

SUMMARY OF 2009  
WEED CONTROL EXPERIMENTS

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Fargo, North Dakota

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Reference to commercial products or trade names is made with no intended endorsement, and failure to mention products or trade names is done with no intended discrimination by North Dakota State University. Experiments with pesticides on non-labeled crops or target species does not imply endorsement for non-labeled uses of pesticides by North Dakota State University.

Some of this material is based upon work supported by the U. S. Department of Agriculture, under Agreement 2002-34361-11781, 2003-34361-13002, 2005-34361-15578. Any opinions, findings, conclusion, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U. S. Department of Agriculture.

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CLIMATIC DATA, 2009, Carrington ND

Date	Precipitation								April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	0.00	0.00	0.00	0.00	0.00	0.86	45	19	58	42	79	48	88	59	84	51	76	55		
2	0.00	0.00	0.06	0.00	0.01	0.08	51	25	52	29	66	50	68	49	80	60	56	41		
3	0.00	0.00	0.25	0.00	0.13	0.00	55	21	64	19	54	47	74	45	80	57	67	38		
4	0.00	0.00	0.01	0.00	0.00	0.54	59	28	68	22	72	50	80	55	78	53	54	49		
5	0.00	0.00	0.29	0.00	0.00	0.00	37	24	68	29	63	50	88	60	79	53	63	42		
6	0.00	0.05	1.05	0.00	0.00	0.00	36	18	69	33	61	50	83	57	80	51	68	37		
7	0.00	0.00	0.00	0.65	0.00	0.00	51	14	59	31	72	50	81	59	80	49	61	36		
8	0.00	0.00	0.08	0.00	0.10	0.00	54	22	58	34	71	45	73	52	74	58	61	33		
9	0.00	0.00	0.22	0.15	0.00	0.00	56	23	52	36	61	49	83	51	79	61	71	37		
10	0.00	0.03	0.00	0.00	0.15	0.06	52	33	51	30	63	50	79	59	71	59	64	47		
11	0.00	0.00	0.98	0.00	0.77	0.00	48	27	65	25	53	47	82	57	72	59	68	49		
12	0.00	0.05	0.02	0.00	0.01	0.00	50	18	59	39	64	45	71	55	81	55	76	47		
13	0.00	0.01	0.02	0.00	0.00	0.18	57	15	51	30	64	49	81	54	85	49	70	49		
14	0.00	0.00	0.18	0.00	0.00	0.01	66	36	68	29	77	46	90	55	78	54	60	41		
15	0.00	0.00	0.02	0.00	0.00	0.00	85	45	74	33	59	45	79	51	81	51	72	42		
16	0.00	0.00	0.00	0.01	0.00	0.00	59	28	82	44	72	43	83	59	85	56	76	44		
17	0.00	0.00	0.00	0.00	0.00	0.00	62	24	73	36	78	45	72	55	90	61	76	43		
18	0.00	0.00	0.77	0.00	0.00	0.00	67	28	67	29	80	51	81	50	82	56	85	53		
19	0.00	0.00	0.00	0.03	0.00	0.00	66	31	73	37	78	50	69	62	87	56	83	44		
20	0.00	0.00	0.00	0.03	0.00	0.00	62	41	63	37	75	53	79	52	83	62	69	42		
21	0.34	0.00	0.00	0.00	0.00	0.64	48	29	67	27	77	51	82	54	84	65	80	50		
22	0.00	0.00	0.00	0.00	0.05	0.71	57	28	69	38	80	49	82	57	73	54	74	60		
23	0.00	0.00	0.03	0.07	0.00	0.68	43	25	74	47	78	54	75	64	71	45	69	45		
24	0.15	0.00	0.01	0.00	0.00	0.00	39	29	69	45	83	51	81	62	77	40	66	44		
25	0.00	0.01	0.00	0.00	0.00	0.00	33	26	74	42	78	58	80	53	82	52	77	45		
26	0.00	0.07	1.01	0.00	0.20	0.00	48	26	57	34	83	58	84	49	84	59	65	43		
27	0.00	0.00	0.00	0.00	0.12	0.00	44	24	61	29	68	54	82	59	82	47	64	35		
28	0.00	0.00	0.00	0.64	0.00	0.00	51	16	70	44	73	51	80	57	72	44	62	40		
29	0.00	0.21	0.00	0.00	0.00	0.00	63	32	64	56	77	51	81	54	77	45	58	36		
30	0.00	0.73	0.00	0.08	0.00	0.00	61	37	69	54	82	53	82	51	89	54	71	36		
31		0.00		0.20	0.00				74	50			79	55	89	72				
Total/Avg	0.15	1.16	5.00	1.86	1.54	3.88	53	26	65	35	71	49	79	55	79	54	36	43		

CLIMATIC DATA, 2009, Casselton

Date	Precipitation						April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	0.25	-	-	-	0.22	-	32	29	50	30	87	49	76	54	75	52	75	46
2	0.00	-	-	-	0.00	-	37	23	55	35	75	44	80	55	70	53	76	49
3	0.00	-	-	-	0.00	-	36	16	60	35	66	39	84	61	71	52	76	56
4	0.00	-	-	-	0.00	-	37	17	65	40	74	46	83	55	81	48	78	53
5	0.00	0.05	-	-	0.00	-	35	51	70	43	80	46	83	60	72	51	81	52
6	0.00	0.00	-	-	0.00	-	32	19	65	43	58	37	82	61	75	49	83	56
7	0.00	0.00	0.32	-	0.18	-	36	18	72	42	51	45	81	56	77	49	78	58
8	0.00	0.00	0.51	0.03	0.00	0.02	40	20	62	34	57	45	78	54	74	60	82	65
9	0.00	0.00	0.00	0.3	0.84	0.45	42	26	46	33	59	43	84	62	72	59	70	53
10	0.00	0.00	0.02	0.00	0.00	0.00	42	27	47	31	60	41	83	58	77	58	76	50
11	0.00	0.03	0.00	0.00	0.00	0.92	46	28	60	43	69	43	83	52	81	58	83	53
12	0.00	0.29	0.00	0.00	0.00	0.00	54	37	68	44	69	47	77	50	86	62	74	56
13	0.05	0.68	0.00	0.00	0.00	0.00	56	40	64	49	76	49	75	50	92	63	76	53
14	0.00	0.04	0.00	0.01	0.00	0.00	61	40	64	37	80	54	71	59	89	64	80	56
15	0.00	0.00	0.00	0.14	0.48	0.00	66	38	55	35	85	54	78	58	90	66	80	55
16	0.00	0.18	0.00	0.00	0.24	0.00	67	40	66	32	78	59	69	47	78	64	80	51
17	0.00	0.00	0.38	0.00	0.05	0.00	64	44	57	34	78	59	71	48	78	52	82	51
18	0.00	0.00	0.03	0.00	0.00	0.00	57	34	68	45	77	60	74	47	68	46	84	56
19	0.00	0.00	0.22	0.00	0.00	0.00	40	32	79	37	74	55	76	51	79	49	85	57
20	0.00	0.00	0.00	0.00	0.26	0.00	56	35	72	40	82	57	81	51	72	56	83	54
21	0.00	0.07	0.00	0.16	0.41	0.00	52	34	80	48	86	65	78	58	68	56	83	54
22	0.00	0.00	0.12	0.00	0.00	0.95	63	30	68	45	75	62	79	53	68	55	60	54
23	0.00	0.00	0.00	0.00	0.00	0.01	60	33	76	35	81	63	83	60	74	57	67	44
24	0.00	0.00	0.00	0.00	0.00	0.00	81	40	66	38	82	55	87	62	82	64	76	49
25	0.07	0.08	0.00	0.00	0.00	0.00	43	30	74	38	82	58	83	56	82	56	77	52
26	0.00	0.30	0.00	0.00	0.00	0.00	55	30	79	47	87	55	86	56	80	50	77	57
27	0.30	0.00	0.97	0.34	0.00	0.00	43	33	58	39	92	66	86	61	80	50	77	56
28	0.00	0.00	0.08	0.00	0.02	0.00	53	30	68	44	77	57	80	53	80	56	65	46
29	0.00	0.00	0.00	0.00	0.02	0.00	59	36	76	42	77	55	75	49	80	45	58	34
30	0.48	0.05	0.00	0.15	0.00	0.00	50	39	79	45	73	54	69	53	68	40	60	34
31		0.00		0.13	0.00				87	49			75	53	70	45		
Total/Avg	1.15	1.77	2.65	1.26	2.72	2.35	50	32	66	40	75	52	79	55	77	54	76	52

CLIMATIC DATA, 2009, Clara City, MN

Date	Precipitation									April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
1	0.20	0.00	0.02	0.00	0.65	0.00	38	29	57	65	86	46	74	55	81	51	71	42			
2	T	0.00	0.00	0.00	0.00	0.00	37	25	60	60	76	51	77	55	72	54	72	42			
3	0.00	0.00	0.00	0.00	0.00	0.00	43	24	65	65	66	38	81	57	85	55	71	47			
4	0.00	0.00	0.00	0.45	0.00	0.00	45	24	66	65	69	41	71	62	84	52	75	48			
5	0.10	0.15	0.00	T	0.00	0.00	40	28	73	68	76	47	78	63	72	51	76	48			
6	0.00	0.00	0.00	0.00	0.00	0.00	39	23	74	42	63	44	82	55	76	51	79	51			
7	0.00	0.00	0.21	0.00	0.33	0.00	37	24	76	43	50	45	83	58	76	60	80	51			
8	0.00	0.00	0.65	0.33	1.33	0.00	49	25	73	39	57	47	74	61	69	64	79	51			
9	0.00	0.00	0.07	0.38	1.11	0.00	49	26	56	36	60	45	79	61	76	64	78	59			
10	0.00	0.03	0.14	T	0.00	0.01	49	26	57	31	63	47	81	57	79	60	80	59			
11	0.00	0.00	T	0.00	0.00	0.00	50	26	58	33	65	50	80	55	81	57	82	58			
12	0.00	0.00	0.00	0.00	0.00	1.40	59	26	71	41	71	51	73	57	85	57	78	57			
13	0.00	0.03	0.00	0.00	0.00	0.00	56	37	72	53	67	45	79	56	90	60	78	57			
14	0.00	T	0.00	0.31	0.00	0.00	60	31	73	40	80	47	78	58	87	66	81	55			
15	0.00	0.00	0.00	T	0.00	0.00	64	32	64	40	82	57	82	61	89	66	80	50			
16	0.00	0.10	T	0.00	0.14	0.00	71	37	64	34	74	59	74	49	75	65	80	50			
17	0.00	T	0.05	0.00	T	0.00	68	46	64	33	72	62	66	51	76	55	77	55			
18	0.01	0.00	0.00	0.00	0.00	0.00	69	44	67	33	82	63	71	47	78	49	82	54			
19	0.00	0.00	0.00	0.00	0.10	0.00	59	35	89	48	88	59	68	45	79	51	84	54			
20	0.00	0.00	0.00	0.00	0.68	0.00	59	35	99	53	82	55	77	47	75	57	82	55			
21	T	0.34	0.00	1.33	0.72	0.00	46	34	93	53	85	58	76	57	71	56	78	56			
22	0.00	T	1.08	0.00	0.04	0.50	62	32	68	51	73	59	78	53	66	51	63	53			
23	0.00	0.00	0.00	0.00	0.00	0.00	66	33	73	53	90	64	81	43	74	52	64	49			
24	0.00	0.00	0.00	0.00	0.00	0.00	92	41	78	40	89	64	84	55	82	55	70	53			
25	T	0.00	0.03	0.00	0.16	0.25	54	32	78	45	81	63	78	56	85	55	75	54			
26	0.00	T	0.00	0.00	0.00	0.47	55	32	84	57	85	63	74	55	77	52	62	46			
27	0.36	0.03	0.22	0.00	0.00	0.00	47	35	57	49	92	67	84	60	78	51	73	47			
28	0.00	T	0.00	0.00	0.00	0.00	50	33	59	42	76	62	82	52	78	51	71	47			
29	T	0.10	0.00	0.00	0.00	0.00	60	33	79	43	76	56	75	47	74	46	59	35			
30	0.20	0.08	0.00	0.00	0.00	0.00	53	45	76	48	72	56	70	48	67	41	60	35			
31		0.00		0.00	0.00				69	46			74	49	70	41					
Total/Avg	0.2	0.18	1.38	1.33	1.7	2.63	54	37	71	47	75	69	77	54	78	55	75	51			

