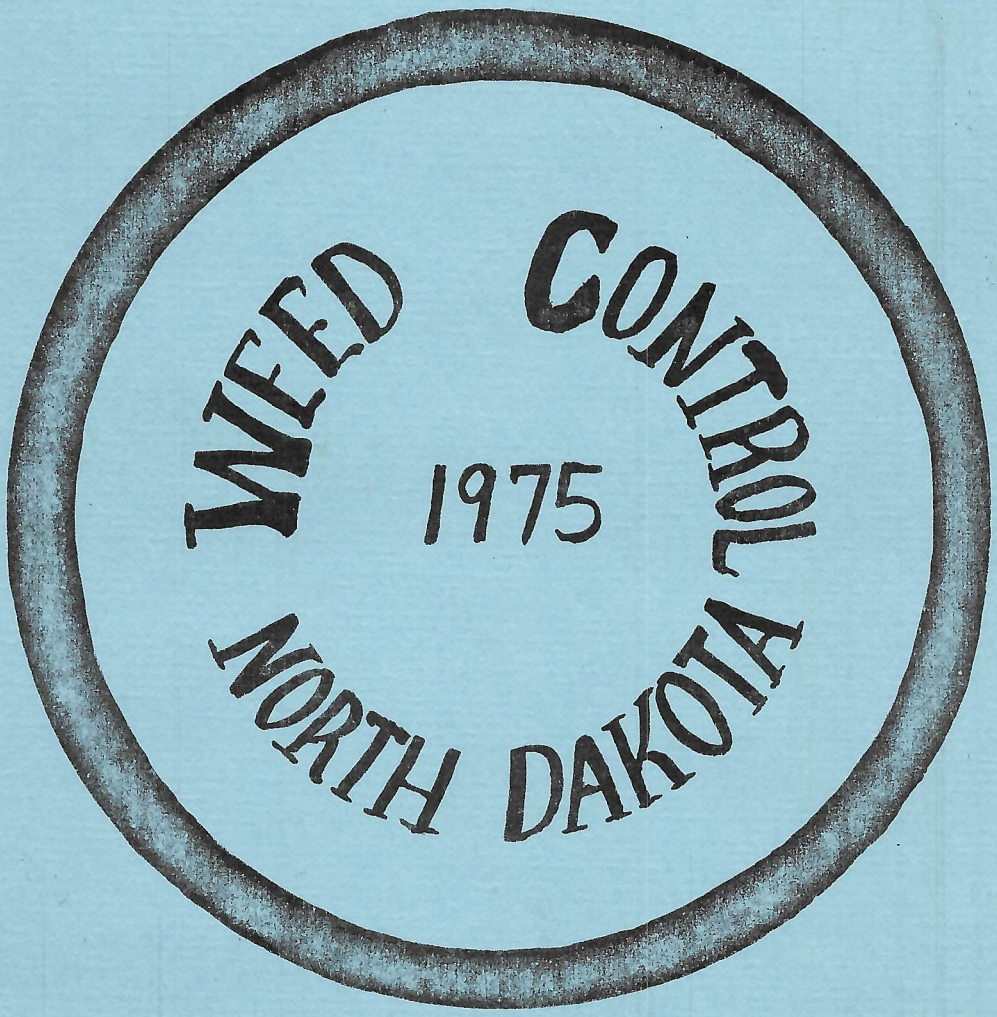
WEED CONTROL
1975
NORTH DAKOTA

Not for Publication

SUMMARY OF 1975

WEED CONTROL TRIALS

FIELD CROPS

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Trials conducted in cooperation with:

Ben Hoag - Minot Experiment Station

Ernie French - Williston Experiment Station

Robert Nowatski - Langdon Experiment Station

Howard Olson - Carrington Experiment Station

Several Farmers

TABLE OF CONTENTS

Yellow Section (cont.):

Green Section: General Weed Control in Crops

Green Section (cont.):

Pink Section: Perennial Weed Control and Chemical Fallow

CLIMATIC DATA - FARGO 1975

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	T	T		.84		33	51	43	72	64	89	62	80	53	71
2	.05	.07				31	59	47	71	74	86	55	81	50	74
3	.01					31	61	46	81	71	85	62	88	49	74
4	T	.28	T			45	63	59	76	77	88	55	82	49	60
5						41	67	45	70	71	86	54	75	45	63
6	T					46	69	42	67	69	87	57	80	43	61
7	.25		.46			50	56	41	72	67	88	63	87	43	63
8	.08	.06				48	60	56	70	57	76	61	82	35	66
9		.38	.10	.01		45	71	54	59	55	74	56	80	51	71
10		T				47	73	55	67	49	71	50	83	48	83
11				T		42	64	51	68	52	70	63	89	38	58
12			T	.02		35	66	50	83	47	72	54	83	35	58
13	.51	.04				43	76	54	76	57	85	49	80	34	71
14	.08	.02		.01		36	55	52	64	62	91	53	82	49	79
15				.10		33	66	42	69	68	95	60	76	52	78
16				.02		50	82	49	75	73	92	56	72	48	79
17	T	.01	.01			58	69	55	72	74	96	48	71	57	73
18	.27		T	T		49	79	50	78	65	85	44	67	46	63
19	.07	2.78		.01		60	80	61	78	61	85	54	75	43	57
20		.09		.01		54	71	65	85	55	81	62	81	45	50
21		.38				46	64	67	79	62	90	58	68	39	64
22	.10	.17	.49			43	72	61	75	60	83	53	79	38	70
23	.03		.37	.68		57	79	58	83	57	80	65	85	41	62
24		.01		T		53	80	64	83	53	79	60	90	34	65
25						55	71	69	85	55	83	56	71	42	70
26	T	.42	T			45	66	60	80	61	85	50	72	45	74
27	T					44	72	55	81	55	89	52	83	51	56
28		1.78				41	76	65	86	65	95	62	83	47	57
29		1.24				43	70	64	83	75	100	64	78	45	67
30	T	.57		1.20		39	68	64	77	76	95	63	70	39	49
31			.99	T		42	68			71	90	61	86		
					Ave.	44.7	68.5	54.8	75.5	63.0	85.5	56.8	79.3	44.5	66.2

CASSELTON CLIMATOLOGY

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1				.37		33	49	42	68	62	76	68	90	49	75
2						35	58	49	74	69	90	55	79	49	74
3						32	66	42	73	68	72	55	81	48	73
4						47	63	57	82	70	71	53	88	45	73
5					.20	41	69	48	76	69	89	56	82	46	63
6					.05	45	69	41	69	65	86	55	75	43	64
7	.24		.30			50	68	39	68	67	84	58	80	39	64
8	.05					47	60	58	73	56	90	52	86	44	66
9		.40				45	71	54	72	56	76	57	87	48	69
10		.17				47	74	53	59	47	74	47	80	42	81
11						65	73	53	68	45	71	60	83	39	57
12		.06				33	67	43	67	49	71	63	90	32	58
13	.50					45	75	54	83	56	72	51	76	31	72
14						34	53	50	75	61	86	55	85	52	78
15				.25		44	70	40	64	67	90	59	87	54	76
16						52	77	48	70	71	95	55	76	49	77
17					.73	48	82	53	76	72	92	44	71	54	79
18	.44	.58			.20	50	76	48	74	66	96	43	72	41	56
19	.07	1.00		.04	.05	65	81	59	79	62	87	62	75	45	59
20		.57			.01	48	78	59	77	55	86	57	75	37	60
21			.66			41	60	65	85	63	81	57	80	41	63
22	.45	.43		.89		59	71	66	79	59	91	53	69	35	62
23	.15					60	80	58	75	57	82	57	80	36	62
24		.90				*	*	62	83	52	80	66	85	58	73
25						52	83	64	83	54	78	57	85	42	69
26					.18	45	70	72	85	62	88	49	75	38	72
27						43	67	53	80	56	85	60	82	46	64
28					.02	41	74	66	83	64	90	66	84	41	59
29		1.31		.80		41	76	61	87	68	94	62	80	41	69
30	.05	1.00				38	69	63	83	74	100	59	72	28	52
31						41	57			74	94	57	87		
					Ave.	45.5	66.9	54	75.6	61.8	84.4	56.4	80.5	43	65.2

CLIMATIC DATA - MINOT 1975

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	.09		T	.31		31	41	44	66	60	85	55	80	46	81
2	.05	T	.04			33	46	47	70	62	83	52	72	47	65
3	.01				.46	36	48	48	68	62	84	54	82	46	66
4		.20	T	T		38	62	49	78	65	83	54	77	42	70
5				T		39	57	41	73	65	88	47	76	41	69
6		T			T	40	61	45	72	65	91	53	72	43	66
7	.08	T			.02	45	63	41	68	69	93	59	86	43	67
8	.90	T		.40		45	51	52	78	54	89	55	85	36	62
9	.01	.74				42	58	50	64	53	79	51	80	38	71
10		1.73	.54			45	65	49	54	50	78	50	76	52	76
11		.03		.03		42	68	47	66	51	72	51	84	38	68
12		.01			.01	42	62	51	76	50	77	55	85	32	58
13		.83				46	71	50	82	59	84	49	74	39	63
14	.15	.01				46	69	54	72	61	87	53	80	43	73
15		.04		.42		42	60	50	68	63	89	43	73	45	83
16	T	.46		T		49	74	52	70	65	94	42	73	45	77
17		.06	.40	T		53	81	50	71	62	95	41	66	45	84
18	.03	T	1.07	.02	.27	47	74	50	71	63	78	44	60	45	75
19		.25		.01	1.59	53	79	54	74	57	78	43	67	38	46
20	.22	.33		T	.05	43	63	56	68	54	77	49	73	40	46
21	.11			.03		39	58	57	79	58	85	51	70	36	54
22	T	T		.02		35	51	59	75	60	84	54	72	38	65
23	.19		.40	.01		38	53	55	80	59	89	56	77	40	74
24	.31			T		46	55	59	84	50	75	60	84	40	64
25	.58		T	.03		42	72	65	87	54	90	52	73	44	70
26				.02		42	57	63	89	59	88	42	64	47	77
27		T			.18	42	65	59	73	59	83	44	71	49	68
28		T			.03	44	69	59	85	66	91	53	85	46	55
29	.04	T		.15		43	70	58	80	66	98	57	86	45	51
30		T		T		39	60	60	82	69	98	49	74	39	72
31			.25			36	65			66	94	52	82		
					Ave.	42.0	62.2	52.5	74.1	59.9	85.8	50.6	76.1	42.3	67.3

CLIMATIC DATA - WILLISTON 1975

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1			.48			29	48	40	69	60	83	52	75	44	69
2	.09	.03		T	.48	33	52	44	76	64	83	49	85	52	68
3		T				38	68	50	77	68	82	59	83	44	70
4		.08		T		43	68	45	72	68	83	50	76	46	69
5						43	61	43	77	66	90	48	80	42	69
6		.22	.10			47	60	45	71	66	87	62	93	51	69
7	.38	.10				47	58	49	75	67	87	62	93	40	67
8		.87		.80	T	45	55	48	67	56	81	52	80	49	76
9	.02	1.60				44	55	47	55	53	81	50	80	53	78
10	.10	.06				45	63	47	67	53	80	53	86	53	77
11						42	66	45	74	53	80	46	87	35	56
12		T				41	71	50	81	50	83	54	75	31	65
13	.13					49	70	51	75	54	85	47	78	36	78
14	.17	.17				39	68	51	66	60	92	55	78	44	83
15		.25				45	81	48	69	63	92	45	76	45	82
16	.03	.05	.11			53	81	50	68	67	92	41	76	50	89
17	.20	.05	.30	T	.44	50	80	46	70	63	91	42	67	53	84
18		.03	T	.06	.31	44	76	49	71	61	80	52	67	43	54
19		.39	.05	.02	.45	51	72	49	70	56	80	51	72	42	46
20			T	T	.01	42	57	52	76	54	89	55	80	41	56
21						41	58	49	75	54	89	57	77	36	65
22	.05			T		37	55	51	77	63	91	60	87	38	77
23	T		.02	T		45	64	52	80	57	90	60	87	39	76
24	T			.21		46	65	52	89	49	82	52	82	42	79
25	.30			.17		36	55	69	89	60	96	51	60	44	83
26	.08	.70			.10	39	66	49	88	60	96	42	69	49	82
27					.03	37	66	54	84	61	97	54	82	48	53
28		.25				42	67	51	84	62	103	60	84	46	59
29				.37		40	65	53	80	72	102	56	84	45	59
30			T			38	67	57	82	71	99	48	81	34	56
31			.82			38	66			64	77	50	79		
					Ave.	42.2	64.7	49.5	75.1	60.5	87.8	52.1	79.3	43.8	69.8

CLIMATIC DATA - LANGDON 1975

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	.08	T	.23	.70		31	41	36	69	59	78	62	72	46	69
2	.08	.14			.10	31	47	45	70	61	78	50	73	37	60
3				.07		34	54	45	64	55	80	56	73	42	69
4		.22			.01	33	55	48	65	59	83	49	72	38	68
5			.25		.04	31	57	42	64	61	84	43	72	44	65
6					.08	38	64	37	63	61	84	49	82	39	66
7			.05			42	65	40	74	60	82	60	84	44	65
8		.14		.25		37	67	52	72	49	78	59	78	32	66
9		.48				41	72	50	68	51	70	55	78	47	74
10		.42			T	42	73	50	64	38	69	45	82	45	72
11				.01		35	70	43	69	47	70	45	81	32	62
12		T		T	T	32	68	46	79	44	80	52	78	31	55
13	.03	.11				42	72	51	75	50	86	47	78	31	70
14	.08					36	51	45	62	51	92	49	72	44	84
15		.03	.07			31	70	48	65	62	95	51	74	41	75
16		.36	.33			47	81	40	69	65	92	39	76	35	76
17	.21					50	81	46	68	66	89	36	65	52	79
18			T	.02	.83	43	75	44	76	60	81	37	59	48	71
19	.11	T		.02	.14	48	73	53	74	51	75	43	58	36	53
20	.03	.31			.17	47	67	54	84	50	81	45	66	38	46
21		T		.02		34	52	56	74	56	81	45	66	29	61
22		1.10	.07			31	61	56	76	56	76	43	78	31	71
23	.54		.10	.04		47	70	51	80	57	75	57	89	38	66
24				.13		48	74	58	82	47	77	45	87	31	66
25				.26		47	71	58	85	50	87	49	67	37	73
26		.11		.03		41	61	67	83	51	85	47	64	37	74
27	.05					41	69	49	82	49	91	39	71	39	67
28		.06		.02		41	69	60	81	62	96	47	81	38	55
29				.62		44	65	60	81	65	102	59	77	39	60
30		.42		.23	T	35	59	58	79	68	98	54	78	35	54
31	T		.02	.08		36	62			67	94	60	81		
					Ave.	39.2	65.0	49.6	73.2	55.8	83.5	48.9	74.5	38.5	66.4

CLIMATIC DATA - CARRINGTON 1975

Date	Precipitation					Temperature									
						May		Jun		Jul		Aug		Sep	
	May	Jun	Jul	Aug	Sep	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1						27	47	42	72	56	81	54	84	52	77
2	.23	.05			T	29	49	49	73	59	78	43	81	42	77
3						32	65	49	80	56	84	46	90	37	74
4		.05			T	34	64	49	78	60	89	45	78	44	72
5					T	34	61	46	74	60	86	40	75	35	67
6					.03	36	64	42	66	59	89	50	84	37	65
7	.66	.52	T			44	62	42	65	59	86	55	84	38	64
8	.09			T		41	57	44	75	51	83	54	88	33	67
9		1.70	.03			38	68	52	54	49	75	51	81	45	79
10		.41			.04	45	71	50	65	41	73	46	86	46	75
11						39	68	48	68	51	70	59	86	34	64
12				.05		30	67	49	82	49	81	55	85	28	59
13	T	.12				42	74	49	81	49	85	42	79	30	73
14	.48	.08				36	63	49	70	51	87	44	78	44	80
15		.39		.14		34	73	49	64	61	91	49	77	43	84
16		.10				48	87	46	70	64	88	46	76	37	81
17	.04	.01	T		.07	54	87	46	70	57	86	39	68	54	80
18			.03	T	.54	47	80	50	77	81	81	40	64	42	63
19		.52		.04	.38	48	75	50	75	52	81	52	75	40	48
20	.06	.15			.08	42	70	56	83	50	82	58	72	35	46
21		.03		T		36	57	60	83	56	84	55	72	34	63
22		1.75	.30			33	61	57	74	53	77	50	79	38	72
23	.98		.15	.60		47	73	56	83	52	74	57	90	38	71
24		1.46				48	77	57	82	44	76	58	85	33	68
25						46	74	60	85	48	86	42	71	38	77
26		T				41	64	65	85	55	84	42	71	36	76
27	.09	T		.01		38	68	54	83	47	90	45	84	50	75
28					.19	36	70	57	82	63	93	50	84	51	59
29		.10		.98		34	68	64	80	75	98	61	77	38	62
30		.80				39	66	62	80	64	96	57	80	38	57
31	.05		.08			35	64			67	84	63	79		
					Ave.	38.9	67.5	51.6	75.7	56.3	84.3	49.8	79.3	39.2	68.9

SOIL TEST RESULTS FROM VARIOUS WEED CONTROL LOCATIONS

Location	Soil texture	Organic matter	pH	lb/A N	lb/A P	lb/A K
Section 22, Fargo	Silty clay	4.83	7.6	77.3	36.3	711.7
Barban N, Fargo	Silty clay	5.7	8.0	76	40	545
Fargo Main Station	Silty clay	6.9	7.5	119	49.5	545
Langdon, ND	Clay loam		7.5	288	42	460
Barban N, Langdon, ND	Clay loam		7.5	140	45	468
Williston, ND	Loam		7.3	108	48	500
Barban N, Williston, ND	Loam		7.4	60	28	240
Minot, ND	Loam		7.0	118	46	472
Barban N, Minot, ND	Loam		6.6	26	22	475
Oakes, ND	Sandy loam		7.7			
Carrington, ND	Loam	3	7.0			

Location	Soil texture	Organic matter	pH	N lb/A	P lb/A	K lb/A
Kennedy, Mn.	silty clay-loam	6.0	7.6	249	35	455
Wahpeton, N.D.	loam	2.7	7.3	114	24	250
Renville, Mn.	clay-loam	6.8	7.0	79	40	150
Crookston, Mn.	silty clay-loam	6.2	7.7	123	58	170
St. Thomas, N.D.	silty clay-loam	5.2	7.6	140	27	280
Casselton, N.D.	silty clay	5.1	7.7	128	22	380

KEY TO ABBREVIATIONS AND EVALUATIONS

0-10 ratings refer to ratings based on a 0-10 system. 0 - no injury; 1, 2, 3 - slight; 4, 5, 6 - moderate; 7, 8, 9 - severe; 10 - complete kill. Percent control (0-100) is a visual estimate of reduction in weed stand and growth.

SPECIES

1. Barl, Bar = Barley
2. BDLV, Bdlf = Broadleaved weed
3. Bygr = Barnyardgrass
4. Cath, C.T. = Canada thistle
5. Colq, LBQT, LBQ = Common lambsquarter
6. Coma = Common mallow
7. FXTL, FOXT = Foxtail species
8. GPPW = Greenflower pepperweed
9. Grft = Green foxtail
10. Howe = Horseweed
11. KOCZ, KOC = Kochia
12. Mesa = Meadow salsify
13. Nccf = Night flowering catchfly
14. Pest = Perennial sowthistle
15. Prle = Prickly lettuce
16. Ptpw = Prostrate pigweed
17. Rrpw = Redroot pigweed
18. Ruth, R.T. = Russian thistle
19. Sobe = Soybean
20. Wisf = Sunflower
21. Sugarbt, Sugb = Sugarbeet
22. Tamu = Tansy mustard
23. Tumu = Tumble mustard
24. Wibu, W.B., Wibw = Wild buckwheat
25. Wimu, W.M. = Wild mustard
26. Wioa = Wild oat
27. Whet, Wht = Wheat
28. Yeft = Yellow foxtail

CHEMICALS

1. ALAC, AL = alachlor
2. AMI = amine
3. ATR, ATRA = atrazine
4. ASU = asulam
5. Bar, BARB = barban
6. BENT, BE = bentazon
7. BIFI, Bife = bifenox
8. BRO, BROM = bromoxynil
9. But = butoxy ethanol ester
10. BUT = butylate
11. CHAM, CLAM = chloramben
12. CYAN = cyanazine
13. CYP = cyprazine
14. DALA, DAL = dalapon
15. DESMED, DESM, DES, DE = desmedipham
16. DIAL = diallate
17. DIC = dicamba
18. DIAM, DINI = dinitramine
19. ENDO = endothall
20. ETHI = ethiolate
21. FLDI = fluorodifen
22. Fluc = fluchloralin
23. HOE = HOE-23408
24. LO, LOTM = linseed oil
25. LOAM = linseed oil amine
26. MTBZ, METR = metribuzin
27. PHENMED, PHEN = phenmedipham
28. PO, PO-11E = Sunoco Superior Spray Oil
29. PO-Std = Standard Crop Oil Concentrate
30. PROF = profluralin
31. PROP = propachlor
32. PYR, PYRA = pyrazon
33. OCT = octanoic ester
34. OSA = oil soluble amine
35. OXID = oxidiazon
36. SURF, S = surfactant
37. TRIF = trifluralin
38. TRI, TRIA = triallate
39. VERN = vernolate
40. WDS = water dispersable solution

METHODS

1. PEI = preemergence incorporated
2. PI, PPI = preplant incorporated
3. POST, PO = postemergence
4. PRE, PE = preemergence

MISCELLANEOUS

1. APPL = Applied or application
2. CONTROL, CNTL = Weedy check
3. EC, L, LIQ = Emulsifiable concentrate
4. EVAL = Evaluated
5. G, GRAN = Granules
6. HARV = Harvested
7. HERB = Herbicide
8. Ht = Height in cm
9. INCORP, INC = Incorporated
9. LVS, LF = Leaves or leaf
10. N, NIT = Nitrogen
11. PCT = Percent
12. PLT = Planted
13. REP = Replication
14. SPR = Spring
15. SUR = Surface
16. TRT = Treated or treatment

All preplant incorporated or preemergence treatments were applied in 17 gpa of water and all postemergence treatments applied in 8.5 gpa of water at 35 psi with a bicycle wheel-type plot sprayer unless otherwise stated in the table. Preplant incorporation was by a garden type rototiller and preemergence incorporation was by harrowing twice.

LIST OF HERBICIDES TESTED IN 1975

Common Name or Code Name	Chemical Name	Trade Name
Alachlor	2-chloro-2',6'-diethyl-N-(methoxymethyl) acetanilide	Lasso
Amitrole-T	3-amino-s-triazole + ammonium thiocyanate	Amitrol-T
Asulam	methyl sulfanilylcarbamate	Asulox
Atrazine	2-chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine	AAtrex
Barban	4-chloro-2-butynyl-m-chlorocarbanilate	Carbyne
BAS-87959		
BAS-90016		
Benazolin	4-chloro-2-oxo-benzothiazolin-3-yl-acetic acid	Basfapon
Bentazon	3-isopropyl-1H-2,1,3-benzothiadiazin-(4)3H-one 2,2-dioxide	Basagran
BH-1455	methyl 2-(3,3-diethyleneoxyuredio) benzoate	
Bifenox	methyl-5(2,4-dichlorophenoxy)-2-nitrobenzoate	Modown
Bromacil	5-bromo-3-sec-butyl-6-methyluracil	
Bromoxynil	3,5-dibromo-4-hydroxybenzonitrile	Brominal Butril
Butylate	S-ethyl diisobutylthiocarbamate	Sutan
CGA-18762, procyazine	2-[[4-chloro-6-(cyclopropylamino)-1,3,5-triazine-2-yl]amino]-2-methylpropanenitrile	
CGA-24705	2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide	
Chloramben	3-amino-2,5-dichlorobenzoic acid	Amiben
Chloroxuron	3-[p-(p-chlorophenoxy)phenyl]-1,1-dimethylurea	Tenoran
CIPC (PPG 124)	isopropyl m-chlorocarbanilate	
Cyanazine	2-[[4-chloro-6-(ethylamino)-s-triazin-2-yl]amino]-2-methylpropionitrile	Bladex
Cycloate	S-ethyl N-ethylthiocyclohexanecarbamate	Ro-Neet
Dalapon	2,2-dichloropropionic acid	Dowpon
Desmedipham	ethyl m-hydroxycarbanilate carbanilate	Betanex
Diallate	S-(2,3-dichloroallyl)diisopropylthiocarbamate	Avadex
Dicamba	3,6-dichloro-o-anisic acid	Banvel
Difenzoquat	1,2-dimethyl-3,5-diphenyl-1H-pyrazolium	Avenge
Dinitramine	N^4,N^4-diethyl-α,α,α-trifluoro-3,5-dinitrotoluene-2,4-diamine	Cobex
DNBP, dinoseb	2-sec-butyl-4,6-dinitrophenol	Premerg
Dowco 290, M-3972	3,6-dichloropicolinic acid	
Dowco 356		
Dowco 367		
DS-23017		

LIST OF HERBICIDES TESTED IN 1975

Common Name or Code Name	Chemical Name	Trade Name
Diuron	3-(3,4-dichlorophenyl)-1,1-dimethylurea	Karmex
Endothall	7-oxabicyclo[2,2,1]heptane-2,3-dicarboxylic acid	Herbicide 273
EPTC	S-ethyl dipropylthiocarbamate	Eptam
Ethofumesate	2-ethoxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methanesulfonate	
FMC-25213	r-2-ethyl-5-methyl-c-5-(2-methylbenzyloxy)-1,3-dione	
Glyphosate	N-(phosphonomethyl)glycine	Roundup
H-22234, diethyne	N-chloroacetyl-N-(2,6-diethylphenyl)-glycine ethyl ester	Antor
H-26905	O-ethyl-O-(3-methyl-6-nitrophenyl)-N-sec-butyl-phosphorothioamidate	
H-26910	N-chloroacetyl-N-(2-methyl-6-ethylphenyl)-glycine isopropyl ester	
HOE-23408	methyl 2-[4'(2,4-dichlorophenoxy) phenoxy] propanoate	
IPC	isopropyl carbanilate	
Karbutilate	tert-butylcarbamic acid ester with 3-(m-hydroxyphenyl)-1,1-dimethylurea	Tandex
Linuron	3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea	Lorox
LS-1299	N-(isopropyl-4-phenyl)-N,N-dimethylurea	
M-3785	Dowco 290 + 2,4-D	
M-4127		
MCPA	[(4-chloro-o-tolyl)oxy] acetic acid	
Metribuzin	4-amino-6-tert-butyl-3-(methylthio)-as-triazine-5(4H)one	Sencor
MSMA	monosodium methanearsonate	Phytar 529
Napthalic anhydride	1,8-napthalic anhydride	Protect
Oxadiazon	2-tert-butyl-4-(2,4-dichloro-5-isopropoxyphenyl)-Δ^2-1,3,4-oxadiazolin-5-one	Ronstar
Penoxalin	N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine	Prowl
Phenmedipham	methyl m-hydroxycarbanilate m-methyl carbanilate	Betanal
Picloram	4-amino-3,5,6-trichloropicolinic acid	Tordon
Propachlor	2-chloro-N-isopropylacetanilide	Ramrod
Profluralin	N-(cyclopropylmethyl)-α,α,α-trifluoro-2,6-dinitro-N-propyl-p-toluidine	
Pyrazon	5-amino-4-chloro-2-phenyl-3(2H)-pyridazinone	Pyramin
R-25788	N,N-diallyl-2,2-dichloroacetamide	
R-31401		
R-37878		
RH-2915		
RH-8817		

LIST OF HERBICIDES TESTED IN 1975

Common Name or Code Name	Chemical Name	Trade Name
SD-29761	methyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-2-aminopropionate	
SD-23027	propionamide, 2-(2,6-dinitro-4-methyl-anilino)-N-hydroxy-N-methyl	
TCA	trichloroacetic acid	
Terbacil	3-tert-butyl-5-chloro-6-methyluracil	
Terbutryn	2-(tert-butylamino)-4-(ethylamino)-6-(methylthio)-s-triazine	
Triallate	S-(2,3,3-trichloroallyl)diisopropylthio-carbamate	Fargo
Tribunil	N-(2-benzothiazolyl)-N-methyl-N'-methyl urea	
Trifluralin	α,α,α-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine	Treflan
2,4-D	(2,4-dichlorophenoxy)acetic acid	
2,4,5-T	(2,4,5-trichlorophenoxy)acetic acid	
U-27,267	3,4,5-tribromo-N,N-a-trimethylpyrazole-1-acetamide	
USB 3153		
VEL 4207		
VEL 5026		
VEL 5028		
VEL 5052		
Velpar	3-cyclohexyl-6-(dimethylamino)-1-methyl-s-triazine-2,4(1H,3H)-dione	Velpar

Postemergence herbicides applied over preplant incorporated herbicides. Dexter, Alan G. Preplant incorporated herbicides were applied and rototiller incorporated to a depth of four inches and 'American Crystal Hybrid B' sugarbeets were planted 1 inch deep in 22 inch rows on May 18, 1975 at Crookston, MN. The soil was silty clay loam in texture with pH 8.0 and 5.4 percent organic matter. Rainfall of 0.42 inches fell in the first five days after planting. Postemergence herbicides were applied June 16 when the sugarbeets had 4 to 6 leaves, the redroot pigweed had 2 to 6 leaves, and the green and yellow foxtail was 1 to 3 inches tall. The preplant incorporated herbicides were applied in 15 foot wide strips which ran north-south across all postemergence herbicide treatments. The postemergence herbicides were applied east-west across the five preplant incorporated treatments. This arrangement was replicated four times. The postemergence treatments were applied to the center four rows of the six row plots. Weed control was evaluated visually July 25 and weeds and sugarbeets were counted July 14-16. Weeds were counted in 40 square feet of treated and untreated areas and sugarbeets were counted in 60 feet of treated and untreated row.

Redroot pigweed control, green and yellow foxtail control, and sugarbeet injury are given in Tables 1, 2, and 3, respectively. Combining HOE-23408 with desmedipham caused a large decrease in redroot pigweed control as compared to desmedipham used alone. However, HOE-23408 plus desmedipham did not reduce foxtail control as compared to HOE-23408 alone. The foxtail control was probably at such a high level that the antagonism between the two herbicides was not expressed. The addition of linseed oil to the postemergence combination of desmedipham and ethofumesate appeared to increase weed control and decrease sugarbeet injury. Desmedipham plus ethofumesate used postemergence gave excellent redroot pigweed control but only fair to poor foxtail control. Sugarbeet injury was significant from desmedipham plus ethofumesate and could be a serious problem so the possible safening from linseed oil should be investigated further. Desmedipham plus dalapon used postemergence at 1 + 2 lb/A also gave severe sugarbeet injury. U-27,267, H-22234, and ethofumesate gave similar control of redroot pigweed and all gave superior control of redroot pigweed as compared to EPTC. EPTC gave better foxtail control than the other preplant incorporated herbicides. None of the preplant incorporated herbicides caused serious sugarbeet injury but U-27,267 was the most injurious of the group.

Table 1. Redroot pigweed control from postemergence over preplant incorporated herbicides.

Postemergence Herbicide (Rate lb/A)	Redroot Pigweed Control (%)[a] Preplant Incorporated Herbicide (Rate lb/A)					
	No PPI Herbicide	EPTC (2.5)	U-27,267 (4)	H-22234 (6)	Ethofumesate (4)	Avg.
			LSD(.05) = 27			
Desmedipham (0.75)	82	66	96	87	84	84
Desmedipham (1)	81	63	86	92	79	81
Desmedipham (1.5)	90	93	96	96	96	94
HOE-23408 (2)	-21	12	81	74	75	44
HOE-23408 (4)	-27	59	81	87	87	58
Dalapon (3)	-17	32	61	86	66	46
Ethofumesate (2)	46	76	85	90	96	79
Ethofum. + L.O.[b] (2+1 qt)	43	42	60	89	71	61
MBR-12325 (0.25)	0	56	76	81	84	60
MBR-12325 (0.5)	-19	65	79	78	90	58
Desmed.+ethofum (.75+1.5)	89	93	100	100	99	97
Desmed.+ethofum (1 + 2)	94	100	98	75	98	93
Desmed.+ethofum+L.O. (.75+1.5+1 qt)	96	97	100	99	98	98
Desmed.+HOE-23408 (1+1)	20	74	93	91	91	74
Desmed.+HOE-23408 (1+2)	18	30	93	89	79	64
Desmed.+HOE-23+L.O. (1+2+1 qt)	11	54	91	82	86	65
Desmed.+pyrazon (1+3)	80	91	99	92	97	92
Desmed.+dalapon (1+2)	54	60	93	87	74	73
Pyrazon+dalapon (3.8+2.2)	5	54	89	87	86	63
Ethofum+HOE-23408 (2+1)	13	80	87	98	92	74
Endothall+dalapon (1+2)	-23	37	69	76	74	46
No post herbicide	19	8	77	76	75	51
Avg.	34	61	86	87	85	LSD(.05) = 16
					LSD(.05) = 11	

[a]Average of percent stand reduction and visual evaluation of control.

