

Registered sugarbeet herbicides, Breckenridge, 2002. (Dexter) 'Hilleshog Resist' sugarbeet was seeded 1.25 inches deep in 22 inch rows April 30. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Preemergence ethofumesate treatments were soil applied April 30 after planting. Postemergence treatments were applied May 23, May 30, June 6 and June 17. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Maple-leaved goosefoot, common lambsquarters and redroot pigweed control and sugarbeet injury were evaluated June 25.

Date of Application	April 30	May 23	May 30	June 6	June 17
Time of Day	5:00 pm	11:00 am	1:30 pm	12:00 pm	9:30 am
Air Temp. (°F)	55	42	88	83	72
Relative Humidity (%)	29	43	14	32	51
Soil Temp. (°F at 6")	47	52	66	68	68
Wind Velocity (mph)	17	16	21	19	6
Cloud Cover (%)	20	100	0	80	50
Soil Moisture	good	good	good	good	good
Sugarbeet Stage	---	cotyledon	2 leaf	4-6 leaf	4-8 leaf
Redroot pigweed	---	cotyledon	cot-3 lf	1-2" tall	2 leaf-3"
Common lambsquarters	---	cotyledon	cot-6 lf	1-4" tall	2-8" tall
Maple-leaved goosefoot	---	cotyledon	cot-6 lf	1-4" tall	2-8" tall

Summary

Weed control was excellent with all treatments. Weed populations were sparse. Sugarbeet injury was summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data.

Experiment continued on next page.

Registered sugarbeet herbicides, Breckenridge, 2002. (continued)

Treatment	Rate lb/A	Sgbt inj %	Mlgf cntl %	Colq cntl %	Rrpw cntl %
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	11	100	100	100
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	16	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	6	100	100	98
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	18	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	14	100	100	99
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	14	100	100	99
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	6	100	100	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%				
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	8	100	100	100
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	16	100	100	100
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	11	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	10	100	100	99
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	19	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	16	100	100	96
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	15	100	100	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	9	100	100	100
Ethofumesate-N (PRE)		3			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	13	100	100	100
Ethofumesate-WC (PRE)		3			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	20	100	100	100
Ethofumesate-N (PRE)		2			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	13	100	100	100
Ethofumesate-N (PRE)		3			
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	13	100	100	100
Ethofumesate-N (PRE)		3			
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	11	100	100	100

Table continued on next page.

Registered sugarbeet herbicides, Breckenridge, 2002. (continued)

Treatment	Rate lb/A	Sgbt inj %	Mlgf cntl %	Colq cntl %	Rrpw cntl %
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	23	100	100	99
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	20	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	10	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	10	100	100	99
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	24	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	15	100	100	100
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	4	100	100	98
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	18	100	100	100
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19				
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	18	100	100	100
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	15	100	100	100
EXP MEAN		14	100	100	100
C.V. %		43	0	0	2
LSD 5%		8	0	0	NS
LSD 1%		11	0	0	NS
# OF REPS		4	4	4	4

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, Christine, 2002. (Dexter) 'Crystal 999' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 6. Preemergence ethofumesate treatments were soil applied May 6 after planting. Postemergence treatments were applied May 24, May 30, June 7 and June 13. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and yellow foxtail control were evaluated June 25. Redroot pigweed and common lambsquarters control were evaluated June 25 and July 8. Green and yellow foxtail control was evaluated July 8.

Date of Application	May 6	May 24	May 30	June 7	June 13
Time of Day	5:00 pm	10:00 am	11:30 am	9:00 am	12:30 pm
Air Temp. (°F)	48	52	87	66	60
Relative Humidity (%)	42	31	21	45	56
Soil Temp. (°F at 6")	44	46	63	65	60
Wind Velocity (mph)	12	2	13	4	7
Cloud Cover (%)	100	20	0	80	100
Soil Moisture	good	good	fair	fair	fair
Sugarbeet Stage	---	cotyledon	cot-2 lf	2-4 leaf	4-6 leaf
Redroot pigweed	---	cotyledon	cot-2 leaf	cot-6leaf(1")	2 leaf - 1.5" tall
Common Lambsquarters	---	cot-2 leaf	cot-4 leaf	6lf(2")-3" tall	2-4" tall
Green and Yellow Foxtail	---	emerging - 1" tall	0.5-1.5" tall	1-2.5" tall	1-4" tall

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data. Desmedipham in the micro-rate gave less common lambsquarters control than desmedipham&phenmedipham or desm&phenðofumesate in the micro-rate on July 18. Treatments that did not include clethodim gave less grass control than treatments with clethodim.

Experiment continued on next page.

Registered sugarbeet herbicides, Christine, 2002. (continued)

Treatment	Rate lb/A	June 25				July 18		
		Sgbt inj %	Rrpw cntl %	Colq cntl %	Yeft cntl %	Rrpw cntl %	Colq cntl %	Fxtl cntl %
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	5	83	99	100	61	89	100
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	3	86	99	100	71	99	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	3	80	94	100	60	99	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	3	86	100	100	75	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	3	84	98	99	68	95	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	3	79	97	100	59	95	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	0	74	97	100	55	100	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%							
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	0	79	99	100	65	99	100
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042							
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042							
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	5	86	96	94	65	95	90
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042							
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042							
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	84	100	95	66	98	97
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042							
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042							
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	86	100	100	65	100	100
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125							
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125							
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	5	86	100	98	58	100	97
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125							
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125							
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	4	87	100	97	69	100	99
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042							
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042							
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	5	86	100	93	61	100	94
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042							
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042							
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	0	79	100	95	73	98	93
Ethofumesate-N (PRE)		3						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	3	88	100	100	82	100	100
Ethofumesate-WC (PRE)		3						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	94	97	100	86	99	100
Ethofumesate-N (PRE)		2						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	80	95	100	70	95	100
Ethofumesate-N (PRE)		3						
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042							
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042							
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	3	94	100	100	83	100	100
Ethofumesate-N (PRE)		3						
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	3	89	100	94	71	100	98

Table continued on next page.

Registered sugarbeet herbicides, Christine, 2002. (continued)

Treatment	Rate lb/A	June 25			July 18		
		Sgbt inj	Rrpw %	Colq %	Yeft cntl	Rrpw %	Colq %
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%						
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	0	90	100	100	71	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	3	94	99	100	86	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	3	85	100	100	70	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	0	83	99	100	60	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%						
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	5	94	100	100	84	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	5	96	98	100	93	98
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156						
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11						
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	3	86	100	76	65	100
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156						
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11						
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	10	98	100	87	93	100
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19						
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11						
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	15	99	100	80	92	100
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03						
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	0	79	95	99	59	95
EXP MEAN		3	86	99	97	71	95
C.V. %		143	8	3	4	15	5
LSD 5%		6	10	NS	6	15	7
LSD 1%		8	13	NS	8	20	10
# OF REPS		4	4	4	4	4	4

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, Crookston, 2002. (Dexter) 'Crystal 999' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 14. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Preemergence ethofumesate treatments were soil applied May 14 after planting. Postemergence treatments were applied June 3, June 12, June 18 and June 24. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and yellow foxtail control were evaluated July 4. Redroot pigweed control was evaluated July 4 and July 19.

Date of Application	May 14	June 3	June 12	June 18	June 24
Time of Day	1:30 pm	1:15 pm	9:30 am	11:00 am	3:00 pm
Air Temp. (°F)	64	60	62	72	86
Relative Humidity (%)	28	34	52	52	40
Soil Temp. (°F at 6")	47	55	61	61	80
Wind Velocity (mph)	12	12	8	14	4
Cloud Cover (%)	0	90	20	80	100
Soil Moisture	good	fair	good	good	good
Sugarbeet Stage	---	cot-2 lf	4 leaf	4-6 leaf	6-8 leaf
Redroot pigweed	---	cot-1 lf	2-8 leaf	2 lf-1.5"	2-5" tall
Yellow foxtail	---	emer-0.5"	0.5-1"	1-2" tall	1-3" tall

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data.

All treatments gave total control of yellow foxtail. Weed populations were sparse.

Experiment continued on next page.

Registered sugarbeet herbicides, Crookston, 2002. (continued)

Treatment	Rate lb/A	July 4		July 19	
		Sgbt inj %	Rrpw cntl %	Yeft cntl %	Rrpw cntl %
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	12	100	100	99
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	15	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	7	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	8	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	2	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	8	100	100	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	8	100	100	99
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%				
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	7	100	100	100
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	20	100	100	99
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	18	100	100	96
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	25	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	23	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	22	100	100	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	10	100	100	99
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	23	100	100	100
Ethofumesate-N (PRE)	3				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	15	100	100	100
Ethofumesate-WC (PRE)	3				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	10	100	100	100
Ethofumesate-N (PRE)	2				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	12	100	100	100
Ethofumesate-N (PRE)	3				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	22	100	100	100
Ethofumesate-N (PRE)	3				
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	17	100	100	100

Table continued on next page.

Registered sugarbeet herbicides, Crookston, 2002. (continued)

Treatment	Rate lb/A	July 4		July 19	
		Sgbt inj %	Rrpw cntl %	Yeft cntl %	Rrpw cntl %
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	23	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	23	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	10	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+.005+.03+.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	7	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	20	100	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	8	100	100	100
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	25	100	100	99
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	30	100	100	100
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19				
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	30	100	100	100
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	12	100	100	100
EXP MEAN		16	100	100	100
C.V. %		35	0	0	1
LSD 5%		9	0	0	1
LSD 1%		12	0	0	2
# OF REPS		3	3	3	3

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, Fargo, 2002. (Dexter) 'Beta 2088' sugarbeet was seeded 1.25 inches deep in 22 inch rows April 26. Preemergence ethofumesate treatments were soil applied April 26 after planting. Postemergence treatments were applied May 21, May 28, June 4 and June 12. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury was evaluated June 28. Pennsylvania smartweed and redroot pigweed control were evaluated June 28 and July 18.

Date of Application	April 26	May 21	May 28	June 4	June 12
Time of Day	1:00 pm	10:30 am	11:30 am	9:30 am	5:00 pm
Air Temp. (°F)	44	66	76	63	70
Relative Humidity (%)	9	19	44	37	35
Soil Temp. (°F at 6")	33	48	60	57	67
Wind Velocity (mph)	7	16	11	4	14
Cloud Cover (%)	10	0	0	30	100
Soil Moisture	good	good	good	good	good
Sugarbeet Stage	---	cotyledon	cot-2 lf	2-4 leaf	4-6 leaf
Redroot pigweed	---	cotyledon	cot-1 lf	cot-2 lf	2 leaf-1"
Pennsylvania Smartweed	---	cot-1 lf	cot-2 lf	2-4 leaf	2-3" tall

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data.

Desmedipham in the micro-rate gave less control of Pennsylvania smartweed than desmedipham&phenmedipham or desm&phenðofumesate in the micro-rate. Treatments at the conventional rates gave less control of Pennsylvania smartweed than the micro-rate, probably because oil adjuvant was not used with conventional rates.

Experiment continued on next page.

Registered sugarbeet herbicides, Fargo, 2002. (continued)

Treatment	Rate lb/A	June 28			July 18	
		Sgbt inj %	Pesw cntl %	Rrpw cntl %	Pesw cntl %	Rrpw cntl %
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	0	92	91	63	23
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	99	89	91	13
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	98	89	91	13
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	0	99	87	94	13
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	0	98	87	93	15
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	0	99	89	96	18
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	0	99	90	92	25
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%					
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	0	98	94	96	48
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042					
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042					
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	78	94	43	46
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042					
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042					
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	81	93	61	47
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042					
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042					
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	94	88	85	30
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125					
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125					
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	90	94	67	47
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125					
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125					
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	96	95	95	45
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042					
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042					
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	0	86	88	60	30
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042					
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042					
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	0	96	94	84	30
Ethofumesate-N (PRE)	3					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	100	94	97	25
Ethofumesate-WC (PRE)	3					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	99	92	91	15
Ethofumesate-N (PRE)	2					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	99	93	88	25
Ethofumesate-N (PRE)	3					
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042					
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042					
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	0	96	93	89	38
Ethofumesate-N (PRE)	3					
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	0	92	94	81	53

Table continued on next page.

Registered sugarbeet herbicides, Fargo, 2002. (continued)

Treatment	Rate lb/A	June 28			July 18	
		Sgbt inj %	Pesw cntl %	Rrpw cntl %	Pesw cntl %	Rrpw cntl %
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%					
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	0	100	98	91	44
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	0	100	99	91	58
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%					
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	0	99	92	96	18
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+.005+.03+.03+1.5%+0.063					
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063					
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	0	99	92	96	13
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%					
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1					
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	0	100	98	90	43
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063					
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	0	99	99	91	55
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156					
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11					
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	0	97	93	96	45
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156					
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11					
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	0	99	100	92	67
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19					
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11					
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	0	99	100	94	82
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125					
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03					
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	0	99	81	96	8
EXP MEAN		0	96	93	86	34
C.V. %		0	5	4	16	61
LSD 5%		NS	7	5	20	29
LSD 1%		NS	9	7	26	39
# OF REPS		4	4	4	4	4

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, Glasston, 2002. (Dexter) 'Seedex Gladiator' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 2. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Preemergence ethofumesate treatments were soil applied May 2 after planting. Postemergence treatments were applied May 29, June 5, June 17 and June 28. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and kochia, redroot pigweed, green and yellow foxtail and common lambsquarters control were evaluated July 6. Kochia, redroot pigweed and wild oats control were evaluated July 18.

Date of Application	May 2	May 29	June 5	June 17	June 28
Time of Day	2:15 pm	1:15 pm	1:00 pm	3:00 pm	2:00 pm
Air Temp. (°F)	48	83	76	76	81
Relative Humidity (%)	25	34	27	31	53
Soil Temp. (°F at 6")	35	60	60	68	73
Wind Velocity (mph)	14	10	6	10	7
Cloud Cover (%)	0	75	0	20	40
Soil Moisture	good	good	poor	good	good
Sugarbeet Stage	---	cotyledon	cot-2 lf	4 leaf	6-8 leaf
Redroot pigweed	---	cotyledon	cot-2 lf	2-8 leaf	1-6" tall
Common Lambsquarters	---	cot-2 lf	2-4 leaf	1-4" tall	2-7" tall
Kochia	---	cot-0.25" ros.diam.	0.5-1" ros.diam.	1-4" tall	4-9" tall
Green & Yellow Foxtail	---	emerging	emer-0.5"	1-2" tall	2-4" tall
Wild Oats	---	1lf(1-2")	2-3" tall	2-8" tall	6-12" tall

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data.