CLIMATIC DATA, 2009, Fargo, ND

Date	Precipitation							April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	36	28	59	32	75	41	78	53	72	52	76	51	
2	0.00	0.00	0.00	0.00	0.00	0.00	36	21	61	35	64	43	84	53	73	57	76	56	
3	0.00	0.00	0.00	0.00	0.02	0.00	39	15	63	35	73	39	80	62	83	50	79	63	
4	0.00	0.03	0.00	0.00	0.00	0.00	35	28	70	39	80	54	81	53	74	45	78	56	
5	0.00	0.02	0.00	0.00	0.00	0.00	31	24	66	50	59	41	84	57	75	52	80	55	
6	0.00	0.01	0.16	0.01	0.00	0.00	35	24	74	46	51	38	80	60	76	49	83	60	
7	0.00	0.00	0.01	0.00	0.08	0.00	39	21	65	42	56	47	77	57	73	63	82	59	
8	0.00	0.00	0.41	0.00	0.49	0.46	42	26	46	35	59	46	83	57	73	61	73	63	
9	0.00	0.00	0.00	0.12	0.00	0.02	41	27	45	31	59	42	84	64	78	59	77	53	
10	0.00	0.00	0.00	0.00	0.00	0.00	48	27	59	29	68	41	77	57	82	57	84	54	
11	0.00	0.24	0.00	0.00	0.00	0.67	54	34	66	45	72	43	75	49	87	62	74	59	
12	0.00	0.72	0.02	0.00	0.00	0.00	56	40	65	50	76	51	76	59	94	65	78	56	
13	0.00	0.04	0.00	0.00	0.00	0.00	59	41	66	37	82	55	71	48	90	68	81	52	
14	0.00	0.00	0.00	0.09	0.56	0.00	63	41	52	34	86	57	76	64	91	67	81	64	
15	0.00	0.19	0.00	0.00	0.35	0.00	67	41	66	36	81	61	70	53	78	68	82	61	
16	0.00	0.00	0.23	0.00	0.13	0.00	64	50	57	33	72	63	70	48	76	62	82	59	
17	0.00	0.00	0.57	0.00	0.00	0.00	57	44	68	38	76	62	72	50	69	53	84	60	
18	0.00	0.00	0.23	0.00	0.00	0.00	44	35	76	43	77	63	74	50	79	49	86	62	
19	0.00	0.00	0.00	0.00	0.13	0.00	52	33	70	39	82	58	80	53	75	57	85	61	
20	0.00	0.03	0.00	0.24	0.01	0.00	49	36	83	54	86	56	74	62	72	55	79	58	
21	0.00	0.00	0.37	0.00	0.00	0.63	60	32	67	49	78	64	80	58	65	52	67	58	
22	0.00	0.02	0.02	0.00	0.00	0.17	58	31	75	46	80	64	82	54	74	52	65	47	
23	0.00	0.00	0.05	0.00	0.00	0.00	82	44	65	35	85	64	88	57	84	59	77	44	
24	0.09	0.00	0.00	0.00	0.00	0.00	45	33	72	37	80	58	79	62	82	61	78	51	
25	0.00	0.44	0.00	0.00	0.00	0.00	55	30	76	51	85	62	79	58	78	57	79	55	
26	0.18	0.00	0.41	0.00	0.00	0.00	47	34	56	43	91	65	87	56	81	54	76	58	
27	0.00	0.00	0.75	0.00	0.00	0.02	52	34	65	39	76	58	81	56	81	56	63	49	
28	0.00	0.00	0.00	0.00	0.07	0.00	61	32	74	47	76	57	76	53	66	49	58	41	
29	0.38	0.00	0.00	0.01	0.00	0.00	52	46	79	42	70	55	71	49	69	43	61	32	
30	0.00	0.00	0.00	0.02	0.00	0.00	53	39	70	44	73	54	75	52	72	39	62	43	
31		0.00		0.14	0.00				87	52			78	56	75	50			
Total/Avg	0.65	1.74	3.23	0.63	1.84	1.97	50	33	67	41	74	53	78	55	77	56	76	55	

CLIMATIC DATA, 2009, Grand Forks ND

Date	Precipitation									April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
1	0.00	0.00	0.00	0.00	0.00	0.00	35	25	58	35	74	42	77	54	71	51	77	48			
2	0.02	0.00	0.00	0.00	0.01	0.00	36	27	57	35	64	44	81	54	70	53	75	54			
3	0.00	0.00	0.00	0.00	0.00	0.00	37	29	63	38	75	39	77	56	77	50	80	51			
4	0.00	0.00	0.01	0.00	0.00	0.00	35	25	67	37	84	55	80	53	73	46	78	53			
5	0.00	0.00	0.01	0.00	0.00	0.00	29	22	65	49	57	41	82	54	75	51	81	54			
6	0.00	0.00	0.00	0.00	0.00	0.00	36	21	71	42	55	34	81	61	75	45	84	59			
7	0.00	0.00	0.00	0.00	0.74	0.00	37	23	54	37	63	47	79	56	71	60	81	57			
8	0.00	0.00	0.38	0.00	0.06	1.16	41	27	44	35	55	46	82	55	71	60	72	61			
9	0.00	0.00	0.00	0.21	0.00	0.01	39	29	44	35	59	43	83	63	78	54	78	49			
10	0.00	0.00	0.00	0.00	0.00	0.00	46	29	60	33	67	43	75	53	82	52	83	48			
11	0.00	0.73	0.02	0.00	0.00	0.15	53	34	67	40	71	41	73	50	86	56	75	58			
12	0.05	0.33	0.02	0.00	0.00	0.00	56	38	64	50	80	49	74	53	92	61	76	57			
13	0.23	0.09	0.00	0.00	0.00	0.00	55	43	64	34	80	56	72	45	87	64	81	51			
14	0.00	0.00	0.00	0.29	0.46	0.00	64	38	49	32	84	50	72	62	84	68	81	57			
15	0.00	0.03	0.00	0.00	0.38	0.00	65	39	61	36	82	57	67	51	77	66	82	54			
16	0.00	0.00	0.34	0.00	0.29	0.00	64	45	58	33	73	61	68	50	75	56	85	53			
17	0.00	0.00	0.05	0.00	0.01	0.00	54	38	68	37	74	42	71	51	66	52	84	55			
18	0.00	0.00	0.00	0.00	0.00	0.00	38	33	68	39	64	44	76	49	77	46	86	57			
19	0.00	0.00	0.00	0.00	0.45	0.00	47	33	69	36	74	62	80	48	73	57	87	60			
20	0.01	0.00	0.10	0.19	0.26	0.00	49	35	70	47	79	58	80	61	72	58	80	57			
21	0.01	0.00	0.02	0.00	0.03	0.00	62	34	65	43	85	57	79	60	66	51	66	57			
22	0.00	0.00	0.07	0.02	0.00	0.00	55	32	75	42	88	60	82	53	74	49	71	46			
23	0.00	0.00	0.00	0.37	0.00	0.00	70	42	65	32	84	60	86	59	80	59	80	41			
24	0.01	0.95	0.00	0.00	0.00	0.00	43	32	74	37	84	64	77	58	80	60	83	46			
25	0.00	0.00	1.89	0.00	0.00	0.00	56	31	61	48	82	62	78	57	78	53	81	49			
26	0.55	0.00	0.93	0.13	0.00	0.00	48	33	62	46	86	57	82	55	80	49	80	56			
27	0.04	0.00	0.00	0.00	0.00	0.00	53	34	67	42	85	58	77	58	75	54	64	51			
28	0.00	0.00	0.00	0.00	0.00	0.00	58	33	63	47	93	59	73	52	68	47	60	39			
29	0.40	0.00	0.00	0.25	0.03	0.00	51	45	80	43	75	59	73	47	69	42	60	33			
30	0.00	0.00	0.00	0.16	0.00	0.00	49	40	66	43	74	57	73	56	72	38	65	40			
31		0.00		0.13	0.00		49	33	80	48			71	55	76	43					
Total/Av	1.32	2.13	3.84	1.75	2.72	1.32	49	33	64	40	75	52	77	54	76	53	77	52			