[b]Linseed oil additive, Bioveg.

Table 2. Green and yellow foxtail control from postemergence over preplant incorporated herbicides.

Postemergence Herbicide (Rate lb/A)	Green and Yellow Foxtail Control (%)[a] Preplant Incorporated Herbicide (Rate lb/A)					
	No PPI Herbicide	EPTC (2.5)	U-27,267 (4)	H-22234 (6)	Ethofumesate (4)	Avg.
			LSD(.05) = 19			
Desmedipham (0.75)	13	97	83	69	87	70
Desmedipham (1)	16	92	85	78	82	71
Desmedipham (1.5)	29	95	91	73	90	75
HOE-23408 (2)	94	98	98	97	99	97
HOE-23408 (4)	100	100	100	100	100	100
Dalapon (3)	95	93	97	100	96	96
Ethofumesate (2)	36	100	66	84	79	73
Ethofum.+L.O.[b] (2+1 qt)	46	92	84	74	79	75
MBR-12325 (0.25)	49	97	87	89	86	82
MBR-12325 (0.5)	62	98	88	87	87	84
Desmed. + ethofum (.75+1.5)	15	98	88	91	93	77
Desmed. + ethofum (1+2)	57	100	94	74	96	84
Desmed. + ethofum + L.O. (.75+1.5+1 qt)	56	99	91	94	98	88
Desmed. + HOE-23408 (1+1)	84	96	97	99	100	95
Desmed.+HOE-23408 (1+2)	96	100	100	100	100	99
Desmed. + HOE-23 + L.O. (1+2+1 qt)	99	100	99	99	100	99
Desmed. + pyrazon (1+3)	-21	96	85	68	75	61
Desmed. + dalapon (1+2)	74	87	98	94	99	90
Pyrazon + dalapon (3.8 + 2.2)	81	100	96	100	99	95
Ethofum + HOE-23408 (2+1)	92	100	97	90	100	96
Endothall + dalapon (1+2)	94	100	99	94	100	97
No post herbicide	6	88	74	72	85	65
Avg.	58	97	91	87	92	LSD(.05) = 11
			LSD(.05) = 5			

[a]Average of percent stand reduction and visual evaluation of control.

[b]Linseed oil additive, Bioveg.

Table 3. Sugarbeet injury from postemergence over preplant incorporated herbicides.

Postemergence Herbicide (Rate lb/A)	Sugarbeet Injury (%)[a] Preplant Incorporated Herbicide (Rate lb/A)					
	No PPI Herbicide	EPTC (2.5)	U-27,267 (4)	H-22234 (6)	Ethofumesate (4)	Avg.
			LSD(.05) = 18			
Desmedipham (0.75)	11	15	7	5	-4	7
Desmedipham (1)	5	9	24	19	8	13
Desmedipham (1.5)	16	21	22	11	16	17
HOE-23408 (2)	-3	-11	0	-8	-11	-7
HOE-23408 (4)	-6	-22	-7	-21	-20	-15
Dalapon (3)	-2	0	2	-4	-6	-2
Ethofumesate (2)	5	-8	-10	-38	-20	-14
Ethofum.+L.O.[b](2+1 qt)	2	-16	8	5	-8	-2
MBR-12325 (0.25)	6	-16	-10	-3	-19	-9
MBR-12325 (0.5)	-1	0	-9	-2	-8	-4
Desmed.+ethofum (.75+1.5)	20	24	25	20	15	21
Desmed.+ethofum (1+2)	34	26	33	27	19	28
Desmed.+ethofum+L.O. (.75+1.5+1 qt)	19	8	6	4	-1	7
Desmed.+HOE-23408 (1+1)	22	22	17	13	13	17
Desmed.+HOE-23408 (1+2)	17	7	31	20	12	18
Desmed.+HOE-23+L.O. (1+2+1 qt)	2	1	7	4	1	3
Desmed. + pyrazon (1+3)	-1	4	-5	-15	-17	-7
Desmed. + dalapon (1+2)	23	36	34	46	32	34
Pyrazon + dalapon (3.8+2.2)	-8	-24	-19	-37	-51	-28
Ethofum. + HOE-23408 (2+1)	-14	-17	-11	-22	-33	-19
Endothall + dalapon (1+2)	-1	17	-5	-4	7	3
No post herbicide	-3	-4	15	-6	-11	-2
Avg.	6	3	7	1	-4	LSD(.05) = 21

LSD(.05) = N.S.

[a]Average of percent stand reduction and visual evaluation of damage.

[b]Linseed oil additive, Bioveg.

Sugarbeet variety response to EPTC and desmedipham. Dexter, Alan G. EPTC was applied and rototiller incorporated on May 20, 1975 at St. Thomas, N.D. in 15 foot wide strips which ran east-west across all sugarbeet varieties. Twelve rows of each of six sugarbeet varieties were planted north-south, 1 inch deep in 22 inch rows on May 20. Desmedipham was applied postemergence at 1 lb/A on June 18 to four rows of each sugarbeet variety across the 0, 2.5, and 5 lb/A rates of EPTC. The treatments were replicated four times. Visual evaluations of sugarbeet injury and weed control were taken July 4 and stand counts of sugarbeets and weeds were taken July 20. The untreated (no EPTC, no desmedipham) portion of each plot was used as a check to calculate percent stand reduction. Some significant differences among varieties were observed, however, much more extensive testing will be needed to use herbicide resistance as a criteria for selecting varieties.

Table 4. Sugarbeet injury from EPTC and EPTC plus desmedipham.

	EPTC (2.5 lb/A)				EPTC (5 lb/A)			
	No Post		Post Desmedipham		No Post		Post Desmedipham	
Variety	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.
Bush Johnson Mono	2	29	20	24	18	20	39	36
Holly HH 21	4	25	36	27	16	23	41	43
Amer. Crys. 2 Hy B	8	9	36	14	16	5	48	24
Bush Johnson Monofort	0	13	24	0	8	3	35	6
Beta 1443	11	32	22	16	25	34	48	35
Grt. West. Mono Hy D2	5	19	34	22	29	15	54	25
LSD(.05)	8	15	8	15	8	15	8	15

Table 5. Weed control from EPTC and EPTC plus desmedipham averaged over all sugarbeet varieties.

	Percent Stand Reduction	
Herbicide (Rate lb/A)	Prostrate Pigweed	Green Foxtail & Yellow Foxtail
EPTC (2.5)	28	85
EPTC (5)	37	94
EPTC (2.5) + desmedipham (1)	65	79
EPTC (5) + desmedipham (1)	70	91
Desmedipham (1)	65	-5
LSD(.05)	17	20

Sugarbeet variety response to H-22234, ethofumesate, and desmedipham. Dexter, Alan G. Ethofumesate was applied at 6 lb/A, H-22234 was applied at 8 lb/A and both were rototiller incorporated on May 20, 1975 at St. Thomas, N.D. in 15 foot wide strips which ran east-west across all sugarbeet varieties. Twelve rows of each of six sugarbeet varieties were planted north-south, 1 inch deep in 22 inch rows on May 20. Desmedipham was applied postemergence at 1 lb/A on June 18 to four rows of each sugarbeet variety across the two PPI herbicide strips and one untreated strip. The treatments were replicated four times. Visual evaluations of weed control and sugarbeet injury were taken July 4 and stand counts were taken July 22. The untreated (no PPI, no post herbicide) portion of each plot was used as a check to calculate percent stand reduction. Some significant differences among varieties were observed, however, much more extensive testing will be needed to use herbicide resistance as a criteria for selecting varieties.

Table 6. Sugarbeet injury from H-22234, ethofumesate, and desmedipham plus H-22234 or ethofumesate.

	ethofumesate (6 lb/A)				H-22234 (8 lb/A)			
	No Post		Post Desmedipham		No Post		Post Desmedipham	
Variety	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.	Visual Rating	Stand Reduc.
Bush Johnson Mono	16	22	26	0	16	4	22	0
Holly HH 21	26	35	30	11	30	40	31	3
Amer. Crys. 2 Hy B	19	55	42	29	12	32	39	34
Bush Johnson Monofort	11	33	21	15	18	35	22	20
Beta 1443	12	9	34	26	11	15	38	25
Grt. West. Mono Hy D2	5	28	25	35	0	20	11	12
LSD(.05)	7	24	7	24	7	24	7	24

Table 7. Weed control from H-22234, ethofumesate, and desmedipham plus H-22234 or ethofumesate averaged over all sugarbeet varieties.

	Percent Stand Reduction		
Herbicide (Rate lb/A)	Prostrate Pigweed	Green Foxtail & Yellow Foxtail	Common Lambsquarters
H-22234 (8)	82	79	10
H-22234 (8) + desmedipham (1)	87	82	91
Ethofumesate (6)	56	89	86
Ethofumesate (6) + desmedipham (1)	70	91	60
Desmedipham (1)	57	2	71
LSD(.05)	16	14	32

Table 8. Fall and spring herbicides, Kennedy, Mn, 1975. PPI herbicides were applied and rototiller incorporated October 28, 1974 and May 13, 1975. American Crystal Hybrid B sugarbeets were planted May 13. Postemergence herbicides were applied June 12 when the sugarbeets had 4-6 leaves, green and yellow foxtail was 1/2-1 inch, and redroot pigweed had 2-6 leaves. Visual evaluations were taken July 7 and stand counts were taken July 14-16. Plots were six rows wide with the center four rows treated. Weeds were counted in 40 sq ft of the treated and untreated areas. Sugarbeets were counted in 60 feet of row. Percent stand reductions and visual evaluations were averaged to form the parameters percent injury or percent control.

Herbicide (Rate lb/A)	How Applied	Sugarbeet % Injury	Grft & Yeft % Control	Rrpw % Control
Fall applied				
EPTC (3)	PPI	0	84	-3
EPTC (4.5)	PPI	5	85	2
EPTC + diallate (3+2)	PPI	4	95	8
EPTC + diallate (4+1.5)	PPI	3	92	10
EPTC + ethofumesate (3+4)	PPI	3	93	60
H-22234 (6)	PPI	-2	21	-1
H-26910 (6)	PPI	5	73	11
Ethofumesate (5)	PPI	1	88	57
U-27,267 (5)	PPI	22	37	92
Spring applied				
EPTC (2)	PPI	2	79	-15
EPTC (3)	PPI	3	89	-11
Ethofumesate (4)	PPI	0	66	40
Ethofumesate (6)	PPI	7	74	63
H-22234 (4)	PPI	5	54	39
H-22234 (6)	PPI	-4	73	70
U-27,267 (4)	PPI	12	52	88
U-27,267 (6)	PPI	5	63	87
Ethofumesate + EPTC (4+1)	PPI	-3	86	83
Ethofumesate + TCA (4+6)	PPI	8	96	65
Ethofumesate + cycloate (3+4)	PPI	14	86	61
Ethofumesate + U-27,267 (3+4)	PPI	8	69	89
Ethofumesate + H-22234 (3+4)	PPI	3	75	51
EPTC + H-22234 (2+4)	PPI	7	86	63
EPTC + U-27,267 (2+4)	PPI	19	82	81
Desmedipham (1)	post	0	25	76
Phenmedipham (1)	post	1	65	2
Pyrazon + dalapon (3.8+2.2)	post	-4	97	19
Desmedipham + dalapon (1+1)	post	5	91	84
Endothall + dalapon (1.5+2)	post	4	94	21
Desmedipham + ethofumesate (1+2)	post	2	81	89
Ethofumesate (4) PPI + desmedipham + dalapon (1+1)	post	7	97	79
Ethofumesate (4) PPI + desmedipham (1)	post	7	86	83
H-22234 (6) PPI + desmedipham + dalapon (1+1)	post	6	95	85
H-22234 (6) PPI + desmedipham (1)	post	3	67	83
EPTC (2.5) PPI + desmedipham + dalapon (1+1)	post	8	99	70
EPTC (2.5) PPI + desmedipham (1)	post	4	92	68
U-27,267 (4) PPI + desmedipham + dalapon (1+1)	post	3	85	87
U-27,267 (4) PPI + desmedipham (1)	post	4	61	82
LSD (.05)		10	13	24
No. of Reps		4	4	4

Redroot pigweed control from EPTC was very poor. Apparently the pigweed germinated after the EPTC had dissipated.

Table 9. Fall and spring herbicides, Wahpeton, N.D., 1975. PPI herbicides were applied and rototiller incorporated November 5, 1974 and May 9, 1975. American Crystal Hybrid B sugarbeets were planted May 9. Linott flax was seeded in one of the four treated rows. Postemergence herbicides were applied June 6 when the sugarbeets had 4-6 leaves, green and yellow foxtail was 1-3 inches, common lambsquarters had 4-6 leaves, and wild mustard was 1-2 inches in diameter. Visual evaluations were taken June 6 and June 23 and stand counts were taken June 26-27. Plots were six rows wide with the center four rows treated. Weeds were counted in 40 sq ft of the treated and untreated areas. Sugarbeets were counted in 60 feet of row and flax was counted in 30 feet of row. Percent stand reductions and the June 23 visual evaluations were averaged to form the parameters percent injury or percent control.

Herbicide (Rate lb/A)	How Applied	6/6 SugB Injury Rating	SugB % Injury	6/23 Flax Injury Rating	Colq % Control	Fxtl % Control	Wimu % Control
Fall applied							
EPTC (3) PPI		13	7	5	28	84	20
EPTC (4.5) PPI		41	18	13	47	92	25
EPTC + diallate (3+2) PPI		14	2	5	63	97	39
EPTC + diallate (4+1.5) PPI		33	11	24	64	91	52
EPTC + ethofumesate (3+4) PPI		80	33	74	82	99	52
H-22234 (6) PPI		10	-2	1	3	34	0
H-26910 (6) PPI		55	16	13	36	91	52
Ethofumesate (5) PPI		36	8	66	72	86	67
U-27,267 (5) PPI		95	68	94	99	89	89
Spring applied							
EPTC (2) PPI		5	1	3	37	71	14
EPTC (3) PPI		24	3	8	57	95	20
Ethofumesate (4) PPI		20	5	24	47	58	53
Ethofumesate (6) PPI		33	9	46	69	71	40
H-22234 (4) PPI		41	16	8	20	65	15
H-22234 (6) PPI		30	12	11	31	77	29
U-27,267 (4) PPI		50	29	38	89	75	88
U-27,267 (6) PPI		45	15	49	85	78	83
Ethofumesate + EPTC (4+1) PPI		64	17	68	75	87	65
Ethofumesate + TCA (4+6) PPI		43	8	34	71	96	61
Ethofumesate + cycloate (3+4) PPI		41	16	61	85	91	60
Ethofumesate + U-27,267 (3+4) PPI		65	33	61	88	76	80
Ethofumesate + H-22234 (3+4) PPI		50	15	45	68	86	63
EPTC + H-22234 (2+4) PPI		43	14	23	70	95	63
EPTC + U-27,267 (2+4) PPI		58	24	43	93	93	74
Desmedipham (1) post		--	4	40	78	34	95
Phenmedipham (1) post		--	6	63	86	63	71
Pyrazon + dalapon (3.8+2.2) post		--	3	14	71	62	51
Desmedipham + dalapon (1+1) post		--	-5	44	88	66	99
Endothall + dalapon (1.5+2) post		--	-2	23	-2	65	31
Desmedipham + ethofumesate (1+2) post		--	25	88	95	64	100
Ethofum(4)PPI+desm+dala(1+1)post		--	21	95	99	92	100
Ethofum(4)PPI+desm(1) post		--	13	80	99	92	100
H-22234(6)PPI+desm+dala(1+1)post		--	13	54	95	89	100
H-22234(6) PPI+desm(1) post		--	11	43	88	89	100
EPTC(5)PPI+desm+dala(1+1) post		--	45	85	99	95	100
EPTC (5) PPI + desm (1) post		--	32	74	96	97	100
U-27,267(4)PPI+desm+dala(1+1)post		--	34	79	93	80	98
U-27,267 (4) PPI + desm (1) post		--	37	80	98	81	99
LSD (.05)		16	17	20	16	15	23
No. of Reps.		4	4	4	4	4	4

Considerable sugarbeet injury was observed on this loam soil with 2.7 percent organic matter.

Table 10. Fall and spring herbicides, Renville, Mn., 1975. PPI herbicides were applied and rototiller incorporated November 6, 1974 and May 7, 1975. American Crystal Hybrid B sugarbeets were planted May 7. Postemergence herbicides were applied June 5 when the sugarbeets had 4-6 leaves, common lambsquarters had 2-4 leaves, and the green and yellow foxtail was 2-4 inches tall. Visual evaluations were taken June 30 and foxtail on June 5 and 30. Stand counts were taken June 16. Weeds were counted in 20 sq ft and sugarbeets were counted in 60 feet of row. Plots were 6 rows wide with the center four rows treated. Plant populations in the untreated area of each plot were used to calculate percent stand reduction. Visual evaluations and percent stand reductions were averaged to form percent injury or percent control.

Herbicide (Rate lb/A)	How Applied	6/5 Fxtl Injury Rating	6/30 Fxtl Injury Rating	Fxtl % Control	Colq % Control	Sugb % Injury
Fall applied						
EPTC (3)	PPI	83	41	22	7	-2
EPTC (4.5)	PPI	89	80	52	51	0
H-22234 (6)	Pre	48	23	17	-1	4
H-26910 (6)	Pre	33	20	37	-6	7
EPTC + ethofumesate (3+4)	PPI	95	86	79	90	1
H-22234 (6)	PPI	66	58	44	-6	4
H-26910 (6)	PPI	85	68	70	24	4
Ethofumesate (5)	PPI	83	79	68	58	1
U-27,267 (5)	PPI	88	93	87	89	35
Spring applied						
EPTC (2)	PPI	90	89	68	33	2
EPTC (3)	PPI	95	90	85	64	8
Ethofumesate (4)	PPI	64	56	40	23	2
Ethofumesate (6)	PPI	73	79	62	53	1
H-22234 (4)	PPI	64	45	40	4	-2
H-22234 (6)	PPI	81	61	59	11	2
U-27,267 (4)	PPI	63	51	50	35	1
U-27,267 (6)	PPI	79	70	62	50	4
Ethofumesate + EPTC (4+1)	PPI	93	83	77	79	-2
Ethofumesate + TCA (4+6)	PPI	94	94	87	46	0
Ethofumesate + cycloate (3+4)	PPI	97	94	81	83	6
Ethofumesate + U-27,267 (3+4)	PPI	64	63	56	53	6
Ethofumesate + H-22234 (3+4)	PPI	75	70	63	36	5
EPTC + H-22234 (2+4)	PPI	95	90	87	73	2
EPTC + U-27,267 (2+4)	PPI	94	94	84	85	8
Desmedipham (1)	post	--	--	22	49	3
Phenmedipham (1)	post	--	--	29	58	3
Pyrazon + dalapon (3.8+2.2)	post	--	--	73	15	7
Desmedipham + dalapon (1+1)	post	--	--	71	74	1
Endothall + dalapon (1.5+2)	post	--	--	67	-2	7
Desmedipham + ethofumesate (1+2)	post	--	--	45	91	4
Ethofum(4)PPI+desm+dala(1+1)	post	--	--	86	95	2
Ethofum(4)PPI + desm (1)	post	--	--	74	93	8
H-22234(6)PPI+desm+dala(1+1)	post	--	--	81	66	6
H-22234 (6) PPI + desm (1)	post	--	--	82	76	4
EPTC (2.5) PPI+desm+dala (1+1)	post	--	--	97	98	5
EPTC (2.5) PPI + desm (1)	post	--	--	92	90	3
U-27,267(4)PPI+desm+dala(1+1)	post	--	--	76	63	-2
U-27,267 (4) PPI + desm (1)	post	--	--	58	68	4
LSD (.05)		19	22	20	27	10
No. of Reps		4	4	4	4	4

Foxtail control was generally less on June 30 than on June 5 and the fall applied EPTC at 3 lb/A showed a large drop in control.

Table 11. Fall and spring herbicides, results combined over locations.

Herbicide (Rate lb/A)	How Applied	Three Locations Sugb % Injury	Three Locations Fxtl % Control	Two Locations Colq % Control
Fall applied				
EPTC (3)	PPI	2	64	18
EPTC (4.5)	PPI	8	77	49
EPTC + ethofumesate (3+4)	PPI	13	90	86
H-22234 (6)	PPI	0	33	-1
H-26910 (6)	PPI	8	78	30
Ethofumesate (5)	PPI	3	80	65
U-27,267 (5)	PPI	42	71	94
Spring applied				
EPTC (2)	PPI	2	73	35
EPTC (3)	PPI	5	90	61
Ethofumesate (4)	PPI	2	55	35
Ethofumesate (6)	PPI	6	69	61
H-22234 (4)	PPI	6	53	12
H-22234 (6)	PPI	3	69	21
U-27,267 (4)	PPI	14	59	62
U-27,267 (6)	PPI	8	68	68
Ethofumesate + EPTC (4+1)	PPI	4	84	77
Ethofumesate + TCA (4+6)	PPI	5	93	58
Ethofumesate + cycloate (3+4)	PPI	12	86	84
Ethofumesate + U-27,267 (3+4)	PPI	16	67	71
Ethofumesate + H-22234 (3+4)	PPI	8	75	52
EPTC + H-22234 (2+4)	PPI	8	89	72
EPTC + U-27,267 (2+4)	PPI	17	87	89
Desmedipham (1)	post	3	27	63
Phenmedipham (1)	post	4	52	72
Pyrazon + dalapon (3.8 + 2.2)	post	2	78	43
Desmedipham + dalapon (1+1)	post	0	76	81
Endothall + dalapon (1.5+2)	post	3	75	-2
Desmedipham + ethofumesate (1+2)	post	10	64	93
Ethofum (4) PPI+desm+dala(1+1)	post	10	92	97
Ethofum (4) PPI + desm (1)	post	9	84	96
H-22234(6)PPI+desm+dala(1+1)	post	8	88	81
H-22234 (6) PPI + desm (1)	post	6	80	82
U-27,267 (4)PPI+desm+dala(1+1)	post	12	80	78
U-27,267 (4) PPI + desm (1)	post	15	66	83
LSD (.05)		13	22	27

Treatments which were not the same at all three locations are not included in this summary table. U-27,267 fall applied at 5 lb/A gave better weed control and more sugarbeet injury than spring applied U-27,267 at 6 lb/A.

Table 12. Preplant incorporated herbicides, Crookston, Mn, 1975. Herbicides were applied and rototiller incorporated and American Crystal Hybrid B sugarbeets were planted May 18. Plots were six rows wide with the center four rows treated. Visual evaluations were taken July 16 and stand counts were taken June 12-13. Weeds were counted in 40 sq ft and sugarbeets were counted in 60 feet of row. Plant populations in the untreated areas of each plot were used to calculate percent stand reduction. Visual ratings were averaged with percent stand reduction to form the parameters percent injury or percent control.

Herbicide (Rate lb/A)	Sugb % Injury	Rrpw % Control	Fxtl % Control	Prpw % Stand Reduction
H-22234 (6)	-2	92	81	95
H-22234 (12)	5	93	89	93
U-27,267 (4)	13	88	70	64
Ethofumesate (4)	2	90	84	71
EPTC (2.5)	9	81	89	81
Pyrazon (4)	0	64	34	71
Pyrazon (8)	24	88	63	71
EPTC + pyrazon (2.5+4)	7	85	95	72
H-22234 + U-27,267 (4+4)	37	81	90	50
H-22234 + ethofumesate (4+3)	7	98	91	90
H-22234 + TCA (4+7)	6	92	97	82
H-22234 + pyrazon (4+4)	-1	87	70	87
H-22234 + pyrazon (6+4)	16	96	85	84
H-22234 + pyrazon (12+8)	18	98	84	92
H-22234 + cycloate (4+4)	7	91	78	73
H-22234 + cycloate (6+4)	9	96	90	98
H-22234 + EPTC (4+2)	12	93	97	96
H-22234 + EPTC (6+2)	11	97	97	93
Ethofumesate + TCA (3+6)	8	93	98	86
Ethofumesate + TCA (4+6)	15	88	97	69
Ethofumesate + pyrazon (4+4)	8	95	91	88
Ethofumesate + EPTC (3+1)	19	94	97	92
Ethofumesate + EPTC (4+1)	17	96	96	91
Ethofumesate + cycloate (3+4)	7	91	90	89
Ethofumesate + cycloate (4+4)	24	99	97	97
Ethofumesate + U-27,267 (3+4)	16	94	89	83
U-27,267 + EPTC (4+2)	23	93	82	89
U-27,267 + pyrazon (4+4)	16	96	82	72
U-27,267 + TCA (4+7)	21	90	98	89
LSD(.05)	13	14	14	40
No. of Reps	4	4	4	4

Table 13. Preplant incorporated herbicides, St. Thomas, N.D., 1975. Herbicides were applied and rototiller incorporated and American Crystal Hybrid B sugarbeets were planted May 20. Plots were six rows wide with the center four rows treated. Visual evaluations were taken July 4 and stand counts were taken July 21. Weeds were counted in 40 sq ft and sugarbeets were counted in 60 feet of row. Plant populations in the untreated areas of each plot were used to calculate percent stand reduction. Visual ratings were averaged with percent stand reduction to form the parameters percent injury or percent control.

Herbicide (Rate lb/A)	Sugb % Injury	Colq % Control	Fxtl % Control	Prpw % Stand Reduction
H-22234 (6)	11	2	79	74
H-22234 (12)	8	52	91	94
U-27,267 (4)	8	72	75	69
Ethofumesate (4)	2	80	83	43
EPTC (2.5)	6	70	87	-26
Pyrazon (4)	2	42	13	-25
Pyrazon (8)	6	54	6	10
EPTC + pyrazon (2.5+4)	5	56	90	14
H-22234 + U-27,267 (4+4)	19	79	81	43
H-22234 + ethofumesate (4+3)	9	89	91	35
H-22234 + TCA (4+7)	10	48	90	52
H-22234 + pyrazon (4+4)	0	61	77	41
H-22234 + pyrazon (6+4)	2	63	83	69
H-22234 + pyrazon (12+8)	9	70	93	70
H-22234 + cycloate (4+4)	5	85	90	76
H-22234 + cycloate (6+4)	-4	80	94	91
H-22234 + EPTC (4+2)	8	82	95	64
H-22234 + EPTC (6+2)	11	79	96	47
Ethofumesate + TCA (3+6)	7	90	86	18
Ethofumesate + TCA (4+6)	20	96	89	42
Ethofumesate + pyrazon (4+4)	1	92	82	22
Ethofumesate + EPTC (3+1)	2	94	98	39
Ethofumesate + EPTC (4+1)	9	92	95	29
Ethofumesate + cycloate (3+4)	6	92	91	41
Ethofumesate + cycloate (4+4)	4	93	96	43
Ethofumesate + U-27,267 (3+4)	13	97	96	84
U-27,267 + EPTC (4+2)	14	74	88	64
U-27,267 + pyrazon (4+4)	16	78	77	54
U-27,267 + TCA (4+7)	23	72	95	72
LSD(.05)	14	22	13	46
No. of Reps	4	4	4	4

Table 14. Preplant incorporated herbicides, 1975, data averaged over two locations.

Herbicide (Rate lb/A)	Sugb % Injury	Fxtl % Control	Prpw % Stand Reduction
H-22234 (6)	6	80	85
H-22234 (12)	4	90	94
U-27,267 (4)	11	73	66
Ethofumesate (4)	2	83	57
EPTC (2.5)	8	88	28
Pyrazon (4)	1	23	23
Pyrazon (8)	15	35	40
EPTC + pyrazon (2.5+4)	6	92	43
H-22234 + U-27,267 (4+4)	28	85	47
H-22234 + ethofumesate (4+3)	8	91	62
H-22234 + TCA (4+7)	8	94	67
H-22234 + pyrazon (4+4)	0	74	64
H-22234 + pyrazon (6+4)	9	84	77
H-22234 + pyrazon (12+8)	14	88	81
H-22234 + cycloate (4+4)	6	84	75
H-22234 + cycloate (6+4)	2	92	95
H-22234 + EPTC (4+2)	10	96	80
H-22234 + EPTC (6+2)	11	97	70
Ethofumesate + TCA (3+6)	7	92	52
Ethofumesate + TCA (4+6)	18	93	56
Ethofumesate + pyrazon (4+4)	5	87	54
Ethofumesate + EPTC (3+1)	10	98	65
Ethofumesate + EPTC (4+1)	13	95	60
Ethofumesate + cycloate (3+4)	6	91	65
Ethofumesate + cycloate (4+4)	14	96	70
Ethofumesate + U-27,267 (3+4)	14	93	84
U-27,267 + EPTC (4+2)	19	85	77
U-27,267 + pyrazon (4+4)	16	79	63
U-27,267 + TCA (4+7)	22	97	81
LSD(.05)	11	18	41

Depth of incorporation of herbicides, 1974 and 1975, Crookston, Mn and Casselton, N.D. Dexter, Alan G.

Herbicides were applied and rototiller incorporated on June 18, 1974 and May 28, 1975 at Casselton, and on May 31, 1974 and May 17, 1975 at Crookston. Sugarbeets were planted the day after herbicide application. The rototiller was set to operate at depths of 0, 1, 2, and 4 inches. Plots were six rows wide with the center four rows treated. Weeds were counted in 40 sq ft and sugarbeets were counted in 30 feet of row in 1974 and in 60 feet of row in 1975. The plant populations in the untreated area of each plot were used to calculate percent stand reductions. Plant populations were counted July 17, 1974 and July 3, 1975 at Crookston, and on July 28, 1974 and July 28, 1975 at Casselton. Visual evaluations were taken July 17, 1974 and July 28, 1975 at Crookston, and on July 28, 1974 and July 21, 1975 at Casselton. Visual evaluations and percent stand reductions were averaged to form the parameters percent injury or percent control. The data presented in Table 15 are combined over years and locations. Table 16 shows sugarbeet injury in 1974 and 1975 separately since the interaction was significant.

Table 15. Weed control from herbicides as influenced by depth of incorporation.

Herbicide	(Rate lb/A)	Incorp depth (Inches)	1974&1975, Crookston Rrpw % Control	1974&1975, Crookston Prpw % Stand Reduction	1974 & 1975 Casselton, 1975 Crookston Grft & Yeft % Control
EPTC	(2.5)	0	8	4	17
		1	32	16	57
		2	66	44	63
		4	68	62	78
U-27,267	(4)	0	14	7	24
		1	70	58	60
		2	81	47	66
		4	82	77	77
H-22234	(6)	0	64	21	47
		1	89	68	55
		2	94	82	66
		4	85	74	64
Ethofumesate	(4)	0	71	18	23
		1	86	57	44
		2	88	60	48
		4	92	62	51
Ethofumesate + TCA	(3+7)	0	68	34	59
		1	71	46	61
		2	83	48	66
		4	84	63	72
No Herbicide		0	3	1	1
		1	-2	18	6
		2	9	18	9
		4	4	28	14
LSD (.05)			20	33	26

Table 16. Sugarbeet injury from herbicides as influenced by depth of incorporation. Sugarbeet populations at Casselton were too low to evaluate.

Herbicide (Rate lb/A)	Incorp. Depth (Inches)	Crookston, 1974 Sugarbeet % Stand Reduction	Crookston, 1975 Sugarbeet % Stand Reduction
EPTC (2.5)	0	3	12
	1	8	13
	2	36	5
	4	6	9
U-27,267 (4)	0	3	12
	1	0	9
	2	1	12
	4	20	7
H-22234 (6)	0	32	4
	1	21	-4
	2	48	9
	4	41	7
Ethofumesate (4)	0	1	5
	1	-9	14
	2	18	5
	4	13	5
Ethofumesate + TCA (3+7)	0	19	4
	1	23	15
	2	26	10
	4	41	11
No Herbicide	0	5	19
	1	8	12
	2	-12	9
	4	-2	8
LSD(.05)		27	20

Time of incorporation of herbicides, 1974 and 1975, Crookston Mn and Casselton, N.D. Dexter, Alan G. Herbicides were applied on June 18, 1974 and May 28, 1975 at Casselton, and on May 28, 1975 at Casselton, and on May 31, 1974 and May 17, 1975 at Crookston. The herbicides were incorporated with a rototiller set to operate 3 inches deep after delays of 0, 1/2, 1, 4, 8, and 24 hours. Sugarbeets were planted shortly after the 24 hour delayed incorporation. Plots were six rows wide with the center four rows treated. Weeds were counted in 40 sq ft and sugarbeets were counted in 30 feet of row in 1974 and in 60 feet of row in 1975. The plant populations in the untreated area of each plot were used to calculate percent stand reductions. Plant populations were counted July 17, 1974 and July 3, 1975 at Crookston, and on July 28, 1974 and July 28, 1975 at Casselton. Visual evaluations were taken July 17, 1974 and July 28, 1975 at Crookston, and on July 28, 1974 and July 21, 1975 at Casselton. Visual evaluations and percent stand reductions were averaged to form the parameters percent injury or percent control. The data presented in Table 17 are combined over years and locations. Table 18 shows sugarbeet injury in 1974 and 1975 separately since the interaction was significant.

Table 17. Weed control from herbicides as influenced by delayed incorporation.