Treatments that included clethodim gave excellent control of wild oat and foxtail spp. The three treatments without clethodim gave less grass control. The conventional rate treatments generally gave better kochia control than the micro-rate treatments. Preemergence ethofumesate at 3 lb/A followed by the micro-rate gave kochia control similar to conventional rate treatments without ethofumesate. PRE ethofumesate at 2 lb/A followed by the micro-rate gave less kochia control than PRE ethofumesate at 3 lb/A followed by the micro-rate. Kochia control was improved by adding dimethenamid-P or ethofumesate to the POST micro-rate. Increasing the rate of triflusalufuron from 0.004 to 0.005 lb/A did not improve kochia control.

Experiment continued on next page.

Registered sugarbeet herbicides, Glasston, 2002. (continued)

Treatment	Rate lb/A	July 6				July 18			
		Sgbr inj	Kocz cntl	Rrpw cntl	Gr&Y Fxtl cntl	Colq cntl	Kocz cntl	Rrpw cntl	Wioa cntl
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	8	50	100	100	100	56	100	100
Desm&Phen+Tfsu+Clpy+Clet+MSO(4X)	0.08+0.004+0.03+0.03+1.5%	9	53	100	100	100	64	99	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	9	63	99	100	100	58	93	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO(2X)	0.08+0.004+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO(2X)	0.12+0.004+0.03+0.03+1.5%	6	58	99	100	100	56	98	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO(2X)	0.08+0.004+0.03+0.03+1.5%	9	73	100	100	100	78	93	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO(2X)	0.08+0.004+0.03+0.03+1.5%	8	63	96	100	100	64	97	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	4	54	100	100	100	54	94	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%								
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	5	76	96	100	100	63	99	100
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	9	76	93	99	97	69	88	100
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	9	74	89	99	92	78	92	100
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	16	91	83	99	99	80	75	97
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	13	90	92	100	100	78	88	100
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	9	94	92	100	100	85	83	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042								
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042								
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	7	81	92	98	96	74	89	100
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042								
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042								
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	13	91	95	98	99	83	88	100
Ethofumesate-N (PRE)									
De&Ph&Et+Tfsu+Clpy+Clet+MSO(4X)	0.08+0.004+0.03+0.03+1.5%	10	95	100	100	100	87	100	100
Ethofumesate-WC (PRE)									
De&Ph&Et+Tfsu+Clpy+Clet+MSO(4X)	0.08+0.004+0.03+0.03+1.5%	9	95	100	100	100	83	100	100
Ethofumesate-N (PRE)									
De&Ph&Et+Tfsu+Clpy+Clet+MSO(4X)	0.08+0.004+0.03+0.03+1.5%	4	74	100	100	99	70	100	100
Ethofumesate-N (PRE)									
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	10	93	99	100	100	86	91	100
Ethofumesate-N (PRE)									
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	9	94	97	100	100	84	94	100

Table continued on next page.

Registered sugarbeet herbicides, Glasston, 2002. (continued)

Treatment	Rate lb/A	July 6					July 18		
		Gr&Y					Kocz cntl	Rrpw cntl	Wioa cntl
		Sgbt inj	Kocz cntl	Rrpw cntl	Fxtl cntl	Colq cntl			
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%								
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	6	74	100	100	100	75	99	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	9	81	99	100	100	74	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	4	70	96	100	100	46	95	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	6	71	99	100	100	71	98	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%								
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	11	75	100	100	100	64	100	100
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	9	68	100	100	100	70	100	100
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156								
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11								
Desm&Phen&Etho+Tfsu+Clpy (June 28)	0.42+0.0156+0.11	21	96	100	86	100	91	99	65
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156								
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11								
Desm&Phen&Etho+Tfsu+Clpy+Dime (June 28)	0.42+0.0156+0.11+1	24	92	100	84	100	89	100	56
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19								
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11								
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	23	98	100	100	100	96	99	66
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03								
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	5	73	95	100	98	71	91	100
EXP MEAN		10	78	97	99	99	73	94	96
C.V. %		56	14	4	3	2	14	8	5
LSD 5%		8	16	5	4	3	14	11	7
LSD 1%		10	21	7	5	4	19	14	10
# OF REPS		4	4	4	4	4	4	4	4

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, Hillsboro, 2002. (Dexter) 'Seedex Gladiator' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 3. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Preemergence ethofumesate treatments were soil applied May 3 after planting. Postemergence treatments were applied May 24, May 31, June 12 and June 19. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury was evaluated June 26. Common lambsquarters, kochia and redroot pigweed control were evaluated June 26 and July 9.

Date of Application	May 3	May 24	May 31	June 12	June 19
Time of Day	12:30 pm	3:00 pm	12:00 pm	2:00 pm	3:00 pm
Air Temp. (°F)	58	58	86	68	76
Relative Humidity (%)	25	16	7	38	87
Soil Temp. (°F at 6")	38	56	66	63	70
Wind Velocity (mph)	19	6	6	11	1
Cloud Cover (%)	0	60	70	100	100
Soil Moisture	good	good	good	good	good
Sugarbeet Stage	---	cotyledon	2 leaf	4-6 leaf	6-8 leaf
Redroot pigweed	---	cot-2 lf	2-4 leaf	6 leaf-2"	2-6" tall
Common Lambsquarters	---	cot-2 lf	2-8 leaf	6 leaf-5"	2-8" tall
Kochia	---	cot-0.25" ros.diam.	0.5-1.5" ros.diam.	2-4" tall	3-8" tall

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the "Registered sugarbeet herbicides, St. Thomas" data. Kochia was present only in two replications and the differences among treatments were not significant. All treatments gave excellent control of common lambsquarters.

Experiment continued on next page.

Registered sugarbeet herbicides, Hillsboro, 2002. (continued)

Treatment	Rate lb/A	June 26				July 9			
		Sgbt	Colq	Kocz	Rrpw	Colq	Kocz	Rrpw	
		inj	cntl	cntl	cntl	cntl	cntl	cntl	cntl
		%	%	%	%	%	%	%	
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	5	97	40	100	96	50	93	
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	6	99	65	94	99	50	80	
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	5	99	50	94	99	55	86	
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	5	100	45	93	99	45	73	
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	0	100	70	93	100	50	81	
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	3	99	50	97	100	55	88	
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	0	99	55	94	99	55	81	
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%								
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	6	99	40	94	99	50	82	
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	5	100	60	99	100	50	92	
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	6	100	68	99	100	60	96	
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	4	100	65	95	100	75	82	
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125								
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	6	100	65	97	100	70	89	
De&Ph&Et+Tfsu+Clpy+Clet+Etho-WC	0.25+0.008+0.047+0.042+0.125								
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125								
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	4	100	70	97	100	65	89	
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042								
Des&Phen+Etho-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042								
Des&Phen+Etho-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	4	100	60	99	100	65	96	
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042								
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042								
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	6	100	80	99	100	60	97	
Ethofumesate-N (PRE)		3							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	3	99	65	99	100	60	97	
Ethofumesate-WC (PRE)		3							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	99	70	99	100	65	98	
Ethofumesate-N (PRE)		2							
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	0	100	40	98	100	50	92	
Ethofumesate-N (PRE)		3							
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042								
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042								
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	4	100	86	100	100	75	100	
Ethofumesate-N (PRE)		3							
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	1	100	88	100	100	68	98	

Table continued on next page.

Registered sugarbeet herbicides, Hillsboro, 2002. (continued)

Treatment	Rate lb/A	June 26				July 9			
		Sgbt inj %	Colq cntl %	Kocz cntl %	Rrpw cntl %	Colq cntl %	Kocz cntl %	Rrpw cntl %	
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%								
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1	6	98	70	98	100	60	91	
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	9	100	85	98	100	58	94	
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	4	99	40	95	95	55	87	
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+.005+.03+.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	8	100	60	100	100	60	94	
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%								
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1								
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	13	99	60	99	100	60	94	
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063								
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	9	100	75	100	100	55	96	
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156								
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11								
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	6	100	93	97	100	70	91	
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156								
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11								
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	16	100	75	100	100	65	99	
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19								
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11								
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	16	100	85	100	100	70	100	
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125								
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03								
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	8	100	50	99	100	55	86	
EXP MEAN		6	99	64	97	99	59	91	
C.V. %		82	1	27	4	2	18	10	
LSD 5%		6	2	NS	5	NS	NS	13	
LSD 1%		8	2	NS	NS	NS	NS	17	
# OF REPS		4	4	2	4	4	2	4	

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, St. Thomas, 2002. (Dexter) 'Hilleshog Horizon RR' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 2. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Preemergence ethofumesate treatments were soil applied May 2 after planting. Postemergence treatments were applied May 29, June 6, June 14 and June 28. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet was hand thinned to a 10 inch spacing June 18. Roundup UltraMax herbicide at 3 pint/A was applied to the entire plot area June 20. Lorsban 4E insecticide at 1 qt/A was applied to the entire plot area June 28. Sugarbeet was row-crop cultivated July 2. Sugarbeet injury was evaluated July 6. Sugarbeet in the center two rows of 35 foot long plots was counted and harvested October 2.

Date of Application	May 2	May 29	June 6	June 14	June 28
Time of Day	7:30 pm	9:00 am	10:30 am	11:00 am	11:00 am
Air Temp. (°F)	48	75	70	66	78
Relative Humidity (%)	22	51	36	52	50
Soil Temp. (°F at 6")	52	58	60	57	72
Wind Velocity (mph)	2	6	4	5	8
Cloud Cover (%)	0	70	0	75	0
Soil Moisture	good	fair	good	good	good
Sugarbeet Stage	---	cotyledon	2-4 leaf	4-6 leaf	6-10 leaf

Summary

Sugarbeet injury and redroot pigweed control were summarized over locations and this data is in a table following the data from St. Thomas.

None of the treatments had a significant influence on sugarbeet yield or population.

Experiment continued on next page.

Registered sugarbeet herbicides, St. Thomas, 2002. (continued)

Treatment	Rate lb/A	7-6 10-2		Sucr %	Root Yield ton/A	Imput Index	Extr Sucr lb/A
		Sgbr inj	Sgbr Popl %				
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	11	78	13.8	19.0	855	4550
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	13	79	14.4	17.9	799	4499
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	11	82	14.2	19.2	814	4723
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	15	75	14.3	18.9	810	4757
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	15	73	15.0	19.9	735	5280
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	14	75	14.5	18.2	816	4618
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	18	74	14.1	19.8	834	4841
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%						
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	13	81	14.5	19.0	767	3642
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042						
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042						
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	15	77	14.7	18.2	723	4743
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042						
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042						
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	23	75	14.5	18.7	760	4812
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042						
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042						
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	10	81	14.7	18.4	760	4813
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125						
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125						
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	13	79	14.8	18.9	742	4954
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125						
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125						
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	18	77	14.6	19.1	741	4960
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042						
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042						
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	18	78	14.4	17.9	779	4554
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042						
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042						
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	24	77	14.5	17.4	553	4465
Ethofumesate-N (PRE)	3						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	10	82	14.6	21.0	778	5403
Ethofumesate-WC (PRE)	3						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	16	69	14.2	18.4	803	4602
Ethofumesate-N (PRE)	2						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	13	76	14.4	19.6	751	5018
Ethofumesate-N (PRE)	3						
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042						
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042						
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	16	77	14.6	18.2	767	4700
Ethofumesate-N (PRE)	3						
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	10	80	14.4	19.3	808	4883

Table continued on next page.

Registered sugarbeet herbicides, St. Thomas, 2002. (continued)

Treatment	Rate lb/A	7-6 10-2		Sucr %	Root Yield ton/A	Imput Index	Extr Sucr lb/A
		Sgbt inj	Sgbt Popl				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%						
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	19	79	14.4	18.2	735	4634
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	20	73	14.6	19.1	775	4913
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	15	67	14.0	18.0	862	4375
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+.03+.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	11	78	14.4	19.0	777	4850
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%						
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1						
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	14	77	14.4	18.2	787	4627
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063						
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	16	74	14.4	19.0	819	4813
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156						
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11						
Desm&Phen&Etho+Tfsu+Clpy (June 28)	0.42+0.0156+0.11	30	74	14.7	18.6	762	4837
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156						
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11						
Desm&Phen&Etho+Tfsu+Clpy+Dime (June 28)	0.42+0.0156+0.11+1	30	73	15.0	18.5	744	4896
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19						
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11						
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	35	76	14.3	18.8	832	4683
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125						
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03						
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	14	81	14.2	20.3	819	5042
EXP MEAN		17	76	14.4	18.8	777	4750
C.V. %		32	11	3.4	9.9	14	13
LSD 5%		8	NS	NS	NS	NS	NS
LSD 1%		10	NS	NS	NS	NS	NS
# OF REPS		4	4	4	4	4	4

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

Registered sugarbeet herbicides, combined locations, 2002. (Dexter)

Treatment	Rate lb/A	Sgbt ⁴ inj %	Rrpw ⁵ cntl %	Rrpw ⁶ cntl %	Rrpw ⁷ cntl %
Desm+Tfsu+Clpy+Clet+MSO ¹ (4X)	0.08+0.004+0.03+0.03+1.5%	8	94	69	81
Desm&Phen+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	10	92	66	79
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	7	90	63	77
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.004+0.03+0.03+1.5%	9	91	65	78
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N ² (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	7	91	64	77
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-WC ³ (2X)	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.004+0.03+0.03+1.5%	8	90	65	78
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (4X)	0.053+0.027+0.004+0.03+0.03+1.5%	6	89	64	77
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.152+0.004+0.03+0.03+1.5%				
Desm&Phen+Etho-N+Tfsu+Clpy+Clet+MSO (2X)	0.053+0.027+0.004+0.03+0.03+1.5%	6	91	73	82
Desmedipham+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desmedipham+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	11	93	73	83
Desm&Phen+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	11	91	75	83
De&Ph&Et+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	10	88	63	75
De&Ph&Et+Tfsu+Clpy+Clet+Etho-N	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-N	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	13	92	70	81
De&Ph&Et+Tfsu+Clpy+Clet+Eth-WC	0.25+0.008+0.047+0.042+0.125				
D&P&E+Tfsu+Clpy+Clet+Etho-WC	0.33+0.008+0.047+0.042+0.125				
De&Ph&Et+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	12	93	71	82
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.08+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.22+0.11+0.008+0.047+0.042				
Des&Phen+Eth-N+Tfsu+Clpy+Clet	0.33+0.17+0.008+0.047+0.042	10	91	69	80
Desm&Phen+Etho-N+Tfsu+Clpy+Clet	0.17+0.21+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.22+0.24+0.008+0.047+0.042				
Desm&Ph+Etho-N+Tfsu+Clpy+Clet	0.33+0.29+0.008+0.047+0.042	12	92	72	82
Ethofumesate-N (PRE)		3			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	8	95	76	85
Ethofumesate-WC (PRE)		3			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	9	96	75	86
Ethofumesate-N (PRE)		2			
De&Ph&Et+Tfsu+Clpy+Clet+MSO (4X)	0.08+0.004+0.03+0.03+1.5%	7	92	72	82
Ethofumesate-N (PRE)		3			
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.25+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.33+0.008+0.047+0.042				
Desm&Phen&Etho+Tfsu+Clpy+Clet	0.5+0.008+0.047+0.042	11	96	78	87
Ethofumesate-N (PRE)		3			
Desm&Phen&Etho+Tfsu+Clpy+Clet (3X)	0.25+0.008+0.047+0.042	8	95	79	87

Table continued on next page.

