]	187	195
125	134	149	171	188	195
126	135	149	171	189	196
127	136	150	172	189	197
128	137	151	173	190	198
129	138	152	173	191	199
130	139	152	174	192	200
131	140	153	175	193	201
132	141	154	176	194	202
133	142	155	177	195	203
134	143	156	178	196	204
135	144	157	179	197	205
136	144	158	179	198	206
137	145	159	180	199	207
138	146	160	181	200	208
139	147	161	182	201	209
140	148	162	183	203	211
141	149	164	184	204	212
142	150	165	186	205	213
143	151	166	187	206	214
144	152	167	188	207	215
145	153	168	189	209	217
146	154	169	190	210	218
147	154	170	191	211	219
148	155	172	192	212	221
149	156	173	194	214	222

CROP STAGE JULIAN DATES FOR CROP: SA DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: SASKATCHEWAN UC: SCOTT
LATITUDE: 52.40
OBSERVED
NORMAL MAX: 10.9 16.9 24.2 49.6 65.1 72.0 79.5 77.0 65.1 53.2 31.3 18.0
NORMAL MIN: -8.1 -3.6 3.1 26.1 37.8 45.9 51.1 48.2 38.8 28.2 12.6 -0.2
ESTIMATED
NORMAL MAX: 11.2 14.6 26.8 44.5 62.9 77.1 83.3 79.8 67.6 50.0 31.6 17.4
NORMAL MIN: -6.8 -4.4 5.5 20.3 36.0 48.4 54.2 51.8 41.9 27.2 11.5 -1.0

P	E	J	H	S	R
150	157	174	195	215	224
151	158	176	196	217	225
152	159	177	198	218	227
153	160	178	199	219	228
154	161	180	200	221	230
155	162	181	202	222	231
156	163	183	203	223	233
157	164	184	205	225	234
158	165	185	206	226	236
159	166	187	207	227	237
160	167	188	209	229	239
161	168	189	210	230	240
162	169	190	211	231	242
163	170	192	213	232	244
164	170	193	214	234	245
165	171	194	215	235	247
166	172	195	217	236	249
167	173	197	218	238	251
168	174	198	219	239	253
169	175	199	221	241	256
170	176	200	222	241	260
171	177	201	223	243	149
172	178	202	225	244	152
173	179	204	226	246	154
174	180	205	227	247	156
175	181	206	229	249	158
176	182	207	230	250	159
177	183	208	231	252	160
178	184	209	233	254	161
179	185	210	234	256	162

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON 3MTS MODEL

LOCATION: MANITOBA SE:=INNEPEG
LATITUDE: 49.8
OBSERVED
NORMAL MAX: 9.5 15.3 28.5 47.5 63.5 73.0 79.5 77.2 65.7 53.1 31.5 19.9
NORMAL MIN: -9.0 -6.5 7.2 27.3 39.6 50.4 56.1 53.6 43.7 33.3 16.5 -0.4
ESTIMATED
NORMAL MAX: 10.0 13.3 25.5 43.6 62.4 77.0 83.5 80.2 67.9 49.9 31.1 16.5
NORMAL MIN: -8.3 -6.9 3.3 19.5 37.5 52.3 60.1 58.7 48.5 32.2 14.3 -0.5

P	F	J	H	S	R
90	121	142	165	182	188
91	121	142	165	182	188
92	121	142	165	182	188
93	121	142	165	182	188
94	121	142	165	182	188
95	121	142	165	182	188
96	121	142	165	182	189
97	121	142	165	182	189
98	121	142	165	182	189
99	121	142	165	182	189
100	121	142	165	182	189
101	121	142	165	182	189
102	121	142	165	182	189
103	121	142	165	182	189
104	121	142	165	182	189
105	121	142	165	182	190
106	122	142	165	182	190
107	122	142	165	182	190
108	123	142	165	182	190
109	123	142	165	183	190
110	124	143	166	183	190
111	124	143	166	183	190
112	125	143	166	183	191
113	125	143	166	183	191
114	126	144	166	184	191
115	127	144	167	184	191
116	127	144	167	184	192
117	128	145	167	185	192
118	129	145	168	185	193
119	129	146	168	186	193