Herbicide (Rate lb/A)	Incorp. Delay (Hours)	1974&1975, Crookston Redroot Pigweed % Control	1974&1975, Crookston&Casselton Green and Yellow Foxtail % Control
EPTC (2.5)	0	82	83
	1/2	59	73
	1	43	77
	4	46	74
	8	50	76
	24	36	81
	No Incorp.	15	21
Ethofumesate (4)	0	82	69
	1/2	82	68
	1	76	63
	4	86	66
	8	82	65
	24	84	68
	No Incorp.	58	33
H-22234 (6)	0	87	65
	1/2	84	71
	1	83	67
	4	84	74
	8	79	67
	24	85	68
	No Incorp.	63	45
LSD(.05)		20	14

Table 18. Sugarbeet injury from herbicides as influenced by delayed incorporation.

Herbicide	(Rate lb/A)	Incorp. Delay (Hours)	Crookston, 1974 Sugarbeet % Stand Reduction	Crookston, 1975 Sugarbeet % Stand Reduction
EPTC	(2.5)	0	12	-1
		1/2	18	0
		1	29	-3
		4	27	7
		8	28	5
		24	1	-3
		No Incorp.	12	-2
Ethofumesate	(4)	0	35	3
		1/2	38	0
		1	34	-3
		4	10	-3
		8	10	9
		24	4	1
		No Incorp.	2	6
H-22234	(6)	0	46	-7
		1/2	15	2
		1	58	-4
		4	38	0
		8	16	-6
		24	36	4
		No Incorp.	28	2
LSD(.05)			33	16

Evaluation of preplant incorporated, preemergence and postemergence herbicides on several species. Dexter, Alan G. and John D. Nalewaja. Preplant herbicides were applied and rototiller incorporated on May 26, 1975. Two rows each of Waldron wheat, Multum barley, Goodman oats, Linnott flax, American Crystal Hybrid B sugarbeets, wild mustard, wild buckwheat, and redroot pigweed, and one row each of Cenex 2000 corn, Peredovik sunflowers, and Swift soybeans were seeded across the plot area May 27. A natural mixed population of green and yellow foxtail was present. Postemergence herbicides were applied July 7 when the wheat, barley, and oats were in the early boot, flax was 6 inches tall, sugarbeets had 6-8 leaves, foxtail had 6 leaves, redroot pigweed had 6-8 leaves, wild mustard was in early bloom, soybeans were in fourth trifoliate, sunflowers had 8 leaves, and corn was 18 inches tall. Heavy rains and flooding caused delayed postemergence applications and erratic plant populations. All herbicides were applied in 17 gpa of water to plots 35 feet long by 10 feet wide arranged in a randomized complete block with three replications. The center 80 inches of each plot was treated so a 3 foot wide untreated check was left on both sides of every plot. Percent weed control and percent crop injury was evaluated visually July 18-19 and the results are summarized in Tables 19-21. The erratic plant populations caused by heavy rains and flooding made the results more variable than in past years.

Table 19. Weed control and crop injury from preplant incorporated herbicides.

	Percent control or percent crop injury											
Treatment (Rate lb/A)	Whet	Barl	Oats	Corn	Flax	Sugb	Soyb	Sunf	Wimu	Wibw	Rrpw	Ye & Grft
FMC-25213 (2)	98	100	98	97	92	81	54	45	68	61	99	94
FMC-25213 (3)	100	100	100	98	98	93	47	67	88	78	100	97
H-22234 (6)	62	48	47	10	28	10	0	10	0	8	78	72
U-27,267 (4)	69	82	77	38	75	28	27	35	53	53	87	79
Ethofumesate (4)	100	100	100	58	67	13	53	12	72	85	93	65
Ethofumesate flowable (4)	100	100	100	65	57	22	55	18	58	85	95	70
EPTC (3)	98	95	100	10	52	23	13	0	43	38	87	85
EPTC LRS (3)	93	98	100	3	37	0	17	0	17	17	82	90
EPTC HRA (3)	98	97	98	10	35	28	42	12	7	70	93	92
EPTC LRA (3)	95	92	98	10	43	12	15	0	13	83	78	93
EPTC encapsulated (3)	96	95	100	17	17	0	20	0	3	62	82	94
Trifluralin (1)	77	41	96	53	27	82	10	0	0	93	98	93
Alachlor (2.5)	78	70	63	20	30	37	7	0	13	33	97	70
H-22234+terbacil (6+0.5)	77	68	90	42	58	82	100	25	99	93	75	70
H-22234+terbacil (6+1)	98	98	100	53	94	100	100	50	95	100	94	94
Ethofum+terbacil (4+1)	100	100	100	100	100	100	100	30	100	100	100	98
U-27,267+terbacil (4+1)	85	95	97	95	95	100	100	48	100	100	97	96
EPTC+terbacil (3+1)	100	100	100	82	89	100	100	40	95	96	90	98
Ethofumesate + EPTC (4+3)	100	100	100	97	93	33	88	5	90	100	100	99
M-4127 (1)	80	78	73	27	48	83	27	3	45	48	93	65
M-4127 (2)	98	85	97	70	67	93	33	17	59	77	93	75
R-37878+Eradicane (3+4)	100	100	100	25	80	47	58	25	70	95	97	100
R-37878+R-25788 (6+.25)	97	73	93	70	12	23	57	15	43	32	97	99
RH 8817 (0.5)	20	44	11	3	22	53	10	0	93	56	93	25
RH 8817 (1)	50	47	43	0	82	80	10	7	100	93	97	78
VEL 5052 (2)	62	62	47	7	28	18	48	3	30	0	70	37
VEL 5052 (4)	48	42	23	0	38	18	7	8	13	33	97	62
USB-3153 (0.75)	70	60	83	58	53	100	27	18	7	97	97	92
EPTC+chloramben (3+.75)	100	95	100	7	47	55	13	17	20	60	85	90
EPTC+alachlor (3+1)	97	100	98	0	87	48	12	10	40	60	95	95
LSD(.05)	20	24	20	28	30	27	29	22	30		19	13
No. of Reps	3	3	3	3	3	3	3	3	3	3	3	3

Table 20. Weed control and crop injury from preemergence herbicides.

Treatment (Rate lb/A)	Percent control or percent crop injury											
	Whet	Barl	Oats	Corn	Flax	Sugb	Soyb	Sunf	Wimu	Wibw	Rrpw	Ye & Grft
HOE-23408 (4)	3	40	92	67	0	7	5	0	0	0	0	92
Chloramben (2.5)	18	31	33	6	11	71	11	1	63	90	98	45
FMC-25213 (2)	62	88	42	27	65	48	0	3	13	45	75	63
FMC-25213 (3)	78	97	75	23	78	73	5	22	13	63	87	79
Metribuzin (0.5)	22	57	95	30	100	100	28	87	100	100	100	90
M-4127 (1)	38	40	27	0	12	60	5	0	23	48	57	40
M-4127 (2)	50	43	53	3	27	92	3	0	47	20	68	67
VEL 5026 (0.25)	0	0	17	10	18	67	48	17	65	67	58	0
VEL 5028 (0.25)	0	0	0	23	0	8	7	7	58	37	25	0
VEL 5052 (2)	3	0	13	0	0	8	0	0	13	37	20	10
VEL 5052 (4)	47	50	17	0	10	15	7	0	20	47	53	45
R-31401 (2)	100	100	98	0	93	100	100	66	100	100	100	97
R-31401 (4)	100	100	100	10	100	100	100	100	100	100	100	100
RH-8817 (0.5)	33	40	0	18	100	98	22	23	100	100	100	50
RH-8817 (1)	58	60	20	23	100	100	27	63	100	100	100	93
Propachlor (5)	3	10	3	17	7	0	13	3	0	10	43	90
Alachlor (2.5)	30	10	27	32	35	13	3	17	0	23	97	65
Alachlor (2.5)+WEX (1 pt)	35	18	23	0	17	27	0	7	13	42	80	70
BAS-90016 (2)	20	15	25	5	6	6	1	6	13	4	12	43
BAS-90016 (4)	15	9	15	23	1	11	1	1	3	4	12	84
BAS-87959 (2)	18	23	13	11	11	23	16	49	13	15	22	10
BAS-87959 (4)	63	63	33	7	8	12	37	30	23	23	50	28
LSD(.05)	35	39	26	34	18	28	26	35	34	39	37	16
No. of Reps	3	3	3	3	3	3	3	3	3	3	3	3

Table 21. Weed control and crop injury from postemergence herbicides.

Treatment (Rate lb/A)	Percent control or percent crop injury										
	Whet	Oats	Corn	Flax	Sugb	Soyb	Sunf	Wimu	Wibw	Rrpw	Ye & Grft
HOE-23408 (1)	0	23	82	0	0	0	0	0	0	0	27
HOE-23408 (2)	0	17	73	7	5	0	0	8	7	10	23
HOE-23408 (4)	10	30	80	17	7	0	0	17	0	3	57
Desmedipham (1)	9	7	7	3	0	0	3	57	0	8	0
Desmed + HOE-23408 (1+2)	7	3	77	20	10	5	33	68	0	38	28
Ethofumesate + desmed (2+1)	22	7	13	48	0	17	13	57	3	8	0
Ethofumesate (2)	0	0	0	10	0	20	5	17	0	8	0
Ethofumesate + L.O. (2+1 qt)	13	12	13	27	5	17	0	45	0	30	3
RH-5205 (0.25)	27	13	33	98	47	77	58	98	63	78	5
RH-5205 + HOE-23408 (.25+1)	25	12	57	98	33	77	68	92	43	85	3
Bentazon + HOE-23408 (.75+1)	3	7	67	8	37	13	23	72	7	58	27
Dalapon (4)	17	10	27	10	0	28	17	17	0	8	35
Desmedipham + pyrazon (1+3)	3	0	10	20	0	47	23	90	7	32	0
Benazolin (0.125)	0	0	0	3	0	3	10	63	0	17	0
Benazolin (0.25)	0	0	0	0	0	0	3	67	7	37	0
AC-78299 + X-77 (.5+.5%)	4	0	1	9	4	17	11	20	27	12	0
AC-78299 + X-77 (1+.5%)	0	17	3	32	28	47	13	87	22	37	0
AC-78299 + X-77 (4+.5%)	5	30	43	42	82	73	38	88	58	77	0
Bentazon (0.75)	0	0	7	0	40	0	20	63	17	18	0
VEL 5026 (0.125)	0	0	20	3	13	28	10	52	7	7	0
VEL 5026 (0.25)	12	0	30	3	32	30	18	62	13	17	0
VEL 5028 (0.062)	0	0	0	3	20	17	13	77	0	30	0
VEL 5028 (0.125)	0	0	7	0	35	25	3	55	30	32	0
LSD(.05)	13	18	29	16	29	28	22	43	31	35	14
No. of Reps	3	3	3	3	3	3	3	3	3	3	3

TABLE 1. WILD OAT SCREENING TRIAL, FARGO 1975. OLAF WHEAT AND MULTUM BARLEY WERE SEEDED, PEI AND PE TRTS. APPLIED MAY 22. POST TRTS. WERE APPLIED AT THE 1.5, 2 AND 3-LF STAGES ON JUNE 3, 11, AND 16; RESPECTIVELY. INCORPORATION BY HARROWING TWICE.

TREATMENT	RATE OZ/A	---WHEAT---- INJ. PCNT	STAND RED.	---BARLEY--- INJ. PCNT	STAND RED.	WIOA PCNT CNTL
TRIALLATE PEI	16	0.	0.	0.	0.	70.
TRIAL(EXP) PEI	16	0.	21.	0.	0.	68.
DOWCO 356 PE	16	0.	0.	0.	0.	0.
COWCO 356 PE	32	0.	0.	0.	0.	39.
TRIAL(GRAN) PEI	16	0.	29.	0.	10.	78.
TRIAL (EXP) PEI	32	0.	49.	0.	16.	81.
EAR+BAR 1+2	2+4	0.	0.	0.	0.	70.
EARBAN 2	4	0.	0.	0.	0.	59.
BARBAN 2	8	8.	0.	0.	0.	84.
BAR(ALT) 2	4	0.	0.	0.	0.	68.
BAR(ALT) 2	8	23.	0.	8.	0.	88.
DOWCO 356+S 2	8	0.	0.	0.	0.	13.
COWCO 356+S 2	16	9.	0.	5.	0.	40.
DOWCO 356+S 2	32	16.	0.	9.	0.	63.
MSMA 3	32	0.	0.	0.	0.	79.
MSMA+LOAM 3	32+1QT	5.	0.	5.	0.	91.
DIFEN 3	8	8.	0.	0.	0.	99.
DIFEN 3	12	9.	0.	0.	0.	98.
DIFEN 3	16	26.	0.	0.	0.	100.
DIF+BH-1455 3	12+12	19.	0.	3.	0.	98.
DIF+BH-1455 3	16+16	31.	0.	0.	0.	100.
DIF+TURB 3	8+16	25.	0.	14.	0.	91.
DIF+TURB 3	12+16	29.	0.	10.	0.	94.
DOWCO 367+S 3	8	0.	0.	0.	0.	33.
COWCO 367+S 3	16	0.	0.	0.	0.	35.
DOWCO 367+S 3	32	0.	0.	0.	0.	51.
DOW 367+11E 3	8+16	0.	0.	0.	0.	28.
CONTROL		0.	0.	0.	0.	0.
MEAN		7.	4.	2.	1.	65.
HIGH MEAN		31.	49.	14.	16.	100.
LOW MEAN		0.	0.	0.	0.	0.
COEFF. OF VARIATION		95.	72.	199.	273.	21.
LSD(.01 PERCENT)		13.	5.	7.	5.	25.
LSD(.05 PERCENT)		10.	4.	5.	4.	19.
NO. OF REPS		4.	4.	4.	4.	4.

SUMMARY

WILD OAT CONTROL WAS NOT ADEQUATE WITH DOWCO 356 PREEMERGENCE OR POSTEMERGENCE AND DOWCO 367 POSTEMERGENCE AT ALL RATES TESTED. BH-1455 DID NOT REDUCE WHEAT INJURY WITH DIFENZOQUAT AT EITHER RATE. WHEAT INJURY WITH BARBAN AT 8 OZ/A WAS GREATER WITH THE ALTERNATE THAN REGULAR BARBAN FORMULATION. THE ADDITION OF LOAM INCREASED WILD OAT CONTROL WITH MSMA.

TABLE 2. WILD OAT CONTROL IN WHEAT, CASSELTON 1975. WALDRON WHEAT WAS SEEDED MAY 27. TREATMENTS WERE APPLIED TO WHEAT AND WIOA IN THE 2 TO 2.5-LEAF STAGE, JUNE 16.

TREATMENT	LEAF STAGE	RATE OZ/A	WHEAT INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT
BARBAN	2	4	0.	75.	0.
BARBAN	2	8	0.	87.	0.
BARBAN	2	12	3.	90.	0.
MSMA	2	32	0.	43.	67.
MSMA	2	48	0.	42.	72.
HOE-23408	2	12	3.	98.	100.
HOE-23408	2	16	3.	100.	100.
HOE-23408	2	24	8.	100.	100.
DIFEN	2	12	80.	83.	0.
DIFEN	2	16	93.	70.	0.
SD-29761	2	4	0.	82.	0.
SD-29761	2	8	0.	93.	0.
CONTROL			0.	0.	0.
MEAN			15.	74.	34.
HIGH MEAN			93.	100.	100.
LOW MEAN			0.	0.	0.
COEFF. OF VARIATION			33.	13.	10.
LSD(.01 PERCENT)			11.	21.	8.
LSD(.05 PERCENT)			8.	16.	6.
NO. OF REPS			3.	3.	3.

SUMMARY

HOE-23408 GAVE EXCELLENT WILD OAT AND FOXTAIL CONTROL AT ALL RATES WITH LITTLE CROP INJURY. DIFENZOQUAT AT 12 AND 16 OZ/A SEVERELY INJURED WALDRON WHEAT. MSMA WAS LESS EFFECTIVE ON WILD OAT THAN FOXTAIL AT BOTH RATES.

TABLE 3. WILD OAT CONTROL WHEAT, MINOT 1975. WALDRON WHEAT WAS SEEDED MAY 10. TRTS. WERE APPLIED TO 2-LF WHT AND WIOA AND 1/2" FXTL ON MAY 30, TO 4-LF WHT AND WIOA AND 1" FXTL ON JUNE 5, AND TO 5-LF WHT AND WIOA AND 1 1/2" FXTL ON JUNE 13.

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT
BARBAN	2	4	742.	0.	34.	0.
BARBAN	2	8	796.	0.	54.	0.
BARBAN	2	12	722.	8.	66.	0.
MSMA	2	32	583.	0.	15.	18.
MSMA	2	48	613.	0.	16.	18.
HOE-23408	2	12	1492.	0.	87.	85.
HOE-23408	2	16	1607.	0.	91.	88.
HOE-23408	2	24	1507.	0.	98.	97.
DIFEN	2	12	725.	0.	36.	0.
DIFEN	2	16	749.	0.	54.	0.
SD-29761	2	4	675.	0.	36.	0.
SD-29761	2	8	753.	0.	64.	0.
CONTROL			385.	0.	0.	0.
BARBAN	3.5	4	626.	0.	31.	0.
BARBAN	3.5	8	618.	0.	36.	0.
BARBAN	3.5	12	577.	0.	51.	0.
MSMA	3.5	32	1042.	0.	54.	53.
MSMA	3.5	48	1098.	0.	69.	61.
HOE-23408	3.5	12	1278.	0.	88.	83.
HOE-23408	3.5	16	1188.	0.	93.	90.
HOE-23408	3.5	24	1453.	0.	98.	97.
DIFEN	3.5	12	588.	0.	55.	0.
DIFEN	3.5	16	620.	0.	68.	0.
SD-29761	3.5	4	674.	0.	56.	0.
SD-29761	3.5	8	788.	3.	87.	0.
CONTROL			396.	0.	0.	0.
BARBAN	5	4	449.	0.	8.	0.
BARBAN	5	8	330.	0.	11.	0.
BARBAN	5	12	499.	0.	29.	0.
MSMA	5	32	734.	0.	84.	63.
MSMA	5	48	684.	3.	94.	73.
HOE-23408	5	12	1108.	0.	85.	91.
HOE-23408	5	16	1005.	0.	85.	95.
HOE-23408	5	24	854.	9.	89.	97.
DIFEN	5	12	558.	0.	88.	1.
DIFEN	5	16	879.	5.	95.	0.
SD-29761	5	4	530.	0.	65.	0.
SD-29761	5	8	762.	0.	97.	0.
CONTROL			444.	0.	0.	0.

TABLE 3. CONTINUED

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA CNTL. PCNT	FXTL CNTL PCNT
MEAN			798.	1.	58.	28.
HIGH MEAN			1607.	9.	98.	97.
LOW MEAN			330.	0.	0.	0.
COEFF. OF VARIATION			22.	394.	15.	22.
LSD(.01 PERCENT)			325.	5.	16.	12.
LSD(.05 PERCENT)			246.	4.	12.	9.
NO. OF REPS			4.	4.	4.	4.

SUMMARY

HOE-23408 GAVE GOOD TO EXCELLENT WILD OAT CONTROL AT ALL STAGES OF APPLICATION. BARBAN WAS MORE EFFECTIVE ON WILD OAT WHEN APPLIED EARLY POSTEMERGENCE THAN WHEN APPLIED LATE POSTEMERGENCE; HOWEVER, THE REVERSE WAS TRUE WITH DIFENZOQUAT AND MSMA. FOX-TAIL CONTROL WAS GOOD AT ALL STAGES OF APPLICATION WITH HOE-23408 AND FAIR WITH MSMA LATE POSTEMERGENCE. WHEAT YIELDS WERE HIGHEST FROM PLOTS TREATED WITH HOE-23408.

TABLE 4. WILD OAT CONTROL WHEAT, WILLISTON 1975. CLAF WHEAT WAS SEEDED MAY 16. TRTS. WERE APPLIED TO 1.5-LF WHEAT AND WIOA AND EMERGING FXTL MAY 30, TO 3.5-LF WHEAT AND WIOA AND 1/2" FXTL JUNE 4, AND TO 4.5-LF WHEAT AND WIOA AND 1" FXTL JUNE 13.

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	-% CONTROL- WIOA	FXTL	TEST WT.	HT. CM.	HEAD-ING
BARBAN	2	4	1631.	0.	69.	0.	60.2	62.5	38.0
BARBAN	2	8	1503.	10.	84.	0.	60.2	62.0	39.0
BARBAN	2	12	1699.	15.	90.	0.	60.5	65.5	39.0
MSMA	2	32	1314.	0.	5.	69.	59.6	67.0	37.0
MSMA	2	48	1393.	0.	10.	69.	59.5	66.0	38.0
HOE-23408	2	12	1798.	0.	81.	87.	60.3	65.5	37.5
HOE-23408	2	16	1888.	0.	87.	94.	60.4	67.0	37.5
HOE-23408	2	24	1882.	5.	96.	98.	60.4	67.0	38.0
DIFEN	2	12	1675.	0.	50.	0.	60.0	68.5	37.5
DIFEN	2	16	1489.	0.	58.	0.	59.8	67.5	37.0
SD-29761	2	4	1395.	0.	19.	0.	59.7	68.5	36.5
SD-29761	2	8	1751.	0.	71.	0.	59.9	69.0	37.0
CONTROL			1524.	0.	0.	0.	59.4	65.0	37.5
BARBAN	3.5	4	1607.	0.	58.	0.	60.8	63.5	37.5
BARBAN	3.5	8	1561.	11.	81.	0.	59.5	64.0	39.5
BARBAN	3.5	12	1494.	23.	87.	0.	58.8	65.5	40.5
MSMA	3.5	32	1582.	0.	61.	75.	59.8	65.5	37.5
MSMA	3.5	48	1572.	3.	76.	85.	60.4	63.5	38.0
HOE-23408	3.5	12	1903.	3.	98.	98.	60.1	62.0	38.5
HOE-23408	3.5	16	1832.	4.	99.	100.	60.2	62.5	38.0
HOE-23408	3.5	24	1542.	14.	100.	100.	60.1	65.0	38.5
DIFEN	3.5	12	1645.	3.	85.	0.	60.5	63.5	38.0
DIFEN	3.5	16	1741.	5.	89.	0.	60.6	62.5	38.5
SD-29761	3.5	4	1577.	0.	72.	0.	60.9	62.0	37.5
SD-29761	3.5	8	1674.	9.	93.	0.	60.7	63.0	37.0
CONTROL			1354.	0.	0.	0.	59.0	68.5	36.5
BARBAN	5	4	1340.	0.	30.	0.	59.8	64.5	37.5
BARBAN	5	8	1458.	0.	60.	0.	60.2	61.5	37.0
BARBAN	5	12	1391.	3.	64.	0.	58.7	60.5	39.0
MSMA	5	32	1547.	5.	84.	86.	60.9	67.5	38.0
MSMA	5	48	1532.	9.	85.	85.	61.1	62.5	38.0
HOE-23408	5	12	1532.	5.	90.	93.	61.5	63.5	37.5
HOE-23408	5	16	1719.	9.	91.	100.	60.8	63.5	38.0
HOE-23408	5	24	1608.	18.	95.	99.	60.9	65.0	37.0
DIFEN	5	12	1591.	3.	81.	0.	60.3	60.5	37.5
DIFEN	5	16	1458.	5.	86.	0.	60.8	60.0	37.0
SD-29761	5	4	1346.	0.	73.	0.	60.7	61.5	37.5
SD-29761	5	4	1355.	16.	94.	0.	61.3	57.5	38.0
CONTROL			1271.	0.	0.	0.	60.0	63.5	36.5

TABLE 4. CONTINUED

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	-% CONTROL- WIOA	FXTL	TEST WT.	HT. CM.	HEAD-ING
MEAN			1569.	4.	68.	34.	60.2	64.2	37.8
HIGH MEAN			1903.	23.	100.	100.	61.5	69.0	40.5
LOW MEAN			1271.	0.	0.	0.	58.7	57.5	36.5
COEFF. OF VARIATION			14.	111.	12.	11.	0.0	0.0	0.0
LSD(.01 PERCENT)			418.	9.	15.	7.	0.0	0.0	0.0
LSD(.05 PERCENT)			316.	7.	11.	5.	0.0	0.0	0.0
NO. OF REPS			4.	4.	4.	4.	1.0	1.0	1.0

SUMMARY

WILD OAT AND FOXTAIL CONTROL WAS GOOD WITH HOE-23408 AT ALL STAGES OF APPLICATION AND MSMA LATE POSTEMERGENCE. BARBAN AT 4 OZ/A EARLY POSTEMERGENCE WAS SLIGHTLY MORE EFFECTIVE THAN 12 OZ/A LATE POSTEMERGENCE. DIFENZOQUAT GAVE GOOD WILD OAT CONTROL AT THE 3.5 AND 5-LEAF STAGE WITH LITTLE CROP INJURY.

TABLE 5. WILD OAT CONTROL WHEAT, LANGDON 1975. CLAF WHEAT WAS SEEDED MAY 31. TRTS. WERE APPLIED TO 1.5-LF WHT AND WIOA AND 1/2" FXTL JUNE 12, TO 3.5-LF WHT AND WIOA AND 1 1/2" FXTL JUNE 20, AND TO 4.5-LF WHT AND WIOA AND 2 1/2" FXTL JUNE 27. WIOA INFEST. LIGHT.

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT	TEST WT.
EARBAN	2	4	1238.	0.	76.	0.	59.8
EARBAN	2	8	1662.	0.	84.	0.	59.5
EARBAN	2	12	1268.	15.	89.	0.	60.0
MSMA	2	32	1425.	0.	55.	63.	59.8
MSMA	2	48	1704.	0.	45.	48.	59.5
HOE-23408	2	12	1349.	0.	94.	83.	59.5
HOE-23408	2	16	1778.	3.	98.	94.	60.3
HOE-23408	2	24	1515.	6.	100.	99.	59.8
DIFEN	2	12	1440.	0.	78.	0.	59.5
DIFEN	2	16	1580.	3.	78.	0.	59.8
SD-29761	2	4	1550.	0.	58.	0.	60.3
SD-29761	2	8	1379.	0.	65.	0.	60.3
CONTROL			1058.	0.	0.	0.	59.8
BARBAN	3.5	4	1485.	0.	53.	0.	60.3
EARBAN	3.5	8	1776.	0.	55.	0.	59.8
EARBAN	3.5	12	1492.	6.	90.	0.	59.8
MSMA	3.5	48	1893.	0.	78.	74.	59.5
MSMA	3.5	32	1521.	4.	83.	74.	59.8
HOE-23408	3.5	12	1572.	0.	88.	89.	60.3
HOE-23408	3.5	16	1881.	0.	98.	98.	59.3
HOE-23408	3.5	24	1635.	3.	99.	99.	59.5
DIFEN	3.5	12	1568.	5.	96.	0.	59.8
DIFEN	3.5	16	1313.	23.	98.	0.	59.8
SD-29761	3.5	4	1593.	0.	77.	0.	60.0
SD-29761	3.5	8	1377.	3.	93.	0.	59.5
CONTROL			1268.	0.	0.	0.	59.5
BARBAN	5	4	1394.	0.	20.	0.	59.3
BARBAN	5	8	1563.	0.	56.	0.	59.5
BARBAN	5	12	1671.	0.	68.	0.	59.8
MSMA	5	32	1583.	14.	100.	86.	60.0
MSMA	5	48	1763.	21.	100.	91.	60.3
HOE-23408	5	12	2106.	0.	80.	88.	59.3
HOE-23408	5	16	1872.	0.	86.	89.	59.5
HOE-23408	5	24	1704.	5.	90.	98.	59.3
DIFEN	5	12	1802.	0.	100.	0.	59.5
DIFEN	5	16	1731.	5.	100.	0.	59.3
SD-29761	5	4	1719.	0.	98.	0.	59.3
SD-29761	5	8	1826.	0.	100.	0.	59.5
CONTROL			1593.	0.	0.	0.	59.6

TABLE 5. CONTINUED

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT	TEST WT.
MEAN			1580.	3.	75.	33.	59.7
HIGH MEAN			2106.	23.	100.	99.	60.3
LOW MEAN			1058.	0.	0.	0.	59.3
COEFF. OF VARIATION			21.	148.	16.	22.	0.0
LSD(.01 PERCENT)			614.	8.	23.	13.	0.0
LSD(.05 PERCENT)			464.	6.	17.	10.	0.0
NO. OF REPS			4.	4.	4.	4.	1.0

SUMMARY

WILD OAT AND FOXTAIL CONTROL WAS GOOD TO EXCELLENT WITH HOE-23408 AT ALL STAGES OF APPLICATION AND MSMA LATE POSTEMERGENCE. DIFENZOQUAT GAVE EXCELLENT WILD OAT CONTROL AT THE 3.5 AND 5-LEAF STAGE AND BARBAN FAIR CONTROL AT THE 2-LEAF STAGE.

TABLE 6. WILD OAT CONTROL, CARRINGTON 1975. OLAF WHEAT SEEDED MAY 29. TWO LEAF TRTS APPLIED JUNE 10 AND 4-LEAF TRTS JUNE 18. A HEAVY RAIN ON JUNE 23 CAUSED EROSION AND SOME STAND REDUCTION. HARVEST SEPT. 8.

TREATMENT	RATE OZ/A	---- OLAF WHEAT---- YIELD BU/A	TEST WT.
BARBAN	4	28.	59.
BARBAN+N	4	26.	59.
BARBAN	8	29.	59.
HOE-23408	12	35.	59.
HOE-23408	16	37.	59.
MSMA	48	25.	58.
DIFENZOQUAT	12	28.	59.
DIFENZOQUAT	16	26.	59.
SD-29761	4	28.	59.
SD-29761	8	32.	60.
CONTROL		21.	58.
MEAN		29.	59.
HIGH MEAN		37.	60.
LOW MEAN		21.	58.
COEFF. OF VARIATION		9.	C.
LSD(.01 PERCENT)		5.	C.
LSD(.05 PERCENT)		4.	0.
NO. OF REPS		4.	1.

SUMMARY

HOE-23408 AT 16 OZ/A FOR WILD OATS CONTROL RESULTED IN A 16 BU/A YIELD INCREASE. ALL OTHER TREATMENTS TENDED TO INCREASE YIELD, BUT LESS DRAMATICALLY.

TABLE 7. WILD CAT CONTROL BARLEY, FARGO 1975. MULTUM BARLEY WAS SEEDED MAY 25. TRTS. WERE APPLIED TO 2.5-LF BARLEY AND WIOA AND 1" FXTL JUNE 16 AND TO 4-LF BARLEY AND WIOA AND 2" FXTL JUNE 24. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	LEAF STAGE	RATE OZ/A	BARLEY INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT
BARBAN	2	4	0.	42.	13.
BARBAN	2	8	0.	75.	0.
BARBAN	2	12	0.	72.	0.
HOE-23408	2	12	0.	88.	95.
HOE-23408	2	16	10.	97.	94.
HOE-23408	2	32	37.	100.	100.
MSMA	2	32	0.	63.	67.
MSMA	2	48	0.	57.	70.
DIFEN	2	12	0.	88.	0.
DIFEN	2	16	0.	97.	0.
BARBAN	3.5	4	0.	22.	0.
BARBAN	3.5	8	0.	32.	0.
BARBAN	3.5	12	0.	30.	13.
HOE-23408	3.5	12	0.	73.	86.
HOE-23408	3.5	16	0.	77.	85.
HOE-23408	3.5	32	0.	78.	90.
MSMA	3.5	32	0.	97.	83.
MSMA	3.5	48	20.	100.	98.
DIFEN	3.5	12	0.	97.	0.
DIFEN	3.5	16	0.	97.	0.
CONTROL			0.	0.	0.
MEAN			3.	71.	43.
HIGH MEAN			37.	100.	100.
LOW MEAN			0.	0.	0.
COEFF. OF VARIATION			212.	20.	20.
LSD(.01 PERCENT)			15.	32.	19.
LSD(.05 PERCENT)			11.	24.	14.
NO. OF REPS			3.	3.	3.

SUMMARY

WILD OAT AND FOXTAIL CONTROL WAS GOOD WITH HOE-23408 EARLY OR MSMA LATE; HOWEVER, SOME BARLEY INJURY WAS OBSERVED WITH BOTH TREATMENTS. DIFENZOQUAT GAVE GOOD WILD OAT CONTROL WITH NO CROP INJURY AT BOTH STAGES OF APPLICATION.

TABLE 8. WILD OAT CONTROL BARLEY, MINOT 1975. BEACON BARLEY WAS SEEDED MAY 10. TRTS. WERE APPLIED TO 2.5-LF BARLEY AND WIOA AND 1/2" FXTL MAY 29 AND TO 3.5-LF BARLEY AND WIOA AND 1" FXTL JUNE 5. WIOA AND FXTL INFESTATIONS WERE HEAVY (300 PLRS/SQ. YD.)