Registered sugarbeet herbicides, combined locations, 2002. (continued)

Treatment	Rate lb/A	Sgbt ⁴ inj %	Rrpw ⁵ cntl %	Rrpw ⁶ cntl %	Rrpw ⁷ cntl %
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.004+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	12	96	76	86
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.004+0.03+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.004+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.004+0.03+0.03+1.5%	13	97	84	91
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO (2X)	0.12+0.005+0.03+0.03+1.5%	7	92	67	80
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+.005+.03+.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N	0.12+0.005+0.03+0.03+1.5%+0.094				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	7	93	66	80
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.08+0.005+0.03+0.03+1.5%				
D&P&E+Tfsu+Clpy+Clet+MSO+Dime	0.12+0.005+0.03+0.03+1.5%+1				
De&Ph&Et+Tfsu+Clpy+Clet+MSO	0.12+0.005+0.03+0.03+1.5%	14	98	80	89
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Etho-N (2X)	0.08+0.005+0.03+0.03+1.5%+0.063				
De&Ph&Et+Tfsu+Clpy+Clet+MSO+Dime (2X)	0.08+0.005+0.03+0.03+1.5%+0.5	10	98	86	92
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy	0.42+0.0156+0.11	14	94	75	85
Desm&Phen&Etho+Triflusulfuron	0.14+0.0156				
Desm&Phen&Etho+Tfsu+Clpy	0.33+0.0156+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	21	99	90	94
Desm&Phen&Etho+Tfsu+Etho-N	0.14+0.0156+0.19				
Desm&Phen&Etho+Tfsu+Etho-N+Clpy	0.33+0.0156+0.19+0.11				
Desm&Phen&Etho+Tfsu+Clpy+Dime	0.42+0.0156+0.11+1	23	100	93	96
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Etho-N	0.08+0.004+0.03+1.5%+0.125				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03				
De&Ph&Et+Tfsu+Clet+MSO+Clpy	0.12+0.004+0.03+1.5%+0.03	9	88	61	75
EXP MEAN		10	93	73	83
C.V. %		56	6	20	11
LSD 5%		3	4	10	6
LSD 1%		4	5	13	8
# OF REPS		23	16	16	16

¹MSO=methylated seed oil from Loveland.

²Etho-N=Nortron formulation of ethofumesate from Aventis.

³Etho-WC=Ethofumesate formulation from West Central Chemical.

⁴Sugarbeet injury combined over Christine, St. Thomas, Glasston, Crookston, Hillsboro and Breckenridge locations.

⁵Redroot pigweed evaluation 1-2 weeks after the last herbicide application combined over Christine, Glasston, Fargo and Hillsboro locations.

⁶Redroot pigweed evaluation 3-5 weeks after the last herbicide application combined over Christine, Glasston, Fargo and Hillsboro locations.

⁷Mean of early and late redroot pigweed evaluations combined over Christine, Glasston, Fargo and Hillsboro locations.

(Summary of results over locations on next page)

Summary of Results over Locations

Redroot pigweed control was less at the second evaluation as compared to the first, partly due to pigweed that emerged after the last POST treatment. Conventional rates of desm^ophen^etho + triflusulfuron applied once followed by desm^ophen^etho + triflusulfuron + clopyralid twice with dimethenamid-P in the third application gave 94 to 96% redroot pigweed control but also gave more sugarbeet injury than the other treatments. The micro-rate applied four times plus dimethenamid-P in the third application gave more sugarbeet injury and greater redroot pigweed control than the micro-rate alone. PRE ethofumesate followed by the micro-rate gave better control of redroot pigweed and similar sugarbeet injury compared to the micro-rate alone. The micro-rate with triflusulfuron at 0.004 lb/A gave sugarbeet injury and redroot pigweed control similar to the micro-rate with triflusulfuron at 0.005 lb/A. The addition of POST ethofumesate did not improve redroot pigweed control from the micro-rate or conventional rate treatments. PRE ethofumesate followed by the micro-rate gave redroot pigweed control similar to PRE ethofumesate followed by the conventional rate.

Outlook on sugarbeet, Crookston, 2002. (Dexter) 'Crystal 999' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 14. Counter 15G insecticide at 12 pounds product per acre was applied modified in-furrow at planting. Postemergence treatments were applied June 3, June 12, June 18 and June 24. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and pigweed species (redroot pigweed and prostrate pigweed) control were evaluated July 1. Redroot pigweed control was evaluated July 19.

Date of Application	June 3	June 12	June 18	June 24
Time of Day	1:15 pm	9:30 am	11:00 am	3:00 pm
Air Temp. (°F)	60	62	72	86
Relative Humidity (%)	34	52	52	40
Soil Temp. (°F at 6")	55	61	61	80
Wind Velocity (mph)	12	8	14	4
Cloud Cover (%)	90	20	80	100
Soil Moisture	fair	good	good	good
Sugarbeet Stage	cot-early 2 lf	4 leaf	4-6 leaf	6-8 leaf
Redroot pigweed	cot - 1 leaf	2-8 leaf	2lf-1.5" tall	2-5" tall
Prostrate Pigweed	cot - 2 leaf	4-8 leaf	2 lf-2"diam.	1-4" diam.

Summary

Dimethenamid + clethodim gave less pigweed control than other treatments. The micro-rate applied three times plus dimethenamid-P on June 12 caused more sugarbeet injury than the micro-rate without dimethenamid. Adding dimethenamid three times at 0.33 lb/A caused more sugarbeet injury than adding 1.0 lb/A once. Adding Quadris or GEM fungicide to the micro-rate plus dimethenamid caused increased sugarbeet injury but adding Headline or Eminent did not increase injury. Leaving the clopyralid out of the micro-rate did not reduce sugarbeet injury. Delaying the dimethenamid application from June 12 to June 18 did not reduce sugarbeet injury.

Experiment continued on next page.

Outlook on sugarbeet, Crookston, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	July 1		July 19
			Sugarbeet injury %	Pigweed control %	Redroot Pigweed control %
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12, June 18, June 24)		0.08+0.004+0.03+0.06+1.5%	16	100	95
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12, June 18)		0.08+0.004+0.03+0.06+1.5%	11	100	91
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 18)		0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 12)		0.08+0.004+0.03+0.06+1.5%+1	21	100	100
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12)		0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 18)		0.08+0.004+0.03+0.06+1.5%+1	18	100	99
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 18)		0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Dime (June 12)		0.08+0.004+0.03+0.06+1	16	100	100
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3)		0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 12)		0.08+0.004+0.03+0.06+1.5%+0.29			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 18)		0.08+0.004+0.03+0.06+1.5%+0.71	15	100	100
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 3, June 12, June 18)		0.08+0.004+0.03+0.06+1.5%+0.33	36	100	99
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12)		0.08+0.004+0.03+0.06+1.5%			
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Headline (June 18)		0.08+0.004+0.03+0.06+1.5%+1+0.15	23	100	100
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12)		0.08+0.004+0.03+0.06+1.5%			
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Eminent (June 18)		0.08+0.004+0.03+0.06+1.5%+1+0.1	14	100	99

Table continued on next page.

Outlook on sugarbeet, Crookston, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	July 1		July 19
			Sugarbeet injury %	Pigweed control %	Redroot Pigweed control %
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12) 0.08+0.004+0.03+0.06+1.5%					
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Quadris (June 18) 0.08+0.004+0.03+0.06+1.5%+1+0.15			34	100	96
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12) 0.08+0.004+0.03+0.06+1.5%					
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime+GEM (June 18) 0.08+0.004+0.03+0.06+1.5%+1+0.11			36	100	100
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12) 0.08+0.004+0.03+0.06+1.5%					
Dimethenamid (June 18) 1			8	99	96
Dimethenamid+Clethodim (June 12) 1+0.095			0	88	85
Dimethenamid+Clethodim+Scoil (June 12) 1+0.095+1.5%			4	92	83
Desm&Phen+Tfsu+Seth+Scoil (June 3, June 18) 0.08+0.004+0.06+1.5%					
Desm&Phen+Tfsu+Seth+Scoil+Dime (June 12) 0.08+0.004+0.06+1.5%+1			19	100	99
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 12, June 24) 0.08+0.004+0.03+0.06+1.5%					
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 18) 0.08+0.004+0.03+0.06+1.5%+1			20	100	99
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 3, June 18) 0.08+0.004+0.03+0.06+1.5%					
Dimethenamid ¹ (June 12) 1					
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 12) 0.08+0.004+0.03+0.06+1.5%			15	100	100
Untreated Check			0	0	0
EXP MEAN			17	93	91
C.V. %			33	2	6
LSD 5%			8	3	8
LSD 1%			11	4	10
# OF REPS			4	4	4

*Scoil = methylated seed oil from AGSCO.

¹Dimethenamid applied alone and allowed to dry on leaves prior to applying the other herbicides June 12.

Outlook on sugarbeet, Fargo, 2002. (Dexter) 'Beta 2088' sugarbeet was seeded 1.25 inches deep in 22 inch rows April 26. Postemergence treatments were applied May 21, May 28, June 4 and June 12. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and Pennsylvania smartweed, redroot pigweed and volunteer wheat control were evaluated June 26. Pennsylvania smartweed and redroot pigweed control were evaluated July 18.

Date of Application	May 21	May 28	June 4	June 12
Time of Day	10:30 am	11:30 am	9:30 am	5:00 pm
Air Temp. (°F)	66	76	63	70
Relative Humidity (%)	19	40	37	35
Soil Temp. (°F at 6")	48	60	57	67
Wind Velocity (mph)	16	11	4	14
Cloud Cover (%)	0	0	30	100
Soil Moisture	good	good	good	good
Sugarbeet Stage	cotyledon	cot - 2 leaf	2-early 4 lf	4-6 leaf
Pennsylvania smartweed	cot - 1 leaf	cot - 2 leaf	2-4 leaf	2-3" tall
Redroot pigweed	cotyledon	cot - 1 leaf	cot - 2 leaf	2lf-1" tall
Volunteer wheat	spike-1 leaf	1-2 lf(2-4")	4-6" tall	7-9" tall

Summary

Adding Headline, Quadris or GEM fungicide to the micro-rate plus dimethenamid-P caused increased sugarbeet injury with Quadris causing the most injury. Four applications of the micro-rate gave better control of redroot pigweed than three applications. Three applications of the micro-rate plus dimethenamid in the second or third application gave pigweed control similar to four applications of the micro-rate. Adding Headline to the micro-rate plus dimethenamid reduced control of redroot pigweed and Pennsylvania smartweed. Leaving the Scoil out of the third application of micro-rate plus dimethenamid gave reduced redroot pigweed control on June 26. Two applications of the micro-rate plus dimethenamid alone at time 3 gave poor weed control. Splitting the dimethenamid into two or three applications did not improve weed control. Dimethenamid plus clethodim gave less sugarbeet injury than several of the micro-rate plus dimethenamid treatments.

Experiment continued on next page.

Outlook on sugarbeet, Fargo, 2002. (continued)

Treatment*	(Date of Application)	Rate	June 26				July 18	
			Sgbt inj	Pesw cntl	Rrpw cntl	Vowh cntl	Pesw cntl	Rrpw cntl
		lb/A	%	%	%	%	%	%
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28, June 4, June 12)		0.08+0.004+0.03+0.06+1.5%	5	100	99	100	88	86
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28, June 4)		0.08+0.004+0.03+0.06+1.5%	3	97	88	92	88	44
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, June 4)		0.08+0.004+0.03+0.06+1.5%						
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (May 28)		0.08+0.004+0.03+0.06+1.5%+1	13	96	99	100	79	92
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28)		0.08+0.004+0.03+0.06+1.5%						
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 4)		0.08+0.004+0.03+0.06+1.5%+1	11	97	100	100	84	82
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, June 4)		0.08+0.004+0.03+0.06+1.5%						
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (May 28)		0.08+0.004+0.03+0.06+1	3	91	92	97	84	74
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21)		0.08+0.004+0.03+0.06+1.5%						
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (May 28)		0.08+0.004+0.03+0.06+1.5%+0.29						
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 4)		0.08+0.004+0.03+0.06+1.5%+0.71	10	98	97	98	90	82
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (May 21, May 28, June 4)		0.08+0.004+0.03+0.06+1.5%+0.33	10	98	96	100	84	66
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28)		0.08+0.004+0.03+0.06+1.5%						
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Headline (June 4)		0.08+0.004+0.03+0.06+1.5%+1+0.15	39	92	93	100	68	53
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28)		0.08+0.004+0.03+0.06+1.5%						
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Eminent (June 4)		0.08+0.004+0.03+0.06+1.5%+1+0.1	9	94	96	99	84	66

Table continued on next page.