CLIMATIC DATA, 2009, Hettinger, ND

Date	Precipitation									April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
1	0.00	0.00	0.47	0.00	0.00	0.19	30	1	56	25	64	50	79	57	80	40	80	80	53		
2	0.02	0.00	0.00	0.00	0.00	0.07	31	15	61	27	60	41	80	55	87	53	81	55	55		
3	0.00	0.00	0.00	0.39	0.00	0.00	34	20	65	29	59	41	67	57	88	51	74	52	52		
4	0.03	0.22	0.00	0.00	0.00	0.00	28	24	55	39	73	39	77	55	76	40	83	57	57		
5	0.00	0.00	0.00	0.28	0.03	0.00	30	18	70	37	60	42	82	50	73	47	89	55	55		
6	0.00	0.00	0.73	0.00	1.07	0.00	28	6	66	44	45	35	84	54	64	54	87	57	57		
7	0.00	0.03	0.20	0.00	0.63	0.00	42	15	66	37	45	39	74	58	74	62	82	61	61		
8	0.00	0.25	0.01	0.21	0.21	0.00	41	21	53	38	61	36	83	57	70	53	67	47	47		
9	0.00	0.00	0.21	0.00	0.86	0.00	33	29	56	33	52	39	77	51	71	47	79	45	45		
10	0.00	0.00	0.01	0.00	0.01	0.00	41	30	64	30	55	38	76	48	80	48	89	50	50		
11	0.00	0.06	0.23	0.00	0.00	0.19	53	31	71	38	64	32	83	49	90	57	66	46	46		
12	0.00	0.38	0.01	0.00	0.00	0.00	58	35	72	42	73	42	83	58	95	57	67	52	52		
13	0.00	0.01	0.00	0.90	0.00	0.00	64	32	47	36	77	46	67	59	94	59	77	51	51		
14	0.00	0.00	0.00	0.01	0.00	0.00	68	32	69	30	74	53	72	55	74	62	88	59	59		
15	0.00	0.04	0.18	0.00	0.05	0.00	59	43	53	31	77	54	72	48	72	54	89	51	51		
16	0.01	0.00	0.04	0.00	0.00	0.00	52	37	61	24	74	52	72	43	70	49	89	52	52		
17	0.00	0.00	0.01	0.00	0.00	0.00	52	36	73	42	79	49	74	39	68	46	88	49	49		
18	0.09	0.00	0.46	0.00	0.00	0.00	48	36	85	45	77	57	80	45	82	42	88	46	46		
19	0.00	0.00	0.00	0.00	0.47	0.00	63	29	74	38	77	54	91	59	70	53	86	53	53		
20	0.00	0.00	0.00	0.00	0.00	0.00	62	37	74	54	83	58	74	53	72	50	83	48	48		
21	0.00	0.00	0.00	0.00	0.00	0.00	72	40	65	43	80	61	78	49	74	41	57	47	47		
22	0.00	0.00	0.57	0.00	0.00	0.00	80	39	69	47	84	55	83	46	87	50	69	43	43		
23	0.00	0.00	0.00	0.00	0.00	0.00	74	37	66	46	76	53	95	57	89	55	78	39	39		
24	0.09	0.39	0.35	0.00	0.00	0.00	39	28	62	47	79	47	80	56	83	58	78	42	42		
25	0.00	0.01	0.00	0.00	0.00	0.00	53	27	60	49	87	51	84	50	82	48	77	40	40		
26	0.54	0.00	0.13	0.00	0.00	0.00	39	32	65	48	79	57	90	59	85	59	84	45	45		
27	0.00	0.00	0.01	0.00	0.00	0.00	51	26	79	40	72	51	80	52	92	54	60	41	41		
28	0.00	0.00	0.00	0.00	0.00	0.00	53	35	81	45	80	45	74	44	71	53	61	32	32		
29	0.02	0.00	0.00	0.30	0.00	0.00	59	36	84	44	86	54	67	50	74	45	68	38	38		
30	0.00	0.00	0.23	0.00	0.00	0.10	45	27	78	41	80	54	72	48	76	49	74	47	47		
31		0.00		0.00	0.00				82	52			70	47	80	52					
Total/Avg	0.8	1.39	3.85	2.09	3.33	0.55	49	28	67	39	71	48	78	52	79	51	78	48	48	48	



CLIMATIC DATA, 2009, Langdon, ND

Date	Precipitation							April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
1	0.00	0.00	0.05	0.00	0.00	0.00	30	24	49	30	68	42	74	49	68	47	76	50	
2	0.00	0.00	0.00	0.00	0.03	0.00	32	25	54	32	61	37	75	51	67	54	77	54	
3	0.00	0.00	0.00	0.00	0.00	0.00	34	24	60	33	72	39	74	51	68	50	76	49	
4	0.00	0.00	0.10	0.00	0.00	0.00	31	14	65	35	71	43	76	51	69	45	76	55	
5	0.00	0.00	0.00	0.00	0.00	0.00	24	12	63	43	52	34	75	53	71	51	81	58	
6	0.00	0.00	0.00	0.00	0.00	0.00	33	12	69	41	49	31	77	56	71	45	83	58	
7	0.00	0.00	0.00	0.00	0.12	0.00	34	13	50	30	57	43	71	53	69	58	79	62	
8	0.00	0.00	0.37	0.00	0.08	0.00	38	22	38	30	51	44	78	52	66	55	70	53	
9	0.00	0.00	0.00	1.65	0.00	0.00	34	21	40	27	51	42	75	60	76	54	75	48	
10	0.00	0.00	0.00	0.00	0.00	0.00	39	19	56	29	60	38	68	48	79	52	82	52	
11	0.00	0.00	0.01	0.00	0.00	0.00	43	31	67	34	66	39	67	44	85	55	65	56	
12	0.16	0.13	0.03	0.00	0.00	0.00	43	36	66	45	76	41	69	51	91	59	68	52	
13	0.04	0.33	0.00	0.00	0.00	0.00	42	35	53	30	74	47	71	45	83	64	76	51	
14	0.00	0.00	0.00	1.15	0.00	0.00	60	33	47	27	81	49	73	59	72	61	77	59	
15	0.00	0.00	0.01	0.00	0.46	0.00	60	41	42	31	77	54	61	50	74	59	78	59	
16	0.03	0.00	0.00	0.00	0.04	0.00	55	42	55	29	76	58	65	45	69	54	82	56	
17	0.00	0.00	0.00	0.00	0.04	0.00	44	31	67	33	76	59	69	46	60	49	79	54	
18	0.00	0.01	1.15	0.00	0.00	0.00	32	27	59	32	86	58	72	45	74	43	81	61	
19	0.00	0.01	0.00	0.00	0.02	0.00	42	30	59	28	77	56	80	50	72	56	83	57	
20	0.00	0.00	0.00	0.48	0.26	0.00	51	32	68	41	84	54	74	58	68	53	76	57	
21	0.00	0.01	0.00	0.00	0.00	0.14	58	32	61	35	79	61	74	55	62	52	61	53	
22	0.00	0.00	0.00	0.00	0.00	0.00	50	26	70	35	83	61	79	52	70	55	70	45	
23	0.00	0.00	0.00	0.00	0.00	0.00	57	37	63	26	77	59	83	55	81	55	77	45	
24	0.00	1.68	0.00	0.00	0.00	0.00	40	28	70	37	83	55	74	55	73	57	81	48	
25	0.00	0.01	0.00	0.00	0.00	0.00	52	28	53	45	82	55	76	54	76	53	78	49	
26	0.16	0.00	2.20	0.02	0.00	0.00	45	32	62	44	83	61	78	58	80	51	73	54	
27	0.03	0.00	0.20	0.00	0.00	0.00	50	32	68	40	66	56	73	53	72	57	62	44	
28	0.00	0.00	0.00	0.00	0.00	0.00	51	32	62	44	71	53	70	50	68	47	52	36	
29	0.67	0.00	0.00	0.00	0.04	0.00	44	40	74	41	66	53	70	50	66	45	55	30	
30	0.30	0.14	0.00	0.00	0.00	0.00	49	37	67	41	71	50	71	53	71	40	59	38	
31		0.01		0.19	0.00				69	46			64	51	74	45			
Total/Avg	1.39	2.33	4.12	3.49	1.09	2.3	43	28	60	35	71	49	73	52	72	52	74	51	



CLIMATIC DATA, 2009, Minot, ND

Date	Precipitation							April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	35	24	55	35	71	47	80	53	77	47	81	56	
2	0.00	0.00	0.00	0.00	0.00	0.00	40	13	59	34	65	38	75	58	75	56	80	53	
3	0.00	0.00	0.00	0.00	0.03	0.00	33	15	64	32	74	43	74	52	69	47	72	51	
4	0.00	0.00	0.00	0.00	0.00	0.00	33	17	69	42	78	48	78	57	70	45	80	57	
5	0.00	0.00	0.00	0.00	0.00	0.00	31	20	70	48	56	38	78	51	73	50	90	61	
6	0.00	0.01	0.32	0.00	0.00	0.00	32	14	69	46	46	38	78	54	76	46	90	58	
7	0.00	0.00	0.37	0.94	0.49	0.00	45	22	63	39	50	40	65	54	69	61	78	61	
8	0.00	0.00	0.44	0.40	0.33	2.14	42	26	51	35	51	45	77	53	65	55	67	51	
9	0.00	0.00	0.00	0.00	0.00	0.00	42	22	47	32	53	42	75	57	75	55	81	51	
10	0.00	0.03	0.00	0.00	0.00	0.00	38	24	60	32	63	39	68	46	81	52	88	60	
11	0.00	0.00	0.00	0.20	0.00	1.58	43	30	70	38	67	47	72	43	91	61	61	51	
12	0.00	0.28	0.00	0.01	0.00	0.00	49	37	73	47	76	48	74	54	96	60	64	50	
13	0.00	0.14	0.00	0.00	0.00	0.01	57	34	52	36	78	52	64	54	87	61	78	50	
14	0.00	0.00	0.00	0.00	0.04	0.00	63	36	59	29	82	50	74	57	80	63	83	62	
15	0.00	0.00	0.00	0.00	0.22	0.00	63	43	51	30	70	51	66	49	78	61	87	56	
16	0.01	0.00	0.00	0.00	0.01	0.00	55	40	60	25	73	57	68	43	67	52	83	59	
17	0.00	0.00	0.00	0.00	0.00	0.00	44	37	71	43	80	53	73	45	69	48	88	55	
18	0.01	0.00	0.00	0.00	0.00	0.00	44	33	68	35	84	61	80	49	81	46	88	57	
19	0.02	0.00	0.00	0.00	0.27	0.00	55	31	69	32	78	58	82	56	73	57	87	59	
20	0.00	0.00	0.00	0.00	0.00	0.00	60	28	65	42	87	55	76	56	71	56	83	54	
21	0.00	0.04	0.00	0.00	0.00	0.16	64	39	66	36	82	62	76	51	70	48	55	48	
22	0.00	0.00	0.00	0.00	0.00	0.00	72	37	68	41	80	59	82	52	83	48	71	43	
23	0.00	0.00	0.00	0.00	0.00	0.00	58	37	68	32	75	51	90	60	85	61	82	48	
24	0.00	0.19	0.00	0.00	0.06	0.00	46	31	72	44	82	56	79	54	70	54	84	49	
25	0.00	0.81	0.00	0.00	0.00	0.00	56	29	53	48	87	52	82	54	81	48	79	54	
26	0.02	0.00	0.75	0.00	0.00	0.00	45	33	66	48	86	60	83	62	87	59	79	49	
27	0.00	0.00	0.00	0.00	0.00	0.00	53	31	79	47	71	55	76	54	84	59	59	45	
28	0.13	0.00	0.00	0.00	0.00	0.00	52	37	71	49	75	51	74	49	69	48	54	37	
29	0.99	0.00	0.00	0.00	0.00	0.00	43	42	79	51	75	53	70	53	74	47	64	36	
30	0.09	0.00	0.00	0.00	0.00	0.05	50	34	78	41	77	51	72	53	74	46	68	46	
31		0.00		0.13	0.00				78	59		51		52	82	47			
Total/Avg	1.27	1.5	1.88	1.68	1.45	3.94	48	30	65	40	72	51	66	53	76.	53	77	52	