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	BARLEY INJ. PCNT	WIOA CNTL	FXTL CNTL	PCNT WIOA
BARBAN	2	4	3188.	0.	33.	0.	20.
BARBAN	2	8	1166.	0.	46.	1.	20.
BARBAN	2	12	1139.	4.	54.	0.	14.
HOE-23408	2	12	1480.	0.	81.	83.	7.
HOE-23408	2	16	1832.	5.	90.	90.	3.
HOE-23408	2	32	1417.	19.	98.	100.	3.
MSMA	2	32	1150.	0.	29.	35.	11.
MSMA	2	48	1016.	0.	23.	39.	15.
DIFEN	2	12	1067.	0.	28.	0.	15.
DIFEN	2	16	1146.	0.	44.	0.	16.
BARBAN	3.5	4	1043.	0.	18.	0.	19.
BARBAN	3.5	8	1051.	0.	45.	0.	14.
BARBAN	3.5	12	955.	0.	34.	0.	23.
HOE-23408	3.5	12	1269.	8.	92.	88.	3.
HOE-23408	3.5	16	839.	38.	94.	96.	2.
HOE-23408	3.5	32	867.	54.	96.	99.	2.
MSMA	3.5	32	1176.	0.	64.	63.	5.
MSMA	3.5	48	1166.	4.	78.	61.	4.
DIFEN	3.5	12	1506.	0.	66.	0.	6.
DIFEN	3.5	16	1132.	0.	65.	0.	12.
CONTROL			1156.	0.	0.	0.	24.
MEAN			1274.	6.	56.	36.	11.
HIGH MEAN			3188.	54.	98.	100.	24.
LOW MEAN			839.	0.	0.	0.	2.
COEFF. OF VARIATION			82.	89.	26.	13.	50.
LSD(.01 PERCENT)			1959.	10.	28.	9.	11.
LSD(.05 PERCENT)			1473.	8.	21.	7.	8.
NO. OF REPS			4.	4.	4.	4.	4.

SUMMARY

HOE-23408 GAVE GOOD WILD OAT AND FOXTAIL CONTROL AT BOTH STAGES OF APPLICATION; HOWEVER, BARLEY WAS INJURED BY HOE-23408 AT RATES AS LOW AS 16 OZ/A AT THE 3.5-LEAF STAGE. BARBAN WAS MORE EFFECTIVE ON WILD OAT WHEN APPLIED AT THE 2 THAN 3.5-LEAF STAGE; HOWEVER DIFENZOQUAT AND MSMA WERE MORE EFFECTIVE WHEN APPLIED AT THE 3.5 THAN 2-LEAF STAGE.

TABLE 9. WILD OAT CONTROL BARLEY, WILLISTON 1975. HECTOR BARLEY WAS SEEDED MAY 20. TRTS. WERE APPLIED TO 2.5-LF BARLEY, 1.5-LF WIOA, AND 1/2" FXTL JUNE 4 AND TO 4-LF BARLEY, 3-LF WIOA AND 1" FXTL JUNE 13.

TREATMENT		RATE OZ/A	YIELD LB/A	BARLEY INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT	TEST WT.	HT. CM.
BARBAN	2	4	1662.	4.	66.	0.	46.0	55.0
BARBAN	2	8	1541.	10.	83.	0.	46.4	52.5
BARBAN	2	12	1480.	23.	89.	0.	46.2	53.5
HOE-23408	2	12	1556.	19.	96.	95.	46.1	52.0
HOE-23408	2	16	1402.	30.	98.	99.	45.9	46.0
HOE-23408	2	32	935.	71.	99.	100.	46.1	50.0
MSMA	2	32	1632.	3.	48.	76.	46.1	58.0
MSMA	2	48	1539.	3.	48.	74.	45.9	55.0
DIFEN	2	12	1709.	3.	69.	0.	45.2	57.0
DIFEN	2	16	1598.	6.	80.	0.	45.9	57.5
BARBAN	3.5	4	1330.	0.	41.	0.	44.5	55.0
BARBAN	3.5	8	1549.	3.	63.	0.	45.1	52.5
BARBAN	3.5	12	1505.	3.	59.	0.	45.6	55.0
HOE-23408	3.5	12	1439.	19.	93.	97.	46.1	53.0
HOE-23408	3.5	16	1379.	36.	94.	98.	46.4	50.5
HOE-23408	3.5	32	1049.	55.	96.	100.	45.9	45.0
MSMA	3.5	32	1553.	3.	68.	88.	46.9	60.0
MSMA	3.5	48	1495.	16.	74.	89.	47.1	50.5
DIFEN	3.5	12	1477.	0.	76.	0.	45.9	47.0
DIFEN	3.5	16	1432.	6.	77.	0.	46.5	53.0
CONTROL			1321.	0.	0.	0.	45.6	59.5
MEAN			1458.	15.	72.	44.	46.0	53.2
HIGH MEAN			1709.	71.	99.	100.	47.1	60.0
LOW MEAN			935.	0.	0.	0.	44.5	45.0
COEFF. OF VARIATION			11.	47.	11.	7.	C.C	C.C
LSD(.01 PERCENT)			292.	13.	15.	6.	0.0	0.0
LSD(.05 PERCENT)			219.	10.	12.	5.	C.C	0.C
NO. OF REPS			4.	4.	4.	4.	1.0	1.C

SUMMARY

HOE-23408 GAVE GOOD WILD OAT AND FOXTAIL CONTROL AT BOTH STAGES OF APPLICATION; HOWEVER, BARLEY WAS INJURED AT RATES AS LOW AS 12 OZ/A. BARBAN AT 4 OZ/A EARLY POSTEMERGENCE WAS SLIGHTLY MORE EFFECTIVE THAN 12 OZ/A LATE POSTEMERGENCE FOR WILD OAT CONTROL. MSMA WAS MORE EFFECTIVE CN FOXTAIL THAN WILD OAT AT BOTH STAGES OF APPLICATICN.

TABLE 10. WILD OAT CONTROL BARLEY, LANGDON 1975. BEACON BARLEY WAS SEEDED MAY 31. TRTS. WERE APPLIED TO 1.5-LF BARLEY AND WIOA AND 1/2" FXTL JUNE 12 AND TO 3.5-LF BARLEY AND WIOA AND 1 TO 2" FXTL JUNE 20. WIOA INFESTATION WAS LIGHT.

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	BARLEY INJ. PCNT	WIOA PCNT CNTL	FXTL PCNT CNTL	TEST WT.	PLUMP	THIN
BARBAN	2	4	2022.	0.	85.	0.	45.5	93.5	0.9
BARBAN	2	8	1817.	1.	98.	0.	46.0	97.0	1.0
BARBAN	2	12	1512.	3.	96.	0.	45.4	95.8	1.3
HOE-23408	2	12	1766.	0.	93.	88.	46.3	96.3	1.6
HOE-23408	2	16	2012.	0.	95.	91.	46.3	96.3	1.6
HOE-23408	2	32	1755.	11.	100.	98.	45.8	95.8	1.5
MSMA	2	32	1786.	0.	46.	55.	47.3	97.0	0.9
MSMA	2	48	1685.	4.	59.	73.	46.5	96.0	1.1
DIFEN	2	12	1506.	0.	71.	0.	46.8	97.0	0.8
DIFEN	2	16	1505.	0.	85.	0.	45.6	95.5	1.0
BARBAN	3.5	4	2004.	0.	79.	0.	47.0	95.8	1.3
BARBAN	3.5	8	1988.	0.	79.	0.	46.5	95.5	10.8
BARBAN	3.5	12	1591.	0.	83.	0.	47.1	97.0	0.8
HOE-23408	3.5	12	1342.	0.	95.	93.	46.5	97.5	10.4
HOE-23408	3.5	16	1927.	0.	96.	96.	46.5	96.3	10.3
HOE-23408	3.5	32	1846.	16.	99.	99.	46.5	95.5	10.6
MSMA	3.5	32	1649.	0.	88.	83.	46.8	96.3	10.6
MSMA	3.5	48	1601.	0.	86.	88.	46.0	95.8	10.4
DIFEN	3.5	12	1892.	0.	94.	0.	47.1	95.5	10.8
DIFEN	3.5	16	1870.	0.	95.	0.	47.0	96.5	10.8
CONTROL			1498.	0.	0.	0.	46.8	96.5	10.4
MEAN			1741.	2.	82.	41.	46.4	96.1	5.2
HIGH MEAN			2022.	16.	100.	99.	47.3	97.5	10.8
LOW MEAN			1342.	0.	0.	0.	45.4	93.5	0.8
COEFF. OF VARIATION			19.	243.	11.	14.	0.0	0.0	0.0
LSD(.01 PERCENT)			628.	8.	17.	11.	0.0	0.0	0.0
LSD(.05 PERCENT)			472.	6.	13.	8.	0.0	0.0	0.0
NO. OF REPS			4.	4.	4.	4.	1.0	1.0	1.0

SUMMARY

WILD OAT AND FOXTAIL CONTROL WAS GOOD WITH HOE-23408 AT BOTH STAGES OF APPLICATION AND MSMA AT THE 3.5-LEAF STAGE. BARBAN GAVE GOOD WILD OAT CONTROL AT THE 2-LEAF STAGE AND DIFENZOQUAT GOOD WILD OAT CONTROL AT THE 3.5-LEAF STAGE. SOME INJURY WAS OBSERVED WITH HOE-23408 AT 32 OZ/A AT BOTH STAGES OF APPLICATION.

TABLE 11. WILD OATS CONTROL IN FLAX, NW 22 FARGO 1975. PRE-PLANT TRTS APPLIED AND ROTO-TILLER INCORP., MAY 27. 1ST PART APPLIED TO 2-LF WIOA AND 2" FLAX, JUNE 16; AND 2ND TRTS TO 4-LF WIOA AND 3" FLAX, JUNE 25.

TREATMENT	RATE OZ/A	YIELD LB/A	---FLAX---- INJ. 0-10	ST. RED.	---% CONTROL------ RRPW	FXTL	WICA
EPTC+MCPA	48+4	465.	18.	44.	93.	98.	83.
EPTC+MCPA	80+4	383.	23.	54.	95.	100.	98.
TRI+MCP+DAL	16+4+12	523.	13.	10.	90.	98.	90.
BAR+MCP+DAL	4+4+12	345.	3.	0.	84.	86.	58.
HOE-23408	12	662.	0.	0.	0.	98.	96.
HOE-23408	16	796.	0.	0.	0.	100.	98.
HOE-23408	32	722.	5.	5.	0.	100.	100.
HOE+MCPA	12+4	666.	4.	0.	86.	98.	94.
HOE+MCP+DAL	12+4+8	659.	10.	0.	91.	100.	97.
MCPA+DAL	4+12	248.	3.	0.	84.	84.	18.
ASULAM+.2%S	12	451.	13.	0.	59.	88.	83.
ASULAM	16	427.	30.	0.	61.	94.	90.
ASULAM	32	424.	40.	0.	90.	100.	96.
ASULAM+MCPA	12+4	489.	15.	0.	83.	88.	84.
ASULAM+MCPA	16+4	377.	19.	0.	83.	88.	91.
ASULAM+MCPA	32+8	353.	56.	0.	94.	96.	96.
ASULAM+HOE	12+8	402.	15.	0.	61.	88.	88.
ASULAM+DIF	12+12	377.	19.	0.	58.	90.	95.
DIFEN	12	307.	6.	0.	0.	0.	89.
DIFEN	16	293.	8.	0.	0.	0.	95.
DIFEN+MCPA	12+4	304.	14.	0.	83.	0.	94.
DIFEN+MCP+DA	12+4+12	416.	14.	0.	85.	85.	93.
CONTROL		218.	0.	0.	0.	0.	0.
MEAN		448.	14.	5.	60.	77.	84.
HIGH MEAN		796.	56.	54.	95.	100.	100.
LOW MEAN		218.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		34.	63.	116.	11.	5.	7.
LSD(.01 PERCENT)		333.	17.	10.	12.	8.	11.
LSD(.05 PERCENT)		250.	13.	8.	9.	6.	8.
NO. OF REPS		3.	4.	4.	4.	4.	4.

SUMMARY

HOE-23408 GAVE EXCELLENT CONTROL OF WILD OATS AND FOXTAIL, BUT NOT REDROOT PIGWEED. THE APPLICATION OF MCPA OR MCPA + CALAPON AS A SEPERATE TREATMENT 3 DAYS AFTER HOE INCREASED REDROOT PIGWEED CONTROL COMPARED TO HOE ALONE, BUT DID NOT INCREASE FLAX YIELD. EPTC CAUSED SEVERE FLAX INJURY BUT YIELD WAS EQUAL TO OR GREATER THAN THE CONTROL. THE FLAX INJURY PROBABLY WAS FROM HERBICIDE INJURY COUPLED WITH EXCESS MOISTURE.

TABLE 12. HERBICIDE COMBINATIONS FOR WILD OAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 26. TRTS. WERE APPLIED TO 2.5-LF WHEAT AND WIOA JUNE 16 AND TO 4-LF WHEAT AND WIOA JUNE 28. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	LEAF STAGE	RATE OZ/A	WHEAT INJ. PCNT	WIOA CNTL PCNT
EARBAN	2	4	0.	71.
HOE-23408	2	12	0.	99.
BARBAN	3.5	2	0.	10.
BARBAN	3.5	4	0.	5.
HOE-23408	3.5	6	0.	48.
HOE-23408	3.5	12	0.	71.
DIFEN	3.5	12	0.	84.
DIFEN	3.5	6	4.	90.
BAR+DIFEN	3.5	2+6	0.	88.
BAR+DIFEN	3.5	2+12	0.	93.
BAR+HOE	3.5	4+6	0.	40.
BAR+HOE	3.5	4+12	0.	60.
BAR+HOE	3.5	2+6	0.	51.
BAR+HOE	3.5	2+12	0.	63.
BAR+DIFEN	3.5	4+6	0.	76.
BAR+DIFEN	3.5	4+12	0.	81.
HOE+DIFEN	3.5	6+6	0.	76.
HOE+DIFEN	3.5	6+12	0.	93.
HOE+DIFEN	3.5	12+6	0.	83.
HOE+DIFEN	3.5	12+12	0.	87.
CONTROL			0.	0.
MEAN			0.	65.
HIGH MEAN			4.	99.
LOW MEAN			0.	0.
COEFF. OF VARIATION			917.	16.
LSD(.01 PERCENT)			3.	19.
LSD(.05 PERCENT)			2.	14.
NO. OF REPS			4.	4.

SUMMARY

LITTLE WHEAT INJURY WAS OBSERVED WITH ANY TREATMENT. WILD OAT CONTROL WAS GENERALLY GOOD WITH DIFENZOQUAT ALONE OR IN COMBINATION WITH OTHER HERBICIDES.

TABLE 13. HERBICIDE COMBINATIONS FOR WILD OAT CONTROL, MINOT 1975. WALDRON WHEAT WAS SEEDED MAY 10. TREATMENTS WERE APPLIED TO 2-LF WHEAT AND WIOA AND 1/2" FXTL MAY 29 AND TO 3.5-LF WHEAT AND WIOA AND 1" FXTL JUNE 5.

TREATMENT	LEAF STAGE	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA CNTL PCNT	FXTL CNTL PCNT
BARBAN	2	4	616.	0.	36.	0.
HOE-23408	2	12	1257.	0.	83.	75.
BARBAN	3.5	2	503.	0.	4.	0.
BARBAN	3.5	4	495.	0.	20.	0.
HOE-23408	3.5	6	1189.	0.	83.	69.
HOE-23408	3.5	12	1198.	0.	96.	83.
DIFEN	3.5	6	701.	0.	49.	0.
DIFEN	3.5	12	891.	0.	59.	0.
BAR+HOE	3.5	2+6	1407.	0.	86.	84.
BAR+HOE	3.5	2+12	1260.	0.	93.	83.
BAR+HOE	3.5	4+6	1265.	0.	85.	83.
BAR+HOE	3.5	4+12	1522.	0.	92.	91.
BAR+DIFEN	3.5	2+6	726.	0.	48.	0.
BAR+DIFEN	3.5	2+12	853.	0.	65.	0.
BAR+DIFEN	3.5	4+6	1087.	0.	65.	0.
BAR+DIFEN	3.5	4+12	698.	0.	68.	0.
HOE+DIFEN	3.5	6+6	947.	0.	64.	68.
HOE+DIFEN	3.5	6+12	1299.	0.	76.	69.
HOE+DIFEN	3.5	12+6	1332.	0.	93.	83.
HOE+DIFEN	3.5	12+12	867.	0.	89.	79.
CONTROL			383.	0.	0.	0.
MEAN			976.	0.	64.	41.
HIGH MEAN			1522.	0.	96.	91.
LOW MEAN			383.	0.	0.	0.
COEFF. OF VARIATION			33.	0.	18.	21.
LSD(.01 PERCENT)			601.	0.	22.	16.
LSD(.05 PERCENT)			452.	0.	16.	12.
NO. OF REPS			4.	4.	4.	4.

SUMMARY

NO TREATMENTS INJURED WHEAT. WILD OAT AND FOXTAIL CONTROL WAS GENERALLY GOOD WITH HOE-23408 ALONE OR IN COMBINATION WITH BARBAN.

TABLE 14. FALL TRIALLATE IN WEED FREE WHEAT AND BARLEY, FARGO 1975. FALL TRTS. APPLIED AND FIELD CULT. INCORP., OCT. 25, 1975. WALDRON WHEAT AND MULTUM BARLEY SEEDED MAY 16. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TRIALLATE	RATE LB/A	----WHEAT----- INJ. PCNT	STAND REDUCTION	----BARLEY---- INJ. PCNT	STAND REDUCTION
EARLY SEED GFI	1.0	0.	0.	0.	0.
EARLY SEED GFI	1.5	0.	0.	0.	0.
EARLY SEED GFI	2.0	0.	4.	0.	0.
EARLY SEED GFI	3.0	0.	12.	0.	0.
EARLY SEED LFI	1.0	0.	0.	0.	0.
EARLY SEED LFI	1.5	0.	0.	0.	0.
EARLY SEED LFI	2.0	0.	0.	0.	0.
EARLY SEED LFI	3.0	0.	0.	0.	0.
EARLY SEED CONTROL		0.	0.	0.	0.
MEAN		0.	2.	0.	0.
HIGH MEAN		0.	12.	0.	0.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		0.	168.	0.	0.
LSD(.01 PERCENT)		0.	5.	0.	0.
LSD(.05 PERCENT)		0.	4.	0.	0.
NO. OF REPS		5.	5.	5.	5.

SUMMARY

BARLEY WAS NOT INJURED BY EITHER TRIALLATE FORMULATION AT RATES AS HIGH AS 3 LB/A; HOWEVER, WHEAT STANDS WERE REDUCED SLIGHTLY BY GRANULAR TRIALLATE AT 2 AND 3 LB/A.

Table 15. Herbicide protectants with triallate, Fargo. Triallate was applied PPI May 28. Waldron wheat seed non-treated or treated with 1/8% R-25788 and NA or 3 oz/bu Vitavax was seeded May 30. The experiment was a randomized complete block with a factorial arrangement with 4 replications.

Protectant treatment	Triallate oz/A	Wheat	
		Pcnt Inj.	Yield(bu/A)
None	0	0	30.3
	12	18	20.7
	24	55	13.8
	36	76	7.9
	Mean	56	18.2
R-25788	0	0	29.8
	12	0	30.1
	24	49	18.1
	36	71	9.9
	Mean	30	22.0
NA	0	0	30.3
	12	11	22.3
	24	51	14.8
	36	70	9.8
	Mean	33	19.3
Vitavax	0	0	30.6
	12	3	29.7
	24	38	15.5
	36	70	11.1
	Mean	28	21.7
LSD 0.05 Trt.		13	6.1
Mean		6	3.0

Summary

Wheat injury increased as triallate rate increased. R-25788 and NA at 1/8% by seed weight or Vitavax at 3 oz/bu reduced wheat injury with triallate. The maximum safening effect was observed at the 12 oz/A rate of triallate. Wheat yields were increased 9.4 and 9.0 bu/A by R-25788 and Vitavax at the 12 oz/A rate of triallate when compared to the non-protected treatment.

Table 16. Triallate-Vitavax combinations, Fargo. Triallate was applied PPI May 28. Waldron wheat seed which had been treated with 0, 3, 4.5, and 6 oz/bu of Vitavax was seeded May 30. The experiment was a randomized complete block with a factorial arrangement with 4 replications.

Vitavax oz/bu	Triallate oz/A	Wheat	
		Pcnt Inj.	Yield (bu/A)
0	0	0	27.6
	12	21	19.5
	24	41	11.2
	36	56	9.3
	Mean	44	16.9
3	0	0	25.1
	12	10	23.3
	24	40	12.7
	36	48	10.6
	Mean	25	17.9
4.5	0	0	25.9
	12	12	21.3
	24	35	13.4
	36	48	11.7
	Mean	24	18.1
6.0	0	0	26.5
	12	9	21.6
	24	35	15.0
	36	43	17.2
	Mean	22	20.1
LSD 0.05 Trt.		13	5.2
Mean		7	2.7

Summary

Wheat injury increased as triallate rate increased. Vitavax at rates from 3 to 6 oz/bu reduced wheat injury with triallate; however, the 6 oz/bu rate was the only treatment which significantly increased wheat yields.

Table 17. Triallate depth of incorporation, Fargo. Triallate was applied and incorporated to depths of 1.9, 3.8, 5.7, and 7.6 cm. and Waldron wheat seeded May 28. The experiment was a randomized complete block with a split plot arrangement with four replications. Crop not harvested because of flood damage.

Depth cm	Triallate oz/A	Pcnt Wht. Inj.	Pcnt Wioa Cont
1.9	0	0	0
	12	19	85
	24	46	95
	36	59	96
3.8	0	0	0
	12	34	93
	24	41	96
	36	67	99
5.7	0	0	0
	12	40	97
	24	46	98
	36	70	100
7.6	0	0	0
	12	35	99
	24	49	100
	36	72	100
LSD 0.05		8	10

Summary

Wheat injury increased as triallate rate increased at all depths of incorporation. Increasing the depth of incorporation from 1.9 to 3.8 cm increased wheat injury. Wild oat control was generally good with all treatments; however, wild oat control was increased at 12 oz/A when incorporation depth was increased.

Table 18. Time of triallate incorporation, Fargo. Waldron wheat was seeded May 26 and triallate liquid and granules applied at a rate of 1lb/A 24, 8, 4, 2, and 0 hrs. before incorporation on a dry soil surface moistened with 1040 gpa water. Crop not harvested because of flood damage. The experiment was a randomized complete block with a factorial arrangement of formulation, soil surface, and incorporation time with 4 replications.

Time of Inc. hrs. after appl.	Pcnt Control	
	Gran	Liquid
Wet Surface		
0	99	91
2	95	84
4	97	78
8	100	75
24	95	65
Dry Surface		
0	99	89
2	98	84
4	100	84
8	100	83
24	99	65
LSD 0.05	14	

Summary

No wheat injury was observed with any treatment. Wild oat control with granular triallate was similar if incorporated immediately or 24 hrs. after application on both soil surfaces; however, wild oat control with liquid triallate was reduced if incorporation was delayed 8 hrs. on a wet surface or 24 hrs. on a dry surface.

TABLE 19. BARBAN PLUS ADDITIVES FOR WILD OAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 26. TRTS. WERE APPLIED JUNE 18 TO 3-LF WHEAT AND 2.5-LF WIOA. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	RATE OZ/A	WHEAT INJ. 0-10	WIOA PCNT CNTL
BARBAN	2	0.	46.
BARBAN	4	0.	66.
BAR+PO	2+1QT	0.	55.
BAR+PO	4+1QT	0.	68.
BAR+LOAM	2+1QT	0.	45.
BAR+LOAM	2+1QT	0.	58.
BAR+WEX	2+.25%	0.	44.
BAR+WEX	4+.25%	0.	62.
BAR+X-77	2+.5%	0.	44.
BAR+X-77	4+.5%	3.	67.
BAR+MCPA	4+8	0.	49.
CONTROL		0.	0.
MEAN		0.	50.
HIGH MEAN		3.	68.
LOW MEAN		0.	0.
COEFF. OF VARIATION		693.	19.
LSD(.01 PERCENT)		3.	18.
LSD(.05 PERCENT)		2.	14.
NO. OF REPS		4.	4.

SUMMARY

OIL AND SURFACTANT ADDITIVES GENERALLY HAD LITTLE EFFECT ON WILD OAT CONTROL WITH BARBAN. MCPA APPLIED WITH BARBAN REDUCED WILD CAT CONTROL.

TABLE 20. BARBAN PLUS NITROGEN FOR WILD OAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 18. TRTS. WERE APPLIED TO WHEAT AND WIOA IN THE 2 TO 2.5-LF STAGE JUNE 2. ALL TRTS. EXCEPT BARBAN ALONE HAD 1/2% X-77. SOIL TEST N=76 LB..

TREATMENT	RATE OZ/A	YIELD LB/A	WHEAT INJ. 0-10	STAND REDUCTION	WIOA CNTL PCNT
BARBAN	2	373.	0.	0.	31.
BARBAN	4	557.	0.	0.	50.
BAR+NIT	2+1/2G	444.	0.	0.	49.
BAR+NIT	4+1/2G	585.	0.	0.	70.
BAR+NIT	2+1G	498.	0.	0.	54.
BAR+NIT	4+1G	641.	0.	0.	71.
BAR+NIT	2+3G	607.	0.	0.	55.
BAR+NIT	4+3G	605.	0.	0.	68.
BAR+NIT	2+6G	497.	0.	0.	53.
BAR+NIT	4+6G	546.	0.	0.	71.
BAR+S	2	466.	0.	0.	25.
BAR+S	4	482.	0.	0.	36.
N-CONTROL	6G	399.	0.	0.	0.
CONTROL		374.	0.	0.	0.
MEAN		505.	0.	0.	45.
HIGH MEAN		641.	0.	0.	71.
LOW MEAN		373.	0.	0.	0.
COEFF. OF VARIATION		18.	0.	0.	20.
LSD(.01 PERCENT)		171.	0.	0.	17.
LSD(.05 PERCENT)		127.	0.	0.	13.
NO. OF REPS		4.	4.	4.	4.

SUMMARY

NO WHEAT INJURY OR STAND REDUCTION WAS OBSERVED WITH WITH ANY TREATMENT. THE ADDITION OF AQUEOUS NITROGEN TO THE BARBAN SPRAY SOLUTION INCREASED WILD OAT CONTROL WITH BARBAN. WILD OAT CONTROL WAS SIMILAR WITH 4 OZ/A BARBAN ALONE OR 2 OZ/A OF BARBAN WITH AQUEOUS NITROGEN. THE 1/2,1,3 AND 6 GPA VOLUMES OF AQUEOUS NITROGEN WERE EQUALLY EFFECTIVE IN ENHANCING WILD OAT CONTROL WITH BARBAN. THE ADDITION OF SURFACTANT HAD LITTLE OR NO EFFECT ON WILD OAT CONTROL WITH BARBAN.

TABLE 21. BARBAN PLUS NITROGEN FOR WILD OAT CONTROL, WILLISTON 1975. ELLAR WHEAT WAS SEEDED MAY 30. TRTS. WERE APPLIED TO WHEAT AND WIOA IN THE 1.5 TO 2-LF STAGE JUNE 13. ALL TRTS. EXCEPT BARBAN ALONE HAD 1/2%-X-77. SOIL TEST N=40 LB..

TREATMENT	RATE OZ/A	YIELD LB/A	TEST WT.	HT. CM.	WHEAT INJ. 0-10	WIOA CNTL PCNT
BARBAN	2	804.	60.2	67.5	0.	21.
BARBAN	4	849.	60.5	78.0	0.	56.
BARBAN+NIT	2+1/2G	935.	59.6	77.0	0.	64.
BARBAN+NIT	4+1/2G	869.	60.3	70.5	0.	68.
BARBAN+NIT	2+1G	844.	60.3	70.5	0.	65.
BARBAN+NIT	4+1G	869.	60.6	76.5	0.	73.
BARBAN+NIT	2+3G	906.	60.3	76.0	0.	64.
BARBAN+NIT	4+3G	848.	60.4	77.5	0.	71.
BARBAN+NIT	2+6G	866.	59.7	70.0	0.	68.
BARBAN+NIT	4+6G	958.	59.5	78.0	0.	68.
BARBAN+S	2	849.	59.6	68.0	0.	40.
BARBAN+S	4	817.	60.3	69.0	0.	56.
N-CONTROL		688.	58.8	66.0	0.	0.
CONTROL		730.	59.9	72.0	0.	0.
MEAN		845.	60.0	72.6	0.	51.
HIGH MEAN		958.	60.6	78.0	0.	73.
LOW MEAN		688.	58.8	66.0	0.	0.
COEFF. OF VARIATION		13.	0.0	0.0	0.	18.
LSD(.01 PERCENT)		204.	0.0	0.0	0.	17.
LSD(.05 PERCENT)		153.	0.0	0.0	0.	13.
NO. OF REPS		4.	1.0	1.0	4.	4.

SUMMARY

THE ADDITION OF AQUEOUS NITROGEN TO THE BARBAN SPRAY SOLUTION INCREASED WILD OAT CONTROL. WILD OAT CONTROL WAS SIMILAR WITH 4 OZ/A OF BARBAN ALONE OR 2 OZ/A BARBAN WITH AQUEOUS NITROGEN. NITROGEN VOLUMES FROM 1/2 TO 6 GPA WERE EQUALLY EFFECTIVE IN ENHANCING WILD OAT CONTROL WITH BARBAN.

TABLE 22. BARBAN PLUS NITROGEN FOR WILD OAT CONTROL, MINOT 1975. WALDRON WHEAT WAS SEEDED MAY 16. TRTS. WERE APPLIED TO WHEAT AND WIOA IN THE 2.5-LF STAGE JUNE 5. ALL TRTS. EXCEPT BARBAN ALONE HAD 1/2% X-77. SOIL TEST N= 26 LB.. WIOA INFESTATION WAS VERY HEAVY.

TREATMENT	RATE OZ/A	WHEAT INJ. 0-10	WIOA CNTL PCNT
BARBAN	2	0.	14.
BARBAN	4	0.	41.
BAR+NIT	2+1/2G	0.	60.
BAR+NIT	4+1/2G	0.	65.
BAR+NIT	2+1G	0.	61.
BAR+NIT	4+1G	0.	68.
BAR+NIT	2+3G	0.	60.
BAR+NIT	4+3G	0.	69.
BAR+NIT	2+6G	0.	56.
BAR+NIT	4+6G	0.	65.
BAR+S	2	0.	28.
BAR+S	4	0.	41.
N-CONTRCL		0.	0.
CONTROL		0.	0.
MEAN		0.	45.
HIGH MEAN		0.	69.
LOW MEAN		0.	0.
COEFF. OF VARIATION		0.	24.
LSD(.01 PERCENT)		0.	21.
LSD(.05 PERCENT)		0.	16.
NO. OF REPS		4.	4.

SUMMARY

THE ADDITION OF AQUEOUS NITROGEN TO THE BARBAN SPRAY SOLUTION INCREASED WILD OAT CONTROL. WILD OAT CONTROL WAS BETTER WITH 2 OZ/A BARBAN WITH AQUEOUS NITROGEN THAN 4 OZ/A OF BARBAN ALONE. NITROGEN VOLUMES FROM 1/2 TO 6 GPA WERE EQUALLY EFFECTIVE IN ENHANCING WILD OAT CONTROL WITH BARBAN.

TABLE 23. BARBAN PLUS NITROGEN FOR WILD OAT CONTROL, LANGDON 1975. OLAF WHEAT WAS SEEDED MAY 31. TRTS. WERE APPLIED TO WHEAT AND WIOA IN THE 1.5-LF STAGE JUNE 12. ALL TRTS. EXCEPT BARBAN ALONE HAD 1/2% X-77. SOIL TEST N=140 LB.. WIOA INFESTATION WAS LIGHT.

TREATMENT	RATE OZ/A	YIELD LB/A	TEST WT.	WHEAT INJ. 0-10	WIOA CNTL PCNT
BARBAN	2	1833.	58.5	0.	78.
BARBAN	4	1790.	59.0	0.	85.
BARBAN+NIT	2+1/2G	1797.	59.3	0.	85.
BARBAN+NIT	4+1/2G	1853.	59.0	0.	90.
BARBAN+NIT	2+1G	1739.	59.3	0.	90.
BARBAN+NIT	4+1G	1692.	58.5	0.	95.
BARBAN+NIT	2+3G	1961.	59.0	3.	85.
BARBAN+NIT	4+3G	2142.	59.0	0.	85.
BARBAN+NIT	2+6G	1968.	59.3	0.	88.
BARBAN+NIT	4+6G	1760.	59.3	0.	90.
BARBAN+S	2	2034.	59.3	0.	75.
BARBAN+S	4	1895.	59.8	0.	93.
N-CONTROL	6G	1914.	59.3	0.	0.
CONTROL		2016.	59.3	0.	0.
MEAN		1885.	59.1	0.	74.
HIGH MEAN		2142.	59.8	3.	95.
LOW MEAN		1692.	58.5	0.	0.
COEFF. OF VARIATION		10.	0.0	748.	9.
LSD(.01 PERCENT)		346.	0.0	3.	21.
LSD(.05 PERCENT)		258.	0.0	2.	15.
NO. OF REPS		4.	1.0	4.	2.