Outlook on sugarbeet, Fargo, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	June 26				July 18	
			Sgbt inj %	Pesw cntl %	Rrpw cntl %	Vowh cntl %	Pesw cntl %	Rrpw cntl %
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28) 0.08+0.004+0.03+0.06+1.5%								
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Quadris (June 4) 0.08+0.004+0.03+0.06+1.5%+1+0.15			69	94	97	99	74	80
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28) 0.08+0.004+0.03+0.06+1.5%								
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime+GEM (June 4) 0.08+0.004+0.03+0.06+1.5%+1+0.11			30	95	98	99	81	73
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28) 0.08+0.004+0.03+0.06+1.5%								
Dimethenamid (June 4) 1			0	68	76	90	58	50
Dimethenamid+Clethodim (May 28) 1+0.095			0	8	0	100	0	55
Dimethenamid+Clethodim+Scoil (May 28) 1+0.095+1.5%			0	10	0	100	0	50
Desm&Phen+Tfsu+Seth+Scoil (May 21, June 4) 0.08+0.004+0.06+1.5%								
Desm&Phen+Tfsu+Seth+Scoil+Dime (May 28) 0.08+0.004+0.06+1.5%+1			14	83	89	100	60	64
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, May 28, June 12) 0.08+0.004+0.03+0.06+1.5%								
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 4) 0.08+0.004+0.03+0.06+1.5%+1			11	100	100	100	95	96
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 21, June 4) 0.08+0.004+0.03+0.06+1.5%								
Dimethenamid ¹ (May 28) 1								
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 28) 0.08+0.004+0.03+0.06+1.5%			8	96	96	99	88	75
Untreated Check			0	0	0	0	0	0
EXP MEAN			13	79	79	93	67	66
C.V. %			60	7	4	4	15	29
LSD 5%			11	8	4	5	14	27
LSD 1%			15	11	6	7	19	36
# OF REPS			4	4	4	4	4	4

*Scoil = methylated seed oil from AGSCO.

Outlook on sugarbeet, St. Thomas, 2002. (Dexter)

'Hilleshog Horizon' Roundup Ready sugarbeet was seeded 1.25 inches deep in 22 inch rows May 2. Counter 15G insecticide at 12 pounds product per acre was applied modified in-furrow at planting. Postemergence treatments were applied May 29, June 6, June 14 and June 28. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet was hand thinned to a ten inch spacing June 18. Roundup UltraMax at 3 pt/A was applied to all plots June 20. Lorsban at 1 qt/A was applied to all plots June 28. Sugarbeet was row-crop cultivated July 2. Sugarbeet injury was evaluated July 6. Sugarbeet from the center two rows of 35 foot long plots was counted and harvested October 2.

Date of Application	May 29	June 6	June 14	June 28
Time of Day	10:00 am	10:30 am	11:00 am	11:00 am
Air Temp. (°F)	75	70	66	78
Relative Humidity (%)	51	36	52	50
Soil Temp. (°F at 6")	58	60	57	72
Wind Velocity (mph)	6	4	5	8
Cloud Cover (%)	70	0	75	0
Soil Moisture	fair	good	good	good
Sugarbeet Stage	cotyledon	2-early 4 lf	4-6 leaf	6-10 leaf

Summary

The micro-rate applied three times plus dimethenamid-P in the second application caused more sugarbeet injury than the micro-rate alone. Removing the Scoil from the micro-rate plus dimethenamid application did not reduce sugarbeet injury. Splitting the dimethenamid between two or three applications did not reduce sugarbeet injury. Adding Headline or Eminent fungicide to the third micro-rate application plus dimethenamid caused no increase in sugarbeet injury. However, adding Quadris or GEM fungicide to the micro-rate plus dimethenamid caused increased sugarbeet injury. Leaving the clopyralid out of the micro-rate plus dimethenamid did not reduce sugarbeet injury. None of the treatments caused significant yield loss.

Experiment continued on next page.

Outlook on sugarbeet, St. Thomas, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	7-6	10-2	Sucr %	Root Yield ton/A	Impur Index	Extr Sucr lb/A
			Sgbr inj %	Sgbr Popl plt/70'				
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6, June 14, June 28)	0.08+0.004+0.03+0.06+1.5%	15	80	13.8	23.1	921	5508	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6, June 14)	0.08+0.004+0.03+0.06+1.5%	6	77	14.2	20.4	838	5054	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 14)	0.08+0.004+0.03+0.06+1.5%							
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 6)	0.08+0.004+0.03+0.06+1.5%+1	14	79	14.3	22.7	837	5678	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6)	0.08+0.004+0.03+0.06+1.5%							
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 14)	0.08+0.004+0.03+0.06+1.5%+1	11	74	14.5	22.7	840	5780	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 14)	0.08+0.004+0.03+0.06+1.5%							
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 6)	0.08+0.004+0.03+0.06+1	14	66	14.4	21.9	844	5523	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29)	0.08+0.004+0.03+0.06+1.5%							
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 6)	0.08+0.004+0.03+0.06+1.5%+0.29							
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 14)	0.08+0.004+0.03+0.06+1.5%+0.71	16	68	14.4	20.9	822	5255	
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (May 29, June 6, June 14)	0.08+0.004+0.03+0.06+1.5%+0.33	18	75	14.7	20.8	808	5362	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6)	0.08+0.004+0.03+0.06+1.5%							
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Headline (June 14)	0.08+0.004+0.03+0.06+1.5%+1+0.15	11	81	15.1	23.1	767	6191	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6)	0.08+0.004+0.03+0.06+1.5%							
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Eminent (June 14)	0.08+0.004+0.03+0.06+1.5%+1+0.1	16	70	14.4	21.3	839	5378	

Table continued on next page.

Outlook on sugarbeet, St. Thomas, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	7-6	10-2	Sucr %	Root Yield ton/A	Impur Index	Extr Sucr lb/A
			Sggt inj %	Sggt Popl plt/70'				
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6) 0.08+0.004+0.03+0.06+1.5%								
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Quadris (June 14) 0.08+0.004+0.03+0.06+1.5%+1+0.15			33	79	14.8	20.0	787	5203
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6) 0.08+0.004+0.03+0.06+1.5%								
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime+GEM (June 14) 0.08+0.004+0.03+0.06+1.5%+1+0.11			25	73	14.5	20.7	795	5288
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6) 0.08+0.004+0.03+0.06+1.5%								
Dimethenamid (June 14) 1			11	66	14.1	20.0	905	4878
Dimethenamid+Clethodim (June 6) 1+0.095			10	72	14.7	20.1	815	5159
Dimethenamid+Clethodim+Scoil (June 6) 1+0.095+1.5%			11	77	14.4	20.4	808	5170
Desm&Phen+Tfsu+Seth+Scoil (May 29, June 14) 0.08+0.004+0.06+1.5%								
Desm&Phen+Tfsu+Seth+Scoil+Dime (June 6) 0.08+0.004+0.06+1.5%+1			18	75	14.8	20.0	739	5276
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 6, June 28) 0.08+0.004+0.03+0.06+1.5%								
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (June 14) 0.08+0.004+0.03+0.06+1.5%+1			19	68	14.2	20.3	832	5069
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 29, June 14) 0.08+0.004+0.03+0.06+1.5%								
Dimethenamid ¹ (June 6) 1								
Desm&Phen+Tfsu+Clpy+Seth+Scoil (June 6) 0.08+0.004+0.03+0.06+1.5%			16	70	13.6	19.9	937	4666
Untreated Check			3	73	14.9	21.0	756	5508
EXP MEAN			15	73	14.4	21.1	827	5330
C.V. %			40	10	4.9	8.2	15	10
LSD 5%			8	10	NS	NS	NS	NS
LSD 1%			11	NS	NS	NS	NS	NS
# OF REPS			4	4	4	4	4	4

*Scoil = methylated seed oil from AGSCO.

¹Dimethenamid applied alone and allowed to dry on leaves prior to applying the other herbicides June 6.

Outlook on sugarbeet, combined locations, 2002. (Dexter)

Treatment*	(Date of Application)	Rate lb/A	Sugarbeet injury ²	Redroot pigweed control ³
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+1.5%		12	93
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2, Time 3)	0.08+0.004+0.03+0.06+1.5%		7	74
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 3)	0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 2)	0.08+0.004+0.03+0.06+1.5%+1		16	97
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)	0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 3)	0.08+0.004+0.03+0.06+1.5%+1		13	94
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 3)	0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 2)	0.08+0.004+0.03+0.06+1		11	89
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1)	0.08+0.004+0.03+0.06+1.5%			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 2)	0.08+0.004+0.03+0.06+1.5%+0.29			
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 3)	0.08+0.004+0.03+0.06+1.5%+0.71		14	93
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 1, Time 2, Time 3)	0.08+0.004+0.03+0.06+1.5%+0.33		21	87
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)	0.08+0.004+0.03+0.06+1.5%			
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Headline (Time 3)	0.08+0.004+0.03+0.06+1.5%+1+0.15		24	82
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)	0.08+0.004+0.03+0.06+1.5%			
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Eminent (Time 3)	0.08+0.004+0.03+0.06+1.5%+1+0.1		13	87

Table continued on next page.

Outlook on sugarbeet, combined locations, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	Sugarbeet injury ²	Redroot pigweed control ³
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)		0.08+0.004+0.03+0.06+1.5%		
De&Ph+Tfsu+Clpy+Seth+Scoil+Dime+Quadris (Time 3)		0.08+0.004+0.03+0.06+1.5%+1+0.15	45	91
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)		0.08+0.004+0.03+0.06+1.5%		
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime+GEM (Time 3)		0.08+0.004+0.03+0.06+1.5%+1+0.11	30	90
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2)		0.08+0.004+0.03+0.06+1.5%		
Dimethenamid (Time 3)		1	6	74
Dimethenamid+Clethodim (Time 2)		1+0.095	3	47
Dimethenamid+Clethodim+Scoil (Time 2)		1+0.095+1.5%	5	44
Desm&Phen+Tfsu+Seth+Scoil (Time 1, Time 3)		0.08+0.004+0.06+1.5%		
Desm&Phen+Tfsu+Seth+Scoil+Dime (Time 2)		0.08+0.004+0.06+1.5%+1	17	84
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2, Time 4)		0.08+0.004+0.03+0.06+1.5%		
Desm&Phen+Tfsu+Clpy+Seth+Scoil+Dime (Time 3)		0.08+0.004+0.03+0.06+1.5%+1	17	98
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 3)		0.08+0.004+0.03+0.06+1.5%		
Dimethenamid ¹ (Time 2)		1		
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 2)		0.08+0.004+0.03+0.06+1.5%	13	90
Untreated Check			1	0
EXP MEAN			15	79
C.V. %			60	22
LSD 5%			7	14
LSD 1%			10	19
# OF REPS			12	12

*Scoil = methylated seed oil from AGSCO.

¹Dimethenamid applied alone and allowed to dry on leaves prior to applying the other herbicides Time 2.

²Sugarbeet injury combined over Crookston, Fargo and St. Thomas locations.

³Redroot pigweed control combined over July 19 evaluation at Crookston and June 26 and July 18 evaluation at Fargo.

Postemergence ethofumesate on sugarbeet, Crookston, 2002. (Dexter) 'Crystal 999' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 14. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Treatments were applied 1:15 pm June 3 when the air temperature was 60F, soil temperature at six inches was 55F, relative humidity was 34%, wind velocity was 12 mph, cloud cover was 90%, soil moisture was fair, sugarbeet was in the cotyledon to 2 leaf stage, redroot pigweed was in the cotyledon to 1 leaf stage and prostrate pigweed was in the cotyledon to 2 leaf stage. All treatments were applied once in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and redroot pigweed and prostrate pigweed control were evaluated July 1.

Treatment	Rate lb/A	Sgbt inj %	Prpw Rrpw cntl %
Ethofumesate-N ¹ (POST)	3.75	3	100
Ethofumesate-WC ² (POST)	3.75	4	100
Desm&Phen+Tfsu+Clpy+Clet+MSO ³ (1X)	0.08+0.004+0.03+0.03+1.5%	1	48
De&Ph+Tfsu+Clpy+Clet+MSO+Etho-N (1X)	0.08+0.004+0.03+0.03+3.75	18	100
De&Ph+Tfsu+Clpy+Clet+MSO+Etho-W (1X)	0.08+0.004+0.03+0.03+3.75	14	100
Desm&Phen+Ethofumesate-N (1X)	0.25+3.75	16	100
EXP MEAN		9	91
C.V. %		41	6
LSD 5%		6	8
LSD 1%		8	11
# OF REPS		4	4

¹Ethofumesate-N=Nortron formulation of ethofumesate from Aventis.

²Ethofumesate-WC=Ethofumesate formulation from West Central Chemical.

³MSO=methylated seed oil from Loveland.

Summary

Ethofumesate POST at 3.75 lb/A did not cause significant sugarbeet injury and gave excellent pigweed control. Ethofumesate plus the micro-rate gave more sugarbeet injury than the micro-rate alone. The two formulations of ethofumesate gave similar results.

Grass control experiment, Crookston, 2002. (Dexter) 'Youngs' oats at 50 lb/A, 'Ember' wheat at 92 lb/A, Siberian red foxtail millet at 21 lb/A, 'Asgrow AG080 RR' soybean and 'Garst 359SG' corn were seeded in 4 foot wide strips across herbicide plots May 14. 'Crystal 999' sugarbeet was seeded in six 22 inch rows across the herbicide plots May 14. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Herbicide treatments were applied June 3, June 12, June 18 and June 24 in 17 gpa water at 40 psi through 8002 nozzles to the center 6.67 feet of 11 foot wide plots. Sugarbeet injury and redroot pigweed and prostrate pigweed, oats, wheat, foxtail millet, corn and soybean control were evaluated July 4. Corn and redroot pigweed control were evaluated July 19.