CROP STAGE JULIAN DATES FOR CROP: S1 DERIVED FROM
CLIMATIC NORMALS (DOLIES) TO A SORENTSON BMTS MODEL

LOCATION: MANITOU-A SF:WINDSOR
LATITUDE: 40.8

OBSERVED												
NORMAL MAX:	9.5	15.3	29.6	47.5	63.5	73.0	79.5	77.2	65.7	53.1	31.5	16.9
NORMAL MIN:	-9.3	-6.5	7.2	27.3	39.6	50.4	56.1	53.6	43.7	33.3	16.5	-0.4
ESTIMATED												
NORMAL MAX:	10.0	13.3	25.6	43.6	62.4	77.0	83.5	80.2	67.9	44.4	31.1	10.5
NORMAL MIN:	-5.3	-6.4	3.3	19.6	37.5	52.3	60.1	56.7	48.5	32.2	14.3	-0.5

D	F	J	A	S	O
120	130	146	169	195	193
121	131	147	169	197	196
122	132	147	170	197	195
123	133	148	17	198	195
124	134	149	171	198	195
125	134	149	171	199	197
126	135	150	172	199	197
127	136	151	172	199	198
128	137	152	173	199	199
129	138	152	174	199	200
130	139	153	174	199	201
131	140	154	175	199	201
132	141	155	176	199	202
133	142	156	177	199	203
134	143	157	178	199	204
135	143	158	179	199	205
136	144	159	179	199	206
137	145	160	180	200	207
138	146	161	181	201	208
139	147	162	182	202	210
140	148	162	183	203	211
141	149	163	184	204	212
142	149	164	185	205	213
143	150	165	186	206	214
144	151	166	186	207	215
145	152	167	187	208	216
146	153	168	188	209	217
147	154	169	189	210	218
148	155	170	190	211	219
149	156	171	191	212	220

CROP STAGE JULIAN DATES FOR CROP: SW DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOBA SE:WINNIPEG
LATITUDE: 49.90
OBSERVED
NORMAL MAX: 9.5 15.3 23.6 47.5 63.5 73.0 79.5 77.2 65.7 53.1 31.5 16.4
NORMAL MIN: -9.0 -6.5 7.2 27.3 39.6 50.4 56.1 53.6 43.7 33.3 16.5 -0.4
ESTIMATED
NORMAL MAX: 10.0 13.3 25.6 43.6 62.4 77.0 83.5 80.2 67.3 44.9 31.1 16.5
NORMAL MIN: -8.3 -6.9 3.3 19.6 37.5 52.3 60.1 58.7 48.5 32.2 14.3 -0.5

D	F	J	M	S	N
150	156	172	192	213	221
151	157	173	193	214	222
152	158	174	194	215	223
153	159	175	195	215	224
154	160	175	195	216	225
155	161	176	196	217	225
156	162	177	197	218	226
157	163	178	198	219	227
158	164	179	199	220	228
159	165	180	200	221	229
160	166	181	201	222	230
161	167	182	202	223	231
162	168	183	203	224	232
163	169	184	204	225	233
164	170	185	205	226	234
165	171	186	206	227	235
166	172	187	207	228	236
167	173	188	208	229	237
168	174	189	209	230	238
169	175	190	210	231	239
170	176	191	211	232	240
171	177	192	213	233	242
172	178	193	214	234	243
173	179	194	215	235	244
174	181	195	216	236	245
175	181	196	217	237	246
176	182	198	218	238	248
177	183	199	220	240	249
178	184	200	221	241	250
179	185	201	222	242	252

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS ADJUSTED TO A ROBERTSON HMTS MODEL

LOCATION: [illegible] SC: [illegible]
LATITUDE: 49.2
OBSERVED
NORMAL MAX: 9.5 15.3 24.0 47.8 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.4 -5.6 7.5 27.0 38.8 48.9 54.5 51.8 41.5 31.3 14.7 -0.8
ESTIMATED
NORMAL MAX: 4.9 13.2 25.5 43.5 62.4 77.0 83.6 80.2 67.9 49.4 31.1 16.4
NORMAL MIN: -5.7 -6.1 4.1 20.0 37.1 51.1 58.0 56.1 45.9 30.1 12.9 -1.1