CLIMATIC DATA, 2009, Oakes ND

Date	Precipitation							April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	35	23	60	35	70	46	81	56	72	52	76	51	
2	0.00	0.00	0.00	0.00	0.00	0.00	41	17	64	38	65	46	84	57	83	50	74	61	
3	0.00	0.00	0.00	0.77	0.00	0.00	35	16	64	36	71	39	79	63	85	51	81	59	
4	0.00	0.16	0.00	0.00	0.00	0.00	31	25	71	41	77	48	80	58	73	48	76	54	
5	0.00	0.00	0.00	0.00	0.00	0.00	32	21	70	48	61	47	84	60	79	50	79	55	
6	0.00	0.00	0.33	0.00	0.00	0.01	34	18	72	41	47	44	82	60	74	53	80	60	
7	0.00	0.00	0.53	0.29	0.90	0.00	42	20	70	45	53	45	71	60	82	62	80	60	
8	0.00	0.01	0.06	0.04	1.07	0.35	43	28	50	36	64	46	77	58	76	65	72	62	
9	0.00	0.02	0.00	0.15	0.00	0.01	43	27	51	32	60	43	82	62	78	57	78	49	
10	0.00	0.05	0.00	0.00	0.00	0.00	45	25	60	32	67	44	71	57	82	57	82	51	
11	0.00	0.03	0.00	0.00	0.00	0.00	57	30	72	46	71	45	77	50	85	58	76	57	
12	0.00	0.12	0.44	0.09	0.00	0.00	53	43	69	48	74	49	78	57	91	60	77	56	
13	0.01	0.01	0.00	0.00	0.00	0.00	62	40	65	41	81	54	71	54	89	63	81	50	
14	0.00	0.00	0.00	0.53	1.22	0.00	66	41	60	41	82	54	79	63	89	66	80	59	
15	0.10	0.12	0.07	0.00	0.59	0.00	67	43	64	39	74	61	72	54	81	66	81	55	
16	0.12	0.00	3.63	0.00	0.33	0.00	64	48	57	33	67	60	69	48	76	56	79	52	
17	0.00	0.00	0.01	0.00	0.00	0.00	58	43	69	35	79	59	73	49	68	53	82	54	
18	0.06	0.00	0.65	0.00	0.00	0.00	43	35	87	43	83	59	76	49	79	48	83	54	
19	0.00	0.00	0.00	0.00	0.19	0.00	64	34	86	39	80	59	80	54	75	57	82	57	
20	0.00	0.00	0.00	0.03	0.07	0.01	54	36	78	54	86	57	75	63	72	57	79	52	
21	0.00	0.01	0.18	0.00	0.00	1.13	64	37	68	50	73	63	80	55	65	55	64	54	
22	0.00	0.00	0.00	0.00	0.00	0.43	68	33	75	48	85	63	83	53	75	49	64	47	
23	0.00	0.00	0.27	0.00	0.00	0.00	86	39	66	39	82	64	86	56	83	58	76	42	
24	0.09	0.00	0.06	0.00	0.01	0.00	45	33	76	42	69	58	81	61	83	61	78	46	
25	0.00	0.00	0.00	0.00	0.00	0.00	55	33	82	52	86	59	80	57	81	56	70	50	
26	0.39	0.02	0.29	0.00	0.00	0.00	46	35	60	48	92	65	87	58	87	52	77	52	
27	0.00	0.00	0.00	0.00	0.00	0.00	55	36	72	44	79	59	82	58	80	54	63	51	
28	0.00	0.00	0.00	0.00	0.00	0.00	60	30	83	48	76	57	75	51	71	50	60	39	
29	0.65	0.00	0.00	0.05	0.02	0.00	56	47	78	44	77	56	68	52	73	47	64	34	
30	0.00	0.00	0.00	0.03	0.00	0.00	49	38	73	48	78	55	74	53	72	41	65	44	
31		0.00		0.31	0.00				86	54			79	52	75	47			
Total/Avg	1.42	0.55	6.52	2.29	4.41	2.23	52	32	70	43	74	53	78	56	78	55	75	52	

CLIMATIC DATA, 2009, Prosper ND

Date	Precipitation					April		May		June		July		August		Sept		
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
1	0.00	0.00	0.00	0.00	0.00	0.00	35	27	57	34	77	39	79	54	72	51	74	44
2	0.00	0.00	0.00	0.00	0.00	0.00	35	19	61	34	66	40	85	55	70	50	71	53
3	0.00	0.00	0.00	0.00	0.00	0.00	42	13	64	36	75	35	79	61	81	48	78	56
4	0.00	0.03	0.00	0.00	0.00	0.00	33	26	69	38	83	52	82	52	73	46	76	50
5	0.00	0.03	0.00	0.00	0.00	0.00	30	22	65	46	60	40	84	56	74	49	79	49
6	0.00	0.00	0.21	0.04	0.00	0.00	34	21	72	39	52	33	81	59	75	46	82	52
7	0.00	0.00	0.00	0.00	0.02	0.00	37	18	62	39	58	46	76	55	73	62	80	56
8	0.00	0.00	0.49	0.00	0.33	0.66	40	26	44	34	58	46	82	52	72	57	70	62
9	0.00	0.00	0.00	0.33	0.00	0.02	40	28	45	32	59	44	83	60	78	56	77	48
10	0.00	0.00	0.00	0.00	0.00	0.00	46	29	61	31	68	40	77	55	81	54	83	46
11	0.00	0.14	0.00	0.00	0.00	0.46	53	33	66	42	71	41	75	47	84	54	73	57
12	0.00	0.37	0.00	0.00	0.00	0.00	54	37	63	49	79	46	75	53	89	61	77	55
13	0.04	0.01	0.00	0.00	0.00	0.00	58	40	65	37	84	50	70	46	86	61	80	50
14	0.00	0.00	0.00	0.31	1.00	0.00	63	38	52	34	87	54	75	61	89	65	80	58
15	0.00	0.13	0.00	0.00	0.13	0.00	64	38	66	37	80	57	68	49	78	66	81	53
16	0.00	0.00	0.06	0.00	0.22	0.00	62	45	57	32	78	59	70	46	75	53	83	48
17	0.00	0.00	0.01	0.00	0.07	0.00	56	41	68	32	78	61	72	50	66	49	86	54
18	0.00	0.00	0.00	0.00	0.21	0.00	42	34	77	40	75	59	80	46	79	44	85	53
19	0.00	0.00	0.17	0.00	0.15	0.00	52	31	57	34	82	57	77	61	72	53	80	54
20	0.00	0.03	0.01	0.01	0.00	0.77	50	34	70	37	89	56	79	54	70	53	64	56
21	0.00	0.01	0.01	0.00	0.00	0.16	61	33	79	49	79	63	82	50	67	52	69	45
22	0.00	0.00	0.00	0.00	0.00	0.00	57	32	67	47	81	63	86	53	72	50	78	40
23	0.00	0.00	0.00	0.00	0.00	0.00	79	40	77	40	85	60	78	59	81	57	79	44
24	0.03	0.00	0.43	0.00	0.00	0.00	43	33	65	35	82	55	78	56	81	59	79	49
25	0.00	0.16	0.43	0.00	0.00	0.00	55	30	72	36	87	61	85	53	78	51	79	56
26	0.33	0.00	0.00	0.00	0.13	0.01	46	33	77	50	92	61	79	52	79	46	64	49
27	0.00	0.00	0.00	0.00	0.00	0.00	52	34	58	46	77	57	75	50	79	49	59	43
28	0.00	0.00	0.00	0.00	0.00	0.00	58	31	68	40	78	56	70	47	65	47	60	31
29	0.63	0.00	0.01	0.04	0.00	0.01	50	43	75	43	72	55	74	49	67	41	62	42
30	0.01	0.00	0.00	0.00	0.07	0.00	50	39	81	39	76	54	73	50	71	37	85	53
31		0.00		0.24	0.21		71	43	71	43			80	46	74	43		
Total/Avg	1.04	0.91	1.83	0.97	2.54	2.09	49	32	66	39	76	51	78	53	76	52	76	50

CLIMATIC DATA, 2009, St Thomas ND

Date	Precipitation						April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	0.00	0.13	0.00	0.00	0.00	0.00	32	27	50	34	70	43	75	52	68	51	78	49
2	0.00	0.00	0.00	0.00	0.01	0.00	34	28	54	35	62	42	78	55	70	55	78	53
3	0.00	0.00	0.00	0.00	0.00	0.00	33	29	61	38	74	39	76	53	73	52	81	51
4	0.00	0.00	0.04	0.02	0.00	0.00	32	25	65	37	73	49	78	52	70	49	80	56
5	0.00	0.00	0.00	0.00	0.00	0.00	28	21	65	48	52	39	76	54	73	52	84	56
6	0.00	0.01	0.00	0.00	0.00	0.00	35	23	68	45	53	34	78	59	74	46	85	59
7	0.00	0.00	0.00	0.00	0.07	0.00	39	23	55	34	60	47	75	53	70	60	82	59
8	0.00	0.00	0.42	0.00	0.29	1.55	41	31	42	32	53	47	81	50	67	60	72	60
9	0.00	0.00	0.00	0.03	0.00	0.01	37	29	42	32	56	46	83	65	76	57	78	53
10	0.00	0.00	0.06	0.00	0.00	0.00	43	28	58	34	62	44	73	53	84	52	84	50
11	0.00	0.00	0.02	0.00	0.00	0.88	52	33	68	38	68	42	71	48	86	54	68	57
12	0.20	0.07	0.02	0.19	0.00	0.00	52	38	64	45	77	45	71	51	92	58	71	55
13	0.13	0.37	0.00	0.00	0.00	0.00	47	40	58	31	76	51	75	46	88	66	79	50
14	0.01	0.00	0.00	0.41	0.06	0.18	63	35	45	29	82	47	74	60	79	64	81	55
15	0.00	0.00	0.00	0.00	0.18	0.00	63	42	45	35	83	55	66	55	78	62	81	55
16	0.00	0.00	0.00	0.00	0.03	0.00	60	44	57	32	77	62	67	51	74	55	85	57
17	0.00	0.00	0.00	0.00	0.05	0.00	49	34	67	35	76	62	69	52	63	50	83	54
18	0.00	0.00	0.00	0.00	0.18	0.00	36	31	61	36	85	59	74	50	77	48	85	57
19	0.00	0.00	0.00	0.00	0.59	0.00	42	33	62	31	81	58	81	48	68	51	88	59
20	0.00	0.00	0.03	0.05	0.59	0.00	50	34	69	43	86	60	78	59	74	56	79	57
21	0.00	0.00	0.03	0.00	0.01	0.00	60	35	64	41	84	61	76	58	71	56	65	56
22	0.03	0.01	0.00	0.06	0.00	0.00	50	32	72	40	85	63	82	57	64	52	69	52
23	0.01	0.00	0.00	0.04	0.00	0.00	55	40	65	33	81	60	85	56	72	48	80	43
24	0.00	0.00	0.00	0.00	0.00	0.00	43	31	72	38	87	58	74	58	80	57	83	48
25	0.24	2.46	2.32	0.00	0.00	1.55	53	31	59	48	85	61	76	58	78	59	80	50
26	0.02	0.01	0.63	0.00	0.00	0.01	46	34	64	46	86	59	80	56	78	53	79	53
27	0.00	0.00	0.00	0.14	0.00	0.00	52	34	68	43	68	61	75	58	82	51	64	48
28	0.50	0.00	0.00	0.00	0.00	0.88	55	34	61	48	74	58	72	54	74	57	56	40
29	0.12	0.00	0.00	0.00	0.00	0.00	49	44	75	41	69	54	71	53	69	49	58	32
30	0.00	0.00	0.00	0.23	0.00	0.00	49	41	63	45	72	52	71	57	68	44	64	38
31		0.03		0.14	0.00				72	48			65	54	73	39		
Total/Avg	1.26	3.09	3.57	1.31	1.47	4.88	46	33	61	39	73	52	75	54	75	54	77	52