SUMMARY

ONLY TWO REPS WERE EVALUATED FOR WILD OAT CONTROL BECAUSE OF A LIGHT WILD OAT STAND; HOWEVER, AQUEOUS NITROGEN INCREASED WILD OAT CONTROL WITH BARBAN SLIGHTLY. SOIL NITROGEN TESTS WERE HIGH.

TABLE 24. RESPONSE OF SPRING WHEAT CULTIVARS TO BARBAN, FARGO 1975. CULTIVARS WERE SEEDED IN 6FT. STRIPS MAY 18. BARBAN WAS APPLIED TO 2 TO 2.5-LF WHEAT JUNE 2.

SPECIES	BARBAN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
WALDRON	4	0.	0.	0.	0.
LARK	4	0.	0.	0.	0.
OLAF	4	0.	0.	0.	0.
CHRIS	4	0.	0.	0.	0.
TIOGA	4	1.	3.	0.	0.
1809	4	0.	1.	0.	0.
KITT	4	0.	1.	0.	0.
ELLAR	4	0.	0.	0.	0.
ERA	4	0.	0.	0.	0.
WALDRON	8	0.	0.	0.	0.
LARK	8	3.	0.	0.	0.
OLAF	8	0.	0.	0.	0.
CHRIS	8	1.	0.	0.	0.
TIOGA	8	3.	8.	0.	1.
1809	8	3.	5.	0.	1.
KITT	8	0.	1.	0.	0.
ELLAR	8	0.	0.	0.	0.
ERA	8	2.	0.	0.	0.
WALDRON	16	6.	4.	0.	3.
LARK	16	7.	4.	0.	5.
OLAF	16	8.	9.	0.	3.
CHRIS	16	14.	13.	0.	8.
TIOGA	16	20.	21.	0.	15.
1809	16	10.	13.	0.	5.
KITT	16	2.	10.	0.	3.
ELLAR	16	7.	3.	0.	3.
ERA	16	0.	0.	0.	3.
WALDRON	32	11.	18.	0.	9.
LARK	32	13.	21.	0.	11.
OLAF	32	13.	24.	0.	13.
CHRIS	32	29.	40.	0.	19.
TIOGA	32	40.	60.	3.	23.
1809	32	34.	48.	2.	18.
KITT	32	15.	26.	0.	10.
ELLAR	32	17.	21.	0.	8.
ERA	32	21.	24.	0.	10.

TABLE 24. CONTINUED

SPECIES	BARBAN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
MEAN		8.	10.	0.	5.
HIGH MEAN		40.	60.	3.	23.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		132.	75.	524.	96.
LSD(.01 PERCENT)		22.	14.	1.	10.
LSD(.05 PERCENT)		17.	11.	1.	7.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

HARD RED SPRING WHEAT INJURY INCREASED AS BARBAN RATE INCREASED. TIOGA WAS MORE SUSCEPTIBLE TO BARBAN THAN THE OTHER HARD RED SPRING WHEAT CULTIVARS TESTED.

TABLE 25. RESPONSE OF DURUM CULTIVARS TO BARBAN, FARGO 1975.
CULTIVARS WERE SEEDED IN 6 FT. STRIPS MAY 18.
BARBAN WAS APPLIED TO 2 TO 2.5-LF WHEAT JUNE 2.

SPECIES	BARBAN OZ/A	YIELD REC. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. REC. PCNT
WELLS	4	0.	0.	0.	0.
WARD	4	3.	0.	0.	0.
ROLLETTE	4	8.	4.	0.	0.
D71111	4	10.	5.	0.	0.
D6962	4	0.	3.	0.	0.
LEEDS	4	1.	0.	0.	0.
RUGBY	4	2.	0.	0.	0.
CROSBY	4	0.	0.	0.	0.
D7057	4	0.	1.	0.	0.
BOTNO	4	0.	0.	0.	0.
WELLS	8	4.	5.	0.	1.
WARD	8	7.	15.	0.	3.
ROLLETTE	8	10.	10.	0.	5.
D71111	8	14.	15.	3.	5.
D6962	8	8.	11.	1.	4.
LEEDS	8	0.	8.	0.	1.
RUGBY	8	15.	13.	0.	6.
CROSBY	8	10.	10.	0.	6.
D7057	8	11.	11.	0.	8.
BOTNO	8	10.	13.	0.	5.
WELLS	16	4.	5.	0.	4.
WARD	16	35.	20.	3.	8.
ROLLETTE	16	23.	20.	0.	9.
D71111	16	25.	33.	3.	13.
D6962	16	30.	28.	2.	9.
LEEDS	16	10.	8.	0.	6.
RUGBY	16	28.	25.	2.	16.
CROSBY	16	23.	18.	0.	10.
D7057	16	35.	31.	3.	15.
BOTNO	16	32.	31.	3.	15.
WELLS	32	21.	36.	0.	5.
WARD	32	60.	73.	3.	21.
ROLLETTE	32	53.	60.	2.	20.
D71111	32	74.	83.	3.	35.
D6962	32	46.	59.	4.	17.
LEEDS	32	15.	35.	0.	7.
RUGBY	32	77.	68.	4.	25.
CROSBY	32	64.	59.	0.	25.
D7057	32	52.	63.	4.	19.
BOTNO	32	73.	80.	4.	36.

TABLE .25. CONTINUED

SPECIES	BARBAN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
MEAN		22.	24.	1.	9.
HIGH MEAN		77.	83.	4.	36.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		33.	39.	123.	40.
LSD(.01 PERCENT)		16.	17.	3.	8.
LSD(.05 PERCENT)		12.	13.	2.	6.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

DURUM INJURY INCREASED AS BARBAN RATE INCREASED. DURUM WAS GENERALLY INJURED MORE BY BARBAN THAN HARD RED SPRING WHEAT. WELLS AND LEEDS WERE THE MOST RESISTANT DURUM CULTIVARS TO BARBAN.

TABLE 26. RESPCNSE OF WILD CAT LINES TO BARBAN, FARGO 1975. WILD OAT LINES WERE SEEDED IN HILLS 3 FT. APART MAY 21. BARBAN WAS APPLIED TO 2.5 TO 3-LF WIOA JUNE 17. FRESH WT. DETERMINED JULY 24.

TREATMENT		RATE OZ/A	PCNT CNTL
WO 1	BAR	4	58.
WO 28	BAR	4	78.
WO 35	BAR	4	69.
WO 36	BAR	4	34.
WO 55	BAR	4	51.
WO 65	BAR	4	78.
WO 73	BAR	4	77.
WO 150	BAR	4	56.
WO 155	BAR	4	62.
WO 159	BAR	4	79.
WO 189	BAR	4	85.
WO 1	BAR	8	80.
WO 28	BAR	8	83.
WO 35	BAR	8	84.
WO 36	BAR	8	51.
WO 55	BAR	8	64.
WO 65	BAR	8	72.
WO 73	BAR	8	81.
WO 150	BAR	8	72.
WO 155	BAR	8	71.
WO 159	BAR	8	82.
WO 189	BAR	8	89.
MEAN			71.
HIGH MEAN			89.
LOW MEAN			34.
COEFF. OF VARIATION			14.
LSD(.01 PERCENT)			21.
LSD(.05 PERCENT)			16.
NO. OF REPS			3.

SUMMARY

WILD OAT LINES DIFFERED IN THEIR RESPONSE TC BARBAN IN THE FIELD AT BOTH 4 AND 8 OZ/A. THE RESPCNSE WAS SIMILAR TO THAT OBSERVED IN THE GREENHCUSE WITH LINE 36 BEING THE MOST RESISTANT.

Table 27. Barban stage response in wheat, Fargo. Waldron wheat was seeded May 16. Barban was applied from 4 to 24 days after crop emergence at rates of 6, 12, 24, and 48 oz/A. The experiment was a randomized complete block with a factorial arrangement with 4 replications.

Days after emergence	Rate oz/A	Wheat Pl. Ht. cm	Heads No./m	Inj. %	Yield bu/A	Protein %
4	6	80	49	8	11.9	17.2
4	12	79	44	21	8.9	17.1
4	24	74	14	65	4.1	16.8
4	48	69	7	91	2.1	17.1
	Mean	76	29	46	6.8	17.1
8	6	82	53	5	14.2	17.2
8	12	80	62	5	13.8	17.0
8	24	80	50	28	10.5	17.0
8	48	74	31	58	6.3	16.9
	Mean	79	49	24	11.2	17.0
12	6	84	60	0	14.9	17.4
12	12	80	56	7	13.9	17.1
12	24	75	51	25	11.8	17.2
12	48	73	42	43	8.2	16.9
	Mean	78	52	19	12.2	17.1
16	6	82	73	2	14.5	17.4
16	12	84	60	3	15.9	17.6
16	24	82	49	16	13.4	17.6
16	48	79	65	26	12.7	17.4
	Mean	82	62	12	14.1	17.5
20	6	84	73	3	14.9	17.5
20	12	84	72	0	16.1	17.6
20	24	81	68	10	14.6	17.2
20	48	80	63	22	11.4	17.2
	Mean	82	69	9	14.3	17.4
24	6	84	69	5	16.0	17.4
24	12	79	74	4	15.6	17.2
24	24	79	58	11	16.3	17.2
24	48	81	64	32	12.9	17.1
	Mean	81	66	13	15.2	17.2
Control		84	67	0	15.6	17.5
LSD 0.05	Trt.	5	16	13	2.7	0.8
	Mean	3	8	7	1.4	0.4

Summary

Wheat tolerance to barban increased with time after emergence. Wheat yields were reduced with barban at 6 oz/A applied 4 days after emergence, 24 oz/A applied 8 and 12 days after emergence, or 48 oz/A applied 16, 20 and 24 days after emergence.

Table 28. SD-29761-barban combinations for wild oat control, Fargo 1974. W. Olson. Waldron wheat was seeded June 6. SD-29761 and barban applied alone or in combination at the 2, 3.5, and 5-leaf stage. The experiment was a randomized complete block with a split-plot arrangement with 4 replications.

Treatment	Rate oz/A	Wioa Cntl	Wheat Inj.	Wheat Yield (kg/ha)
2-leaf				
Barban	2	54	0	1270
Barban	4	78	0	1177
Barban	6	64	0	1142
SD-29761	4	87	0	1213
SD-29761	8	97	0	1189
SD-29761	12	99	0	1117
SD+BAR	4+2	94	0	1187
SD+BAR	4+4	96	0	1116
SD+BAR	4+6	95	5	1171
SD+BAR	8+2	99	0	1242
SD+BAR	8+6	99	5	1275
SD+BAR	8+12	99	2	1165
SD+BAR	12+2	98	5	1172
SD+BAR	12+4	99	0	1176
SD+BAR	12+6	99	10	1149
3.5-leaf				
Barban	2	20	0	1249
Barban	4	61	0	1325
Barban	6	62	0	1417
SD-29761	4	86	0	1340
SD-29761	8	99	3	1352
SD-29761	12	100	3	1360
SD+BAR	4+2	91	0	1406
SD+BAR	4+4	90	0	1279
SD+BAR	4+6	90	3	1286
SD+BAR	8+2	98	5	1217
SD+BAR	8+4	95	0	1243
SD+BAR	8+6	97	5	1181
SD+BAR	12+2	99	3	1231
SD+BAR	12+4	96	5	1134
SD+BAR	12+6	99	8	1242
5-leaf				
Barban	2	31	0	1183
Barban	4	36	0	1239
Barban	6	51	3	1068
SD-29761	4	93	0	1244
SD-29761	8	100	0	1279
SD-29761	12	100	5	1196
SD+BAR	4+2	95	0	1215
SD+BAR	4+6	89	0	1319
SD+BAR	4+8	93	3	1316
SD+BAR	8+2	98	5	1263

Table 28. (continued)

SD+BAR	8+4	99	3	1197
SD+BAR	8+6	100	3	1288
SD+BAR	12+2	100	3	1265
SD+BAR	12+4	100	8	1180
SD+BAR	12+6	100	8	1154
Control		0	0	1255
LSD 0.05		9	3	98

Summary

Wild oat control with SD-29761 was good to excellent at all stages of application. The addition of barban to SD-29761 increased wild oat control slightly at the 2-leaf stage; however, at the 3.5 or 5-leaf stage barban had no effect on wild oat control with SD-29761.

TABLE 29. DIFENZOQUAT FOR WILD CAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 26. TRTS. WERE APPLIED TO 4-LF WHEAT AND 3.5-LF WICA JUNE 28. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	RATE OZ/A	WHEAT INJ. PCNT	WIOA CNTL PCNT
DIFEN 8.5 G 2AS	8	15.	98.
DIFEN 8.5 G 2AS	10	24.	99.
DIFEN 8.5 G 2AS	12	30.	100.
DIFEN 8.5 G 2AS	16	35.	100.
DIFEN 8.5 G	8	13.	83.
DIFEN 8.5 G	10	21.	84.
DIFEN 8.5 G	12	23.	95.
DIFEN 8.5 G	16	24.	95.
DIF+2,4-D	12+8	23.	98.
DIF+MCPA	12+8	29.	98.
DIF+BROM+MCPA	12+4+4	22.	97.
DIFEN 17 G 2AS	8	16.	94.
CONTROL		0.	0.
MEAN		21.	88.
HIGH MEAN		35.	100.
LOW MEAN		0.	0.
COEFF. OF VARIATION		28.	4.
LSD(.01 PERCENT)		11.	6.
LSD(.05 PERCENT)		8.	4.
NO. OF REPS		4.	4.

SUMMARY

WILD OAT CONTROL WAS GOOD WITH ALL TREATMENTS; HOWEVER, THE 2AS FORMULATION OF DIFENZOQUAT WAS SLIGHTLY MORE EFFECTIVE AT THE LOWER RATES. WHEAT INJURY WAS OBSERVED WITH ALL TREATMENTS AND INCREASED AS RATE INCREASED.

TABLE 30. RESPONSE OF SPRING WHEAT CULTIVARS TO DIFENZOQUAT, FARGO 1975. CULTIVARS WERE SEEDED IN 6 FT. STRIPS MAY 18. DIFENZOQUAT WAS APPLIED TO 4-LF WHEAT JUNE 11.

SPECIES	DIFEN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
WALDRON	8	22.	31.	1.	12.
LARK	8	17.	21.	0.	7.
OLAF	8	7.	4.	0.	5.
CHRIS	8	14.	18.	2.	9.
TIOGA	8	17.	20.	0.	9.
1809	8	24.	16.	2.	5.
KITT	8	0.	4.	0.	1.
ELLAR	8	7.	10.	0.	3.
ERA	8	5.	14.	0.	8.
WALDRON	16	29.	59.	7.	21.
LARK	16	22.	69.	1.	17.
OLAF	16	9.	31.	1.	6.
CHRIS	16	23.	51.	2.	17.
TIOGA	16	26.	51.	4.	15.
1809	16	29.	53.	3.	12.
KITT	16	0.	20.	0.	2.
ELLAR	16	18.	39.	2.	12.
ERA	16	20.	46.	2.	12.
WALDRON	24	48.	83.	11.	29.
LARK	24	47.	78.	1.	22.
OLAF	24	16.	44.	2.	10.
CHRIS	24	30.	61.	5.	23.
TIOGA	24	35.	55.	4.	20.
1809	24	47.	68.	6.	21.
KITT	24	8.	24.	0.	3.
ELLAR	24	24.	45.	0.	16.
ERA	24	33.	56.	3.	17.
WALDRON	32	61.	90.	11.	37.
LARK	32	57.	94.	7.	32.
OLAF	32	30.	59.	6.	18.
CHRIS	32	41.	74.	7.	26.
TIOGA	32	51.	74.	6.	28.
1809	32	58.	75.	8.	31.
KITT	32	15.	38.	2.	12.
ELLAR	32	28.	53.	3.	21.
ERA	32	38.	60.	7.	21.

TABLE 30. CONTINUED

SPECIES	DIFEN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
MEAN		27.	47.	3.	16.
HIGH MEAN		61.	94.	11.	37.
LOW MEAN		0.	4.	0.	1.
COEFF. OF VARIATION		32.	19.	66.	33.
LSD(.01 PERCENT)		18.	16.	5.	11.
LSD(.05 PERCENT)		14.	12.	3.	8.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

HARD RED SPRING WHEAT INJURY INCREASED AS DIFENZOQUAT INCREASED. HARD RED SPRING WHEAT WAS GENERALLY INJURED MORE BY DIFENZOQUAT THAN DURUM WHEAT. KITT WAS THE MOST RESISTANT AND WALDRON THE MOST SUSCEPTIBLE HARD RED SPRING WHEAT CULTIVAR TO DIFENZOQUAT.

TABLE 31. RESPONSE OF DURUM CULTIVARS TO DIFENZOQUAT, FARGO 1975. CULTIVARS WERE SEEDED IN 6 FT. STRIPS MAY 18. DIFENZOQUAT WAS APPLIED TO 4-LF WHEAT JUNE 11.

SPECIES	DIFEN OZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
WELLS	8	0.	0.	0.	0.
WARD	8	0.	0.	0.	0.
ROLLETTE	8	0.	0.	0.	0.
D71111	8	0.	0.	0.	0.
D6962	8	0.	0.	0.	0.
LEEDS	8	0.	0.	0.	0.
RUGBY	8	0.	0.	0.	0.
CROSBY	8	0.	0.	0.	0.
D7057	8	0.	0.	0.	0.
BOTNO	8	0.	0.	0.	0.
WELLS	16	5.	23.	0.	4.
WARD	16	2.	20.	0.	1.
ROLLETTE	16	2.	23.	0.	5.
D71111	16	4.	28.	0.	6.
D6962	16	4.	29.	0.	4.
LEEDS	16	4.	29.	0.	4.
RUGBY	16	4.	24.	0.	0.
CROSBY	16	5.	23.	0.	3.
D7057	16	4.	35.	2.	1.
BOTNO	16	5.	18.	0.	2.
WELLS	24	5.	25.	0.	7.
WARD	24	12.	33.	1.	9.
ROLLETTE	24	10.	34.	0.	5.
D71111	24	16.	31.	0.	6.
D6962	24	10.	34.	0.	8.
LEEDS	24	11.	29.	0.	5.
RUGBY	24	12.	30.	3.	6.
CROSBY	24	12.	29.	0.	3.
D7057	24	16.	44.	4.	10.
BOTNO	24	14.	33.	2.	8.
WELLS	32	21.	30.	0.	7.
WARD	32	23.	34.	0.	9.
ROLLETTE	32	24.	36.	0.	7.
D71111	32	34.	41.	2.	15.
D6962	32	34.	43.	0.	18.
LEEDS	32	22.	40.	0.	12.
RUGBY	32	31.	40.	3.	13.
CROSBY	32	25.	28.	0.	9.
D7057	32	36.	46.	3.	15.
BOTNO	32	31.	39.	2.	13.

TABLE 31. CONTINUED

SPECIES	DIFEN CZ/A	YIELD RED. PCNT	WHEAT INJ. PCNT	MATURITY DELAY DAYS	PL.HT. RED. PCNT
MEAN		11.	24.	1.	5.
HIGH MEAN		36.	46.	4.	18.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		46.	50.	218.	72.
LSD(.01 PERCENT)		11.	22.	3.	8.
LSD(.05 PERCENT)		8.	17.	2.	6.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

DURUM INJURY INCREASED AS DIFENZOQUAT RATE INCREASED. DURUM CULTIVARS DID NOT DIFFER IN THEIR SUSCEPTIBILITY TO DIFENZOQUAT.

TABLE 32. RESPONSE OF WILD OAT LINES TO DIFENZOQUAT, FARGO 1975. WIOA LINES WERE SEEDED IN HILLS 3 FT. APART MAY 21. DIFENZOQUAT WAS APPLIED TO 4 TO 5-LF WIOA JUNE 26. FRESH WT. DETERMINED JULY 24.

TREATMENT		RATE OZ/A	PCNT CNTL
WO	1	DIF 12	83.
WO	28	DIF 12	69.
WO	35	DIF 12	93.
WO	36	DIF 12	73.
WO	55	DIF 12	63.
WO	65	DIF 12	83.
WO	73	DIF 12	89.
WO	150	DIF 12	63.
WO	155	DIF 12	93.
WO	159	DIF 12	82.
WO	189	DIF 12	83.
WO	1	DIF 16	92.
WO	28	DIF 16	66.
WO	35	DIF 16	92.
WO	36	DIF 16	79.
WO	55	DIF 16	67.
WO	65	DIF 16	92.
WO	73	DIF 16	93.
WO	150	DIF 16	58.
WO	155	DIF 16	91.
WO	159	DIF 16	93.
WO	189	DIF 16	83.
MEAN			81.
HIGH MEAN			93.
LOW MEAN			58.
COEFF. OF VARIATION			11.
LSD(.01 PERCENT)			19.
LSD(.05 PERCENT)			14.
NO. OF REPS			3.

SUMMARY

WILD OAT LINES DIFFERED IN THEIR RESPONSE TO DIFENZOQUAT IN THE FIELD AT 12 AND 16 OZ/A. LINE 28,55, AND 150 WHICH WERE QUITE RESISTANT TO DIFENZOQUAT IN THE GREENHOUSE WERE ALSO RESISTANT TO DIFENZOQUAT IN THE FIELD.

TABLE 33. HOE-23408 METHOD OF APPLICATION, FARGO 1975. PRE-PLANT TRTS. WERE APPLIED AND INCORPORATED, CLAF WHT SEEDED, AND PEI AND PE TRTS. APPLIED MAY 26. POST TREATMENTS WERE APPLIED TO 2.5-LF WHEAT AND WIOA JUNE 16. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	RATE PZ/A	WHEAT INJ. PCNT	WIOA CNTL PCNT
TRIALLATE PEI	16	0.	81.
HOE-23408 PPI	16	0.	60.
HOE-23408 PPI	32	0.	81.
HOE-23408 PPI	64	5.	93.
HOE-23408 PEI	16	0.	51.
HOE-23408 PEI	32	0.	74.
HOE-23408 PEI	64	0.	89.
HOE-23408 PE	16	0.	45.
HOE-23408 PE	32	0.	71.
HOE-23408 PE	64	0.	83.
BARBAN 2-L	4	0.	74.
HOE-23408 2-L	12	0.	97.
HOE-23408 2-L	16	0.	100.
HOE-23408 2-L	32	0.	100.
CONTROL		0.	0.
MEAN		0.	73.
HIGH MEAN		5.	100.
LOW MEAN		0.	0.
COEFF. OF VARIATION		775.	10.
LSD(.01 PERCENT)		5.	14.
LSD(.05 PERCENT)		4.	10.
NO. OF REPS		4.	4.

SUMMARY

POSTEMERGENCE APPLICATIONS OF HOE-23408 WERE MORE EFFECTIVE FOR WILD OAT CONTROL THAN PREPLANT OR PREEMERGENCE APPLICATIONS.

TABLE 34. HOE-23408 METHOD OF APPLICATION, MINOT 1975. PRE-PLANT TRTS. WERE APPLIED AND INCORPORATED, CLAF WHT SEEDED, AND PEI AND PE TRTS. APPLIED MAY 16. POST TRTS. WERE APPLIED TO 2.5-LF WHT AND WICA JUNE 5.

TREATMENT	RATE OZ/A	YIELD LB/A	WHEAT INJ. PCNT	WIOA PCNT CNTL	FXTL PCNT CNTL
TRIALLATE PEI	16	483.	0.	66.	0.
HOE-23408 PPI	16	827.	0.	81.	90.
HOE-23408 PPI	32	1032.	0.	88.	94.
HOE-23408 PPI	64	869.	5.	90.	99.
HOE-23408 PEI	16	708.	0.	64.	84.
HOE-23408 PEI	32	778.	0.	80.	89.
HOE-23408 PEI	64	868.	5.	88.	93.
HOE-23408 PE	16	685.	0.	50.	80.
HOE-23408 PE	32	869.	0.	84.	91.
HOE-23408 PE	64	826.	0.	94.	99.
BARBAN 2-L	4	237.	0.	36.	0.
HOE-23408 2-L	12	766.	0.	97.	98.
HOE-23408 2-L	16	649.	0.	100.	100.
HOE-23408 2-L	32	562.	5.	100.	100.
CONTROL		221.	0.	0.	0.
MEAN		692.	1.	75.	74.
HIGH MEAN		1032.	5.	100.	100.
LOW MEAN		221.	0.	0.	0.
COEFF. OF VARIATION		31.	390.	10.	3.
LSD(.01 PERCENT)		401.	7.	14.	4.
LSD(.05 PERCENT)		302.	6.	11.	3.
NO. OF REPS		4.	4.	4.	4.

SUMMARY

POSTEMERGENCE APPLICATIONS OF HOE-23408 WERE MORE EFFECTIVE FOR WILD OAT AND FOXTAIL CONTROL THAN PREPLANT OR PREEMERGENCE APPLICATIONS. WILD OAT AND FOXTAIL CONTROL WAS BETTER WITH PREPLANT THAN WITH PREEMERGENCE APPLICATIONS EITHER INCORPORATED OR SURFACE APPLIED. SOIL APPLIED TREATMENTS WERE GENERALLY MORE EFFECTIVE AT MINOT THAN FARGO.

TABLE 35. HOE-23408 PLUS BROADLEAF HERBICIDES FOR WILD OAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 26. HOE-23408 AND BROADLEAF HERBICIDES APPLIED JUNE 17 TO 3 TO 3.5-LF WHT AND 2.5-LF WIOA. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	RATE OZ/A	WHEAT INJ. PCNT	STAND REDUCTION	WIOA PCNT CNTL	RRPW PCNT CNTL
HOE-23408	12	0.	0.	99.	0.
+MCPA	12+8	0.	0.	53.	65.
+2,4-D	12+8	5.	0.	45.	61.
+BROMOXYNIL	12+8	3.	0.	99.	58.
+BENTAZON	12+4	3.	0.	93.	45.
+BENTAZON	12+8	0.	0.	93.	41.
+DICAMBA	12+1	0.	0.	43.	60.
+DICAMBA	12+2	0.	0.	18.	74.
+VEL 4207	12+1	0.	0.	84.	46.
+VEL 4207	12+2	3.	0.	78.	50.
+RH-2915	12+1/4	5.	0.	94.	33.
+RH-2915	12+1/2	6.	0.	93.	44.
+RH-2915	12+1	11.	4.	90.	45.
+RH-2915	12+2	18.	9.	92.	54.
+RH-2915	12+4	21.	53.	90.	60.
+DOWCO 290+D	12+1	0.	0.	54.	71.
+DOWCO 290+D	12+2	3.	0.	29.	70.
+BIFENOX	12+8	3.	0.	89.	64.
+BIFENOX	12+16	13.	0.	86.	69.
+BENAZLIN	12+2	0.	0.	91.	50.
+BENAZLIN	12+4	8.	0.	88.	58.
+METRIBUZIN	12+4	14.	63.	91.	68.
+METRIBUZIN	12+8	30.	97.	98.	72.
+CYANAZINE	12+8	9.	31.	84.	23.
+CYANAZINE	12+16	19.	78.	93.	43.
CONTROL		0.	0.	0.	0.
MEAN		7.	13.	75.	51.
HIGH MEAN		30.	97.	99.	74.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		114.	53.	12.	40.
LSD(.01 PERCENT)		14.	13.	17.	38.
LSD(.05 PERCENT)		10.	10.	13.	29.
NO. OF REPS		4.	4.	4.	4.

SUMMARY

TANK MIX TREATMENTS OF CYANAZINE, METRIBUZIN AND RH-2915 WITH HOE-23408 WERE INJURIOUS TO WHEAT RESULTING IN SUBSTANTIAL STAND REDUCTIONS AT THE HIGHER RATES. WILD OAT CONTROL WITH HOE-23408 WAS REDUCED 47% TO 82% BY THE ADDITION OF MCPA,2,4-D, DICAMBA AND DOWCO 290+2,4-D; HOWEVER, THE ADDITION OF BROMOXYNIL DID NOT INFLUENCE WILD OAT CONTROL OR CROP INJURY WITH HOE-23408.

TABLE 36. HOE-23408 PLUS ADDITIVES FOR WILD OAT CONTROL, FARGO 1975. WALDRON WHEAT WAS SEEDED MAY 26. TRTS. WERE APPLIED JUNE 18 TO 3.5-LF WHT AND 2.5-LF WIOA. CROP NOT HARVESTED BECAUSE OF FLOOD DAMAGE.

TREATMENT	RATE OZ/A	WHEAT INJ. 0-10	WICA PCNT CNTL
HOE-23408	8	0.	90.
HOE-23408	12	0.	95.
HOE-23408	16	4.	98.
HOE+PO	8+1QT	0.	94.
HOE+PO	12+1QT	0.	98.
HOE+LOAM	8+1QT	0.	95.
HOE+LOAM	12+1QT	0.	96.
HOE+X-77	8+0.5	0.	96.
HOE+X-77	12+0.5	0.	98.
HOE+MCPA	12+8	0.	85.
+MCPA 1DAY AFT	12+8	0.	76.
CONTROL		0.	0.
MEAN		0.	83.
HIGH MEAN		4.	98.
LOW MEAN		0.	0.
COEFF. OF VARIATION		693.	5.
LSD(.01 PERCENT)		4.	8.
LSD(.05 PERCENT)		3.	6.
NO. OF REPS		4.	4.

SUMMARY

WILD OAT CONTROL WAS GOOD WITH HOE-23408 ALONE OR IN COMBINATION WITH OIL AND SURFACTANT ADDITIVES. WILD OAT CONTROL WAS REDUCED 30% WHEN MCPA WAS APPLIED WITH HOE-23408 OR 19% WHEN APPLIED 1 DAY AFTER HOE-23408.

TABLE 37. RESPONSE OF WILD OAT LINES TO HOE-23408, FARGO 1975. WILD OAT LINES WERE SEEDED IN HILLS 3 FT. APART MAY 21. BARBAN WAS APPLIED TO 2.5 TO 3-LF WICA JUNE 17. FRESH WT. DETERMINED JULY 24.

TREATMENT		RATE OZ/A	PCNT CNTL
WO 1	HOE	12	90.
WO 28	HOE	12	100.
WO 35	HOE	12	97.
WO 36	HOE	12	96.
WO 55	HOE	12	95.
WO 65	HOE	12	92.
WO 73	HOE	12	98.
WO 150	HOE	12	89.
WO 155	HOE	12	98.
WO 159	HOE	12	87.
WO 189	HOE	12	100.
WO 1	HOE	16	93.
WO 28	HOE	16	100.
WO 35	HOE	16	97.
WO 36	HOE	16	100.
WO 55	HOE	16	100.
WO 65	HOE	16	98.
WO 73	HOE	16	94.
WO 150	HOE	16	90.
WO 155	HOE	16	95.
WO 159	HOE	16	89.
WO 189	HOE	16	99.
MEAN			95.
HIGH MEAN			100.
LOW MEAN			87.
COEFF. OF VARIATION			6.
LSD(.01 PERCENT)			12.
LSD(.05 PERCENT)			9.
NO. OF REPS			3.

SUMMARY

HOE-23408 GAVE GOOD TO EXCELLENT CONTROL OF ALL WILD OAT LINES AT 12 TO 16 OZ/A IN THE FIELD. LINE 159 WHICH WAS MORE RESISTANT THAN LINE 189 TO HOE-23408 IN THE GREENHOUSE WAS ALSO MORE RESISTANT IN THE FIELD.

TABLE 38. RESPONSE OF SPRING WHEAT CULTIVARS TO MSMA, FARGO 1975. CULTIVARS WERE SEEDED IN 6 FT. STRIPS MAY 18. MSMA WAS APPLIED TO 4-LF WHEAT JUNE 11.

SPECIES	MSMA OZ/A	YIELD PCNT	INJ. WHEAT PCNT	% DELAY MATURITY RATE	PLANT HT. CM.
WALDRON	48	1.	0.	0.	1.
LARK	48	1.	0.	0.	3.
OLAF	48	1.	3.	0.	2.
CHRIS	48	3.	0.	0.	3.
TIOGA	48	0.	0.	0.	4.
1809	48	0.	0.	0.	3.
KITT	48	1.	3.	0.	1.
ELLAR	48	0.	0.	0.	3.
ERA	48	0.	0.	0.	2.
WALDRON	64	0.	0.	0.	2.
LARK	64	2.	0.	0.	4.
OLAF	64	1.	0.	0.	3.
CHRIS	64	0.	1.	0.	3.
TIOGA	64	1.	3.	0.	3.
1809	64	2.	5.	1.	3.
KITT	64	0.	5.	0.	1.
ELLAR	64	0.	5.	0.	3.
ERA	64	3.	9.	0.	3.
MEAN		1.	2.	0.	3.
HIGH MEAN		3.	9.	1.	4.
LOW MEAN		0.	0.	0.	1.
COEFF. OF VARIATION		246.	178.	735.	56.
LSD(.01 PERCENT)		6.	6.	1.	3.
LSD(.05 PERCENT)		4.	5.	1.	2.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

LITTLE HARD RED SPRING WHEAT INJURY WAS OBSERVED WITH MSMA AT EITHER THE 3 OR 4 LB/A RATE.

TABLE 39. RESPONSE OF DURUM CULTIVARS TO MSMA, FARGO 1975. CULTIVARS WERE SEEDED IN 6 FT. STRIPS MAY 18. MSMA WAS APPLIED TO 4-LF WHEAT JUNE 11.