Date of Application	May 28	June 4	June 12	June 18
Time of Day	1:15 pm	9:50 am	11:00 am	3:00 pm
Air Temperature (°F)	60	62	72	86
Relative Humidity (%)	34	52	52	40
Soil Temp. (°F at 6")	55	61	61	80
Wind Velocity (mph)	12	8	14	4
Cloud Cover (%)	90	20	80	100
Soil Moisture	fair	good	good	good
Sugarbeet	cot-2 leaf	4 leaf	4-6 leaf	6-8 leaf
Corn	1-2lf(2-3")	3-5" tall	4-7" tall	6-10" tall
Oats	1 leaf(2-3")	5-7" tall	6-8" tall	8-10" tall
Wheat	1-2 lf(3-4")	4-6" tall	5-8" tall	8-10" tall
Foxtail Millet	emerg-0.5"	0.5-1" tall	1-2" tall	1-3" tall
Redroot Pigweed	cot-1 leaf	2-8 leaf	2lf-1.5"tall	2-5" tall
Prostrate Pigweed	cot-2 leaf	4-8 leaf	2lf-2"diam.	1-4" diam.
Soybean	cotyledon	2 leaf	1 st trifol.	2 nd trifol.

Summary

V-10117 gave grass control similar to clethodim when used with the micro-rate and oil adjuvant. V-10117 gave less grass control than clethodim when used with conventional rates of herbicides and no oil adjuvant. The conventional rate with clethodim at 0.03 lb/A applied three times gave less corn control than the micro-rate with clethodim and Scoil applied four times. The micro-rate with sethoxydim and the best adjuvants gave better control of corn than the micro-rate with sethoxydim plus Sub4+3 plus Sub4MSO at 1% or at 1% twice and 1.5% twice; Base; Rivet; or AG01023. The micro-rate plus Z64 caused more sugarbeet injury than the micro-rate with other adjuvants. The conventional rate plus MSO gave more sugarbeet injury and greater corn control than the conventional rate without an adjuvant.

Experiment continued on next page.

Grass control experiment, Crookston, 2002. (continued)

Treatment*	(Date of Application)	Rate lb/A	July 4						July 19		
			Prpw			Wht cntl	Fxm cntl	Corn cntl	Soyb cntl	Corn cntl	Rrpw cntl
			Sgbr inj	Rrpw cntl	Oats cntl						
Desm&Phen+Tfsu+Clpy+Clet+Scoil (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.03+1.5%	13	99	100	100	100	100	100	100	100	
Desm&Phen+Tfsu+Clpy+V-10117+Scoil (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	15	96	100	100	100	99	100	100	98	
Desm&Phen+Tfsu+Clpy+Clet (May 28)	0.25+0.008+0.047+0.03										
Desm&Phen+Tfsu+Clpy+Clet (June 4)	0.33+0.008+0.047+0.03										
Desm&Phen+Tfsu+Clpy+Clet (June 12)	0.5+0.008+0.047+0.03	20	100	98	100	100	79	100	61	96	
Desm&Phen+Tfsu+Clpy+V-10117 (May 28)	0.25+0.008+0.047+0.028										
Desm&Phen+Tfsu+Clpy+V-10117 (June 4)	0.33+0.008+0.047+0.028										
Desm&Phen+Tfsu+Clpy+V-10117 (June 12)	0.5+0.008+0.047+0.028	21	100	97	99	100	69	100	50	98	
Clethodim+Scoil (June 12)	0.094+1.5%	0	0	100	100	100	100	0	100	0	
V-10117+Scoil (June 12)	0.088+1.5%	0	0	100	100	100	100	0	100	0	
Sethoxydim+Scoil (June 12)	0.18+1.5%	0	0	98	98	100	100	0	99	0	
Quizalofop+Scoil (June 12)	0.055+1.5%	0	0	100	100	100	100	0	100	0	
Desm&Phen+Tfsu+Clpy (May 28)	0.25+0.008+0.047										
Desm&Phen+Tfsu+Clpy (June 4)	0.33+0.008+0.047										
Desm&Phen+Tfsu+Clpy+Clet (June 12)	0.5+0.008+0.047+0.094	21	97	96	100	100	68	100	53	97	
Desm&Phen+Tfsu+Clpy (May 28)	0.25+0.008+0.047										
Desm&Phen+Tfsu+Clpy (June 4)	0.33+0.008+0.047										
Desm&Phen+Tfsu+Clpy+V-10117 (June 12)	0.5+0.008+0.047+0.088	20	98	95	99	100	65	100	43	95	
Desm&Phen+Tfsu+Clpy+Seth+Scoil (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	15	99	100	100	100	100	100	98	97	
Desm&Phen+Tfsu+Clpy+Seth+Quad7+Scoil (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.75%+0.75%	18	100	100	100	100	99	100	98	98	
De&Ph+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1%	18	95	99	100	100	95	100	88	96	
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1.5%	14	98	99	100	100	96	100	91	97	
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (May 28, June 4)	0.08+0.004+0.03+0.06+0.13%+1%										
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1.5%	15	96	98	100	100	93	100	88	96	
Desm&Phen+Tfsu+Clpy+Seth+Destiny (May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	15	97	100	100	100	99	100	96	99	

Table continued on next page.

Grass control experiment, Crookston, 2002. (continued)

Treatment*	(Date of Application)	Rate	July 4					July 19			
			Sgbt inj	Prpw cntl	Oats cntl	Wht cntl	Fxmi cntl	Corn cntl	Soyb cntl	Corn cntl	Rrpw cntl
		lb/A	%	%	%	%	%	%	%	%	
Desm&Phen+Tfsu+Clpy+Seth+Base (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.06+1.5%	13	98	99	100	100	97	100	90	95
Desm&Phen+Tfsu+Clpy+Seth+MSO (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.06+1.5%	13	98	100	100	100	99	100	98	98
Desm&Phen+Tfsu+Clpy+Seth+Z64 (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.06+1.5%	31	99	100	100	100	99	100	96	99
Desm&Phen+Tfsu+Clpy+Clet+Z64 (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.03+1.5%	28	98	100	100	100	100	100	100	97
Desm&Phen+Tfsu+Clpy+V-10117+Z64 (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.028+1.5%	31	98	100	100	100	100	100	100	97
Desm&Phen+Tfsu+Clpy+Qufp+Z64 (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.028+1.5%	24	96	100	100	100	99	100	99	91
Desm&Phen+Tfsu+Clpy+Qufp+Base (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.028+1.5%	15	98	100	100	100	100	100	100	100
Desm&Phen+Tfsu+Clpy+Qufp+MSO (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.028+1.5%	16	97	100	100	100	100	100	100	98
Desm&Phen+Tfsu+Clpy+Clet+MSO (May 28)		0.25+0.008+0.047+0.03+1.5%									
Desm&Phen+Tfsu+Clpy+Clet+MSO (June 4)		0.33+0.008+0.047+0.03+1.5%									
Desm&Phen+Tfsu+Clpy+Clet+MSO (June 12)		0.5+0.008+0.047+0.03+1.5%	36	99	100	100	100	100	100	100	96
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (May 28)		0.25+0.008+0.047+0.03+0.047G									
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (June 4)		0.33+0.008+0.047+0.03+0.047G									
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (June 12)		0.5+0.008+0.047+0.03+0.047G	20	95	99	100	100	95	100	88	98
Desm&Phen+Tfsu+Clpy+Seth+Rivet (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.06+0.5%	11	98	98	100	100	96	100	90	98
Desm&Phen+Tfsu+Clpy+Seth+AG01023 (May 28, June 4, June 12, June 18)		0.08+0.004+0.03+0.06+0.5%	9	96	98	100	100	93	100	87	99
EXP MEAN			16	84	99	100	100	94	86	90	83
C.V. %			31	3	2	1	0	4	0	8	4
LSD 5%			7	3	3	1	0	5	NS	10	5
LSD 1%			9	4	3	NS	0	7	NS	14	6
# OF REPS			4	4	4	4	4	4	4	4	4

*Scoil=methylated seed oil from AGSCO; V-10117=1.88 lb/gal formulation of clethodim from Valent; Quad 7=basic blend adjuvant from Agsco; Sub4+3=spray adjuvant plus pH modifier from CropSpray; Sub4MSO=methylated seed oil from CropSpray; Destiny=methylated seed oil from Agrilience; Base=methylated seed oil basic blend from West Central; MSO=methylated seed oil from Loveland; Z64=methylated seed oil basic blend from AGSCO; V-10073=experimental adjuvant from Valent; Rivet=methylated seed oil plus organosilicone surfactant from Agrilience; AG01023=experimental adjuvant from Agrilience.

Grass control experiment, Fargo, 2002. (Dexter) 'Youngs' oats at 54 lb/A, 'Oxen' wheat at 92 lb/A, Siberian red foxtail millet at 27 lb/A and 'Novartis N2555 BT' corn were seeded in 4 foot wide strips across herbicide plots May 7. 'Crystal 999' sugarbeet was seeded in six 22 inch rows across the herbicide plots May 7. Herbicide treatments were applied May 28, June 4, June 12 and June 18 in 17 gpa water at 40 psi through 8002 nozzles to the center 6.67 feet of 11 foot wide plots. Sugarbeet injury and wheat, oats, wild buckwheat, foxtail millet, corn, redroot pigweed and Pennsylvania smartweed control were evaluated June 28.

Date of Application	May 28	June 4	June 12	June 18
Time of Day	11:30 am	9:30 am	5:00 pm	1:30 pm
Air Temperature (°F)	76	63	70	83
Relative Humidity (%)	44	37	35	61
Soil Temp. (°F at 6")	60	57	67	69
Wind Velocity (mph)	11	4	14	11
Cloud Cover (%)	0	30	100	60
Soil Moisture	good	good	good	good
Sugarbeet	cot-2 leaf	2-4 leaf	4-6 leaf	6-10 leaf
Corn	emerging	2 leaf(3-4")	5-8" tall	5-9" tall
Oats	1 leaf(3-4")	2-3 lf(4-6")	7-9" tall	8-10" tall
Wheat	1 leaf(3-4")	2-3 lf(4-6")	7-9" tall	8-10" tall
Foxtail Millet	0.5" tall	2 leaf(2")	3-6" tall	4-7" tall
Redroot Pigweed	cotyledon	cot-2 leaf	2 lf-1" tall	2 lf-3" tall
Pennsylvania Smartweed	cot-2 leaf	2-4 leaf	2-3" tall	2-6" tall
Wild Buckwheat	cot-1 leaf	cot-2 leaf	2-3" tall	2-5" tall

Summary

V-10117 gave grass control similar to clethodim when used with the micro-rate and oil adjuvant. V-10117 gave less grass control than clethodim when used with conventional rates of herbicides and no oil adjuvant. Clethodim at 0.03 lb/A applied three times with the conventional rate gave less grass control than 0.09 lb/A applied once in the third application. The micro-rate with sethoxydim plus Sub4+3 plus Sub4MSO; the micro-rate with sethoxydim plus Base; the micro-rate with sethoxydim plus Rivet; and the micro-rate with sethoxydim plus AG01023 gave less control of wheat or oats than the micro-rate with sethoxydim plus Quad 7 plus Scoil. Other tested adjuvants gave grass control similar to Quad 7 plus Scoil. The micro-rate with sethoxydim plus Z64 caused more sugarbeet injury than the same treatment with several of the other adjuvants. The conventional rate plus MSO gave more sugarbeet injury and better control of grass and Pennsylvania smartweed than the same treatment without MSO. The conventional rate with clethodim at 0.03 lb/A applied three times gave less control of grass and Pennsylvania smartweed than the micro-rate with clethodim and Scoil applied four times.

Experiment continued on next page.

Grass control experiment, Fargo, 2002. (continued)

Treatment*	(Date of Application)	Rate	Sgbt inj	Wht cntl	Oats cntl	Wibw cntl	Fxmi cntl	Corn cntl	Rrpw cntl	Pesw cntl
		lb/A	%	%	%	%	%	%	%	%
Desm&Phen+Tfsu+Clpy+Clet+Scoil	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.03+1.5%	6	100	100	99	100	100	99	99
Desm&Phen+Tfsu+Clpy+V-10117+Scoil	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	10	100	100	100	100	100	98	99
Desm&Phen+Tfsu+Clpy+Clet	(May 28)	0.25+0.008+0.047+0.03								
Desm&Phen+Tfsu+Clpy+Clet	(June 4)	0.33+0.008+0.047+0.03								
Desm&Phen+Tfsu+Clpy+Clet	(June 12)	0.5+0.008+0.047+0.03	25	70	81	98	99	50	97	89
Desm&Phen+Tfsu+Clpy+V-10117	(May 28)	0.25+0.008+0.047+0.028								
Desm&Phen+Tfsu+Clpy+V-10117	(June 4)	0.33+0.008+0.047+0.028								
Desm&Phen+Tfsu+Clpy+V-10117	(June 12)	0.5+0.008+0.047+0.028	18	43	70	98	99	50	97	88
Clethodim+Scoil	(June 12)	0.094+1.5%	0	100	100	0	100	100	0	0
V-10117+Scoil	(June 12)	0.088+1.5%	0	100	100	0	100	100	0	0
Sethoxydim+Scoil	(June 12)	0.18+1.5%	0	98	100	0	100	100	0	0
Quizalofop+Scoil	(June 12)	0.055+1.5%	0	100	100	0	100	100	0	0
Desm&Phen+Tfsu+Clpy	(May 28)	0.25+0.008+0.047								
Desm&Phen+Tfsu+Clpy	(June 4)	0.33+0.008+0.047								
Desm&Phen+Tfsu+Clpy+Clet	(June 12)	0.5+0.008+0.047+0.094	14	80	91	96	100	88	99	88
Desm&Phen+Tfsu+Clpy	(May 28)	0.25+0.008+0.047								
Desm&Phen+Tfsu+Clpy	(June 4)	0.33+0.008+0.047								
Desm&Phen+Tfsu+Clpy+V-10117	(June 12)	0.5+0.008+0.047+0.088	19	80	93	95	100	82	99	90
Desm&Phen+Tfsu+Clpy+Seth+Scoil	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	9	96	100	100	100	100	100	99
Desm&Phen+Tfsu+Clpy+Seth+Quad7+Scoil	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.75%+0.75%	19	99	100	99	100	100	100	99
De&Ph+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1%	8	90	98	95	100	98	97	96
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1.5%	11	95	100	99	100	99	99	98
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO	(May 28, June 4)	0.08+0.004+0.03+0.06+0.13%+1%								
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO	(June 12, June 18)	0.08+0.004+0.03+0.06+0.13%+1.5%	8	91	96	99	100	98	98	97
Desm&Phen+Tfsu+Clpy+Seth+Destiny	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	9	99	100	100	100	100	98	99
Desm&Phen+Tfsu+Clpy+Seth+Base	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	6	91	96	98	100	98	97	97

Table continued on next page.