CLIMATIC DATA, 2009, Tappen ND

Date	Precipitation							April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	31	19	58	30	71	44	83	56	72	47	79	54	
2	0.00	0.00	0.00	0.00	0.01	0.00	36	11	60	32	62	38	84	54	83	54	76	61	
3	0.00	0.00	0.00	0.00	0.00	0.00	33	9	63	30	69	36	76	58	80	45	79	55	
4	0.00	0.21	0.00	0.00	0.00	0.00	30	13	67	39	76	46	78	50	69	42	75	56	
5	0.00	0.01	0.00	0.00	0.00	0.00	27	8	69	44	55	41	83	53	76	47	87	58	
6	0.00	0.00	0.34	0.00	0.00	0.00	32	11	70	45	43	38	82	59	72	49	85	60	
7	0.00	0.00	0.07	0.64	0.02	0.00	37	17	66	39	52	42	70	56	72	61	82	61	
8	0.00	0.00	0.14	0.05	0.14	0.08	38	22	47	30	58	41	80	54	74	60	72	48	
9	0.00	0.00	0.00	0.02	0.00	0.01	40	19	45	29	55	40	80	59	78	53	80	46	
10	0.00	0.03	0.00	0.00	0.00	0.03	37	16	60	25	64	39	74	52	83	52	89	54	
11	0.00	0.03	0.00	0.00	0.00	0.98	46	29	69	44	69	40	77	45	93	58	71	53	
12	0.23	0.40	0.00	0.45	0.00	0.00	44	38	71	46	75	46	77	57	99	63	74	54	
13	0.00	0.01	0.00	0.39	0.00	0.00	59	38	58	37	80	50	62	54	98	68	78	53	
14	0.00	0.00	0.00	0.27	0.00	0.00	65	41	60	30	81	52	77	58	83	65	81	62	
15	0.00	0.03	0.28	0.00	0.12	0.00	63	42	51	36	74	58	69	49	80	64	83	59	
16	0.03	0.00	0.02	0.00	0.17	0.00	55	40	56	26	72	59	68	44	73	54	85	58	
17	0.00	0.00	0.00	0.00	0.00	0.00	52	35	67	40	80	56	73	44	67	49	86	59	
18	0.01	0.00	0.00	0.00	0.00	0.00	42	31	78	39	80	56	77	45	82	44	87	54	
19	0.00	0.00	0.00	0.00	0.12	0.00	60	30	76	35	85	55	81	57	73	56	84	57	
20	0.00	0.00	0.00	0.00	0.02	0.00	56	27	73	49	76	59	76	55	71	56	81	54	
21	0.00	0.00	0.00	0.00	0.00	0.35	64	38	65	43	85	60	77	51	68	50	62	53	
22	0.00	0.00	0.00	0.00	0.00	0.03	67	32	68	44	80	56	81	51	78	45	66	47	
23	0.03	0.03	0.04	0.00	0.00	0.00	83	39	63	34	77	53	92	58	85	60	78	43	
24	0.00	0.94	0.00	0.00	0.00	0.00	44	32	70	39	88	55	79	55	85	59	78	46	
25	0.42	0.00	0.50	0.00	0.00	0.00	55	30	68	48	92	65	79	51	82	50	77	49	
26	0.00	0.00	0.01	0.00	0.00	0.00	44	32	63	47	72	57	88	55	84	59	82	51	
27	0.00	0.00	0.00	0.00	0.00	0.00	53	33	72	38	77	52	79	52	86	60	62	49	
28	0.30	0.00	0.00	0.00	0.02	0.00	52	33	76	46	76	50	74	48	70	48	57	34	
29	0.00	0.00	0.00	0.15	0.00	0.00	57	41	77	46	77	46	68	49	73	42	62	33	
30	0.01	0.00	0.00	0.00	0.00	0.00	45	35	72	40	80	56	73	49	73	38	68	46	
31		0.00		0.06	0.00				81	50			72	54	80	54			
Total/Avg	1.03	1.69	1.4	2.03	0.62	1.48	48	28	66	39	73	50	77	53	79	53	77	52	

CLIMATIC DATA, 2009, Wahpeton ND

Date	Precipitation									April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
1	0.00	0.00	0.00	0.00	0.00	0.00	35	27	59	34	72	46	80	56	72	53	75	50			
2	0.00	0.00	0.00	0.00	0.04	0.00	36	14	62	35	66	44	85	56	78	51	73	55			
3	0.01	0.00	0.00	0.00	0.00	0.00	35	5	63	35	73	39	83	63	83	52	78	57			
4	0.00	0.11	0.00	0.00	0.00	0.00	35	21	72	36	80	50	82	58	73	49	78	51			
5	0.00	0.00	0.00	0.00	0.00	0.00	32	21	68	48	61	43	85	58	77	51	80	53			
6	0.00	0.00	0.27	0.00	0.00	0.00	34	18	74	42	50	39	83	63	76	51	83	58			
7	0.00	0.00	0.02	0.01	0.19	0.00	38	15	72	43	56	47	78	61	76	63	81	56			
8	0.00	0.00	0.26	0.00	0.01	0.78	39	21	53	37	60	47	83	59	76	66	75	65			
9	0.00	0.00	0.00	0.10	0.00	0.01	39	22	48	34	60	43	85	61	79	60	79	53			
10	0.00	0.00	0.00	0.00	0.00	0.00	48	25	60	31	68	44	76	59	81	58	83	52			
11	0.00	0.17	0.00	0.00	0.00	0.67	53	31	65	43	72	45	76	49	86	57	79	60			
12	0.00	0.29	0.00	0.00	0.00	0.00	53	37	66	50	77	49	79	57	93	63	76	58			
13	0.00	0.29	0.01	0.00	0.00	0.00	59	38	67	42	81	51	75	51	89	67	82	56			
14	0.00	0.00	0.00	2.50	0.41	0.00	63	38	54	37	84	54	77	64	89	69	81	61			
15	0.00	0.02	0.00	0.00	0.14	0.00	66	36	66	37	80	58	71	55	80	69	82	55			
16	0.00	0.00	0.98	0.00	1.73	0.00	63	48	57	34	73	62	70	50	77	58	82	53			
17	0.00	0.00	1.08	0.00	0.00	0.00	62	46	70	33	77	62	73	52	70	55	84	57			
18	0.00	0.00	0.01	0.00	0.00	0.00	47	36	83	47	82	60	74	48	79	49	86	58			
19	0.00	0.00	0.00	0.01	0.05	0.00	57	34	79	43	81	59	78	50	74	57	84	59			
20	0.00	0.00	0.42	0.00	0.02	0.00	49	35	86	58	86	58	77	62	71	56	80	56			
21	0.00	0.00	0.00	0.00	0.28	0.49	61	33	70	51	74	64	80	58	67	52	65	58			
22	0.00	0.00	0.11	0.00	0.00	0.07	61	33	79	52	82	65	84	52	75	51	61	52			
23	0.07	0.00	0.01	0.00	0.00	0.00	85	44	68	40	84	65	86	59	83	58	76	44			
24	0.00	1.25	0.00	0.00	0.11	0.00	47	33	77	40	78	59	80	59	81	65	78	47			
25	0.12	0.00	0.81	0.00	0.00	0.08	54	32	81	58	86	61	79	57	78	55	79	54			
26	0.01	0.00	0.31	0.00	0.00	0.00	45	36	59	48	92	60	86	54	80	51	76	53			
27	0.00	0.00	0.00	0.00	0.00	0.00	51	35	64	47	78	60	81	56	81	52	66	51			
28	0.48	0.00	0.00	0.09	0.27	0.00	61	32	76	46	77	58	76	51	69	49	59	42			
29	0.00	0.00	0.00	0.09	0.01	0.00	53	46	78	44	72	56	70	48	69	44	62	32			
30	0.00	0.00	0.01	0.12	0.00	0.09	53	41	71	48	76	55	74	53	72	39	62	42			
31		0.00		0.00	0.00				89	51			80	54	75	46					
Total/Avg	0.69	2.13	4.3	2.92	3.26	2.19	50	31	69	43	75	53	79	56	78	55	76	53			



CLIMATIC DATA, 2009, Williston ND

Date	Precipitation								April		May		June		July		August		Sept	
	April	May	June	July	August	Sept	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	0.00	0.00	0.00	0.00	0.00	0.00	39	17	54	33	67	47	82	58	68	51	84	56		
2	0.00	0.00	0.00	0.00	0.01	0.00	45	22	58	38	67	35	78	58	80	43	84	56		
3	0.00	0.00	0.00	0.49	0.00	0.00	38	28	66	32	72	41	80	56	80	60	79	55		
4	0.00	0.00	0.00	0.08	0.00	0.00	36	25	68	47	79	48	77	53	69	50	86	56		
5	0.00	0.00	0.00	0.00	0.00	0.00	36	23	71	43	55	37	81	55	69	44	90	53		
6	0.00	0.00	0.34	0.00	0.02	0.00	43	18	67	45	48	38	78	56	74	54	95	64		
7	0.00	0.04	0.28	0.82	0.00	0.04	57	26	64	36	49	39	77	60	69	54	74	58		
8	0.00	0.03	0.20	0.63	0.00	0.07	50	26	56	33	55	40	77	59	76	63	70	52		
9	0.00	0.00	0.00	0.00	0.01	0.00	49	28	54	32	55	36	74	55	67	52	83	45		
10	0.00	0.05	0.00	0.00	0.00	0.00	52	32	63	40	63	38	66	51	78	48	82	51		
11	0.00	0.24	0.07	0.00	0.00	0.00	59	31	71	37	69	48	82	48	85	50	70	49		
12	0.00	0.00	0.00	0.00	0.00	0.00	64	41	66	46	78	47	77	54	95	55	72	50		
13	0.00	0.10	0.00	0.19	0.00	0.00	69	33	52	33	82	56	72	61	96	64	79	52		
14	0.00	0.00	0.00	0.06	0.39	0.12	67	42	68	31	82	56	69	53	90	58	86	61		
15	0.01	0.00	0.00	0.00	0.38	0.00	66	47	47	30	79	55	67	47	81	60	88	57		
16	0.11	0.00	0.00	0.00	0.19	0.00	48	36	64	27	79	57	71	43	73	58	86	60		
17	0.00	0.00	0.00	0.00	0.01	0.00	44	33	77	45	87	57	76	45	65	49	91	58		
18	0.00	0.00	0.00	0.00	0.00	0.00	60	31	72	42	85	58	84	52	81	51	90	58		
19	0.00	0.00	0.00	0.00	0.11	0.00	60	34	75	34	81	56	93	59	70	56	93	54		
20	0.00	0.00	0.17	0.00	0.00	0.01	65	36	64	41	90	59	77	58	72	55	78	51		
21	0.00	0.00	0.00	0.00	0.00	0.01	66	45	67	32	80	61	77	52	75	47	61	44		
22	0.00	0.00	0.00	0.00	0.00	0.00	79	41	63	41	79	53	85	53	90	55	75	36		
23	0.01	0.00	0.00	0.00	0.73	0.00	55	30	71	37	77	50	89	58	85	64	84	46		
24	0.04	0.14	0.12	0.00	0.92	0.00	43	26	73	50	89	52	82	54	69	56	86	50		
25	0.00	0.01	0.12	0.00	0.00	0.00	57	26	61	48	94	55	88	54	83	51	81	51		
26	0.00	0.00	0.08	0.00	0.00	0.00	45	34	72	41	72	56	84	63	90	57	84	45		
27	0.12	0.00	0.00	0.15	0.00	0.01	47	33	81	48	74	53	77	57	81	60	59	46		
28	0.20	0.00	0.00	0.06	0.00	0.00	56	36	74	47	84	48	73	48	72	54	60	37		
29	1.01	0.00	0.08	0.01	0.00	0.00	43	33	81	54	81	54	69	51	74	46	70	42		
30	0.05	0.00	0.00	0.00	0.00	0.01	46	33	85	43	82	56	74	54	76	51	70	46		
31		0.00		0.00	0.00				76	59			68	51	85	50				
Total/Avg	1.55	0.61	1.46	2.49	2.77	0.27	53	32	67	40	74	50	78	54	78	54	80	51		