D	F	J	M	S	O
90	121	142	166	183	191
91	121	142	166	183	191
92	121	142	166	183	191
93	121	142	166	183	191
94	121	142	166	183	191
95	121	142	166	183	191
96	121	142	166	183	191
97	121	142	166	183	191
98	121	142	166	183	191
99	121	142	166	183	191
100	121	142	166	183	191
101	121	142	166	183	191
102	121	142	166	183	191
103	121	142	166	183	191
104	121	142	166	183	191
105	122	142	166	183	191
106	122	142	166	183	191
107	122	142	166	183	191
108	122	142	166	183	191
109	122	143	166	183	191
110	124	143	166	183	191
111	124	143	166	184	191
112	125	143	166	184	191
113	125	144	167	184	192
114	126	144	167	184	192
115	127	144	167	185	192
116	127	145	168	185	193
117	128	145	168	185	193
118	129	145	168	185	193
119	130	146	169	186	194

CROP STAGE JULIAN DATES FOR CROP: SH DERIVED FROM
CLIMATIC NORMALS (APPLIED TO A ROBERTSON RMTS MODEL

LOCATION: MANITOBA SC:MORDEN
LATITUDE: 49.2[illegible]
OBSERVED
NORMAL MAX: 9.5 15.3 24.0 47.8 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.[illegible] -5.6 7.5 27.0 38.8 48.9 54.5 51.8 41.5 31.3 14.7 -0.8
ESTIMATED
NORMAL MAX: 9.9 13.2 25.5 43.5 62.4 77.0 83.6 80.2 67.9 49.9 31.1 16.4
NORMAL MIN: -8.[illegible] -6.1 4.1 20.0 37.1 51.1 56.0 56.1 45.9 30.1 12.9 -1.1

D	F	J	M	S	H
120	130	146	166	187	194
121	131	147	17[illegible]	187	195
122	132	148	17[illegible]	188	196
123	133	148	171	189	196
124	134	149	171	189	197
125	134	149	172	190	197
126	135	150	172	191	198
127	136	151	173	191	199
128	137	152	174	192	200
129	138	153	174	193	201
130	139	153	175	194	201
131	140	154	176	195	202
132	141	155	177	195	203
133	142	156	178	197	204
134	143	157	178	198	205
135	144	158	179	199	206
136	144	159	180	200	207
137	145	160	181	201	209
138	146	161	182	202	210
139	147	162	183	203	211
140	148	163	184	204	212
141	149	164	185	205	213
142	150	165	186	206	214
143	150	166	187	207	215
144	151	167	188	208	216
145	152	168	189	210	217
146	153	169	190	211	219
147	154	170	191	212	220
148	155	171	192	213	221
149	156	172	193	214	222

CROP STAGE JULIAN DATES FOR CROP: SH DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON HMFS MODEL

LOCATION: WALTHAM SC:MODIFIED
LATITUDE: 49.2
OBSERVED
NORMAL MAX: 9.5 15.3 24.0 47.8 63.7 72.5 79.5 77.4 65.7 53.2 31.1 17.1
NORMAL MIN: -9.8 -5.6 7.5 27.0 38.8 48.9 54.5 51.8 41.5 31.3 14.7 -0.8
ESTIMATED
NORMAL MAX: 9.9 13.2 25.5 43.5 62.4 77.0 83.6 80.2 67.9 49.9 31.1 16.4
NORMAL MIN: -8.3 -6.1 4.1 20.0 37.1 51.1 58.0 56.1 45.9 30.1 12.9 -1.1