Grass control experiment, Fargo, 2002. (continued)

Treatment*	(Date of Application)	Rate	Sgbr inj %	Wht cntl %	Oats cntl %	Wibw cntl %	Fxmi cntl %	Corn cntl %	Rrpw cntl %	Pesw cntl %
Desm&Phen+Tfsu+Clpy+Seth+MSO	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	11	100	100	99	100	100	99	99
Desm&Phen+Tfsu+Clpy+Seth+Z64	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+1.5%	29	100	100	100	100	100	100	100
Desm&Phen+Tfsu+Clpy+Clet+Z64	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.03+1.5%	19	100	100	100	100	100	100	99
Desm&Phen+Tfsu+Clpy+V-10117+Z64	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	26	100	100	100	100	100	100	100
Desm&Phen+Tfsu+Clpy+Qufp+Z64	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	29	100	100	99	100	100	99	99
Desm&Phen+Tfsu+Clpy+Qufp+Base	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	13	99	100	93	100	100	99	97
Desm&Phen+Tfsu+Clpy+Qufp+MSO	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.028+1.5%	13	100	100	100	100	100	99	98
Desm&Phen+Tfsu+Clpy+Clet+MSO (May 28)		0.25+0.008+0.047+0.03+1.5%								
Desm&Phen+Tfsu+Clpy+Clet+MSO (June 4)		0.33+0.008+0.047+0.03+1.5%								
Desm&Phen+Tfsu+Clpy+Clet+MSO (June 12)		0.5+0.008+0.047+0.03+1.5%	40	100	100	100	100	99	95	99
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (May 28)		0.25+0.008+0.047+0.03+0.047G								
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (June 4)		0.33+0.008+0.047+0.03+0.047G								
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (June 12)		0.5+0.008+0.047+0.03+0.047G	28	91	99	99	100	96	93	94
Desm&Phen+Tfsu+Clpy+Seth+Rivet	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.5%	11	91	98	86	100	98	98	94
Desm&Phen+Tfsu+Clpy+Seth+AG01023	(May 28, June 4, June 12, June 18)	0.08+0.004+0.03+0.06+0.5%	13	86	93	95	100	95	98	98
EXP MEAN			14	93	97	84	100	95	84	83
C.V. %			56	4	3	4	0	3	2	5
LSD 5%			11	6	4	5	0	4	3	5
LSD 1%			15	8	5	6	NS	5	4	7
# OF REPS			4	4	4	4	4	4	4	4

*Scoil=methylated seed oil from AGSCO; V-10117=1.88 lb/gal formulation of clethodim from Valent; Quad 7=basic blend adjuvant from Agsco; Sub4+3=spray adjuvant plus pH modifier from CropSpray; Sub4MSO=methylated seed oil from CropSpray; Destiny=methylated seed oil from Agriliance; Base=methylated seed oil basic blend from West Central; MSO=methylated seed oil from Loveland; Z64=methylated seed oil basic blend from AGSCO; V-10073=experimental adjuvant from Valent; Rivet=methylated seed oil plus organosilicone surfactant from Agriliance; AG01023=experimental adjuvant from Agriliance.

Grass control experiment, combined over the Crookston and Fargo locations, 2002.

(Dexter)

Treatment*	(Date of Application)	Rate lb/A	Wheat control %	Oats control %	Foxtail Millet control %	Corn control %
Desm&Phen+Tfsu+Clpy+Clet+Scoil (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.03+1.5%	100	100	100	100
Desm&Phen+Tfsu+Clpy+V-10117+Scoil (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.028+1.5%	100	100	100	100
Desm&Phen+Tfsu+Clpy+Clet (Time 1)		0.25+0.008+0.047+0.03				
Desm&Phen+Tfsu+Clpy+Clet (Time 2)		0.33+0.008+0.047+0.03				
Desm&Phen+Tfsu+Clpy+Clet (Time 3)		0.5+0.008+0.047+0.03	85	90	100	56
Desm&Phen+Tfsu+Clpy+V-10117 (Time 1)		0.25+0.008+0.047+0.028				
Desm&Phen+Tfsu+Clpy+V-10117 (Time 2)		0.33+0.008+0.047+0.028				
Desm&Phen+Tfsu+Clpy+V-10117 (Time 3)		0.5+0.008+0.047+0.028	71	84	100	50
Clethodim+Scoil (Time 3)		0.094+1.5%	100	100	100	100
V-10117+Scoil (Time 3)		0.088+1.5%	100	100	100	100
Sethoxydim+Scoil (Time 3)		0.18+1.5%	98	99	100	99
Quizalofop+Scoil (Time 3)		0.055+1.5%	100	100	100	100
Desm&Phen+Tfsu+Clpy (Time 1)		0.25+0.008+0.047				
Desm&Phen+Tfsu+Clpy (Time 2)		0.33+0.008+0.047				
Desm&Phen+Tfsu+Clpy+Clet (Time 3)		0.5+0.008+0.047+0.094	90	93	100	70
Desm&Phen+Tfsu+Clpy (Time 1)		0.25+0.008+0.047				
Desm&Phen+Tfsu+Clpy (Time 2)		0.33+0.008+0.047				
Desm&Phen+Tfsu+Clpy+V-10117 (Time 3)		0.5+0.008+0.047+0.088	90	94	100	62
Desm&Phen+Tfsu+Clpy+Seth+Scoil (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.06+1.5%	98	100	100	99
Desm&Phen+Tfsu+Clpy+Seth+Quad7+Scoil (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.06+0.75%+0.75%	100	100	100	99
De&Ph+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.06+0.13%+1%	95	98	100	93
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.06+0.13%+1.5%	97	99	100	95
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (Time 1, Time 2)		0.08+0.004+0.03+0.06+0.13%+1%				
Desm&Phen+Tfsu+Clpy+Seth+Sub4+3+Sub4MSO (Time 3, Time 4)		0.08+0.004+0.03+0.06+0.13%+1.5%	96	97	100	93
Desm&Phen+Tfsu+Clpy+Seth+Destiny (Time 1, Time 2, Time 3, Time 4)		0.08+0.004+0.03+0.06+1.5%	100	100	100	98

Table continued on next page.

Grass control experiment, combined over the Crookston and Fargo locations, 2002.

(continued)

Treatment*	(Date of Application)	Rate lb/A	Wheat control %	Oats control %	Foxtail Millet control %	Corn control %
Desm&Phen+Tfsu+Clpy+Seth+Base (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+1.5%		95	97	100	94
Desm&Phen+Tfsu+Clpy+Seth+MSO (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+1.5%		100	100	100	99
Desm&Phen+Tfsu+Clpy+Seth+Z64 (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+1.5%		100	100	100	98
Desm&Phen+Tfsu+Clpy+Clet+Z64 (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.03+1.5%		100	100	100	100
Desm&Phen+Tfsu+Clpy+V-10117+Z64 (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.028+1.5%		100	100	100	100
Desm&Phen+Tfsu+Clpy+Qufp+Z64 (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.028+1.5%		100	100	100	99
Desm&Phen+Tfsu+Clpy+Qufp+Base (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.028+1.5%		100	100	100	100
Desm&Phen+Tfsu+Clpy+Qufp+MSO (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.028+1.5%		100	100	100	100
Desm&Phen+Tfsu+Clpy+Clet+MSO (Time 1)	0.25+0.008+0.047+0.03+1.5%					
Desm&Phen+Tfsu+Clpy+Clet+MSO (Time 2)	0.33+0.008+0.047+0.03+1.5%					
Desm&Phen+Tfsu+Clpy+Clet+MSO (Time 3)	0.5+0.008+0.047+0.03+1.5%		100	100	100	99
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (Time 1)	0.25+0.008+0.047+0.03+0.047G					
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (Time 2)	0.33+0.008+0.047+0.03+0.047G					
Desm&Phen+Tfsu+Clpy+Clet+V-10073 (Time 3)	0.5+0.008+0.047+0.03+0.047G		96	99	100	92
Desm&Phen+Tfsu+Clpy+Seth+Rivet (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+0.5%		95	98	100	94
Desm&Phen+Tfsu+Clpy+Seth+AG01023 (Time 1, Time 2, Time 3, Time 4)	0.08+0.004+0.03+0.06+0.5%		93	96	100	91
EXP MEAN			96	98	100	92
C.V. %			7	4	0	8
LSD 5%			7	4	0	7
LSD 1%			9	5	0	10
# OF REPS			8	8	8	8

*Scoil=methylated seed oil from AGSCO; V-10117=1.88 lb/gal formulation of clethodim from Valent; Quad 7=basic blend adjuvant from Agsco; Sub4+3=spray adjuvant plus pH modifier from CropSpray; Sub4MSO=methylated seed oil from CropSpray; Destiny=methylated seed oil from Agriliance; Base=methylated seed oil basic blend from West Central; MSO=methylated seed oil from Loveland; Z64=methylated seed oil basic blend from AGSCO; V-10073=experimental adjuvant from Valent; Rivet=methylated seed oil plus organosilicone surfactant from Agriliance; AG01023=experimental adjuvant from Agriliance.

Fall and Spring applied herbicides, Fargo, 2001-2002. (Dexter) Fall herbicides treatments were applied October 22, 2001 when the air temperature was 63F, soil temperature at six inches was 48F, relative humidity was 47%, wind velocity was 21 mph, cloud cover was 100% and soil moisture was good. EPTC+cycloate was incorporated with a rototiller set 4 inches deep and other preplant incorporated herbicides were incorporated with a rototiller set 2 inches deep. Spring herbicide treatments were applied and incorporated 1:00 pm April 26, 2002 when the air temperature was 44F, soil temperature at six inches was 33F, relative humidity was 9%, wind velocity was 7 mph, cloud cover was 10% and soil moisture was good. All herbicides were applied in 17 gpa water at 40 psi through 8002 nozzles to the center 6.67 feet of 11 foot wide plots. Spring tillage was one pass over the entire plot area with a field cultivator with rolling baskets April 26, 2002 after herbicides were applied. 'Beta 2088' sugarbeet was seeded 1.25 inches deep in 22 inch rows April 26, 2002. Sugarbeet injury and yellow foxtail, Pennsylvania smartweed and redroot pigweed control were evaluated June 26.

Treatment (Trade Name)	Time of Application	Rate lb/A	Sgbt inj %	Yeft cntl %	Pesw cntl %	Rrpw cntl %
Flumioxazin (Valor) PRE	Fall	0.047	0	5	8	5
Flumioxazin (Valor) PRE	Fall	0.063	0	5	15	3
Flumioxazin (Valor) PRE	Fall	0.078	0	10	18	5
Flumioxazin (Valor) PRE	Fall	0.094	0	8	45	18
EPTC+Cycl (Eptam+Ro-Neet) PPI	Fall	2+2	0	61	43	55
S-Metolachlor (DualII Mag) PPI	Fall	2	0	58	39	60
S-Metolachlor (DualII Mag) PRE	Fall	2	0	20	29	22
Dimethenamid-P (Outlook) PPI	Fall	1	5	63	70	59
Dimethenamid-P (Outlook) PRE	Fall	1	0	48	58	64
EPTC+Cycl (Eptam+Ro-Neet) PPI	Spring	2+2	10	96	81	81
S-Metolachlor (DualII Mag) PPI	Spring	2	5	80	63	87
Dimethenamid-P (Outlook) PPI	Spring	1	21	92	92	96
EXP MEAN			3	45	47	46
C.V. %			90	36	44	51
LSD 5%			4	23	30	34
LSD 1%			6	31	40	45
# OF REPS			4	4	4	4

Summary

Fall-applied flumioxazin had little phytotoxicity in the spring. Fall-applied EPTC + cycloate, s-metolachlor and dimethenamid-P generally gave less weed control than the same herbicides applied in the spring. Incorporated s-metolachlor gave better weed control than non-incorporated s-metolachlor when fall applied. Dimethenamid-P caused more sugarbeet injury than s-metolachlor or EPTC + cycloate with spring PPI application.

New formulations of sugarbeet herbicides, Crookston, 2002. (Dexter) 'Crystal 999' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 14. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Herbicide treatments were applied June 3, June 12 and June 18. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury, common lambsquarters and redroot and prostrate pigweed control were evaluated July 1. Redroot pigweed control was evaluated July 19.

Date of Application	June 3	June 12	June 18
Time of Day	1:15 pm	9:30 am	11:00 am
Air Temp. (°F)	60	62	72
Relative Humidity (%)	34	52	52
Soil Temp. (°F at 6")	55	61	61
Wind Velocity (mph)	12	8	14
Cloud Cover (%)	90	20	80
Soil Moisture	fair	good	good
Sugarbeet Stage	cot-2 leaf	4 leaf	4-6leaf
Redroot pigweed	cot-1 leaf	2-8 leaf	2 leaf-1.5"
Prostrate Pigweed	cot-2 leaf	4-8 leaf	2lf-2"diameter
Common lambsquarters	2-6 leaf	4 leaf-1.5"	1-2" tall

Treatment	Rate lb/A	July 1		July 19	
		Sgbt inj %	Colq cntl %	Prpw Rrpw cntl %	Rrpw cntl %
AE49913/AE49913/AE49913 ¹	0.25/0.33/0.33	11	100	99	91
De&Ph&Et/De&Ph&Et/De&Ph&Et	0.25/0.33/0.33	9	98	97	93
AE49913+Tfsu+Clpy+MSO ² (4X)	0.08+0.004+0.03+1.5%	13	100	100	98
De&Ph&Et+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	13	100	99	96
AE38584/AE38584/AE38584 ³	0.25/0.33/0.33	13	100	93	61
Desm&Phen/Desm&Phen/Desm&Phen	0.25/0.33/0.33	13	100	92	66
AE38584+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	8	100	100	95
Desm&Phen+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	11	100	100	97
AE38107/AE38107/AE38107 ⁴	0.25/0.33/0.33	13	100	94	63
Desmedipham/Desmedipham/Desmipham	0.25/0.33/0.33	15	98	93	66
AE38107+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	14	100	100	96
Desm+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	14	100	100	97
WC027/WC027/WC027 ⁵	0.25/0.33/0.33	3	100	94	61
WC027+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	14	100	100	96
WC027+Tfsu+WC029 ⁶ +MSO (4X)	0.08+0.004+0.03+1.5%	19	100	100	93
WC028/WC028/WC028 ⁷	0.25/0.33/0.33	1	100	94	64
WC028+Tfsu+WC029+MSO (4X)	0.08+0.004+0.03+1.5%	15	100	99	92
Untreated Check	0	0	0	0	0
EXP MEAN		11	94	92	79
C.V. %		57	1	3	6
LSD 5%		9	1	4	7
LSD 1%		12	2	5	9
# OF REPS		4	3	4	4

¹AE49913=1.6lb/gal formulation of desmedipham+phenmedipham+ethofumesate from Bayer.