Soil Test Results at Various Weed Experiment Locations						
	Soil Texture	Organic Matter	pH	lb/A N	PPM	
					P	K
A. K. Eckre Grassland Preserve (ND)	Loamy sand	2.9	6.8	3	3	70
Absaraka, ND	Loam	2.0	7.2			
Buffalo, ND (Zollinger, Soybean)	Sandy loam	3.1-3.9	7.6-7.9			
Cavalier, ND		5.3	7.7	68	16	185
Casselton, ND	Silty clay	4.0	7.9	Fertilized by test		
Casselton, ND (Stachlerr)	Silty loam	4.3	7.7	61	17	285
Clara City, MN		7.4	8.0	89	28	400
Eckelson, ND	Loam	8.0	7.3	20	5	515
Fargo, ND (campus)	Silty clay	6.8	7.2	Fertilized by test		
Fargo, ND (section 22)	Silty clay	4.5-6.0	7.5	Fertilized by test		
Geneseo, ND	Loam	6.0	4.0			
Glyndon, MN		4.6	8.1	Fertilized by test		
Hillsboro, ND	Loam	4.1	7.7	132	7	210
Hawley, MN	Loam	2.2	8.5	3	4	105
Hettinger, ND	Silty loam	2.9	6.7	Fertilized by test		
Inkster, ND	Loamy sand	2.1	6.0			
Jamestown, ND (Pipestream Dam)	Loam	6.8	6.8	28	5	290
Kindred, ND	Loam	4.6	7.8			
Mayville, ND (Stachler)	Loam	2.6	6.9	12	13	95
Minot, ND	Loam	2.7	7.0	Fertilized by test		
Oakes, ND	Sandy loam	2.0	6.8			
Oriska, ND	Silty clay	4.1	7.4	Fertilized by test		
Oriska, ND (sunflower)	Sandy loam	5.9	3.2			
Prosper, ND	Clay loam	3.5	7.5	90	23	315
Prosper (Stachler)	Clay loam	4.2	7.6	126	24	150
Prosper, ND (Zollinger)	Silt loam - loam	4.3-4.8	6.3-7.8			
Tappen, ND	Sandy loam	1.8	7.6			
Thompson, ND (Zollinger)	Silt loam	5.6	8.1			
Valley City, ND	Fine loam	8.2	6.7	11	15	640
Valley City, ND (wheat)	Sandy loam	7.3	6.1			
Valley City, ND (Zollinger, sunflower)	Loam	5.1	7.2			
Walcott, ND	Loamy sand	2.6	6.7			
Williston, ND	Loam	2.3	6.8	Fertilized by test		
Wynmere, ND	Loamy sand	1.9	5.7	Fertilized by test		



## KEY TO ABBREVIATIONS AND EVALUATIONS

Crop injury, crop stand and weed control ratings are based on a visual estimate using a scale of 0 = no effect to 100 = complete kill.

Alfa = Alfalfa	Nabe = Navy bean
Amar = Amaranth	Nfcf = Nightflowering catchfly
Barl, Bar = Barley	Oats = Tame oats
Bdlf = Broadleaf	Pagf = Pale goosefoot
Biww = Biennial wormwood	Pest = Perennial sowthistle
Bubu = Buffalobur	Pesw = Pennsylvania smartweed
Bygr = Barnyardgrass	Pibe = Pinto bean
Cath = Canada thistle	Poam = Powell amaranth
Cano = Canola	Pota = Potato
Cocb = Common cocklebur	Powe = Pondweed
Colq = Common lambsquarters	Prle = Prickley lettuce
Coma = Common mallow	Prmi = Proso millet (tame)
Copu = Common purslane	Prpw = Prostrate pigweed
Corw = Common ragweed	Prsp = Prostrate spurge
Cram = Crambe	Quin = Quinoa (chenopodium quinoa)
Cudo = Curly dock	Qugr = Quackgrass
Dali = Dandelion	Rrpw = Redroot pigweed
Dobr = Downy brome	Ruth = Russian thistle
Drbe = Dry bean	Safl, Saff = Safflower
Duru = Durum wheat	Shpu = Sheperdspurse
Ebns = Eastern black nightshade	Smwe = Annual smartweed
Fach = False chamomile	Soyb, Sobe = Soybean
Fibw = Field bindweed	Spss = Spotted spurge (prostrate spurge)
Fipc = Field pennycress	Sugb, Sgbt = Sugarbeet
Fisb = Field sandbur	Snfl, Sufi = Sunflower
Flwe = Flixweed	Swcl = Sweet clover
Foba = Foxtail barley, Forage Barley	Tabw = Tame buckwheat
Fomi, Ftmi = Foxtail millet	Tamu = Tansy mustard
Fota, Fxtl = Foxtail species	Tumu = Tumble mustard
Girw = Giant ragweed	Tymu = Tame yellow mustard
Grft = Green foxtail	Vowh = Volunteer wheat
Gsft = Goosefoot	Vele = Velvetleaf
HNS, Hans = Hairy nightshade	Vema = Venice mallow
Howe = Horseweed	Wahe = Waterhemp
HRSW = Hard red spring wheat	Wht = Volunteer wheat
KOCZ = Kochia	Wibw = Wild buckwheat
Lath = Ladysthumb	Wigr = witchgrass
Lent = Lentils	Wimu = Wild mustard
Llsa = Lanceleaf sage	Wioa = Wild oat
Mael = marshelder	Wipm = Wild-proso millet
Mlgr = Mapleleaf goosefoot	Yeft = Yellow foxtail
Nabe = Navy bean goosefoot	

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## METHODS

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EPP = Early preplant	MPOST = Mid postemergence
PPI = Preplant incorporated	LPOST = Late postemergence
PEI = Preemergence incorporated	LLPOST = Late-late postemergence
PRE, PE = Preemergence	P, PO, POST = Postemergence
EPOST = Early postemergence	POSTDIR = Postemergence Directed

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## FORMULATION

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ACS = Aqueous capsule suspension	WBF = Water-based flowable
DF = Dry Flowable	WP = Wettable powder
E, EC = Emulsifiable concentrate	WG, WDG = Water dispersible granules
FL, F = Flowable	WSP, SP = Water Soluble powder
L = Liquid flowable	G = Granules or gallon/A
ME = Micro-encapsulated	S = Solution
	SG = Soluble granules

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## MISCELLANEOUS

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F = Fall	bee = butoxyethyl ester
S = Spring	dea = diethanolamine salt
Inc., I = Incorporation	dga = diglycolamine
%ir, inju = Percent injury rating	dma = dimethylamine salt
%sr, %std, strd = Percent stand reduction	ioe = isooctyl ester
HT = Plant height	MSO, MVO = methylated vegetable oil
SPK = Spike stage	NIS = nonionic surfactant
Tswt, TW = Test weight	PO, OC = Petroleum oil concentrate (17% emulsifier)
Yld = Yield	SURF, S = Surfactant
alk = alkanolamine salt	TMS = trimethylsulfonium salt
AMN = ammonium nitrate	28N, UAN = 28% liquid nitrogen fertilizer
AMS = ammonium sulfate	

## Herbicide Spray Adjuvants

### Fertilizer

AMS (Dry)	Various	\$0.45 lb	2 to 4 lb/A
AMS (liquid)	Various	\$8.00 gal	2 to 4 qt/A
28% UAN	Various	\$15.00 gal	2 to 4 qt/A
28% UAN (bulk)	Various	\$5.00 gal	2 to 4 qt/A

### Surfactant

Activate Plus	Winfield	\$22.00 gal	0.25 to 0.5% v/v
Activator 90	Loveland	\$28.00 gal	0.25 to 0.5% v/v
APSA-80	Amway	\$32.00 gal	0.25 to 0.5% v/v
ChemSurf 90	United Suppl.	\$27.00 gal	0.25 to 0.5% v/v
Crnblt Premier 90	West Central	\$22.00 gal	0.25 to 0.5% v/v
Liberate LeciTech	Loveland	\$30.00 gal	0.25 to 0.5% v/v
Pen-A-trate II	Precision Labs	\$30.00 gal	0.25 to 0.5% v/v
Preference	Winfield	\$28.00 gal	0.25 to 0.5% v/v
Protyx	Precision Labs	\$96.00 gal	0.125% v/v
Purity 100	Rosens	\$21.00 gal	0.25 to 0.5% v/v
R-11	Wilbur-Ellis	\$27.00 gal	0.25 to 0.5% v/v
Tradition 93	Rosens	\$20.00 gal	0.25 to 0.5% v/v
Translate	United Suppl.	\$30.00 gal	0.25 to 0.5% v/v
Wet-Sol-99	Schaeffers	\$30.00 gal	0.25 to 0.5% v/v

### NIS Approved for use in Water

Surfactants approved for use in bodies of water are:

Activate Plus	Agridex	BroncPlusDryEDT
Class Act NG	Induce	Level 7
Liberate L-Tech	Preference	R-11
Top Surf	X-77	

### Surfactant & Silicone

Freeway	Loveland	\$95.00 gal	0.75 to 2 pt/100 gal
Kinetic	Helena	\$105.00 gal	0.75 to 2 pt/100 gal
Silkin	Winfield	\$96.00 gal	0.75 to 2 pt/100 gal
Speed	Precision Labs	\$96.00 gal	0.25 to 2 pt/100 gal
Sur-Plus	United Suppl.	\$87.00 gal	0.5 to 2 pt/100 gal
Sylgard 309	Wilbur-Ellis	\$115.00 gal	0.75 to 2 pt/100 gal

### Surfactant & AMS

Bronc PlusDryEDT	Wilbur-Ellis	\$0.50 lb	10 lb/100 gal
Class Act NG	Winfield	\$10.00 gal	2.5% v/v
Deliver	Precision Labs	\$10.00 gal	2.5% v/v
Impressive DB	Rosens	\$0.82 lb	2.25 lb/A
Powerhouse	Rosens	\$7.25 gal	5 to 10 qt/100 gal
Surfate	Loveland	\$14.50 gal	1% v/v
Ultra-Lite	United Suppl.	\$7.00 gal	2.5% v/v
Ultra Surf AMS	United Suppl.	\$10.00 gal	2.5% v/v

### AMS Replacement / Water Conditioning Agent (WCA)

Alliance	Winfield	\$14.00 gal	1.25% v/v
Bronc Max	Wilbur-Ellis	\$24.00 gal	0.5% v/v
Citron	Farm Direct	\$3.25 lb	2.2 lb/100 gal
Cut-Rate	Wilbur-Ellis	\$1.25 lb	4 lb/100 gal
Quest/Request	Helena	\$30.00 gal	0.5% v/v
Speedway	United Suppl.	\$32.00 gal	0.5% v/v
Transport	Precision Labs	\$30.00 gal	0.5% v/v