SPECIES	MSMA OZ/A	YIELD PCNT	INJ. WHEAT PCNT	% DELAY MATURITY RATE	PLANT HT. CM.
WELLS	48	0.	0.	0.	1.
WARD	48	0.	0.	0.	1.
ROLLETTE	48	0.	0.	0.	1.
D71111	48	0.	0.	0.	0.
D6962	48	0.	0.	0.	0.
LEEDS	48	0.	0.	0.	1.
RUGBY	48	0.	3.	0.	1.
CROSBY	48	0.	3.	0.	1.
D7057	48	0.	3.	0.	0.
BOTNO	48	0.	0.	0.	0.
WELLS	64	5.	0.	0.	1.
WARD	64	3.	3.	0.	1.
ROLLETTE	64	0.	4.	0.	2.
D71111	64	4.	3.	2.	2.
D6962	64	0.	3.	0.	2.
LEEDS	64	0.	0.	0.	1.
RUGBY	64	7.	0.	0.	0.
CROSBY	64	0.	0.	0.	1.
D7057	64	3.	0.	0.	1.
BOTNO	64	0.	0.	2.	0.
MEAN		1.	1.	0.	1.
HIGH MEAN		7.	4.	2.	2.
LOW MEAN		0.	0.	0.	0.
COEFF. OF VARIATION		194.	331.	555.	196.
LSD(.01 PERCENT)		5.	6.	2.	4.
LSD(.05 PERCENT)		4.	4.	2.	3.
NO. OF REPS		3.	4.	3.	3.

SUMMARY

LITTLE DURUM WHEAT INJURY WAS OBSERVED WITH MSMA AT EITHER THE 3 OR 4 LB/A RATE.

TABLE 40. RESPONSE OF WILD OAT LINES TO MSMA, FARGO 1975. WILD OAT LINES WERE SEEDED IN HILLS 3 FT. APART MAY 21. MSMA WAS APPLIED TO 4 TO 5-LF WICA JUNE 26. FRESH WT. DETERMINED JULY 24.

TREATMENT		RATE OZ/A	PCNT CNTL
WO	1	MSMA 32	46.
WO	28	MSMA 32	38.
WO	35	MSMA 32	52.
WO	36	MSMA 32	48.
WO	55	MSMA 32	39.
WO	65	MSMA 32	45.
WO	73	MSMA 32	36.
WO	150	MSMA 32	32.
WO	155	MSMA 32	46.
WO	159	MSMA 32	40.
WO	189	MSMA 32	42.
WO	1	MSMA 48	47.
WO	28	MSMA 48	44.
WO	35	MSMA 48	59.
WO	36	MSMA 48	48.
WO	55	MSMA 48	48.
WO	65	MSMA 48	58.
WO	73	MSMA 48	48.
WO	150	MSMA 48	39.
WO	155	MSMA 48	57.
WO	159	MSMA 48	58.
WO	189	MSMA 48	46.
MEAN			46.
HIGH MEAN			59.
LOW MEAN			32.
COEFF. OF VARIATION			19.
LSD(.01 PERCENT)			19.
LSD(.05 PERCENT)			14.
NO. OF REPS			3.

SUMMARY

MSMA DID NOT ADEQUATELY CONTROL WILD OAT LINES AT EITHER RATE IN THE FIELD. FIELD RESULTS DO NOT RELATE CLOSELY TO GREEN-HOUSE RESULTS.

TABLE 41. RESPONSE OF WILD OAT LINES TO SD-29761, FARGO 1975. WILD OAT LINES WERE SEEDED IN HILLS 3FT. APART MAY 21. SD-29761 WAS APPLIED TO 4 TO 5-LF WICA JUNE 26. FRESH WT. DETERMINED JULY 24.

TREATMENT		RATE OZ/A	PCNT CNTL
WO 1	SD	4	49.
WO 28.	SD	4	76.
WO 35	SD	4	62.
WO 36	SD	4	63.
WO 55	SD	4	56.
WO 65	SD	4	68.
WO 73	SD	4	46.
WO 150	SD	4	52.
WO 155	SD	4	74.
WO 159	SD	4	40.
WO 189	SD	4	55.
WO 1	SD	8	62.
WO 28	SD	8	89.
WO 35	SD	8	77.
WO 36	SD	8	71.
WO 55	SD	8	67.
WO 65	SD	8	86.
WO 73	SD	8	68.
WO 150	SD	8	71.
WO 155	SD	8	78.
WO 159	SD	8	42.
WO 189	SD	8	80.
MEAN			65.
HIGH MEAN			89.
LOW MEAN			40.
COEFF. OF VARIATION			26.
LSD(.01 PERCENT)			37.
LSD(.05 PERCENT)			27.
NO. OF REPS			3.

SUMMARY

WILD OAT LINES DIFFERED IN THEIR RESPONSE TO SD-29761 IN THE FIELD AND THE RESPONSE WAS SIMILAR TO THAT OBSERVED IN THE GREENHOUSE WITH LINE 1 BEING MORE RESISTANT THAN LINE 65.

TABLE 1. BENAZOLIN PLUS DICAMBA AND MCPA IN WHEAT, FARGO 1975. OLAF WHEAT, GOODMAN OATS, AND MULTUM BARLEY WERE SEEDED ON MAY 5. TREATMENTS WERE APPLIED WHEN CROPS WERE IN LATE TILLER TO EARLY BOOT STAGE AND WEEDS WITH APPROX. 8 LEAVES ON JUNE 26.

TREATMENT	RATE OZ/A	-----INJURY----			-----% CONTROL--------			
		WHT	BAR	OATS	WIMU	WIOA	RRPW	FXTL
DIC+MCPA	2+4	14.	11.	4.	98.	93.	100.	21.
DIC+MCPA	4+4	16.	20.	9.	98.	98.	100.	20.
DIC+MCPA+BEN	2+4+2	5.	6.	0.	100.	99.	100.	3.
DIC+MCPA+BEN	4+4+4	20.	26.	9.	99.	98.	100.	25.
MEAN		14.	16.	5.	98.	97.	100.	17.
HIGH MEAN		20.	26.	9.	100.	99.	100.	25.
LOW MEAN		5.	6.	0.	98.	93.	100.	3.
COEFF. OF VARIATION		67.	55.	100.	3.	5.	0.	102.
LSD(.01 PERCENT)		21.	20.	12.	8.	11.	0.	40.
LSD(.05 PERCENT)		15.	14.	8.	5.	8.	0.	28.
NO. OF REPS		4.	4.	4.	4.	4.	2.	4.

SUMMARY

CROP INJURY FROM DICAMBA PLUS MCPA WAS REDUCED WHEN BENAZOLIN WAS ADDED TO THE 2+4 OZ/A DICAMBA AND MCPA MIXTURE.

TABLE 2. DICAMBA AND VEL-4207 IN WHEAT, BARLEY AND OATS, FARGO 1975. OLAF WHEAT, MULTUM BARLEY, AND GOODLAND OATS SEEDED AND PE TRTS APPLIED MAY 17. TRTS APPLIED TO 4 LF CROPS ON JUNE 6 AND TO LATE TILLER TO BOOT STAGE CROPS ON JUNE 26. ALL STANDS MOD. TO HEAVY. GEN 75-53

TREATMENT	LB/A	YLD. LB/A WHT	---INJURY--- WHT.	BAR.	OATS	---% WEED CONTROL--- WIMU	WIBW	FXTL	RRPW	HEIGHTS- WHT CM.	BAR CM.
VEL-4207 PE	.5	848.	0.	0.	0.	0.	0.	0.	0.	72.	63.
VEL-4207 PE	1	852.	3.	0.	0.	10.	16.	0.	100.	73.	62.
VEL-4207 PE	2	840.	4.	4.	3.	28.	51.	10.	95.	73.	64.
DICAMBA PE	.5	745.	10.	18.	5.	28.	61.	0.	100.	75.	63.
DICAMBA PE	1	954.	30.	34.	19.	68.	80.	25.	100.	69.	58.
DICAMBA PE	2	779.	48.	59.	43.	84.	95.	50.	100.	66.	59.
VEL-4207(2-4-LF)	.12	835.	1.	1.	0.	34.	50.	0.	100.	74.	62.
VEL-4207(2-4-LF)	.25	1097.	5.	5.	1.	53.	55.	15.	95.	73.	63.
VEL-4207(2-4-LF)	.5	1046.	21.	20.	10.	88.	89.	20.	100.	73.	65.
VEL-4207(2-4-LF)	1	1068.	43.	53.	28.	99.	100.	60.	100.	69.	60.
DICAMBA	.12	894.	13.	13.	5.	85.	96.	50.	100.	71.	65.
DICAMBA	.25	1116.	19.	28.	14.	94.	98.	80.	100.	68.	64.
DICAMBA	.5	961.	50.	60.	36.	100.	100.	90.	100.	67.	61.
DIC+BENAZ	.25+.25	1076.	31.	45.	24.	98.	100.	65.	100.	69.	60.
VEL-4207(JOINT)	.12	744.	5.	3.	0.	61.	34.	0.	0.	70.	59.
VEL-4207(JOINT)	.25	770.	0.	3.	0.	88.	76.	30.	60.	72.	60.
VEL-4207(JOINT)	.5	439.	8.	13.	3.	99.	91.	0.	85.	70.	57.
VEL-4207(JOINT)	1	572.	11.	16.	0.	96.	93.	10.	90.	72.	60.
DICAMBA	.12	665.	8.	8.	0.	88.	63.	0.	65.	71.	59.
DICAMBA	.25	699.	16.	20.	8.	90.	89.	15.	70.	72.	59.
DICAMBA	.5	652.	20.	23.	13.	98.	99.	0.	90.	70.	54.
CONTROL	CNTL	807.	0.	0.	0.	0.	0.	0.	0.	71.	62.
MEAN		839.	16.	19.	9.	68.	70.	24.	80.	71.	61.
HIGH MEAN		1116.	50.	60.	43.	100.	100.	90.	100.	75.	65.
LOW MEAN		439.	0.	0.	0.	0.	0.	0.	0.	66.	54.
COEFF. OF VARIATION		23.	43.	32.	56.	22.	18.	0.	0.	4.	8.
LSD(.01 PERCENT)		358.	13.	11.	10.	28.	23.	0.	0.	6.	8.
LSD(.05 PERCENT)		271.	9.	9.	7.	21.	18.	0.	0.	4.	6.
NO. OF REPS		4.	4.	4.	4.	4.	4.	1.	1.	4.	4.

SUMMARY

TWO TO FOUR TIMES MORE VEL-4207 THEN DICAMBA WAS REQUIRED FOR SIMILAR WILD MUSTARD AND WILD BUCKWHEAT CONTROL WITH POSTEMERGENCE TREATMENTS. BENAZOLIN PLUS DICAMBA DID NOT INCREASE CROP TOLERANCE IN THE EXPERIMENT.

TABLE 3. FOXTAIL CONTROL IN WHEAT, FARGO 1975. OLAF WHEAT SEEDED AND PEI TRTS HARROW (2X) INCORP. ON MAY 17. POST TRTS APPLIED TO 0.5 TO 0.75 IN. YEFT AND 2.5 LEAF WHEAT ON JUNE 2. FXTL-HEAVY; AND WIMU AND WIOA MODERATE. GENERAL 75-43

TREATMENT		LB/A	YIELD LB/A	WHT INJ.	----% WEED CONTROL---------- FXTL 6/18	WIMU	RRPW	WIBW	WIOA	FXTL 7/17	HT. CM.
TRIFLURAL	PEI	.5	541.	14.	90.	0.	73.	0.	5.	69.	67.
TRIFLURAL	PEI	.75	662.	25.	94.	0.	49.	0.	11.	76.	70.
TRIFLURAL		1	593.	38.	97.	0.	50.	0.	45.	88.	70.
TRIF+TRI	PEI	.5+.75	729.	28.	84.	0.	25.	8.	65.	74.	69.
BUTYLIN	PEI	2	769.	20.	91.	21.	50.	0.	23.	75.	71.
PROFLURAL	PEI	1	625.	14.	88.	9.	50.	0.	30.	80.	69.
FLUCHLOR	PEI	1	647.	6.	89.	6.	38.	0.	11.	83.	70.
DINITRAM	PEI	.5	595.	19.	86.	15.	50.	0.	15.	68.	65.
PENOXALIN	PEI	1.5	798.	19.	91.	14.	48.	13.	21.	82.	71.
HOE-23408	PEI	2	455.	0.	61.	0.	0.	0.	18.	36.	71.
R-31401	PEI	2	377.	0.	28.	64.	40.	4.	68.	33.	68.
R-32346	PEI	3	456.	0.	0.	0.	0.	0.	0.	0.	71.
PENOXALIN	PE	1.5	819.	3.	87.	13.	0.	13.	9.	66.	73.
PENOXALIN	PE	3	1076.	9.	94.	40.	39.	5.	29.	92.	71.
PROPACHLOR	PE	3	789.	5.	89.	0.	0.	0.	8.	79.	72.
PROPACHLOR	PE	6	915.	13.	97.	18.	34.	0.	0.	93.	73.
DOWCO-356	PE	.75	745.	5.	69.	8.	0.	4.	21.	58.	73.
DOWCO-356	PE	1.5	870.	30.	86.	30.	25.	15.	41.	76.	72.
R-32346	PE	3	458.	0.	0.	0.	0.	0.	0.	0.	53.
HOE-23408	POST	.75	795.	3.	78.	0.	0.	0.	95.	83.	73.
HOE-23408	POST	1	930.	9.	88.	0.	0.	0.	98.	89.	72.
MSMA	POST	2	1032.	6.	86.	94.	46.	8.	30.	64.	74.
MSMA	POST	3	1057.	9.	90.	93.	25.	18.	10.	75.	70.
TCA	POST	1	508.	0.	16.	3.	0.	0.	0.	5.	72.
TCA+NO2	POST	1+10	449.	0.	18.	0.	0.	0.	0.	0.	75.
BIFINOX	POST	1	615.	6.	23.	75.	40.	8.	0.	0.	74.
BIF+LO	POST	1+1QT	555.	3.	43.	78.	45.	5.	0.	9.	73.
CONTROL		CNTL	425.	0.	0.	0.	0.	0.	0.	0.	74.
MEAN			689.	10.	66.	21.	26.	3.	23.	55.	71.
HIGH MEAN			1076.	38.	97.	94.	73.	18.	98.	93.	75.
LOW MEAN			377.	0.	0.	0.	0.	0.	0.	0.	53.
COEFF. OF VARIATION			19.	78.	18.	42.	114.	267.	69.	20.	10.
LSD(.01 PERCENT)			246.	14.	22.	16.	54.	17.	30.	20.	13.
LSD(.05 PERCENT)			186.	11.	16.	12.	41.	13.	22.	15.	10.
NO. OF REPS			4.	4.	4.	4.	4.	4.	4.	4.	4.

SUMMARY

WHEAT YIELD WAS VARIABLE BECAUSE OF EXCESS MOISTURE. HOWEVER, WEED STANDS WERE QUITE UNIFORM. THE CROP WAS SEEDED RATHER SHALLOW BECAUSE OF LUMPY SOIL. THUS THE HARROW INCORPORATION OF HERBICIDE MAY HAVE BEEN INTO THE SEED ZONE. THE DINITRO ANALINES AND PROPACHLOR CONTROLLED FOXTAIL, BUT WERE INADEQUATE IN CONTROLLING WILD OATS. HOE-23408 AND MSMA CONTROLLED BOTH FOXTAIL AND WILD OATS. MSMA ALSO CONTROLLED WILD MUSTARD.

TABLE 4. FOXTAIL CONTROL IN WHEAT, LANGDON 1975. CLAF WHEAT WAS SEEDED MAY 28, PEI TRTS APPLIED AND HARROW INCORPORATED MAY 31, AND PE TRTS APPLIED JUNE 3. POST TRTS APPLIED TO 3 TO 4-LF WHEAT AND 2" FOXTAIL ON JUNE 23.

TREATMENT		RATE	WHEAT				% CONTROL		
		OZ/A	YIELD LB/A	HT. CM.	INJ. PCNT	ST. RED.	FXTL	RRPW	CCLQ
TRIFLURALIN	PEI	8	2106.	57.7	5.	8.	97.	53.	63.
TRIFLURALIN	PEI	12	2030.	58.3	8.	10.	86.	72.	75.
TRIFLURALIN	PEI	16	2130.	59.3	3.	8.	93.	73.	78.
TRIF+TRIAL	PEI	8+12	2098.	59.0	2.	5.	87.	60.	58.
PENOXALIN	PEI	24	2092.	58.7	0.	0.	92.	100.	100.
HOE-23408	PEI	32	2118.	59.0	0.	7.	63.	0.	0.
HOE-23408	PE	32	2132.	59.3	0.	0.	93.	12.	13.
PENOXALIN	PE	24	2186.	60.0	8.	7.	98.	100.	100.
PENOXALIN	PE	48	2216.	60.0	12.	22.	100.	100.	100.
PROPACHLOR	PE	48	2286.	60.0	0.	3.	98.	88.	57.
PROPACHLOR	PE	96	2238.	62.0	8.	17.	100.	100.	95.
HOE-23408	POST	12	2128.	59.7	10.	3.	98.	0.	0.
HOE-23408	POST	16	2108.	59.3	0.	0.	98.	0.	0.
MSMA	POST	32	2142.	60.7	0.	0.	92.	95.	83.
MSMA	POST	48	1960.	60.3	5.	7.	52.	58.	52.
CONTROL			2116.	59.7	0.	0.	0.	0.	0.
MEAN			2130.	59.6	4.	6.	84.	57.	55.
HIGH MEAN			2286.	62.0	12.	22.	100.	100.	100.
LOW MEAN			1960.	57.7	0.	0.	0.	0.	0.
COEFF. OF VARIATION			9.	1.8	126.	127.	23.	46.	52.
LSD(.01 PERCENT)			438.	2.4	11.	17.	43.	59.	64.
LSD(.05 PERCENT)			325.	1.8	8.	13.	32.	44.	47.
NO. OF REPS			3.	3.0	3.	3.	3.	3.	3.

SUMMARY

FOXTAIL STAND WAS LIGHT, THUS WHEAT YIELD INCREASES WERE NONSIGNIFICANT WITH FOXTAIL CONTROL. PENOXALIN, PROPACHLOR AND MSMA CONTROLLED FOXTAIL PLUS THE BROADLEAF WEEDS.

TABLE 5. FOXTAIL CONTROL IN WHEAT, WILLISTON 1975. WALDRON WHEAT WAS SEEDED MAY 30 AND PEI AND PE TRTS APPLIED JUNE 2. INCORPORATION BY 2 HARROWINGS. POST TRTS APPLIED TO 3-LEAF WHEAT AND 2-LF FOXTAIL ON JUNE 23.

TREATMENT		RATE OZ/A	WHEAT YIELD LB/A	WHEAT TEST WGHT	WHEAT HT. CM.	WHEAT INJ. PCNT	PCNT FXTL CNTL
TRIFLURALIN	PEI	8	2107.	58.2	88.5	19.	91.
TRIFLURALIN	PEI	12	2199.	58.3	88.0	19.	92.
TRIFLURALIN	PEI	16	2378.	57.9	86.0	31.	94.
TRIF+TRIAL	PEI	8+12	2227.	58.3	86.5	24.	88.
PENOXALIN	PEI	24	2259.	58.2	88.0	28.	94.
HOE-23408	PEI	32	2171.	58.5	81.5	24.	90.
HOE-23408	PE	32	2249.	58.2	86.0	8.	90.
PENOXALIN	PE	24	2173.	58.0	88.5	0.	87.
PENOXALIN	PE	48	2321.	58.5	89.0	4.	94.
PROPACHLOR	PE	48	2146.	57.7	85.5	3.	74.
PROPACHLOR	PE	96	2158.	58.6	86.5	23.	88.
HOE-23408	POST	12	2177.	58.1	87.5	3.	78.
HOE-23408	POST	16	2500.	58.6	86.5	4.	80.
MSMA	POST	32	2335.	59.1	84.5	13.	56.
MSMA	POST	48	2284.	59.0	85.0	13.	75.
DIURON	POST	12	2323.	58.9	86.0	13.	86.
DIURON+BROM	POST	8+4	2157.	58.6	87.5	20.	78.
CONTROL			1934.	58.2	88.0	0.	0.
MEAN			2228.	58.4	86.6	14.	80.
HIGH MEAN			2500.	59.1	89.0	31.	94.
LOW MEAN			1934.	57.7	81.5	0.	0.
COEFF. OF VARIATION			8.	0.0	0.0	72.	14.
LSD(.01 PERCENT)			344.	0.0	0.0	18.	21.
LSD(.05 PERCENT)			258.	0.0	0.0	14.	16.
NO. OF REPS			4.	1.0	1.0	4.	4.

SUMMARY

MOST TREATMENTS GAVE GOOD FOXTAIL CONTROL. HOWEVER, MANY TREATMENTS TENDED TO INJURE WHEAT. HOE-23408, POSTEMERGENCE DID NOT INJURE WHEAT AND GAVE THE HIGHEST YIELD INCREASE.

TABLE 6. FOXTAIL CONTROL IN WHEAT, MINOT 1975. WALDRON WHEAT SEEDED, PEI TRTS APPLIED AND HARROW INCORPORATED AND PE TRTS APPLIED ON MAY 16. POSTEMERGENCE TRTS WERE APPLIED JUNE 13 WHEN FXTL WAS 1.5-2" TALL AND WHEAT WAS IN THE 4-LF STAGE. FXTL STAND HEAVY.

TREATMENT		RATE OZ/A	YIELD BU/A	----WHEAT--- INJ.	STAND	--% CONTROL- FXTL	WIOA
TRIFLURALIN	PEI	8	16.9	5.	16.	87.	31.
TRIFLURALIN	PEI	12	15.6	0.	8.	90.	29.
TRIFLURALIN	PEI	16	10.8	0.	13.	94.	39.
TRIF+TRIAL	PEI	8+12	17.8	0.	3.	85.	59.
PENOXALIN	PEI	24	14.7	0.	4.	90.	10.
HOE-23408	PEI	32	17.5	0.	4.	94.	74.
HOE-23408	PE	32	19.1	0.	0.	98.	88.
PENOXALIN	PE	24	14.3	0.	0.	83.	10.
PENOXYLIN	PE	48	14.9	0.	3.	97.	49.
PROPACHLOR	PE	48	12.2	0.	0.	64.	0.
PROPACHLOR	PE	96	13.6	0.	0.	73.	0.
HOE-23408	P	12	17.1	3.	0.	95.	100.
HOE-23408	P	16	16.2	6.	0.	97.	100.
MSMA	P	32	7.9	5.	4.	41.	100.
MSMA	P	48	10.1	3.	0.	56.	100.
CONTROL			7.8	0.	0.	0.	0.
MEAN			14.2	1.	3.	78.	49.
HIGH MEAN			19.1	6.	16.	98.	100.
LOW MEAN			7.8	0.	0.	0.	0.
COEFF. OF VARIATION			24.0	318.	173.	13.	31.
LSD(.01 PERCENT)			6.4	8.	11.	19.	28.
LSD(.05 PERCENT)			4.8	6.	8.	14.	21.
NO. OF REPS			4.0	4.	4.	4.	4.

SUMMARY

HOE-23408 PREEMERGENCE OR POSTEMERGENCE GAVE EXCELLENT CONTROL OF BOTH WILD OATS AND GREEN FOXTAIL. TRIFLURALIN GAVE GOOD FOXTAIL CONTROL. TRIFLUALIN AT 16 OZ/A APPARENTLY INJURED WHEAT AS THE YIELD WAS LOWER THAN WITH 8 OZ/A. PENOXALIN AND PROPACHLOR GAVE FAIR TO GOOD FOXTAIL CONTROL, BUT POOR WILD OATS CONTROL. MSMA GAVE EXCELLENT WILD OATS CONTROL BUT FAIR TO POOR FOXTAIL CONTROL.

TABLE 7. FOXTAIL CONTROL IN WHEAT, OAKES 1975. CLAF WHEAT SEEDED AND PEI AND PE TRTS APPLIED MAY 13. POST TRTS APPLIED TO WHEAT IN ABOUT 4-LEAF STAGE ON JUNE 5. 6.45" OF WATER APPLIED BETWEEN JUNE 14 AND JULY 24.

TREATMENTS		RATE OZ/A	--WHEAT--- YIELD LB/A	ST. RED.	------PERCENT CONTROL------- FXTL	RRPW	COLQ	SUFL	WIBW	PTPW	TEST WT.
TRIFLURALIN	PEI	8	1322.	29.	98.	100.	98.	56.	99.	99.	58.
TRIFLURALIN	PEI	12	1216.	41.	98.	99.	100.	64.	91.	99.	58.
TRIFLURALIN	PEI	16	984.	47.	100.	99.	100.	50.	100.	100.	58.
TRIF+TRIAL	PEI	8+12	1219.	36.	99.	100.	98.	41.	95.	100.	58.
PENOXALIN	PEI	24	1419.	25.	100.	100.	100.	58.	100.	100.	58.
HOE-23408	PEI	32	1485.	4.	74.	89.	25.	40.	35.	70.	58.
HOE-23408	PE	32	1585.	5.	85.	83.	48.	58.	51.	45.	58.
PENOXALIN	PE	24	1539.	11.	98.	100.	100.	65.	98.	100.	58.
PENOXALIN	PE	48	1530.	4.	100.	100.	100.	73.	100.	100.	58.
PROPACHLOR	PE	96	1431.	6.	93.	100.	93.	71.	25.	99.	58.
PROPACHLOR	POST	96	1442.	13.	100.	100.	94.	83.	14.	99.	59.
HOE-23408	POST	12	1398.	7.	95.	94.	46.	74.	36.	94.	58.
HOE-23408	POST	16	1618.	4.	96.	85.	58.	53.	13.	83.	58.
MSMA	POST	32	1439.	4.	56.	95.	49.	80.	55.	94.	58.
MSMA	POST	48	1571.	8.	64.	98.	69.	85.	64.	84.	59.
CONTROL			1597.	0.	0.	0.	0.	0.	0.	0.	58.
MEAN			1425.	15.	85.	90.	73.	59.	61.	85.	58.
HIGH MEAN			1618.	47.	100.	100.	100.	85.	100.	100.	59.
LOW MEAN			984.	0.	0.	0.	0.	0.	0.	0.	58.
COEFF. OF VARIATION			10.	47.	19.	14.	30.	44.	36.	22.	0.
LSD(.01 PERCENT)			273.	9.	21.	16.	28.	34.	29.	25.	0.
LSD(.05 PERCENT)			205.	7.	16.	12.	22.	26.	22.	19.	0.
NO. OF REPS			4.	8.	8.	8.	8.	8.	8.	8.	1.

SUMMARY

WEED POPULATIONS WERE LIGHT. TRIFLURALIN AND FENCXALIN PREEMERGENCE INCORPORATED REDUCED WHEAT STANDS. HOE-23408 GAVE GCCD FCXTAIL CCNTROL WITHOUT WHEAT INJURY REGARDLESS CF APPLICATICN METHOD. PENCXALIN AND PROPACHLOR PREEMERGENCE WERE ALSO EFFECTIVE FCR FCXTAIL CCNTROL IN WHEAT.

TABLE 14. FALSE CHAMOMILE CONTROL, MOHALL 1975. POSTEMERGENCE TREATMENTS WERE APPLIED TO WARD DURUM IN THE 3-LEAF STAGE AND EACH 1-2 IN. TALL ON JUNE 27.

TREATMENT	RATE LB/A	WHEAT INJURY 0-10	EACH PCNT CNTL
BROM+DIURON	4+8	8.	84.
BROM+MET	4+8	91.	94.
DIC+BEN+MCPA	2+2+4	5.	29.
DIC+BEN+MCPA	4+4+4	8.	65.
BENTAZON	16	0.	58.
BENTAZON+LOAM	1QT 16	3.	76.
RH-2915	1	0.	15.
RH-2915	2	5.	38.
RH-2915	4	29.	63.
PIC+2,4-D	.5+8	0.	60.
C-290+2,4-D	2+8	0.	83.
BIFENOX	16	0.	0.
TERBUTRYNE	32	50.	81.
DNBP	24	8.	39.
LS-1299	64	39.	90.
EXP-3154	4PT	13.	60.
CONTROL	CNT	0.	0.
MEAN		15.	55.
HIGH MEAN		91.	94.
LOW MEAN		0.	0.
COEFF. OF VARIATION		43.	33.
LSD(.01 PERCENT)		12.	34.
LSD(.05 PERCENT)		9.	26.
NO. OF REPS		4.	4.

SUMMARY

METRABUZIN AT 8 OZ/A AND TERBUTRYNE INJURED WHEAT EXCESSIVELY. BROMOXYNIL PLUS DIURON, BENTAZON WITH LOAM, PICLORAM OR DOWCO 290 WITH 2,4-D GAVE GOOD FALSE CHAMOMILE CONTROL WITHOUT WHEAT INJURY.

TABLE 15. DOWCO 290 AND PICLORAM IN WHEAT, MINOT 1975. ELLAR WHEAT WAS SEEDED MAY 16. TILLERING STAGE TREATMENTS APPLIED JUNE 11 AND BOOT STAGE TRTS. APPLIED JUNE 27.

		--- TILLERING STAGE -----					----- BOOT STAGE ---			
TREATMENT	RATE OZ/A	YIELD BU/A	INJ. %	CCLO CNTL	RRPW CNTL	WIBW CNTL	YIELD BU/A	CCLO CNTL	RRPW CNTL	WIBW CNTL
M3785	1.5	42.9	0.	91.	76.	33.	40.1	56.	50.	28.
M3785	2	44.3	0.	86.	81.	64.	39.5	86.	58.	73.
TOR 202	1/4+4	42.5	0.	100.	94.	74.	35.7	95.	70.	88.
TOR 202	3/8+6	42.2	6.	100.	99.	96.	33.8	94.	73.	85.
TOR 22K+2,4-D	1/2+4	38.5	33.	100.	100.	99.	33.8	95.	73.	86.
TOR 22K+2,4-D	3/8+6	41.6	28.	100.	100.	100.	29.2	93.	70.	83.
2,4-D ESTER	8	42.5	0.	100.	96.	54.	39.2	99.	74.	78.
2,4-D+DICAMBA	4+2	42.0	3.	100.	98.	85.	41.3	91.	64.	71.
CONTROL		44.3	0.	0.	0.	0.	37.1	0.	0.	0.
MEAN		42.3	8.	86.	82.	67.	36.6	79.	59.	66.
HIGH MEAN		44.3	33.	100.	100.	100.	41.3	99.	74.	88.
LOW MEAN		38.5	0.	0.	0.	0.	29.2	0.	0.	0.
COEFF. OF VARIATION		6.4	150.	6.	11.	28.	10.8	16.	40.	23.
LSD(.01 PERCENT)		5.3	23.	10.	18.	38.	7.8	25.	46.	30.
LSD(.05 PERCENT)		3.9	17.	7.	13.	28.	5.8	18.	34.	22.
NO. OF REPS		4.0	4.	4.	4.	4.	4.0	4.	4.	4.

SUMMARY

TORDON 202 OR 22K+2,4-D APPLIED AT THE BOOT STAGE TENDED TO REDUCE WHEAT YIELD COMPARED TO THE CONTROL. FURTHER, 22K+2,4-D AT 1/2+4OZ/A APPLIED AT TILLERING REDUCED YIELD. THE TWO STAGES OF APPLICATION WERE TWO SEPERATE EXPERIMENTS LOCATED IN THE SAME GENERAL AREA. WEED INFESTATION WERE LIGHT TO MODERATE IN A VIGOROUS CROP STAND.