²MSO=methylated seed oil from Loveland.

³AE38584=2.67 lb/gal formulation of desmedipham+phenmedipham from Bayer.

⁴AE38107=2.67 lb/gal formulation of desmedipham from Bayer.

⁵WC027=1.3 lb/gal formulation of desmedipham+phenmedipham from Ag Value.

⁶WC029=3 lb/gal formulation of clopyralid from Ag Value.

⁷WC028=1.3 lb/gal formulation of desmedipham from Ag Value.

SUMMARY: WC027 at 0.25/0.33/0.33 lb/A gave less sugarbeet injury than desmedipham & phenmedipham at the same rate. WC028 at 0.25/0.33/0.33 lb/A gave less sugarbeet injury than desmedipham at the same rate.

New formulations of sugarbeet herbicides, Fargo, 2002. (Dexter) 'Beta 2088' sugarbeet was seeded 1.25 inches deep in 22 inch rows April 26. Herbicide treatments were applied May 28, June 4, June 12 and June 18. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet injury and redroot pigweed, Pennsylvania smartweed, volunteer wheat and common lambsquarters control were evaluated June 28.

Date of Application	May 28	June 4	June 12	June 18
Time of Day	11:30 am	9:30 am	5:00 pm	1:30 pm
Air Temp. (°F)	76	63	70	83
Relative Humidity (%)	40	37	35	61
Soil Temp. (°F at 6")	60	57	67	69
Wind Velocity (mph)	11	4	14	11
Cloud Cover (%)	0	30	100	60
Soil Moisture	good	good	good	good
Sugarbeet Stage	cot-2 leaf	2-4 leaf	4-6 leaf	6-10 leaf
Redroot pigweed	cot-1 leaf	cot-2 leaf	2 leaf-1"	2 leaf-3"
Pennsylvania smartweed	cot-2 leaf	2-4 leaf	2-3" tall	2-6" tall
Volunteer wheat	1-2lf (2-4")	4-6" tall	7-9" tall	10" tall
Common lambsquarters	cot-2 leaf	cot-6 leaf	6 leaf-2"	2-4" tall

Treatment	Rate	Sgbt inj	Rrpw cntl	Pesw cntl	Vowh cntl	Colq cntl
	lb/A	%	%	%	%	%
AE49913/AE49913/AE49913 ¹	0.25/0.33/0.33	0	95	76	45	100
De&Ph&Et/De&Ph&Et/De&Ph&Et	0.25/0.33/0.33	0	93	76	58	100
AE49913+Tfsu+Clpy+MSO ² (4X)	0.08+0.004+0.03+1.5%	0	100	100	94	100
De&Ph&Et+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	100	100	97	100
AE38584/AE38584/AE38584 ³	0.25/0.33/0.33	0	94	56	38	100
Desm&Phen/Desm&Phen/Desm&Phen	0.25/0.33/0.33	0	94	59	53	100
AE38584+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	99	99	96	100
Desm&Phen+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	100	100	97	100
AE38107/AE38107/AE38107 ⁴	0.25/0.33/0.33	0	95	28	34	98
Desmedipham/Desmedipham/Desmipham	0.25/0.33/0.33	0	99	30	38	98
AE38107+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	100	100	97	98
Desm+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	100	99	96	98
WC027/WC027/WC027 ⁵	0.25/0.33/0.33	0	84	36	33	90
WC027+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	0	99	100	97	100
WC027+Tfsu+WC029 ⁶ +MSO (4X)	0.08+0.004+0.03+1.5%	0	100	100	98	100
WC028/WC028/WC028 ⁷	0.25/0.33/0.33	0	100	49	43	100
WC028+Tfsu+WC029+MSO (4X)	0.08+0.004+0.03+1.5%	0	100	100	94	99
Untreated Check	0	0	0	0	0	0
EXP MEAN		0	92	73	67	93
C.V. %		0	5	17	18	5
LSD 5%		NS	7	17	17	7
LSD 1%		NS	10	23	23	9
# OF REPS		4	4	4	4	4

¹AE49913=1.6lb/gal formulation of desmedipham+phenmedipham+ethofumesate from Bayer.

²MSO=methylated seed oil from Loveland.

³AE38584=2.67 lb/gal formulation of desmedipham+phenmedipham from Bayer.

⁴AE38107=2.67 lb/gal formulation of desmedipham from Bayer.

⁵WC027=1.3 lb/gal formulation of desmedipham+phenmedipham from Ag Value.

⁶WC029=3 lb/gal formulation of clopyralid from Ag Value.

⁷WC028=1.3 lb/gal formulation of desmedipham from Ag Value.

SUMMARY: WC027 at 0.25/0.33/0.33 lb/A gave less control of redroot pigweed, Pennsylvania smartweed and volunteer wheat than desmedipham & phenmedipham at 0.25/0.33/0.33 lb/A.

New formulations of sugarbeet herbicides, St. Thomas, 2002. (Dexter) 'Hilleshog Horizon RR' sugarbeet was seeded 1.25 inches deep in 22 inch rows May 2. Counter 15G insecticide at 12 lb product/A was applied modified in-furrow at planting. Herbicide treatments were applied May 29, June 6 and June 14. All treatments were applied in 17 gpa water at 40 psi through 8002 nozzles to the center four rows of six row plots. Sugarbeet was hand thinned to a 10 inch spacing June 18. Roundup UltraMax herbicide at 3 pint/A was applied to the entire plot area June 20. Lorsban 4E insecticide at 1 qt/A was applied to the entire plot area June 28. Sugarbeet was row-crop cultivated July 2. Sugarbeet injury was evaluated July 6. Sugarbeet in the center two rows of 35 foot long plots was counted and harvested October 2.

Date of Application	May 29	June 6	June 14
Time of Day	9:00 am	10:30 am	11:00 am
Air Temp. (°F)	75	70	66
Relative Humidity (%)	51	36	52
Soil Temp. (°F at 6")	58	60	57
Wind Velocity (mph)	6	4	5
Cloud Cover (%)	70	0	75
Soil Moisture	fair	good	good
Sugarbeet Stage	cotyledon	2-4 leaf	4-6 leaf

Treatment	Rate	7-6 10-2		Sucr %	Root Yield ton/A	Impur Index	Extr Sucr lb/A
		Sgbit inj	Sgbit Popl				
	lb/A	% plt/70'		%	ton/A		lb/A
AE49913/AE49913/AE49913 ¹	0.25/0.33/0.33	14	74	14.6	20.1	805	5098
De&Ph&Et/De&Ph&Et/De&Ph&Et	0.25/0.33/0.33	25	71	14.8	18.3	774	4767
AE49913+Tfsu+Clpy+MSO ² (4X)	0.08+0.004+0.03+1.5%	13	73	14.1	22.3	869	5450
De&Ph&Et+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	7	71	14.5	21.2	792	5413
AE38584/AE38584/AE38584 ³	0.25/0.33/0.33	19	72	14.0	19.8	910	4779
Desm&Phen/Desm&Phen/Desm&Phen	0.25/0.33/0.33	21	73	14.1	20.1	888	4893
AE38584+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	13	76	13.9	23.3	930	5575
Desm&Phen+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	14	74	14.3	22.5	887	5584
AE38107/AE38107/AE38107 ⁴	0.25/0.33/0.33	19	71	14.6	19.5	800	5021
Desmedipham/Desmedipham/Desmipham	0.25/0.33/0.33	28	69	14.2	21.5	878	5291
AE38107+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	13	76	14.4	21.9	854	5469
Desm+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	11	69	14.5	22.4	816	5717
WC027/WC027/WC027 ⁵	0.25/0.33/0.33	4	67	14.4	20.6	852	5162
WC027+Tfsu+Clpy+MSO (4X)	0.08+0.004+0.03+1.5%	15	66	14.7	20.9	812	5367
WC027+Tfsu+WC029 ⁶ +MSO (4X)	0.08+0.004+0.03+1.5%	15	77	13.7	22.5	988	5229
WC028/WC028/WC028 ⁷	0.25/0.33/0.33	3	78	14.4	22.7	811	5729
WC028+Tfsu+WC029+MSO (4X)	0.08+0.004+0.03+1.5%	16	65	13.6	21.8	979	5013
Untreated Check	0	0	69	13.7	21.6	944	5030
EXP MEAN		14	72	14.2	21.3	866	5255
C.V. %		44	8	4.1	9.5	12	10
LSD 5%		9	NS	NS	NS	NS	NS
LSD 1%		12	NS	NS	NS	NS	NS
# OF REPS		4	4	4	4	4	4

¹AE49913=1.6lb/gal formulation of desmedipham+phenmedipham+ethofumesate from Bayer.

²MSO=methylated seed oil from Loveland.

³AE38584=2.67 lb/gal formulation of desmedipham+phenmedipham from Bayer.

⁴AE38107=2.67 lb/gal formulation of desmedipham from Bayer.

⁵WC027=1.3 lb/gal formulation of desmedipham+phenmedipham from Ag Value.

⁶WC029=3 lb/gal formulation of clopyralid from Ag Value.

⁷WC028=1.3 lb/gal formulation of desmedipham from Ag Value.

SUMMARY: Desmedipham & phenmedipham & ethofumesate at 0.25/0.33/0.33 lb/A gave more sugarbeet injury than AE49913 at 0.25/0.33/0.33 lb/A. Desmedipham at 0.25/0.33/0.33 lb/A gave more sugarbeet injury than AE 38107 at 0.25/0.33/0.33 lb/A but WC028 at the same rates gave less sugarbeet injury than desmedipham or AE38107. WC027 at 0.25/0.33/0.33 lb/A gave less sugarbeet injury than desmedipham & phenmedipham at 0.25/0.33/0.33 lb/A. Sugarbeet yield was not affected by herbicide treatment in these weed-free plots.

Herbicide screening experiment, Fargo, 2002. (Dexter) Experimental test plots 11 feet wide and 50 feet long were established May 7. 'Oxen' wheat at 92 lb/A, 'ND15606' barley at 68 lb/A, 'IS Hyola Hybrid 308' canola at 26 lb/A, Siberian Red foxtail millet at 27 lb/A, lentil, 'Majorette' pea, 'Neche' flax at 31 lb/A, 'VDH 66280' sugarbeet, 'IS Hybrid 5030' sunflower and 'Youngs' oats at 69 lb/A was drilled in 4 foot wide strips across the herbicide plots May 7. There was a natural infestation of Pennsylvania smartweed, redroot pigweed and wild buckwheat. Preemergence herbicide treatments were applied 3:30 pm May 7 when the air temperature was 47F, soil temperature at six inches was 40F, relative humidity was 34%, wind velocity was 4 mph, cloud cover was 100% and soil moisture was good. Postemergence herbicide treatments were applied 1:30 pm June 18 when the air temperature was 83F, soil temperature at six inches was 69F, relative humidity was 61%, wind velocity was 11 mph, cloud cover was 100%, soil moisture was good, wheat was 5-8 inches tall, barley was 3-9 inches tall, canola was 1-5 inches tall, foxtail millet was 4-7 inches tall, pea was 1-5 inches tall, flax was 4-6 inches tall, sugarbeet was in the 6-10 leaf stage, sunflower was 4-8 inches tall, oats was 3-9 inches tall, Pennsylvania smartweed was 2-6 inches tall, redroot pigweed was 2-5 inches tall and wild buckwheat was 2-5 inches tall. All herbicides were applied in 17 gpa water at 40 psi through 8002 nozzles to the center 6.67 feet of 11 foot wide plots. Pennsylvania smartweed, redroot pigweed and wild buckwheat control and control of bioassay crops were evaluated July 3.

Treatment (Application)	Rate	Wheat	Barl	Sufl	Oats	Fxmi	Pea	Lent	Flax	Sggt	Pesw	Rrpw	Wibw
	lb/A	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %	cntl %
Flumioxazin(Valor) Pre	0.094	0	1	0	2	57	0	0	0	96	23	43	40
Carfentrazone(Aim)+X-77 Post	0.008+0.25%	0	0	17	2	2	7	30	20	38	0	98	17
Mesotrione(Callisto)+Herbimax+28%N Post	0.094+0.25G+0.5G	23	3	95	0	37	75	80	50	93	73	75	30
Isoxaflutole(BalancePro) Pre	0.094	7	10	94	8	98	77	96	83	100	96	70	0
Foramsulfuron(Option)+MSO+28%N Post	0.066+0.1875G+0.375G	87	93	85	93	92	67	53	75	99	53	99	23
Sulfentrazone(Spartan/Authority) Pre	0.25	0	0	8	13	57	0	33	0	87	45	10	0
Flufenacet(Define) Pre	0.75	3	0	0	3	80	0	0	0	0	0	0	0
Acetochlor(Surpass) Pre	2.5	95	90	0	96	98	15	62	80	70	27	95	13
Clodinafop(Discover)+DSV Post	0.0625+1.2%	0	50	0	99	98	0	3	0	5	0	0	0
Flucarbazone(Everest)+X-77 Post	0.026+0.25%	0	50	33	85	87	63	33	72	87	73	83	35
Fomesafen(Flexstar)+Herbimax Post	0.175+0.25G	37	17	63	25	42	90	65	99	72	58	99	25
Dimethenamid-P(Outlook) Pre	1	83	47	0	47	98	0	0	8	45	3	33	0
Mesosulfuron+Safener+Destiny Post	0.0033+.026+.25G	0	0	77	90	83	70	45	7	91	13	99	7
Quinclorac(Paramount)+MSO Post	0.1875+0.19G	0	2	45	12	92	13	40	70	17	3	0	0
Amicarbozone Pre	0.3125	7	2	40	10	62	80	70	37	83	86	0	67
Azafenidin(Milestone) Pre	0.125	10	10	3	2	80	0	0	0	73	0	0	0
EXP MEAN		22	23	35	37	72	35	38	38	66	35	50	16
C.V. %		25	36	44	29	20	34	24	25	19	42	43	94
LSD 5%		9	14	26	18	24	20	15	15	20	24	36	25
LSD 1%		12	19	35	24	32	26	20	21	27	33	48	34
# OF REPS		3	3	3	3	3	3	3	3	3	3	3	3

Summary

Isoxaflutole gave 96% control of Pennsylvania smartweed, the best of any treatment. None of the herbicides gave good control of wild buckwheat. Foramsulfuron caused 50% or greater injury to all species except wild buckwheat. Flufenacet, clodinafop and quinclorac did not cause significant injury to sugarbeet.