### AMS & AMS Replacement (WCA)

Alliance	Winfield	\$9.00 gal	1.25% v/v
Bronc Max	Wilbur-Ellis	\$24.00 gal	0.5% v/v
Choice W-Master	Loveland	\$20.00 gal	0.5% v/v
Enact	Rosens	\$18.00 gal	0.5% v/v
Sequester	Hefty	\$20.00 gal	0.25 to 0.5% v/v

### Surfactant & AMS Replacement (WCA)

Fastrack	United Suppl.	\$23.00 gal	0.75% v/v
N-Tense	West Central	\$24.00 gal	0.25 to 0.75% v/v
Transport Ultra	Precision Labs	\$24.00 gal	0.25 to 0.75% v/v

### Surfactant & AMS & AMS Replacement (WCA)

Bronc Total	Wilbur-Ellis	\$33.00 gal	0.75 to 1% v/v
Flame	Loveland	\$40.00 gal	0.5% v/v
Transport	Precision Labs	\$34.00 gal	0.25 to 0.75% v/v

### Acidic AMS Replacement (WCA)

AMADS - Monocarbamide dihydrogen sulfate or urea + sulfuric acid			
CT-301	Cheltec	\$- gal	8 fl oz/100 gal
ET-4000	MK Ag Service	\$28.50 gal	0.5 to 1% v/v
Cut-Rate	Wilbur-Ellis	\$2.00 lb	3 to 4 lb/100 gal
Gun Smoke	Loveland	\$- gal	0.25 to 0.5% v/v
Hel-Fire	Helena	\$34.00 gal	0.5 to 0.75% v/v
Import	Precision Labs	\$34.00 gal	0.5 to 1% v/v
N Go/N Tank	Adjuvants Plus	\$34.00 gal	0.5 to 1% v/v

### MSO & AMS Replacement (WCA)

SuperCharge	Syngenta	w/Achieve	0.5% v/v
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### Basic pH Blend

Linkage	West Central	\$19.00 gal	1% v/v
Mycrimix Plus	J.R. Simplot	\$18.00 gal	1% v/v
Quad 7	Loveland	\$18.50 gal	1% v/v

### High Surfactant Oil Concentrate

Between (PO)	United Suppl.	\$15.00 gal	1 to 2 pt/A
Destiny HC (MSO)	Winfield	\$34.00 gal	1 to 2 pt/A
Diplomat (PO)	Rosens	\$11.50 gal	1 to 2 pt/A
Exchange (PO)	Precision Labs	\$22.00 gal	1 to 2 pt/A
Hi-Load (PO)	Simplot	\$- gal	1 to 2 pt/A
High Load (PO)	Wilbur-Ellis	\$24.00 gal	1 to 2 pt/A
Superb HC (PO)	Winfield	\$17.00 gal	1 to 2 pt/A

### Oil Based Surfactant

Trophy Gold	West Central	\$32.00 gal	0.5 pt/A
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### Petroleum Oil Concentrate

Agri-Dex	Helena	\$18.00 gal	2 to 4 pt/A
Herbimax	Loveland	\$18.00 gal	2 to 4 pt/A
Ortech	Rosens	\$7.50 gal	2 to 4 pt/A
Premium Crop Oil	United Suppl.	\$10.00 gal	2 to 4 pt/A
Premium COC	West Central	\$10.00 gal	2 to 4 pt/A
Prime Oil	Winfield	\$10.00 gal	2 to 4 pt/A
Protyx Aerial	Precision Labs	\$22.00 gal	0.5 pt/A
ROC Crop Oil	Wilbur-Ellis	\$11.00 gal	2 to 4 pt/A

### Methylated Seed Oil (MSO)

Adigor	Syngenta	w/Axial	9.6 fl oz/A
MSO Leci-Tech	Loveland	\$20.00 gal	1 to 2 pt/A
MSO Ultra	Precision Labs	\$20.00 gal	1 to 2 pt/A
Persist Ultra	J.R. Simplot	\$20.00 gal	1 to 2 pt/A
Premium MSO	Helena	\$20.00 gal	1 to 2 pt/A
Soy-Stik	West Central	\$18.00 gal	1 to 2 pt/A
Succeed	United Suppl.	\$17.00 gal	1 to 2 pt/A
Sundance II	Rosens	\$16.00 gal	1 to 2 pt/A
Superspread MSO	Wilbur-Ellis	\$20.00 gal	1 to 2 pt/A

<b>MSO Basic pH Blend</b>			
Entro	Various	\$26.00 gal	1 to 2 pt/A
Renegade	Wilbur-Ellis	\$26.00 gal	1 to 2 pt/A

<b>MSO &amp; Organosilicone Surfactant</b>			
Air Force	United Suppl.	\$44.00 gal	4 to 6 fl oz/A
Dyne-Amic	Helena	\$51.50 gal	4 to 6 fl oz/A
Rivet	Winfield	\$44.00 gal	4 to 6 fl oz/A
Syl-tac	Wilbur-Ellis	\$55.00 gal	4 to 6 fl oz/A

<b>AMS &amp; Drift Retardant</b>			
AMS 20/10	United Suppl.	\$1.60 lb	10 lb/100 gal
Corral AMS Dry	Winfield	\$1.60 lb	10 to 17 lb/100 gal

<b>AMS &amp; Defoamer</b>			
Omnix LDF	Precision Labs	\$4.60 gal	2.5 to 5% v/v

<b>AMS &amp; Deposition &amp; AMS Replacement (WCA)</b>			
Bronc Max EDT	Wilbur-Ellis	\$39.00 gal	2 to 3 qt/100 gal
Transport Plus	Precision Labs	\$30.00 gal	2 to 4 qt/100 gal

<b>AMS &amp; Deposition &amp; Defoamer</b>			
AMS 2000	United Suppl.	\$1.25 lb	10 to 17 lb/100 gal
AmSol Plus	United Suppl.	\$6.00 gal	2.5 gal/100 gal
Arrow Four	Winfield	\$20.00 gal	2 to 4 qt/100 gal
Cornbelt Dri-Gard	West Central	\$1.50 lb	9 lb/100 gal
Cornbelt Gardian Plus	West Central	\$6.50 gal	2.5 gal/100 gal
Double Down	United Suppl.	\$8.00 gal	2.5 gal/100 gal
Drift Guard	Rosens	\$1.32 lb	9 lb/100 gal

<b>AMS &amp; Deposition/Retention &amp; Defoamer</b>			
Array	Rosens	\$1.60 lb	9 to 14 lbs/100 gal
Border Xtra DF	Precision Labs	\$1.60 lb	18 lb/100 gal
Border Xtra 4L	Precision Labs	\$5.00 gal	5% v/v
Border Xtra 8L	Precision Labs	\$8.00 gal	2.5% v/v

<b>AMS &amp; Surfactant &amp; Deposition/Retention &amp; Defoamer</b>			
One-Ap XL	West Central	\$1.85 lb	9 to 15 lb/100 gal
BroncPlus DryEDT	Wilbur-Ellis	\$1.60 lb	10 lb/100 gal
Pay Off Plus	United Suppl.	\$2.00 lb	10 to 13 lb/100 gal
Zenith	Rosens	\$1.25 lb	1.5 to 2.25 lb/A

<b>AMS &amp; Surfactant &amp; AMS Replacement (WCA) &amp; Deposition/Retention &amp; Defoamer</b>			
Veracity	West Central	\$23.00 gal	3 qt/100 gal

<b>Surfactant &amp; AMS Replacement (WCA) &amp; Deposition/Retention &amp; Defoamer</b>			
Weather-Gard	Loveland	\$58.00 gal	1 to 2 qt/100 gal
Complete Leci-Tec			

<b>AMS Replacement (WCA) &amp; Deposition/Retention &amp; Defoamer</b>			
Cornbelt Gardian	West Central	\$22.00 gal	1 to 3 qt/100 gal
Formula 1	United Suppl.	\$30.00 gal	1 to 3 qt/100 gal
Transport Plus	Precision Labs	\$25.00 gal	1 to 3 qt/A

<b>Deposition/Retention - Drift Retardants</b>			
Affect GC	United Suppl.	\$40.00 qt	1 to 2 fl oz/100 gal
Border EG 250	Precision Labs	\$1.00 oz	10 oz/100 gal
Corral Poly	Winfield	\$25.00 qt	4 to 12 fl oz/100 gal
Coverage G-20	Wilbur-Ellis	\$32.00 gal	2 to 4 fl oz/A
Direct	Precision Labs	\$25.00 qt	1 to 4 oz/100 gal
Drift Down	Rosens	\$15.00 qt	4 to 8 fl oz/100 gal
In-Place	Wilbur-Ellis	\$40.00 gal	4 fl oz/pt-lb herbicide
InterLock	Winfield	\$42.00 gal	4 to 6 fl oz/A
Placement	Winfield	\$38.00 gal	4 fl oz/pt-lb herbicide
Shroud II	United Suppl.	\$15.00 qt	10 to 12 oz/100 gal
Syndetic	West Central	\$15.00 qt	2 to 8 oz/100 gal

<b>Deposition/Retention &amp; Surfactant &amp; Drift Retardant</b>			
Powerlock	Winfield	\$44.00 gal	5 to 8 oz/AI

<b>Drift Retardant &amp; Defoamer</b>			
Compadre Leci-Tc	Loveland	\$66.00 gal	1 pt/100 gal
Sedate	West Central	\$45.00 gal	1 pt/100 gal

<b>Acidifying Agents</b>			
Complete	Winfield	\$35.00 gal	1 to 3 pt/100 gal
Indicate 5	United Suppl.	\$48.00 gal	2 to 4 pt/100 gal
LI-700 Leci-Tech	Loveland	\$33.00 gal	2 to 4 pt/100 gal
New Balance	Precision Lab	\$32.00 gal	2 to 4 pt/100 gal
SuperSpread 7000	Wilbur-Ellis	\$32.00 gal	0.5 to 2 pt/100 gal
Tri-Fol	Wilbur-Ellis	\$32.00 gal	0.5 to 2 pt/100 gal

<b>Compatibility Agents</b>			
CompatibilityAgent	West Central	\$30.00 gal	1 to 3 pt/100 gal
Complete	Winfield	\$35.00 gal	1 to 3 pt/100 gal
Convert	Precision Labs	\$35.00 gal	1 to 6 pt/100 gal
Embrace	Wilbur-Ellis	\$35.00 gal	1 to 4 pt/100 gal
EZ-Mix	Loveland	\$38.00 gal	1 to 4 pt/100 gal
Mix-All	Rosens	\$35.00 gal	1 to 4 pt/100 gal
Compatibility Plus	United Suppl.	\$41.50 gal	1 to 2 pt/100 gal

<b>Spray Tank Cleaners</b>			
Tank Cleaner	Various	\$15-35 qt	1 to 2 qt/100 gal
Tank Cleaner	Various	\$5-7.00 lb	1 to 2 lb/100 gal