TABLE 16. PREEMERGENCE WEED CONTROL IN FLAX, FARGO 1975. PPI ROTO-TILLER INCORP, TRTS APPLIED; BOLLEY, NORSTAR, AND LINOTT FLAX SEEDED; AND PE TRTS APPLIED MAY 27. SOIL SURFACE DRY AND LUMPY WITH A WET SUBSURFACE. FXTL-HEAVY, OTHER WEEDS-MODERATE. GENERAL 75-32

TREATMENT		LB/A	-LINOTT--- INJ.	STD. RED.	--NORSTAR- INJ.	STD. RED.	--BOLLY--- INJ.	STD. RED.	RRPW PCNT CNTL	FXTL PCNT CNTL
EPTC	PPI	3	25.	25.	26.	18.	29.	18.	29.	99.
EPTC	PPI	5	35.	60.	41.	46.	49.	47.	36.	100.
TRIFLUR	PPI	.75	50.	36.	56.	54.	56.	51.	68.	92.
PROFLUR	PPI	1	15.	38.	18.	34.	15.	26.	68.	96.
FLUCHLOR	PPI	1	19.	24.	26.	28.	23.	16.	68.	96.
DINITRAM	PPI	.66	33.	28.	26.	19.	10.	11.	61.	98.
PENOXAL	PPI	3	41.	81.	38.	71.	28.	56.	70.	100.
HOE-23408	PPI	2	9.	0.	5.	3.	0.	8.	13.	98.
DS-23017	PPI	2	15.	25.	6.	10.	11.	15.	24.	90.
HER-22234	PPI	3	9.	9.	0.	9.	0.	3.	10.	88.
HER-22234	PPI	6	9.	6.	5.	5.	3.	6.	21.	95.
EPTC+R401	PPI	2.5+2.5	50.	55.	35.	36.	29.	30.	59.	98.
HER+TERB	PPI	3+.5	45.	34.	41.	33.	29.	28.	25.	84.
AMIBEN 6L	PE	2.5	3.	0.	3.	0.	6.	0.	65.	89.
PROPACH	PE	4	4.	0.	3.	3.	3.	0.	0.	79.
PROPACH	PE	6	10.	4.	0.	3.	0.	0.	13.	86.
PROP+BROM	PE	3+.25	33.	8.	35.	3.	33.	0.	18.	63.
R-31401	PE	3	35.	6.	15.	0.	28.	5.	60.	25.
PENOXALIN	PE	3	73.	80.	53.	46.	38.	44.	58.	78.
CGA-24705	PE	3	15.	0.	10.	3.	16.	5.	24.	91.
DS-23017	PE	2	8.	10.	10.	5.	5.	5.	34.	79.
DS-23017	PE	3	19.	13.	10.	5.	20.	8.	40.	84.
DS-23017	PE	4	5.	15.	4.	8.	0.	0.	54.	87.
DS+TERB	PE	2+.5	44.	21.	20.	15.	20.	25.	20.	68.
DS+BROM	PE	2+.25	28.	5.	28.	3.	30.	0.	45.	85.
MEAN			25.	23.	21.	18.	19.	16.	39.	86.
HIGH MEAN			73.	81.	56.	71.	56.	56.	70.	100.
LOW MEAN			3.	0.	0.	0.	0.	0.	0.	25.
COEFF. OF VARIATION			91.	63.	105.	68.	118.	93.	67.	10.
LSD(.01 PERCENT)			42.	27.	40.	23.	42.	28.	49.	16.
LSD(.05 PERCENT)			32.	21.	30.	17.	32.	21.	37.	12.
NO. OF REPS			4.	4.	4.	4.	4.	4.	4.	4.

SUMMARY

LINOTT FLAX TENDED TO BE MORE SUSCEPTIBLE TO EPTC THEN THE OTHER VARIETIES. INJURY WAS SEVERE POSSIBLY FROM THE COMBINED HERBICIDE PLUS EXCESS MOISTURE STRESSES. DINITRAMINE AND FLUCHLORALIN APPEARED LESS INJURIOUS THAN THE OTHER DINITRANALINES. HOE-23408, AMIBEN, PROPACHLOR, CGA-24705, AND DS-23017 ALL GAVE GOOD FOXTAIL CONTROL WITHOUT SERIOUS FLAX INJURY. HOWEVER, RRPW CONTROL WAS NOT ADEQUATE.

TABLE 17. POSTEMERGENCE WEED CONTROL IN FLAX, FARGO 1975. FLAX SEEDED AS IN THE PREEMERGENCE EXP. ON MAY 27. TRTS APPLIED TO 4 IN. FLAX, 1 TO 2 IN. RRPW, 12 IN. WIMU, 6 IN. COLQ, AND .5-4 IN. GRFT AND YLFT. FXTL HEAVY AND BROADLEAF WEEDS MODERATE.

TREATMENT	OZ/A	--LINOTT--		--NORSTAR-		---BOLLEY-		RRPW	FXTL
		INJ.	STD. RED.	INJ.	STD. RED.	INJ.	STD. RED.	PCNT CNTL	PCNT CNTL
MCPA+DAL	4+12	0.	0.	3.	0.	0.	0.	79.	88.
BROMOXYNIL	4	0.	0.	0.	0.	0.	0.	65.	0.
BROMOXYNIL	8	0.	0.	0.	0.	0.	0.	66.	0.
BROM+MCPA	4+4	0.	0.	0.	0.	0.	0.	75.	0.
BROM+MCPA+DAL	4+4+12	5.	0.	3.	0.	0.	0.	81.	85.
BENAZOLIN	2	0.	0.	0.	0.	0.	0.	20.	0.
BENAZOLIN	4	0.	0.	0.	0.	0.	0.	53.	0.
ASULAM+.2%S	16	0.	0.	0.	0.	0.	0.	18.	36.
ASULAM+.2%S	32	23.	0.	15.	3.	15.	0.	56.	76.
AS+MCPA+.2%S	16+4	0.	0.	0.	0.	0.	0.	59.	63.
HOE-23408	12	0.	0.	0.	0.	0.	0.	0.	73.
HOE-23408	16	0.	0.	0.	0.	0.	0.	0.	88.
HOE-23408	32	0.	0.	0.	0.	0.	0.	0.	94.
HOE+MCPA	16+4	0.	0.	0.	0.	0.	0.	51.	74.
MEAN		2.	0.	1.	0.	1.	0.	44.	48.
HIGH MEAN		23.	0.	15.	3.	15.	0.	81.	94.
LOW MEAN		0.	0.	0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		195.	0.	172.	748.	144.	0.	36.	10.
LSD(.01 PERCENT)		7.	0.	5.	3.	3.	0.	31.	9.
LSD(.05 PERCENT)		5.	0.	4.	2.	2.	0.	23.	7.
NO. OF REPS		4.	4.	4.	4.	4.	4.	4.	4.

SUMMARY

YIELDS WERE NOT TAKEN BECAUSE OF VARIABILITY DUE TO EXCESS MOISTURE. HOE-23408 AT 16 LB/A GAVE FOXTAIL CONTROL EQUAL TO DALAPON, NO RRPW CONTROL. 80 % RRPW CONTROL WAS OBTAINED WITH SEVERAL TREATMENTS, WHICH WAS INADEQUATE AS THE SURVIVING PLANTS GREW VIGOROUSLY.

TABLE 18. WEED CONTROL IN FLAX, LANGDON 1975. PPI TRTS WERE APPLIED AND ROTO-TILLER INCORPORATED. RAJA FLAX SEEDED AND PE TRTS APPLIED MAY 30. POST TRTS APPLIED TO 4" FLAX ON JUNE 23.

TREATMENT		RATE OZ/A	FLAX YIELD BU/A	FLAX INJ. PCNT	FLAX ST. RED.	PERCENT CONTROL EXTL	RRPW	WIBW	NFCF
EPTC (7E)	PPI	48	15.1	0.	5.	92.	13.	0.	10.
EPTC (7E)	PPI	80	12.4	8.	23.	98.	56.	45.	33.
TRIF	PPI	12	14.6	0.	23.	89.	73.	67.	53.
PROF	PPI	16	14.4	5.	26.	83.	65.	38.	33.
DINI	PPI	8	13.1	5.	29.	83.	48.	45.	33.
HOE-23408	PPI	32	17.3	0.	0.	20.	36.	0.	0.
PROP	PE	64	17.8	15.	10.	97.	85.	48.	87.
PROP+BROIL	PE	48+4	13.6	21.	40.	96.	96.	98.	98.
HOE-23408	PE	32	16.3	0.	0.	65.	0.	0.	0.
MCPA+DAL	POST	8+12	14.1	0.	1.	76.	85.	58.	65.
BROM+MCPA	POST	8+8	11.6	3.	0.	0.	100.	100.	73.
BR+MC+DA	POST	8+8+12	14.3	9.	4.	79.	94.	99.	60.
ASU+SURF	POST	16	17.1	19.	4.	96.	89.	94.	92.
AS+MC+S	POST	12+8	17.6	5.	3.	96.	91.	96.	92.
AS+MC+S	POST	16+8	15.4	15.	5.	98.	91.	98.	85.
HOE-23408	POST	16	15.1	1.	0.	100.	0.	0.	0.
HOE-23408	POST	32	19.1	18.	0.	100.	0.	0.	0.
INCORP. CONTROL			13.1	0.	0.	0.	0.	0.	0.
CONTROL			12.4	3.	0.	0.	0.	0.	0.
MEAN			15.0	7.	9.	72.	54.	46.	43.
HIGH MEAN			19.1	21.	40.	100.	100.	100.	98.
LOW MEAN			11.6	0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION			13.4	89.	98.	22.	41.	52.	66.
LSD(.01 PERCENT)			3.8	11.	17.	30.	41.	45.	63.
LSD(.05 PERCENT)			2.8	8.	13.	23.	31.	34.	47.
NO. OF REPS			4.0	4.	4.	4.	4.	4.	3.

SUMMARY

EPTC AT 3 LB/A INCREASED YIELD 2.7 BU/A, PROPACHLOR AT 3 LB/A= 5.4 BU/A, ASULAM AT 1 LB/A= 4.7 BU/A AND HOE-23408 AT 2 LB/A= 6.7 BU/A. NONE OF THE TRTS WERE EFFEVTIVE IN CONTROLLING ALL WEED SPECIES PRESENT. EPTC AT 5 LB/A, TRIF AT 3/4 LB/A, PROFLURALIN AT 1 LB/A, AND DINITRAMINE AT 1/2 LB/A ALL SIMILARLY INJURED FLAX.

TABLE 19. WEED CONTROL IN FLAX, WILLISTON 1975. PPI TRTS APPLIED AND INCORPORATED BY 2 CULTIVATIONS ON MAY 21. LINOTT FLAX SEEDED AND PREEMERGENCE TRTS APPLIED MAY 28. POST TRTS APPLIED TO 2" FLAX AND 2-LF WEEDS ON JUNE 17.

TREATMENT		RATE OZ/A	FLAX YIELD BU/A	FLAX TEST WGHT	FLAX INJ. PCNT	% CONTROL- FXTL	% CONTROL- RRPW
EPTC (7E)	PPI	48	9.5	54.	35.	92.	64.
EPTC (7E)	PPI	80	8.3	55.	59.	98.	58.
TRIFLURALIN	PPI	12	9.3	54.	16.	75.	69.
PROFLURALIN	PPI	16	10.0	55.	21.	79.	60.
DINITRAMINE	PPI	8	9.5	54.	16.	71.	71.
HOE-23408	PPI	32	9.8	54.	0.	82.	0.
PROPACHLOR	PE	64	10.4	54.	0.	91.	36.
PROP+BROIL	PE	48+4	3.5	54.	91.	73.	0.
HOE-23408	PE	32	10.3	54.	0.	96.	43.
MCPA+DAL	POST	8+12	9.7	54.	3.	96.	51.
BROM+MCPA	POST	8+8	8.7	54.	5.	0.	97.
ER+MC+DA	POST	8+8+12	9.6	54.	13.	96.	97.
ASU+SURF	POST	16	10.2	54.	14.	41.	46.
AS+MC+S	POST	12+8	9.6	54.	0.	34.	15.
AS+MC+S	POST	16+8	10.5	55.	13.	61.	18.
HOE-23408	POST	16	10.1	54.	5.	94.	20.
HOE-23408	POST	32	10.3	54.	6.	97.	0.
CONTROL			8.8	55.	0.	0.	0.
MEAN			9.3	54.	16.	71.	41.
HIGH MEAN			10.5	55.	91.	98.	97.
LOW MEAN			3.5	54.	0.	0.	0.
COEFF. OF VARIATION			11.6	0.	56.	19.	54.
LSD(.01 PERCENT)			2.0	0.	17.	25.	42.
LSD(.05 PERCENT)			1.5	0.	13.	19.	31.
NO. OF REPS			4.0	1.	4.	4.	4.

SUMMARY

EPTC AT 3 LB/A REDUCED STAND 35% AND 5 LB/A 59%. HOWEVER, BECAUSE OF THE EFFECTIVE WEED CONTROL YIELDS WERE NOT REDUCED. PROPACHLOR AND HOE-23408 GAVE GOOD FOXTAIL CONTROL WITHOUT FLAX INJURY. REDROOT PIGWEED WAS ONLY CONTROLLED ADEQUATELY WHEN BROMOXYNIL WAS IN THE TREATMENT.

TABLE 20. WEED CONTROL IN FLAX, MINOT 1975. BOLLEY FLAX WAS SEEDED AFTER ROTO-TILLER INCORPORATION OF PPI TRTS ON MAY 16. PE TRTS ALSO APPLIED ON MAY 16. POST TRTS WERE APPLIED TO 2-3" FLAX AND GREEN FXTL 1.5 AND WIOA 3.5-LF STAGE ON JUNE 13.

TREATMENT		RATE OZ/A	FLAX YIELD BU/A	FLAX TEST WGHT	FLAX INJ. PCNT	FLAX ST. RED.	% CONTROL FXTL	% CONTROL WIOA
EPTC (7E)	PPI	48	10.1	52.4	0.	13.	97.	78.
EPTC (7E)	PPI	80	12.3	52.9	0.	33.	98.	93.
TRIFLURALIN	PPI	12	8.7	52.3	0.	29.	95.	70.
PROFLURALIN	PPI	16	11.4	52.6	0.	15.	92.	68.
DINITRAMINE	PPI	8	9.5	53.0	0.	35.	95.	66.
HOE-23408	PPI	32	11.5	52.1	0.	0.	97.	97.
PROPACHLOR	PE	64	7.1	52.0	0.	0.	59.	0.
PROP+BRCIL	PE	48+4	6.7	51.5	3.	4.	61.	0.
HOE-23408	PE	32	10.0	52.0	0.	5.	93.	84.
MCPA+DAL	POST	8+12	3.8	50.3	3.	0.	26.	0.
BROM+MCPA	POST	8+8	3.2	48.0	0.	0.	6.	0.
BR+MC+DA	POST	8+8+12	3.5	48.5	0.	0.	29.	0.
ASU+SURF	POST	16	5.3	51.3	6.	0.	60.	91.
AS+MC+S	POST	12+8	5.0	50.8	3.	0.	51.	78.
AS+MC+S	POST	16+8	5.2	51.4	4.	0.	65.	87.
HOE-23408	POST	16	5.3	51.8	0.	0.	68.	90.
HOE-23408	POST	32	8.2	52.3	3.	0.	91.	93.
INCORP. CONTROL			4.6	49.5	0.	0.	0.	0.
CONTROL			3.7	50.8	0.	0.	0.	0.
MEAN			7.1	51.3	1.	7.	62.	52.
HIGH MEAN			12.3	53.0	6.	35.	98.	97.
LOW MEAN			3.2	48.0	0.	0.	0.	0.
COEFF. OF VARIATION			24.6	0.0	304.	91.	15.	16.
LSD(.01 PERCENT)			3.3	0.0	6.	12.	18.	16.
LSD(.05 PERCENT)			2.5	0.0	5.	9.	13.	12.
NO. OF REPS			4.0	1.0	4.	4.	4.	4.

SUMMARY

PREEMERGENCE TREATMENTS, EVEN WITH INJURY TO FLAX, GENERALLY INCREASED YIELDS MORE THAN POSTEMERGENCE TREATMENTS. EPTC AT 5 LB/A CAUSED A 33% FLAX STAND REDUCTION, BUT 7.7 BU/A COMPARED TO THE CONTROL.

TABLE 21. DRYLAND WEED CONTROL IN FLAX, CARRINGTON 1975. PRE-PLANT TRTS ROTO-TILLER INCORPORATED (PPI) AND COLBERT FLAX SEEDED MAY 29. PE TRTS APPLIED MAY 30 AND POST TRTS TO 6" FLAX AND SMALL WEEDS ON JUNE 23.

TREATMENT		RATE OZ/A	YIELD BU/A	---FLAX---- INJ. PCNT	ST. RED.	-% CONTROL- FXTL	RRPW	TEST WT. GR.
EPTC (7E)	PPI	48	15.7	31.	26.	100.	62.	55.
EPTC (7E)	PPI	80	13.6	68.	46.	100.	67.	55.
TRIF	PPI	12	19.5	0.	4.	92.	49.	55.
PROF	PPI	16	16.2	5.	1.	93.	42.	55.
HOE-23408	PPI	32	13.7	0.	0.	90.	30.	54.
PROP	PE	64	12.1	0.	0.	18.	0.	54.
PROP+BROIL	PE	48+4	10.4	0.	3.	34.	15.	53.
HOE-23408	PE	32	13.1	0.	0.	84.	0.	54.
MCPA+DAL	POST	8+12	10.9	0.	0.	81.	23.	54.
BROM+MCPA	POST	8+8	8.5	13.	0.	0.	48.	52.
ER+MC+DA	POST	8+8+12	14.0	6.	5.	80.	53.	54.
ASU+SURF	POST	16	11.7	5.	0.	75.	20.	54.
AS+MC+S	POST	12+8	12.5	8.	0.	69.	24.	55.
AS+MC+S	POST	16+8	13.0	9.	10.	83.	28.	55.
HOE-23408	POST	16	11.9	0.	0.	90.	0.	54.
HOE-23408	POST	32	12.0	3.	0.	95.	0.	54.
INCORP. CONTROL			8.7	0.	0.	0.	0.	53.
CONTROL			8.4	0.	0.	0.	0.	53.
MEAN			12.6	8.	5.	66.	26.	54.
HIGH MEAN			19.5	68.	46.	100.	67.	55.
LOW MEAN			8.4	0.	0.	0.	0.	52.
COEFF. OF VARIATION			16.5	95.	100.	15.	90.	0.
LSD(.01 PERCENT)			3.9	14.	10.	18.	43.	0.
LSD(.05 PERCENT)			2.9	11.	7.	14.	33.	0.
NO. OF REPS			4.0	4.	4.	4.	4.	1.

SUMMARY

EPTC AT BOTH 3 AND 5 LB/A INCREASED FLAX YIELD EVEN WITH SEVERE INJURY TO THE FLAX. TRIFLURALIN AND PROFLURALIN DID NOT INJURE THE FLAX IN THIS EXPERIMENT AND GAVE GOOD FOXTAIL CONTROL AND INCREASED FLAX YIELDS. HOE-23408 POSTEMERGENCE GAVE EXCELLENT FOXTAIL CONTROL, BUT NO REDROOT PIGWEED CONTROL. NONE OF THE TREATMENTS ADEQUATELY CONTROLLED REDROOT PIGWEED.

TABLE 22. FLAX SEEDING TIME AND INJURY, FARGO 1975. EPTC WAS APPLIED AND ROTO-TILLER INCORP.. BOLLEY FLAX SEEDED TO 1/3 OF THE PLOT ON MAY 18. 2ND FLAX SEEDING WAS ON MAY 31 AND THE 3RD ON JUNE 6.

TREATMENT	RATE	--EARLY--		--MIDDLE-		--LATE---		---% CONTROL--		
	LB/A	INJ.	ST. RED.	INJ.	ST. REC.	INJ.	ST. REC.	FXTL	WICA	RRPW
EPTC	0	0.	0.	0.	0.	0.	0.	0.	0.	0.
EPTC	3	0.	4.	0.	1.	0.	0.	59.	35.	4.
EPTC	6	0.	10.	0.	0.	0.	0.	81.	71.	31.
EPTC	9	0.	21.	0.	4.	0.	3.	91.	83.	60.
MEAN		0.	9.	0.	1.	0.	1.	58.	47.	24.
HIGH MEAN		0.	21.	0.	4.	0.	3.	91.	83.	60.
LOW MEAN		0.	0.	0.	0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		0.	45.	0.	231.	0.	400.	16.	27.	72.
LSD(.01 PERCENT)		0.	9.	0.	7.	0.	6.	21.	29.	39.
LSD(.05 PERCENT)		0.	6.	0.	5.	0.	4.	15.	20.	27.
NO. OF REPS		4.	4.	4.	4.	4.	4.	4.	4.	4.

SUMMARY

A DELAY OF 13 DAYS IN FLAX SEEDING TO EPTC TREATED SOIL REDUCED THE EFFECT ON STAND REDUCTION. HOWEVER, SEEDING FLAX IMMEDIATELY AFTER APPLICATION AND ROTO-TILLER INCORPORATION OF EPTC AT 9 LB/A ONLY REDUCED STAND BY 21%. SOIL CONDITIONS WERE VERY WET AND FLAX SEEDING WAS SHALLOW BOTH OF WHICH MAY HAVE REDUCED INJURY TO THE FLAX.

TABLE 23. PREEMERGENCE WEED CONTROL IN CORN, CASSELTON 1975. PPI ROTO-TILLER INCORPORATED TREATMENTS APPLIED, CENNEX 4038 CORN SEEDED, AND PE TRTS. APPLIED MAY 27. SOIL WET AND LUMPY. FOXTAIL STAND HEAVY AND OTHER WEEDS LIGHT. GENERAL 75-1

TREATMENT		LB/A	--% CORN--		----------% WEED CONTROL----				
			INJ.	STD. RED	FXTL	CCLQ	WIMU	RRPW	SUFL
CGA-18762	PPI	4	0.	0.	83.	93.	96.	78.	95.
CYANAZINE	PPI	4	0.	0.	89.	89.	100.	91.	63.
SD-50093	PPI	4	3.	3.	98.	100.	100.	98.	88.
ALACHLOR	PPI	3	0.	0.	84.	69.	56.	69.	23.
CGA-24705	PPI	3	0.	0.	91.	68.	78.	74.	40.
EPTC+R-25788	PPI	4	0.	3.	95.	81.	64.	58.	13.
CGA-18762	PE	4	0.	0.	91.	93.	100.	95.	15.
CYANAZINE	PE	4	0.	3.	92.	93.	100.	76.	50.
SD-50093	PE	4	0.	0.	99.	100.	100.	100.	93.
ALACHLOR	PE	3	0.	0.	83.	10.	23.	33.	0.
CGA-24705	PE	3	0.	0.	90.	10.	30.	36.	0.
CGA-18762+AL	PE	2+2	0.	0.	92.	70.	98.	96.	10.
CGA-762+705	PE	2+2	0.	0.	91.	58.	93.	80.	23.
ATRAZINE+705	PE	1.6+2	0.	3.	98.	98.	100.	98.	70.
BIFINOX+AL	PE	2+2	0.	0.	81.	79.	78.	84.	30.
BIFINOX+PROP	PE	2+3	0.	0.	96.	81.	73.	89.	23.
DICAMBA+PROP	PE	.5+3	0.	0.	91.	99.	88.	94.	83.
CYAN+AL	PE	2+2	0.	0.	91.	70.	94.	85.	10.
MEAN			0.	1.	91.	75.	82.	80.	40.
HIGH MEAN			3.	3.	99.	100.	100.	100.	95.
LOW MEAN			0.	0.	81.	10.	23.	33.	0.
COEFF. OF VARIATION			849.	428.	6.	21.	15.	20.	59.
LSD(.01 PERCENT)			2.	4.	11.	30.	23.	30.	69.
LSD(.05 PERCENT)			2.	3.	8.	22.	17.	22.	50.
NO. OF REPS			4.	4.	4.	4.	4.	4.	2.

SUMMARY

WEED CONTROL FROM ALL TREATMENTS WAS GOOD PROBABLY BECAUSE OF THE ABUNDANT RAINFALL AFTER APPLICATION. CGA-18762 AND CYANAZINE WERE SIMILAR IN PERFORMANCE BOTH PPI AND PE. CONTRARY TO OTHER YEARS ALACHLOR GAVE EQUAL WEED CONTROL WHETHER APPLIED PPI OR PE.

TABLE 24. WEED CONTROL IN CORN, WAHPETON 1975. CENNEX 2000 CORN SEEDED AND PE TRTS APPLIED, MAY 9. SOIL WET AT APPLICATION. WEED STAND MODERATE. GENERAL 75-10

TREATMENT	LB/A	% CORN INJ.	-----% WEED CONTROL----- FXTL	WIML	COLQ
CGA-18762	3	0.	94.	100.	98.
CYANAZINE	3	0.	94.	100.	99.
ALACHLOR	2.5	0.	98.	49.	74.
PROPACHLOR	5	0.	100.	56.	73.
ATR+PROP	1+3	0.	100.	100.	100.
CYAN+PROP	1.5+3	0.	100.	100.	100.
CGA+ALAC	1.5+2	0.	99.	100.	99.
CYAN+ALAC	1.5+2	0.	98.	100.	98.
CYAN+CGA-24705	1.5+2	0.	96.	100.	95.
MEAN		0.	97.	89.	93.
HIGH MEAN		0.	100.	100.	100.
LOW MEAN		0.	94.	49.	73.
COEFF. OF VARIATION		0.	2.	9.	7.
LSD(.01 PERCENT)		0.	4.	16.	12.
LSD(.05 PERCENT)		0.	3.	12.	9.
NO. OF REPS		4.	4.	4.	4.

SUMMARY

ALL TREATMENTS GAVE EXCELLENT FOXTAIL CONTROL. WILD MUSTARD AND COMMON LAMBSQUARTER CONTROL WAS NOT ADEQUATE WITH ALACHLOR AND PROPACHLOR.

TABLE 25. WEED CONTROL IN CORN, WILLISTON 1975. APPLIED PPI TRTS, SEEDED CENEX 2002 CORN, AND APPLIED PE TRTS. JUNE 3. POST TRTS (P) WERE APPLIED JULY 2.

TREATMENT	RATE LB/A	SILAGE YIELD TON/A	PTPW PCNT CNTL	RRPW PCNT CNTL	RUTH PCNT CNTL	GRFT PCNT CNTL	WIBW PCNT CNTL	INJ. PCNT
EPTC+R-25788 PPI	4	7.3	89.	95.	10.	99.	23.	2.
CGA-24705	2.5	8.4	98.	98.	23.	100.	0.	5.
ALACHLOR	2.5	10.3	100.	100.	63.	98.	30.	8.
PROPACHLOR	5	7.9	80.	91.	10.	85.	30.	0.
BIFENOX+ALACHLOR	2+2	10.0	96.	98.	70.	97.	33.	8.
BIFENOX+PRPCHLOR	2+3	9.8	96.	91.	94.	82.	27.	10.
CYANAZINE	3	10.0	92.	97.	100.	99.	33.	5.
CYAN+ALACHLOR	1.5+2	9.3	100.	100.	100.	100.	33.	0.
ATRAZINE+ALACHLOR	1+2	9.5	99.	100.	98.	98.	33.	7.
CGA-18762	3	11.2	95.	100.	100.	91.	33.	7.
DICAM+PRPACHLOR	1/2+3	6.9	57.	63.	37.	88.	0.	0.
CYANAZINE P	2	8.7	86.	93.	7.	53.	33.	10.
CYAN+LOTM P	1+1QT	8.7	88.	93.	78.	53.	32.	20.
CYAN+LOTM P	1.5+1QT	10.2	100.	100.	85.	85.	32.	30.
CYAN+LOTM P	2+1QT	9.3	95.	97.	92.	55.	32.	25.
CONTROL		3.9	0.	0.	0.	0.	0.	0.
MEAN		8.8	86.	88.	60.	80.	25.	9.
HIGH MEAN		11.2	100.	100.	100.	100.	33.	30.
LOW MEAN		3.9	0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		14.3	10.	6.	21.	18.	88.	45.
LSD(.01 PERCENT)		2.8	18.	13.	29.	32.	50.	9.
LSD(.05 PERCENT)		2.1	14.	10.	21.	24.	37.	6.
NO. OF REPS		3.0	3.	3.	3.	3.	3.	3.

SUMMARY

CYANAZINE AND CGA-18762 PE AT 3 LB/A AND CYANAZINE OR ATRAZINE IN COMBINATION WITH ALACHLOR GAVE GOOD BROADSPECTRUM WEED CONTROL EXCEPT FOR WILD BUCKWHEAT.

TABLE 26. CYANAZINE FORMULATIONS AND POSTEMERGENCE WEED CONTROL, CASSELTON, 1975. TRTS APPLIED TO 4 TO 6-LF YELLOW AND GREEN FOXTAIL AND 7-LF CORN ON JUNE 27. OILS 114

TREATMENT	RATE OZ/A	PCNT FXTL CNTL
CYAN 4L	24	73.
CYAN 80	24	46.
CYAN 4L+TM 1QT	8	67.
CYAN 4L+TM 1QT	16	77.
CYAN 80+TM 1QT	8	69.
CYAN 80+TM 1QT	16	76.
MEAN		68.
HIGH MEAN		77.
LOW MEAN		46.
COEFF. OF VARIATION		11.
LSD(.01 PERCENT)		15.
LSD(.05 PERCENT)		11.
NO. OF REPS		4.

SUMMARY

CYANAZINE 4L WAS MORE EFFECTIVE AS A POSTEMERGENCE HERBICIDE WHEN APPLIED ALONE THAN THE 80W FORMULATION. THE LOTM ADDITIVE ENHANCED WEED CONTROL MORE WITH THE 80W THAN 4L FORMULATION OF CYANAZINE.

TABLE 27. POSTEMERGENCE WEED CONTROL IN CORN, CASSELTON 1975. CENNEX 4038 CORN SEEDED, MAY 27. TRTS. APPLIED TO 4.5-LEAF CORN AND GREEN AND YELLOW FOXTAIL ON JUNE 18. 2 IN. FOXTAIL STAND HEAVY AND OTHER WEEDS LIGHT. GENERAL 75-5

TREATMENT	LB/A		--% CORN---		---% WEED CONTROL-------			
			INJ.	STD. REC	FXTL	COLQ	WIMU	RRPW
ATR+11E	4QT	1.5	5.	0.	100.	100.	100.	100.
ATR+LOTM	1QT	1.5	3.	0.	99.	100.	100.	100.
ATR+11E+WEX	1Q+1P	.5	3.	0.	100.	100.	100.	100.
ATR+WEX	1PT	1.5	0.	0.	99.	100.	100.	100.
ATR+AG	1QT	1.5	3.	0.	99.	100.	100.	100.
CY+11E	4QT	1	3.	0.	93.	100.	100.	94.
CY+LOTM	1QT	1	3.	0.	95.	100.	100.	96.
CY+LOTM	1QT	1.5	0.	0.	97.	100.	100.	96.
CY+LOTM	1QT	2	3.	0.	100.	100.	100.	100.
CY+AG	1QT	1	5.	0.	91.	100.	100.	91.
SC-50093		2	3.	0.	99.	100.	100.	100.
CYANAZINE		2	3.	0.	98.	100.	100.	100.
CGA-762		2	5.	0.	98.	100.	100.	100.
CGA+11E	4QT	1	3.	0.	95.	100.	100.	94.
CGA+LOTM	1QT	1	0.	0.	93.	100.	100.	91.
CGA+LOTM	1QT	1.5	3.	0.	96.	100.	100.	100.
CGA+LOTM	1QT	2	3.	0.	96.	100.	100.	95.
CGA+AG	1QT	1	0.	0.	93.	100.	100.	100.
CGA+X77	0.59	1	8.	0.	94.	100.	100.	95.
MEAN			3.	0.	97.	100.	100.	98.
HIGH MEAN			8.	0.	100.	100.	100.	100.
LOW MEAN			0.	0.	91.	100.	100.	91.
COEFF. OF VARIATION			176.	0.	4.	0.	0.	4.
LSD(.01 PERCENT)			9.	0.	8.	0.	0.	8.
LSD(.05 PERCENT)			7.	0.	6.	0.	0.	6.
NO. OF REPS			4.	4.	4.	4.	4.	4.

SUMMARY

ALL TREATMENTS GAVE EXELLENT WEED CONTROL WHETHER APPLIED ALONE OR WITH AN OIL ADDITIVE. THE EXCESSIVE RAINFALL PROBABLY CAUSED THE HERBICIDE TO BE ACTIVE THROUGH THE SOIL INSPITE OF THE SILTY CLAY SOIL TEXTURE WITH 5% ORGANIC MATTER.

TABLE 31. POSTEMERGENCE CYANAZINE, FARM FIELD EXPERIMENTS COMBINED. SEE INDIVIDUAL EXPERIMENTS FOR PROCEDURES. ALL TRTS APPLIED IN 17 GPA.

TREATMENT	RATE OZ/A	PCNT FXTL CNTL
CYAN	8	46.
CYAN	16	62.
CYAN	24	79.
CYAN	32	90.
CYAN+LOTM 1PT	8	67.
CYAN+LOTM 1PT	16	79.
CYAN+LOTM 1PT	24	92.
CYAN+LOTM 1QT	8	78.
CYAN+LOTM 1QT	16	86.
CYAN+LOTM 1QT	24	97.
CYAN+11E 1QT	8	59.
CYAN+11E 1QT	16	79.
CYAN+11E 1QT	24	92.
CYAN+11E 4QT	8	71.
CYAN+11E 4QT	16	87.
CYAN+11E 4QT	24	95.
MEAN		79.
HIGH MEAN		97.
LOW MEAN		46.
COEFF. OF VARIATION		15.
LSD(.01 PERCENT)		13.
LSD(.05 PERCENT)		9.
NO. OF REPS		21.

SUMMARY

THE AVERAGE FOXTAIL CONTROL OVER THE THREE RATES OF CYANAZINE WAS 79, 87, 77, AND 84 % WITH LOTM AT 1 PT/A, LOTM AT 1 QT/A, 11E AT 1 QT/A, AND E11 AT 4 QT/A, RESPECTIVELY. THE COMPARABLE RATES OF CYAN ALONE GAVE 62 % FOXTAIL CONTROL WHICH WAS HIGHER THAN USUAL BECAUSE OF THE ABUNDANT RAINFALL. LOTM AT 1 QT/A GENERALLY WAS THE MOST EFFECTIVE ADDITIVE.