Soybean herbicide carryover, Fargo, 2001-2002. (Dexter) 'Asgrow AG0801' Roundup Ready soybean was seeded in the entire plot area May 16, 2001. The soil texture was clay with 7.8 pH, 4.6% organic matter, 91 lb nitrogen at 0-6 inches, 111 lb nitrogen at 6-24 inches, 16 ppm phosphorus and 390 ppm potassium. Preemergence herbicide treatments were applied 4:15 pm May 16, 2001 when the air temperature was 80F, soil temperature at six inches was 60F, relative humidity was 30%, wind velocity was 0 mph, cloud cover was 20% and soil moisture was good. Postemergence herbicide treatments were applied 12:30 pm June 9, 2001 when the air temperature was 75F, soil temperature at six inches was 62F, relative humidity was 59%, wind was 8 mph, cloud cover was 80%, soil moisture was good and soybean was in the 2 leaf to first trifoliolate stage. Treatments were applied to the center 13 feet of 20 foot wide and 40 foot long plots. All herbicides were applied in 17 gpa water at 40 psi through 8002 nozzles. Roundup UltraMax at 3.5 pt/A was applied to all plots June 23, 2001 to control weeds in the plots. Plots were tilled once with a chisel plow in the fall of 2001 after corn was chopped with a flail/shredder. Spring tillage in 2002 was one pass with a field cultivator with rolling baskets. All tillage operations were parallel to the direction the herbicides were applied to avoid moving treated soil from plot to plot. 'Seedex Gladiator' sugarbeet, 'Conquest' Roundup Ready canola at 19 lb/A, 'Youngs' oats at 60 lb/A, 'ND15606' barley at 74 lb/A, and 'Pioneer 63M80' sunflower were seeded in 4 foot wide strips across the herbicide plots May 15, 2002. There was a natural infestation of yellow foxtail. Sugarbeet, canola, oats, barley, sunflower, and yellow foxtail control were evaluated June 29, 2002.

Treatment	Rate	Sgbt	Cano	Oats	Barl	Sufl	Yeft
	lb/A	cntl	cntl	cntl	cntl	cntl	cntl
		%	%	%	%	%	%
Imazamox (Raptor-1 lb/gal) POST	0.031	0	0	0	0	0	0
Imazamox (Raptor-1 lb/gal) POST	0.062	0	0	0	0	0	0
Flumioxazin (Valor-50%) PRE	0.094	0	0	0	0	0	0
Flumioxazin (Valor-50%) PRE	0.188	0	0	0	0	0	0
Flumioxazin (Valor-50%) PRE	0.375	0	0	0	0	0	0
Flucarbazone (Everest-70%) POST	0.026	0	0	0	0	0	0
EXP MEAN		0	0	0	0	0	0
C.V. %		0	0	0	0	0	0
LSD 5%		0	0	0	0	0	0
LSD 1%		0	0	0	0	0	0
# OF REPS		4	4	4	4	4	4

Summary

No injury from carryover was observed in 2002.

Corn herbicide carryover, Fargo, 2001-2002. (Dexter) 'Dekalb DKC35-50' Roundup Ready corn was seeded over the entire plot area May 16, 2001. The soil texture was clay with 7.8 pH, 4.6% organic matter, 91 lb nitrogen at 0-6 inches, 111 lb nitrogen at 6-24 inches, 16 ppm phosphorus and 390 ppm potassium. Herbicide treatments were applied 12:30 pm June 9, 2001 when the air temperature was 75F, soil temperature at six inches was 62F, relative humidity was 59%, wind was 8 mph, cloud cover was 80%, soil moisture was good and corn was in the 3 leaf stage (4 inches tall). Treatments were applied to the center 13 feet of 20 foot wide and 40 foot long plots. All herbicides were applied in 17 gpa water at 40 psi through 8002 nozzles. Roundup UltraMax at 3.5 pt/A was applied to all plots June 23, 2001 to control weeds in the plots. Plots were tilled once with a chisel plow in the fall of 2001 after corn was chopped with a flail/shredder. Spring tillage in 2002 was one pass with a field cultivator with rolling baskets. All tillage operations were parallel to the direction the herbicides were applied to avoid moving treated soil from plot to plot. 'Seedex Gladiator' sugarbeet, 'Conquest' Roundup Ready canola at 19 lb/A, 'Youngs' oats at 60 lb/A, 'ND15606' barley at 74 lb/A, and 'Pioneer 63M80' sunflower were seeded in 4 foot wide strips across the herbicide plots May 15, 2002. There was a natural infestation of Venice mallow and yellow foxtail. Sugarbeet, canola, oats, barley, sunflower, Venice mallow and yellow foxtail control were evaluated June 29, 2002.

Treatment	Rate	Sgbr	Cano	Oats	Barl	Sufl	Vema	Yeft
	lb/A	cntl	cntl	cntl	cntl	cntl	cntl	cntl
		%	%	%	%	%	%	%
Nicosulfuron (Accent-75%) POST	0.188	53	68	15	20	28	33	43
Nicosulfuron (Accent-75%) POST	0.375	83	93	63	74	49	68	71
Nicosulfuron (Accent-75%) POST	0.563	96	97	88	90	76	74	79
E9636 Rimsulfuron (Matrix-25%) POST	0.188	68	75	18	25	50	44	30
E9636 Rimsulfuron (Matrix-25%) POST	0.375	76	81	34	41	89	56	29
E9636 Rimsulfuron (Matrix-25%) POST	0.563	95	93	58	70	96	78	61
Nicosulfuron+E9636 POST	0.188+0.188	81	84	53	66	81	65	55
Nicosulfuron+E9636 POST	0.375+0.375	98	100	86	91	96	85	78
Nicosulfuron+E9636 POST	0.563+0.563	100	100	95	99	99	97	90
Foramsulfuron (Option-70%DG) POST	0.13125	0	0	0	0	0	0	0
EXP MEAN		75	79	51	58	66	60	54
C.V. %		14	11	29	28	14	33	30
LSD 5%		15	13	21	23	14	28	23
LSD 1%		20	18	29	31	19	38	31
# OF REPS		4	4	4	4	4	4	4

Summary

The nicosulfuron and rimsulfuron were applied at higher than normal rates which explains the severe injury to the bioassay crops.

Extreme carryover to crops. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Fargo, ND, to evaluate weed control and crop response following POST applications the previous year. Asgrow 'AG0801' soybean was planted June 1, 2001. POST treatments were applied July 18, 2001 at 10:30 am with 79 F air, 87 F soil surface, 54% relative humidity, 50% clouds, 3 mph SE wind, dry soil surface, moist subsoil, good crop vigor, and no dew present to V3 soybean. Weed species present were: 6 to 12 inch (1 to 3/yd²) foxtail species; 4 to 12 inch (1 to 5/yd²) redroot pigweed; 3 to 12 inch (1/yd²) Canada thistle; 4 to 8 inch (1 to 2/yd²) common lambsquarters; and 2 to 12 inch diameter (1 to 5/yd²) common purslane. LPOST treatments were applied July 26, 2001 at 3:45 pm with 77 F air, 83 F soil surface, 61% relative humidity, 90% clouds, 6 mph NW wind, dry soil surface, moist subsoil, good crop vigor, and no dew present to V4 to V6 soybean. POST and LPOST treatments were applied to the entire 20 by 20 foot plots with a bicycle-wheel-type plot sprayer delivering 8.5 gpa at 40 psi through 8001 flat fan nozzles. The experiment had a randomized complete block design with four replicates per treatment.

On August 1, 2001 (14 DAT), all treatments gave 99% foxtail, redroot pigweed, common purslane, common lambsquarters, common cocklebur, Canada thistle, and wild mustard control. At August 15, 2001 (28 DAT) weeds were completely controlled and soybean injury was stunting and chlorosis. Harvest was not taken because soybean were planted late and were not mature by freeze up.

DeKalb 'DKC35-50' corn was planted May 14, 2002 on the left ten feet of each plot followed by the planting of 'Oxen' wheat on May 15, 2002 on the right ten feet of each plot. No treatments were applied during the growing season of 2002. Weed infestation in 2002 was minimal and the weeds that emerged were hand weeded. The center four feet of wheat and the center two rows of corn was harvested in the fall of 2002.

In 2002, no chemical control was used to control weeds and residual herbicide required little hand-weeding. There was no observable growth reduction the first half of the growing season and there were no differences or delay in normal growth in any crop. At July 31, some chlorosis and lighter green color develop in corn treated with 2 applications of glyphosate. Rep 1 of that treatment looked normal but reps 2, 3, and 4 showed lighter green corn but not shorter, and there were no difference in tasseling date or observable cob/seed fill production. This observation was not consistent with the excellent safety that would be expected from lack of any glyphosate soil residue appearing the year after application. A possible explanation could be that some impact from the previous year affect amount of available nitrogen. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Extreme carryover to crops (Zollinger and Ries).

Treatments ¹	Rate (product/A)	Aug 1, 2001	Aug 15, 2001	Yield - Fall 2002	
		Soybean % injury	Soybean % injury	Wheat bu/A	Corn bu/A
POST					
Extreme+NIS+AMS	2.25pt	6	4	29.0	113.8
Extreme+NIS+AMS	3pt	15	9	29.9	111.7
Extreme+NIS+AMS	4.5pt	29	20	27.7	116.2
Extreme+NIS+AMS	6pt	31	23	27.9	131.2
POST/LPOST					
RUM+AMS/ RUM+AMS	26fl oz+2% w/w/ 26fl oz+2% w/w	0	0	27.2	88.5
LSD (0.05)		7	8	3.4	41.8

¹NIS = nonionic surfactant = Activator 90 at 0.25% v/v; AMS = ammonium sulfate at 2.5 lb/A.

Pulse crop response to Curtail carryover from previous year. Jenks, Willoughby, and Markle. The objective of this study was to evaluate dry pea, lentil, and chickpea tolerance to Curtail carryover from the previous year. Curtail was applied to Alsen wheat on June 8, 2001. Corners of the plots were marked with permanent stakes to ensure that we planted in the same area in 2002. Dry pea, chickpea, and lentil were planted across the 2001 treatments on May 16, 2002. 'Majoret' dry pea, 'B-90' chickpea, and 'CDC Richlea' lentil were seeded into 6-inch rows at 140, 120, and 55 lb/A, respectively. This study was conducted at two locations at the North Central Research Extension Center (Field T and Field Y).

We collected stand counts and biomass per square meter in June and July 2002. Two subsamples within a replication were taken for each crop and averaged for each replication. Early growth in May seemed normal for all crops, but by early to mid-June, the crops started showing some curling and chlorosis on Field T. Early injury appeared worse with the lentils and chickpeas. By late season, all three crops showed significant injury symptoms. The June stand counts and biomass results do not show differences between treatments, whereas, the July results start to show numerical differences between treatments on Field T (Table 2).

In Field T, reps 1 and 3 were on a hilltop and reps 2 and 4 were on a slope. We saw more injury in reps 2 and 4. The soil test indicates that the soil pH in reps 2 and 4 were 4.7 and 4.8, respectively (Table 1). We observed less injury in reps 1 and 3, which had soil pH of 6.9 and 7.2, respectively. In Field Y, we observed only very slight injury in a small area of Rep 3, which had slightly lower pH and OM than the other reps.

Table 1. Soil pH, organic matter, and soil texture of fields used for Curtail carryover study.

	Field T				Field Y		
	Soil pH	% OM	Soil texture		Soil pH	% OM	Soil texture
Rep 1	6.9	1.1	Sandy loam	Rep 1	5.8	2.8	Loam
Rep 2	4.7	1.5	Sandy loam	Rep 2	5.9	2.8	Loam
Rep 3	7.2	1.5	Loam	Rep 3	5.3	2.6	Loam
Rep 4	4.8	1.5	Sandy loam	Rep 4	5.4	2.8	Loam

Table 2. Pulse crop tolerance to Curtail carryover - Field T (Sandy loam, 1.5% OM)

Treatment Rate		Stand				Dry weight				Injury			
		Jun 12		Jul 8		Jun 12		Jul 8		Jun 24		Jul 24	
		pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8	pH: 6.9-7.2	pH: 4.7-4.8
		— plants / m ² —				— g / m ² —				— % —			
LENTIL													
Curtail	2 pt	116	85	113	30	7	3	131	8	3	50	4	90
Untreated		120	102	124	116	6	5	150	96	0	0	0	0
DRY PEA													
Curtail	2 pt	63	68	74	64	11	8	215	153	0	20	3	70
Untreated		74	64	80	59	12	11	253	181	0	0	0	0
CHICKPEA													
Curtail	2 pt	73	61	83	42	15	11	200	28	3	30	0	68
Untreated		73	61	73	73	14	11	158	122	0	0	0	0

Table 3. Pulse crop tolerance to Curtail carryover - Field Y (Loam, 2.8% OM)

Treatment Rate		Stand		Dry weight		Injury	
		Jun 19	Jul 15	Jun 19	Jul 15	Jun 24	Jul 24
		pH: 5.3-5.9					
		— plants / m ² —		— g / m ² —		— % —	
LENTIL							
Curtail	2 pt	139	123	21	225	0	0
Untreated		136	123	18	228	0	0
DRY PEA							
Curtail	2 pt	66	65	32	347	0	0
Untreated		68	71	32	389	0	0
CHICKPEA							
Curtail	2 pt	64	71	25	259	1	0
Untreated		68	71	27	286	0	0