**LIST OF HERBICIDES TESTED IN 2008**

<b>Common Name</b>	<b>Abbreviation</b>	<b>Company</b>	<b>Formulation</b>	<b>Trade Name</b>
Acetochlor + Dichlormid	Acet + Dcmd	Dow	6.4 EC 3.2 ME	Surpass, Volley, TopNotch
Acetochlor + Clopyralid + Flumetsulam		Dow	4.25SE	Sure Start
Acetochlor + MON 4660	Acet + 4660	Monsanto	7 EC	Harness
Acifluorfen	Acif	BASF	2 E, S	Ultra Blazer
Ambicarbazon		Bayer	70 DF	
Aminocyclopyrachlor	DPX KJM44	Dupont	60 DF	
Aminopyralid + 2, 4-D	GF-1004 GF-750	Dow	0.33 + 2.67	Forefront
Aminopyralid	Amino	Dow	2SL	Milestone
Atrazine	Atra	Various	90 DF	Several
Bentazon	Bent, Bsgn	BASF	4 1 S	Basagran
Bentazon + Sethoxydim	Bent + Seth	BASF	5 SL 1 EC	Rezult
Bromoxynil	Brox	Bayer	2 EC	Buctril, Several
Bromoxynil & 2, 4-D	Brox + 2, 4-D	Wilbur Ellis	5 EC	Weco Max
Bromoxynil & MCPA	Brox + MCPA (51b)	Bayer	5 EC	Bronate Advanced
Bromoxynil & fluroxypyr	Brox + Flox	Dow	2.9 EC	Starane NXT
Bromoxynil & Pyrasulfotole	Brox + Pyst	Bayer	2.8 EC	Huskie
Carfentrazone	Carf	FMC	40 WG	Aim, Quick Silver
Carfentrazone & 2,4-D	Carf + 2,4-D	FMC	0.13 + 3.9	Rage D-Tech
Carfentrazone + Halosulfuron	Priority	Tenkoz	12.5 + 50 WDG	Priority
Chlorsulfuron		DuPont	75 WG	Telar / Glean
Clethodim	Clet	Valent Valent Agasco Tenkoz	2 EC 1 EC 2 EC 2 EC	Select Select Max Clethodim Volunteer
Clodinafop	Clfp	Syngenta	2 EC	Discover
Clopyralid	Clpy	Dow	3 S	Stinger, ClopyrAg, Transline
Clopyralid + 2, 4-D	Clpy + 2,4-D	Dow	0.38 + 2 S	Curtail
Clopyralid & fluroxypyr	Clpy + Flox	Dow/UAP	0.75 + 0.75	Widematch/Colt
Clopyralid + Triclopyr	Clpy + Tric	Dow	0.75 + 2.25 EC	Redeem
Cloransulam	Clor, FrstRt	Dow	84 DF	Amplify, FirstRate
Cycloate	Cycl	Syngenta	6 EC	Ro-Neet
Desmedipham + Phenmedipham + Ethofumesate	De & Ph & Et, DPE	Various	0.6 + 0.6 + 0.6 E	Several
Desmedipham	Desm	Various	1.3 EC	Several
Desmedipham + Phenmedipham	Desm + Phen	Various	0.65 + 0.65 E	Several
Dicamba	Dica	Various	4 S	Banvel, Several
Dicamba + diflufenzopyr + isoxadifin safener	BAS799	BASF	40 + 16 WDG	Status

Diflufenzopyr + Dicamba	Difl + Dica	BASF	50+ 20 WDG	Distinct, Overdrive
Difenzoquat	Dife	AMVAC	2 S	Avenge
Diflufenzopyr	Difl	BASF	70 WG	None
Dimethenamid-P	Dime	BASF, Rosens	6 EC	Outlook / Propel
Diquat	Diqu	Syngenta	2 S	Diquat
EPTC		Gowen	7 EC	Eptam
Ethalfuralin	Etha	Dow	3 EC, 10 G	Sonalan
Ethofumesate	Etho	Various	4 F	Several
Fenoxaprop-P	Fenx	Bayer	1 EC	Puma
Fluazifop-P	Flfp-P	Syngenta	2 EC	Fusilade DX
Flucarbazone-NA	Flcz	Bayer	70 WDG	Everest / PRE- PARE
Flumiclorac		Valent	0.86SL	Resource
Flumetsulam + Clopyralid	Flms + Clpy	Dow	18.5 + 50 WDG	Hornet WDG
Flumetsulam	Flms	Dow	80 WG	Python
Flumioxazin	Flum	Valent, Tenkoz	50 WP	Valor / Encompass
Fluroxypyr	Flox	Dow	1.5 EC	Starane
Fluroxypyr + 2, 4-Dioe	Flox + 2,4D	Dow	0.75 + 3 lb/gal EC	Starane + Salvo
Fluroxypyr + MCPAioe	Flox + MCPA	Dow	0.71 + 2.84 EC	Starane + Sword
Fluroxypyr + 2, 4-Ddma	Flox + 2,4Da	Dow	0.5 + 2 EC	Starane + Saber
Fluroxypyr + 2, 4-De		Dow	3.75 EC	Starane + Esteron
Fluroxypyr + MCPAe		Dow	3.55 EC	Starane + MCPA
Florasulam	Flas	Syngenta		not commercial
Florasulam + MCPA	Flas + MCPA	Syngenta	2.373L	Orion
Florasulam + Pyroxsulam + Fluroxypyr	GF-1848 Flas + Pxlms + Flox	Dow	0.838L	Goldsky
Fluthiacet-methyl		FMC	0.91 EC	Cadet
Fomesafen		Syngenta	2 EC	Reflex
Fomesafen + Adjuvant		Syngenta	1.88 EC	Flexstar
Foramsulfuron + Safener		Bayer	70 WDG	Option
Fosamine		DuPont	4 S	Krenite
Glufosinate	Gluf, Lbrty	Bayer	1.67 SL ,2.33 SL	Liberty/Ignite 280
Glyphosate-ipa	Glyt	Various	3 ae/gal S	Several
Glyphosate-K	Mon 78270 Touchdown KPMG	Monsanto, Syngenta	4.5 S 4.175	RU Weathermax, Touchdown Total
Glyphosate-(NH <sub>3</sub> ) <sub>2</sub>	Glyt	Syngenta	3 ae/gal S	Touchdown
Halosulfuron	Halo, Prmt	Monsanto	75 DF	Permit / Sandea
Imazamethabenz	Immb	BASF	2.5 EC	Assert
Imazamox	Imam lmmx	BASF	1 S	Raptor / Beyond
Imazapic		BASF	2 EC	Plateau

Imazapyr		BASF	2 L	Arsenal
Imazethapyr + Glyphosate		BASF	0.17 + 2SL	Extreme / Tackle
Imazethapyr + Pendimethalin	Imep + Pend	BASF	2.9 EC	Pursuit Plus
Imazethapyr	Imep, Prst	BASF	2 S	Pursuit
Isoxaflutole		Bayer	4 SC, 2 SC	BalancePro / Balance Flexx
Isoxaflutole + thiencazone + Safener		Bayer	2.63 SC	Corus
MCPA	MCPA	Various	4 EC, S	Several
Mesosulfuron + safener	Mess	Bayer	2 WG	Silverado
Mesosulfuron + Propoxycarbazon	Mess + Prcz	Bayer	8.14 + 2.03 WDG	Rimfire
Mesotrione	Mest	Syngenta	4 SC	Callisto
Mesotrione + s-metolachlor		Syngenta	0.33 + 3.3 SC	Camix
Mesotrione + s-metolachlor + Atrazine		Syngenta	0.27 + 2.68 + 1 SC	Lumax
S-metolachlor	Meto	Syngenta	7.62 EC	Dual Magnum, Cinch
S-metolachlor + Benoxacor (active isomer)		Syngenta	7.6 E	Dual/II/Magnum
S-metolachlor + Atrazine		Syngenta	2.4 + 3.1 L 3.23 + 2.67L	Bicep II Magnum Bicep Lite II Magnum, Cinch ATZ
S-meto + mesotrione + glyt		Syngenta	4.38 SC	Halex GT
Metribuzin	Metr	Bayer	4 F, 75 DF	Sencor
Metsulfuron	Mets	DuPont	60 DF	Ally, Escort, Cimarron
Nicosulfuron	Nico	DuPont	75 DF	Accent
Nicosulfuron + Rimsulfuron	Nico + Rims	DuPont	50 + 25 DF	Steadfast
Oxyfluorfen	Oxyf	Dow	2 EC/4 WBF	Goal/Goal Tender
Paraquat	Para	Syngenta	2.5 S	Several
Pendimethalin	Pend	BASF Tenkoz	3.8 ACS 3.3 EC	Prowl / H <sub>2</sub> O Acumen
Picloram		Dow	2 S	Tordon 22K
Pinoxaden	Pxdn	Syngenta	0.83 EC	Axial
Propoxycarbazon	Prcz	Bayer	70 WDG	Olympus
Pyrasulfotole + bromoxynil +Safener + Fenoxaprop	Pyst + Brox + Renx	Bayer	1.32 EC	Wolverine
Pyroxasulfone	KIH - 485, Pxsf	Kumiai	85 WG	KIH - 485
Pyraflufen	pyff	Nichino	0.21 EC	Ecopart / ET Herbicide
Pyroxsulam	Pxlm	Dow	7.5 WG	PowerFlex
Quinclorac		BASF	75 WP	Paramount
Quizalofop-P	Qufp-P	DuPont, Gowan	0.88 EC	Assure II, Targa

Rimsulfuron + Thifensulfuron	Rims + Thif, Bsis	DuPont	75 DF	Basis
Rimsulfuron	Rims	DuPont	25 DF	Matrix / Resolve
Saflufenacil	BAS 800 04, Saff	BASF	2.85 SC	Sharpen
Saflufenacil + dimethenamid	BAS 78102 H	BASF	5.57 EC	Integrity
Sethoxydim	Seth	BASF	1.5 EC	Poast
Sulfentrazone	Suen	DuPont/FMC	75 DF	Authority, Spartan, Payload
Sulfentrazone + Cloransulam		FMC	70 WDG	Authority First, Sonic
Sulfometuron	Sume	DuPont	75 DF	Oust
Sulfosulfuron	Sulf	Monsanto	75 WG	Maverick, Outrider
Tebuthiuron		Dow	20 WG	Spike
Tembotrione + isoxadifen safener	AE172747	Bayer	(2:1) 3.5 SL	Laudis
Thifensulfuron + Tribenuron	Thif + Trib	DuPont	50 + 25 DF	Several
Thifensulfuron + Tribenuron		Dupont	25 + 25 SP	Affinity Broad Spectrum
Thifensulfuron + Tribenuron		Dupont	40 + 10 SP	Affinity Tankmix
Thifensulfuron	Thif, Pinn ,Pncl	DuPont	75 DF	Several
Topramezone		AmVac	2.8 SC	Impact
Tralkoxydim	Tral	Syngenta	40 DF	Achieve
Triallate	GWN 3040	Gowan	4EC	Far-Go
Tribenuron	Trib	DuPont	75 DF	Several
Triclopyr	Trep	Dow	4 EC	Garlon / Remedy
Trifluralin	Trif	Dow	4 EC, 10 G	Several
Triflusulfuron	Tfsu	DuPont	50 DF	UpBeet
2,4-D	2,4-D	Various	Various EC, S, WSP	Several
2,4-DB	2,4-DB	Various		Several

<sup>a</sup>Abbreviations in the tables may consist of only the first one, two, or three listed letters when space was limited. Abbreviations of numbered compounds vary with available space, but usually use the first letters and numbers.