D	F	J	M	S	W
150	157	173	194	215	224
151	158	174	195	216	224
152	158	175	196	217	225
153	159	176	197	218	226
154	160	177	198	219	227
155	161	178	199	220	228
156	162	179	200	221	229
157	163	180	201	222	230
158	164	181	202	223	231
159	165	182	203	224	232
160	166	183	204	225	233
161	167	184	205	226	234
162	168	185	206	227	235
163	169	186	207	228	236
164	170	187	208	229	238
165	171	188	209	230	239
166	172	189	210	231	240
167	173	190	211	232	241
168	174	191	212	233	242
169	175	193	214	234	243
170	176	194	215	235	245
171	177	195	216	236	246
172	178	196	217	237	247
173	179	197	218	238	249
174	180	198	220	240	250
175	181	199	221	241	252
176	182	200	222	242	254
177	183	201	223	244	255
178	184	203	225	245	257
179	185	204	226	246	259

CROP STAGE JULIAN DATES FOR CROP: SB DERIVED FROM
CLIMATIC NORMALS ADJUSTED TO A ROBERTSON RMFS MODEL

LOCATION: MANITOBA SASKATOON
LATITUDE: 49.85
OBSERVED
NORMAL MAX: 0.7 15.3 27.9 48.2 63.7 72.1 79.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.3 26.8 38.7 48.4 54.0 51.1 40.8 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 0.7 13.2 25.5 43.6 62.4 77.0 83.5 80.0 67.7 44.6 30.8 16.2
NORMAL MIN: -7.0 -5.9 4.3 19.9 36.8 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

P	E	J	M	S	D
120	121	142	166	183	191
121	121	142	166	183	191
122	121	142	166	183	191
123	121	142	166	183	191
124	121	142	166	183	191
125	121	142	166	183	191
126	122	142	166	183	191
127	122	142	166	183	191
128	123	142	166	183	191
129	123	142	166	183	191
130	124	143	166	183	191
131	124	143	166	183	191
132	125	143	166	184	191
133	125	143	167	184	191
134	126	144	167	184	192
135	127	144	167	184	192
136	127	144	167	185	192
137	128	145	168	185	193
138	129	145	168	185	193
139	129	146	169	185	194
140	130	146	169	185	194
141	131	147	169	187	195
142	132	147	170	188	195
143	133	148	170	188	195
144	134	149	171	188	196
145	134	149	172	189	197
146	135	150	172	190	198
147	136	151	173	191	199
148	137	152	173	192	199
149	138	152	174	193	200

CROP STAGE JULIAN DATES FOR C-ON: [illegible] DERIVED FROM
CLIMATIC NORMALS APPLIED TO A ROBERTSON AMIS MODEL

LOCATION: [illegible]
LATITUDE: 40.46
OBSERVED
NORMAL MAX: 0.3 15.3 27.4 48.2 63.7 72.1 79.5 77.0 65.7 52.7 30.9 16.9
NORMAL MIN: -9.4 -5.4 7.3 25.8 38.7 48.4 54.0 51.1 40.4 30.6 14.2 -0.8
ESTIMATED
NORMAL MAX: 0.7 13.2 25.5 43.6 62.4 77.0 83.5 80.0 67.7 44.0 30.4 19.2
NORMAL MIN: -7.6 -5.9 4.3 13.9 36.4 50.5 57.2 55.3 45.1 29.4 12.5 -1.1

D	F	J	M	S	D
130	139	153	175	194	201
131	140	154	176	196	202
132	141	155	177	196	203
133	142	156	177	196	204
134	143	157	178	197	205
135	144	158	179	198	206
136	144	159	180	199	207
137	145	160	181	200	208
138	146	161	182	202	209
139	147	162	183	203	210
140	148	163	184	204	211
141	149	164	185	205	212
142	150	165	186	206	214
143	151	166	187	207	215
144	151	167	188	208	216
145	152	168	189	209	217
146	153	169	190	211	218
147	154	170	191	212	220
148	155	171	192	213	221
149	156	172	193	214	222
150	157	173	194	215	223
151	158	175	195	216	224
152	159	176	196	217	225
153	160	177	197	218	226
154	160	178	198	219	227
155	161	179	199	220	228
156	162	180	200	221	230
157	163	181	201	222	231
158	164	182	202	223	232
159	165	183	204	224	233