TABLE 32. PREPLANT WEED CONTROL IN SOYBEANS AND PINTO BEANS, FARGO 1975. PPI TRTS ROTO-TILLER INCORP. AND SWIFT SOBE SEEDED MAY 21 & 22, RESPECTIVELY. CRACKING(C) AND POST(P) TRTS. APPLIED TO 1ST MONOFOLIATE SOBE ON JUNE 11. FIELD FLOODED. FXTL STAND HEAVY & WIMU LIGHT.

TREATMENT	LB/A	---SUBE---- INJ.	STD. PED	PCNT FXTL CNTL	PINTO BEANS INJ.	PCNT CNTL	PCNT WIMU CNTL
TRIFLURALIN PPI	1	0.	0.	87.	0.	C.	C.
PROFLUR PPI	1.5	0.	0.	88.	0.	C.	C.
FLUCHLOR PPI	1.25	0.	0.	67.	0.	C.	C.
DINITRAMIN PPI	.66	0.	0.	88.	0.	C.	60.
DINI+MET PPI	.66+.25	6.	0.	82.	5.	0.	80.
NC-8438 PPI	4	30.	0.	35.	15.	C.	C.
NC-8438 PPI	6	39.	0.	46.	13.	C.	75.
SD-23207 PPI	.5	0.	0.	5.	0.	C.	C.
SD-23207 PPI	1	0.	0.	0.	0.	C.	C.
SD-23207 PPI	2	0.	0.	5.	0.	0.	0.
TRIF+BIF PPI	1+2	0.	C.	88.	0.	C.	0.
TRIF+DNBP PPI+C	1+2	0.	0.	92.	0.	C.	100.
TR+BE PPI+PI	1+.75	0.	0.	85.	C.	C.	95.
PROF+MET PPI	1+.25	6.	0.	81.	8.	0.	80.
PROF+MET PPI	1+.5	20.	5.	86.	28.	48.	100.
DINI+CIPC PPI	.5+3	5.	0.	74.	6.	C.	50.
DINI+CIPC PPI+PE	.5+3	0.	0.	58.	0.	0.	0.
DINI+EPTC PPI	.5+2	8.	10.	94.	C.	C.	80.
DINI+MET PPI	.66+.2	5.	3.	80.	1.	0.	50.
TRIF+CHLO PPI+PI	+.75	0.	C.	84.	0.	C.	80.
MEAN		6.	1.	66.	4.	2.	43.
HIGH MEAN		39.	10.	94.	28.	48.	100.
LOW MEAN		C.	C.	0.	0.	C.	C.
COEFF. OF VARIATION		85.	398.	19.	260.	632.	C.
LSD(.01 PERCENT)		10.	7.	24.	18.	43.	0.
LSD(.05 PERCENT)		7.	5.	18.	14.	31.	C.
NO. OF REPS		4.	4.	4.	4.	2.	1.

SUMMARY

SOYBEANS AND PINTO BEANS WERE INJURED BY NC8438 AT 4 AND 6 LB/A AND METRIBUZIN AT 1/2 LB/A APPLIED WITH PROFLURILIN.

TABLE 33. PREEMERGENCE WEED CONTROL IN SOYBEANS AND PINTO BEANS, FARGO 1975. SWIFT SOBE AND WYOMING 116 PIBE SEEDED AND PE TRTS APPLIED MAY 22. FIELD FLOODED SEVERAL TIMES IN JUNE & JULY. FOXTAIL STAND HEAVY AND WIMU LIGHT.

TREATMENT	LB/A	--% SOBE--- INJ.	STD. RED	PCNT FXTL CNTL	--% PIBE--- INJ.	STD. RED	PCNT WIMU CNTL
AMIBEN 6L PE	2.5	0.	0.	55.	0.	0.	28.
AMIBEN G PE	2.5	0.	0.	75.	0.	0.	38.
ALACHLOR PE	3	0.	0.	59.	0.	0.	10.
CGA-24705 PE	3	0.	0.	52.	6.	0.	0.
OXIDIAZON PE	1.5	0.	0.	46.	0.	0.	18.
OXADIAZON PE	2	0.	0.	61.	0.	3.	30.
HOE-23408 PE	1	0.	0.	24.	5.	0.	15.
HOE-23408 PE	1.5	0.	0.	30.	5.	0.	8.
HOE-23408 PE	3	0.	0.	41.	4.	0.	0.
DS-23017 PE	2.5	0.	0.	31.	0.	0.	6.
FMC-25213 PE	3	0.	0.	35.	0.	0.	10.
RH-2915 PE	.5	0.	0.	43.	0.	0.	13.
DS-23017 PE	2.5	0.	0.	54.	0.	0.	23.
DS-23017 PE	3	0.	0.	54.	0.	0.	23.
SD-23027 PE	1	0.	0.	0.	0.	0.	0.
SD-23027 PE	2	0.	0.	0.	0.	0.	0.
MEAN		0.	0.	41.	1.	0.	14.
HIGH MEAN		0.	0.	75.	6.	3.	38.
LOW MEAN		0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		0.	0.	35.	321.	800.	153.
LSD(.01 PERCENT)		0.	0.	27.	8.	2.	39.
LSD(.05 PERCENT)		0.	0.	21.	6.	2.	30.
NO. OF REPS		4.	4.	4.	4.	4.	4.

SUMMARY

NONE OF THE TREATMENTS ADEQUATELY CONTROLLED WILD MUSTARD. THE GRANULAR AMIBEN WAS MORE EFFECTIVE THAN THE LIQUID FORMULATION.

TABLE 34. WEED CONTROL IN SOYBEANS, WAHPETON 1975. PPI ROTO-TILLER INCORP. TRTS APPLIED, SWIFT SOBE SEEDED, AND PE TRTS APPLIED, MAY 9. SOIL WET AT TREATMENT. ALL WEEDS HAD MODERATE STANDS. GENERAL 75-21

TREATMENT	LB/A	SOBE PCNT CNTL	FXTL PCNT CNTL	WIMU PCNT CNTL	COLQ PCNT CNTL
TRIFLUR PPI	.75	0.	89.	0.	44.
DINITRAM PPI	.5	0.	81.	13.	58.
TRIF+MET PPI	.75+.25	0.	80.	73.	76.
ALACHLOR PE	2	0.	90.	38.	48.
AMIBEN 6L PE	2.5	0.	88.	83.	92.
METRIBUZIN PE	.5	5.	96.	100.	100.
ALAC+MET PE	2+.33	4.	99.	100.	100.
ALAC+BIF PE	2+2	2.	100.	100.	100.
ALAC+LIN PE	2+1	0.	99.	100.	100.
MEAN		1.	91.	67.	80.
HIGH MEAN		5.	100.	100.	100.
LOW MEAN		0.	80.	0.	44.
COEFF. OF VARIATION		88.	5.	28.	22.
LSD(.01 PERCENT)		2.	9.	37.	35.
LSD(.05 PERCENT)		1.	7.	27.	26.
NO. OF REPS		4.	4.	4.	4.

SUMMARY

WILD MUSTARD CONTROL WAS GOOD WHEN THE TREATMENTS CONTAINED METRIBUZIN, BIFENOX, OR LINURON. ALL TREATMENTS GAVE GOOD FOXTAIL CONTROL.

TABLE 35. WEED CONTROL IN SOYBEANS, OAKES 1975. APPLIED PPI TRTS, SEEDED WIRTH SOYBEANS AND APPLIED PE TRTS ON MAY 17. POST TRTS APPLIED TO 3-TRIFOLIATE LEAF SOYBEANS ON JUNE 25. ALL TEST WT. = 58 LB/BU.

TREATMENT	RATE OZ/A	-SOYBEANS- YIELD BU/A	ST. RED.	-------PERCENT CONTROL------- WIBW	FXTL	SUFL	COLG	PTPW	RRPW
TRIFLURALIN PPI	12	26.7	4.	100.	93.	45.	86.	50.	49.
DINITRAMINE PPI	8	24.2	16.	90.	80.	46.	80.	50.	50.
TRIF+MET PPI	12+8	28.7	11.	94.	98.	88.	95.	50.	50.
TR+BE PPI+POST	12+12	29.3	11.	100.	86.	94.	100.	50.	50.
ALACHLOR PE	32	28.6	1.	73.	96.	66.	75.	50.	50.
CHLORAMBEN PE	40	26.4	4.	86.	45.	35.	89.	50.	50.
METRIBUZIN PE	8	25.1	35.	99.	93.	100.	100.	50.	50.
ALA+MET PE	32+5.3	30.7	14.	48.	86.	91.	100.	50.	50.
ALA+BIF PE	32+32	29.1	3.	58.	78.	64.	88.	50.	50.
HOE+BENT POST	16+12	30.1	6.	49.	33.	50.	54.	50.	49.
CONTROL		28.5	0.	0.	0.	0.	0.	0.	0.
MEAN		27.9	10.	72.	71.	62.	79.	45.	45.
HIGH MEAN		30.7	35.	100.	98.	100.	100.	50.	50.
LOW MEAN		24.2	0.	0.	0.	0.	0.	0.	0.
COEFF. OF VARIATION		8.6	75.	31.	18.	28.	19.	35.	36.
LSD(.01 PERCENT)		4.6	9.	30.	17.	22.	19.	21.	21.
LSD(.05 PERCENT)		3.5	7.	23.	13.	17.	15.	16.	16.
NO. OF REPS		4.0	8.	8.	8.	8.	8.	8.	8.

SUMMARY

SEVERAL TREATMENTS INJURED SOYBEANS, HOWEVER ONLY DINITRAMINE AND METRIBUZIN LOWERED YIELDS. WEED STANDS WERE LIGHT TO MODERATE. REDROOT PIGWEED (RRPW) AND PROSTRATE PIGWEED (PTPW) NOT CONTROLLED ADEQUATELY BY ANY TREATMENT. METRIBUZIN GAVE GOOD BROADSPECTRUM WEED CONTROL BUT INJURED SOYBEANS. TRIFLURALIN FOLLOWED WITH A POST TREATMENT OF BENTAZON WAS ONE OF THE MOST EFFECTIVE TREATMENTS.

TABLE 36. POSTEMERGENCE WEED CONTROL IN SOYBEANS, CASSELTON 1975. TRTS APPLIED 2 TO 3 TRIFOLIATE SWIFT SOBE, 4 TO 6 IN. REDROOT PIGWEED AND 5 TO 7 IN. FXTL, JULY 7. OILS 101

TREATMENT	RATE OZ/A	PCNT YEFT CNTL	PCNT RRPW CNTL
BENTAZON	8	3.	11.
BENTAZON	12	3.	15.
HOE-23408	16	17.	4.
HOE-23408	24	26.	1.
DESMED	16	15.	14.
DESMED	24	21.	14.
BENT+11E (1QT)	12	1.	11.
BENT+LOTM (1QT)	12	3.	16.
BENT+LOAM (1QT)	12	3.	16.
HOE+11E	16	38.	7.
HOE+LOTM	16	39.	4.
HOE+LOAM	16	35.	4.
DESMED+11E	16	30.	21.
DESMED+LOTM	16	32.	20.
DESMED+LOAM	16	28.	15.
HOE+BENT+11E	16+8	29.	18.
HOE+BENT+LOTM	16+8	41.	15.
HOE+BENT+LOAM	16+8	18.	13.
HOE+DES+11E	16+16	38.	14.
HOE+DES+LOTM	16+16	35.	12.
HOE+DES+LOAM	16+16	43.	19.
MEAN		24.	13.
HIGH MEAN		43.	21.
LOW MEAN		1.	1.
COEFF. OF VARIATION		54.	42.
LSD(.01 PERCENT)		24.	10.
LSD(.05 PERCENT)		18.	7.
NO. OF REPS		4.	4.

SUMMARY

WEEDS WERE LARGE SO CONTROL WAS POOR WITH ALL TREATMENTS. DIFFERENCES AMONG TREATMENTS NOT OF PRACTICAL SIGNIFICANCE BECAUSE OF THE LOW LEVEL OF CONTROL. RAINS PREVENTED TIMELY APPLICATION.

Table 37. Bentazon in soybeans farm field exp. 1-7 combined. Trts. applied to 3 trifoliate swift sobe, and 8" rrpw on July 11. 2nd application was to 4 trifoliate sobe and heading rrpw on July 15.

Treatment	Rate oz/a	Pcnt Colq Cntl	Pcnt Wimu Cntl	Pcnt Rrpw Cntl	Pcnt Sobe Cntl
Bentazon	6	28	36	46	0
Bentazon	12	34	44	61	0
Bent + Lotm 1qt	6	49	41	69	0
Bent + Lotm 1qt	6+6	69	65	84	2
Bent + Lotm 1qt	12	56	49	64	1
Bent + Loam 1qt	6	49	41	67	0
Bent + Loam 1qt	6+6	64	65	80	1
Bent + Loam 1qt	12	59	50	66	0
Bent + 11E 1qt	6	39	38	61	0
Bent + 11E 1qt	6+6	54	64	81	2
Bent + 11E 1qt	12	47	48	70	1
Bent + Cit 1pt	6	45	40	55	0
Bent + Cit 1pt	6+6	69	72	81	1
Bent + Cit 1pt	12	60	48	69	0

Summary

No obvious differences among the additives were noted. However the weed control was generally poor because the weeds were at too an advanced stage at treatment. Rainy weather prevented timely application.

TABLE 38. WEED CONTROL IN SUNFLOWERS, CASSELTON 1975. PPI ROTO-TILLER INCORP. TRTS APPLIED, PEREDOVIC SUFL SEEDED, AND PE TRTS APPLIED MAY 26. SOIL WET AND LUMPY. FXTL STAND HEAVY, OTHER WEEDS LIGHT. GENERAL 75-27

TREATMENT		LB/A	----% SUFL---- INJ.	STD. RED.	PCNT FXTL CNTL	PCNT WIMU CNTL
EPTC	PPI	3	0.	3.	94.	48.
TRIFLURALIN	PPI	1	0.	0.	85.	10.
DINITRAMINE	PPI	.66	0.	0.	81.	46.
PROFLURALIN	PPI	1	0.	3.	79.	20.
PROFLURALIN	PPI	1.5	0.	3.	86.	25.
PENOXYL	PPI	1.5	0.	0.	88.	51.
PENOXYL	PPI	2	0.	0.	92.	53.
PENOXYL	PPI	4	3.	0.	97.	79.
NC-8438	PPI	4	0.	0.	69.	63.
NC-8438	PPI	6	0.	0.	81.	75.
TRIF+BIF	PPI	1+2	0.	0.	89.	59.
TRIF+BIF	PPI+PE	1+2	0.	0.	93.	72.
TRIF+BIF	PPI+PE	1+4	0.	0.	98.	94.
HER+26905	PPI	3	0.	0.	86.	73.
HER-26905	PPI	6	0.	0.	94.	81.
CHLO 6L	PE	2.5	0.	0.	50.	66.
CHLO G	PE	2.5	0.	0.	80.	58.
CGA-24705	PE	3	0.	0.	79.	25.
DS-23017	PE	2.5	0.	3.	66.	18.
FMC-25213	PE	3	0.	5.	69.	33.
MEAN			0.	1.	83.	52.
HIGH MEAN			3.	5.	98.	94.
LOW MEAN			0.	0.	50.	10.
COEFF. OF VARIATION			894.	401.	7.	32.
LSD(.01 PERCENT)			2.	6.	11.	32.
LSD(.05 PERCENT)			2.	4.	8.	24.
NO. OF REPS			4.	4.	4.	4.

SUMMARY

ALL TREATMENTS EXCEPT LIQUID CHLORAMBEN GAVE GOOD FOXTAIL CONTROL. HER-26905 AT 6 LB/A ALSO CONTROLLED WILD MUSTARD. PENOXALIN AT 4 LB/A, NC-8438 AT 6 LB/A, AND BIFENOX GAVE FAIR WILD MUSTARD CONTROL.

TABLE 39. TAME SUNFLOWER CONTROL, CASSELTON 1975. PEREDOVIC SUNFLOWERS WERE SEEDED, MAY 26. TREATMENTS WERE APPLIED TO SUNFLOWER 4-6" TALL, JUNE 18.

TREATMENT		RATE OZ/A	PCNT CNTL
BENTAZON		8	83.
BENTAZON		12	81.
BENT+AM	1QT	8	92.
2,4-D AMINE		4	100.
2,4-D AMINE		8	100.
2,4-D ESTER		4	98.
MCPA AMINE		4	98.
MCPA AMINE		8	100.
MCPA ESTER		4	100.
DIC+MCPA		2+4	100.
DIC+2,4-D		2+4	100.
PIC+2,4-D		.5+4	99.
ERCM+MCPA		4+4	100.
CONTROL			0.
MEAN			89.
HIGH MEAN			100.
LOW MEAN			0.
COEFF. OF VARIATION			5.
LSD(.01 PERCENT)			10.
LSD(.05 PERCENT)			7.
NO. OF REPS			3.

SUMMARY

ALL TREATMENTS GAVE GOOD TAME SUNFLOWER CONTROL.

TABLE 40. WEED CONTROL IN SAFFLOWER, MINOT 1975. PPI TRTS APPLIED AND SOIL INCORPORATED MAY 17. SAFFLOWER SEEDED AND PE TRTS APPLIED MAY 18. FXTL STAND WAS HEAVY AND CONTROL NOTES WERE TAKEN JULY 11.

TREATMENT		RATE OZ/A	-- SAFFLOWER -- YIELD LB/A	INJ. 0-10	STAND RED.	PCNT FXTL CNTL
TRIFLUR	PPI	12	1452.3	0.	4.	96.
DINI	PPI	5.3	984.0	0.	1.	98.
DINI	PPI	8	1240.1	3.	4.	98.
DINI	PPI	10.6	1214.9	4.	0.	99.
PENOX	PPI	24	1429.8	3.	7.	99.
PENOX	PPI	32	1527.6	4.	8.	99.
PENOX	PI	32	1322.0	0.	2.	99.
PENOX	PPI	64	1345.8	6.	34.	100.
NO CONTROL			890.0	0.	0.	0.
MEAN			1267.4	2.	7.	88.
HIGH MEAN			1527.6	6.	34.	100.
LOW MEAN			890.0	0.	0.	0.
COEFF. OF VARIATION			19.7	183.	81.	1.
LSD(.01 PERCENT)			493.3	8.	10.	2.
LSD(.05 PERCENT)			364.0	6.	8.	1.
NO. OF REPS			4.0	4.	4.	4.

SUMMARY

EXCELLENT FOXTAIL CONTROL WAS OBTAINED FROM ALL TREATMENTS. PENOXALIN CAUSED A SLIGHT STAND REDUCTION, BUT YIELD WAS SIMILAR TO THE TRIFLURALIN SAFFLOWER.

TABLE 41. WEED CONTROL IN SAFFLOWER, WILLISTON 1975. PPI TRTS APPLIED AND SOIL INCORPORATED MAY 21. SAFFLOWER SEEDED AND PE TRTS APPLIED MAY 21. HARVESTED SEPT. 30.

TREATMENT		RATE OZ/A	SAFFLOWER YIELD LB/A	SAFFLOWER TEST WT.	SAFFLOWER HT. CM.	% CONTROL GRFT	% CONTROL RUTH
CHECK			810.	43.	55.	0.	0.
DINI	PPI	5.3	1314.	43.	54.	93.	91.
DINI	PPI	8	1405.	43.	55.	94.	97.
DINI	PPI	10.6	1293.	43.	53.	97.	99.
TRIFLURALIN	PPI	12	1226.	42.	53.	91.	70.
PENOX	PPI	24	1158.	43.	52.	95.	55.
PENOX	PPI	32	1304.	42.	54.	98.	94.
PENOX	PPI	64	1055.	42.	53.	98.	93.
PENOX	PE	32	1178.	43.	53.	84.	48.
MEAN			1194.	43.	53.	83.	72.
HIGH MEAN			1405.	43.	55.	98.	99.
LOW MEAN			810.	42.	52.	0.	0.
COEFF. OF VARIATION			12.	0.	0.	7.	27.
LSD(.01 PERCENT)			292.	0.	0.	11.	39.
LSD(.05 PERCENT)			215.	0.	0.	8.	28.
NO. OF REPS			4.	1.	1.	4.	4.

SUMMARY

GOOD GREEN FOXTAIL (GRFT) CONTROL WAS OBTAINED WITH ALL TREATMENTS. RUSSIAN THISTLE (RUTH) WAS ONLY FAIR WITH TRIFLURALIN AT 12 OZ/A, PENOXALIN AT 24 OZ/A PPI AND AT 32 OZ/A PE. YIELDS WERE INCREASED BY ALL TREATMENTS.

Table 1. Fall 1974 applications of dicamba for leafy spurge control, Strand Farm (Expt. 49).

Dicamba formulation	Rate lb/A	Percent Control
5% granules	4	86
	6	91
	8	99
Liquid	4	92
	6	93
	8	99
Control	-	0
LSD (0.05)		8

The treatments were applied in a dense, mature leafy spurge stand in a grazed pasture on September 4, 1974. The liquid formulations were applied at 8.5 gpa with a bicycle-wheel sprayer. The granular formulations were scattered uniformly by hand. Plot size was 10 by 20 feet. Three replications. Percent control was evaluated visually on June 18, 1975 for reduction in number of leafy spurge stems.

Dicamba at 8 lb/A was required for near perfect leafy spurge control. The liquid and granular formulations of dicamba were similar in effectiveness when compared at the same rates. Since the rates above are intended for spot treatments and most spot treatments have eradication as the objective, dicamba at 8 lb/A would be required for satisfactory results.

Table 2. Fall 1974 applications of glyphosate and amitrole-T under trees for leafy spurge control, Baarstad Farm (Expt. 48).

Date of spraying	Herbicide	Rate lb/A	Percent control
September 3	Glyphosate	1	96
		2	94
	Amitrole-T	2	53
September 4	Glyphosate	1	89
		2	94
	Amitrole-T	2	38
September 15	Glyphosate	1	88
		2	91
	Amitrole-T	2	32
Control	--	-	0
LSD (0.05)			30

The leafy spurge was a mature dense stand under elm and cottonwood trees. The September 3, 1974 treatments were applied on a clear day at 50 F and the temperature had been near freezing the previous evening. The September 4, 1974 treatments were applied on a clear day at 75 F and the evening temperature between 45 and 50 F. The September 15 treatments were applied on a clear day with 75 F temperature. The leafy spurge plants had from 2 to 5 inches of new fall growth on the older stems for each treatment. Plot size was 8 by 25 feet, and treatments were applied with a back-pack sprayer at 8.5 gpa. Three replications. Percent control was evaluated visually on June 27, 1975 for reduction in number of leafy spurge stems.

The amitrole-T (amitrole plus ammonium thiocyanate) treatments were ineffective as compared to glyphosate. Also, the results with amitrole-T were quite variable from replication to replication and were the primary contributor to the relatively high LSD value. Glyphosate at 1 lb/A was just as effective as at 2 lb/A. Control at all treatment dates was satisfactory, but a trend for greater effectiveness with the early September treatment time was evident. A dense stand of leafy spurge seedlins emerged and survived in the glyphosate plots because of the lack of competition, while fewer seedlings survived in the amitrole-T treated plots because of competition by the surviving established plants.

Table 3. Fall 1974 applications of dicamba and picloram granules for leafy spurge control, Strand Farm (Expt. 44).

Herbicide	Rate lb/A	Percent control
Picloram, 5% pellets	0.5	41
	1	69
	2	87
Dicamba, 5G	2	18
	4	69
	6	86
Control	-	0
LSD (0.05)		22

The treatments were applied to a dense, mature leafy spurge stand in a grazed pasture on August 6, 1974. Plot size was 10 by 25 feet with four replications. The granules were scattered uniformly by hand. Percent control was evaluated visually on June 18, 1975 for reduction in number of leafy spurge stems.

Picloram at 1 lb/A was equal to dicamba at 4 lb/A for leafy spurge control, while picloram at 2 lb/A was equal to dicamba at 6 lb/A.

Table 4. Phenoxy and dicamba herbicide combinations for leafy spurge control, Strand Farm (Expt. 29).

Herbicide	Rate lb/A	Percent control	Pl ht inches	Formulation
2,4-D OSA	2	26	15.5	Emulsamine E-3
Dicamba	0.5	13	15.5	Banvel
Dicamba + 2,4-D	0.25 + 0.75	23	15.0	Weedmaster
	0.5 + 1.5	22	12.5	Weedmaster
2,4-D + MCPP + dicamba	1.1 + 0.55 + 0.11	24	15.8	Fairway
	2.2 + 1.1 + 0.22	27	15.0	Fairway
	1 + 1 + 0.25	29	15.8	EH-517A
	2 + 2 + 0.5	69	11.0	EH-517A
2,4-D + 2,4-DP + dicamba	1 + 1 + 0.25	38	12.3	EH-527DP
	2 + 2 + 0.5	38	13.8	EH-527DP
Control	---	4	21.0	
LSD (0.05)		42	4.0	

Treatments were applied on June 25, 1974 to leafy spurge in full bloom in a native pasture. Herbicides were applied at 8.5 gpa with a bicycle-wheel sprayer. Stand counts were taken before treatment in 1974 and again on June 13, 1975. Percent control was calculated from the stand counts.

The treatments gave similar control of leafy spurge, except 2 lb/A 2,4-D + 2 lb/A MCPP + 0.5 lb/A dicamba was the most effective treatment. Dicamba apparently did not increase the control of leafy spurge, when mixed with the phenoxy herbicides.

Table 5. Picolinic acid herbicides for leafy spurge control, Strand Farm (Expt. 30).

Herbicide	Rate lb/A	Percent control	Plant height (inches)
Dowco-290	0.5	-16	17.0
	1	0	19.8
	2	-52	19.8
	4	-2	20.3
Dowco-290 + 2,4-D amine	0.5 + 0.5	-6	18.3
	1 + 1	-21	21.5
	2 + 2	-6	16.0
	4 + 4	-3	17.0
Picloram	0.5	46	16.3
	1	36	13.3
Picloram + 2,4-D amine	0.5 + 0.5	28	13.0
	1 + 1	6	13.3
Control	---	4	19.3
LSD (0.05)		48	4.9

Treatments were applied on June 24, 1974 to leafy spurge in full bloom to soft dough stage in a native pasture. Herbicides were applied at 8.5 gpa with a bicycle-wheel sprayer. Stand counts were taken before treatment in 1974 and again on June 13, 1975. Percent control was calculated from the stand counts. A negative percent control indicates an increase in leafy spurge density.

Dowco-290 was ineffective for leafy spurge control, either alone or in combination with 2,4-D. Picloram treatments controlled some of the leafy spurge as indicated by both the control and plant height determinations. The low control of leafy spurge with 1 lb/A picloram + 1 lb/A 2,4-D occurred because there were many smaller plants, so the stand count data indicated less control than was evident visually.

Table 6. Fall applications of 2,4-D and dicamba for leafy spurge control, Strand Farm (Expt. 43).

Herbicide	Rate lb/A	Percent control	Plant height (inches)
2,4-D OSA	1	52	12.7
(oil-soluble amine)	2	33	13.0
	4	34	13.5
Dicamba	0.25	-11	15.5
	0.5	16	14.3
	1	25	10.8
2,4-D + dicamba	0.25 + 0.75	9	13.0
	0.5 + 1.5	38	9.8
2,4-DP (Weedone 2,4-DP)	2	43	11.8
Silvex (Weedone 2,4,5-TP)	2	37	12.8
Control	-	7	15.7
LSD (0.05)		35	4.5

Treatments were applied on August 27, 1974 to leafy spurge that had 2 to 4 inches of regrowth on stems. The experiment was located in a native grass pasture. Herbicides were applied at 8.5 gpa with a bicycle-wheel sprayer. Stand counts were taken before treatment in 1974 and again on June 24, 1975. Percent control was calculated from the stand counts.

The phenoxy herbicides were similar in effectiveness for leafy spurge control. Dicamba generally was less effective than the phenoxy herbicides for leafy spurge control.

Table 7. Dowco-233 and phenoxy herbicides for leafy spurge control, Strand Farm (Expt. 31).

Herbicide	Rate lb/A	Percent control	Plant height (inches)	Formulation
Silvex	2	51	15.0	Weedone 2,4,5-TP
	4	43	14.0	
2,4-DP	2	69	12.3	Weedone 2,4-DP
	4	43	13.5	
Dowco-233	3/8	-3	19.8	M-3724
	3/4	7	17.8	
	1.5	-6	16.8	
	3	6	16.0	
2,4-D OSA	2	48	11.8	Emulsamine E-3
	4	0	14.5	
Control	-	28	14.3	---
LSD (0.05)		50	4.7	

Treatments were applied on June 25, 1974 to leafy spurge at the full bloom to soft dough stage in a native grassland pasture. Herbicides were applied at 8.5 gpa with a bicycle-wheel sprayer. Stand counts were taken before treatment in 1974 and on June 13, 1975. Percent control was calculated from the stand counts.

Dowco-233 was not effective for leafy spurge control, and had more plants in 1975 than the untreated controls. Silvex, 2,4-DP, and 2,4-D OSA (oil-soluble amine) were similar in effectiveness for leafy spurge control.

Table 8. Granular formulations of dicamba and picloram, and bentazon for leafy spurge control, Strand Farm (Expt. 32).

Herbicide	Rate lb/A	Percent control	Plant height (inches)
Dicamba, 5G	2	66	15.3
	4	81	13.5
Dicamba, liquid	2	35	19.0
	4	29	14.0
Picloram, 5G	1	88	14.3
	2	96	12.0
Picloram, liquid	1	28	17.8
	2	75	9.8
Bentazon (+1% Citowet)	1.5	25	19.0
Control	-	8	19.7
LSD			
LSD (0.05)		35	4.7

Treatments were applied on June 25, 1974 to leafy spurge at the full bloom to soft dough stage in a native grassland pasture. Herbicides were applied at 8.5 gpa with a bicycle-wheel sprayer. Stand counts were taken before treatment in 1974 and on June 13, 1975. Percent control was calculated from the stand counts.

Bentazon was ineffective for leafy spurge control. Dicamba was more effective as a granular formulation than as a liquid formulation. Also, picloram granules were more effective than picloram liquid, but the difference between formulations were relatively small for picloram at 2 lb/A.

Table 9. Fall 1974 applications of herbicides for chemical fallow in 1975, Williston.

Herbicide	Rate lb/A	Percent control									
		Grft	KOCZ	Ruth	Howe	Gfpw	Tamu Tumu	Wibw	Colq	Bdlf	Grass
Cyanazine	2	20	79	75	84	94	80	88	71	89	20
Propachlor	5	10	0	13	0	0	0	0	0	3	10
Diuron	2	75	53	10	43	95	66	49	47	65	75
Velpar	0.75	64	8	44	63	75	75	74	49	63	64
Metribuzin	0.75	28	93	89	96	99	96	94	73	95	28
Penoxalin	2	96	5	15	0	0	23	25	68	11	96
Karbutilate	1	71	68	79	96	95	71	73	71	91	71
Diuron + propachlor	1 + 3	10	75	40	84	50	65	10	73	60	10
Trifluralin granules	1	97	44	85	49	99	24	70	73	68	96
Control, incorporated	-	5	21	83	41	99	0	0	0	43	5
Control, weedy	-	0	0	0	0	0	0	0	0	0	0
LSD (0.05)		24	45	25	34	24	46	37	41	26	24
Weed density as percent of total weed population		60	5	10	5	10	5	2	3 : 40		60

Treatments were applied on October 22, 1974 on wheat stubble with a bicycle-wheel sprayer at 17 gpa and 30 psi. Treatments were evaluated visually on June 18, 1975 for percent reduction in dry weight.

Cyanazine, metribuzin, and karbutilate were the most effective herbicides for broadleaf weed control, while trifluralin and penoxalin were the most effective treatments for grassy weed control. None of the treatments gave good control of both broadleaf and grassy weeds at the rates used. Effective control of all weeds would require either higher herbicide rates of a combination of two herbicides for longer-term weed control.

Table 10. Evaluation of herbicides for chemical fallow at Williston, spring applied.

Glyphosate at 3/8 lb/A was included in all treatments to control established plants, and the other herbicides were intended to provide a residual effect. Treatments were applied on May 10, 1975 on wheat stubble with a bicycle-wheel sprayer at 17 gpa and 30 psi. Treatments were evaluated on June 14 and July 14, 1975 for percent reduction in dry weight.

Table 10a. Evaluation on June 14, 1975.

Herbicide	Rate lb/A	Percent control										
		Grft	Mesa	Tamu	Colq	KOCZ	Prle	Ruth	Howe	Wibu	Bdlf	Grass
Gly + VEL-5026	3/8 + 2	100	100	100	100	100	100	100	100	100	100	100
Gly + VEL-4207	3/8 + 2	79	100	95	100	100	99	99	100	100	98	79
Gly + SD-50093	3/8 + 3	89	100	100	100	100	100	100	100	100	99	89
Gly + cyanazine + propachlor	3/8 + 1 + 3	65	89	98	100	100	100	93	100	100	95	65
Glyphosate	3/8	0	98	83	85	83	91	5	100	33	71	0
Gly + cyanazine	3/8 + 2	80	94	100	100	100	100	100	100	100	99	80
Gly + propachlor	3/8 + 5	78	30	45	63	89	40	0	98	25	49	78
Gly + diuron	3/8 + 2	95	79	100	100	100	100	83	100	100	95	95
Gly + procyazine	3/8 + 2.5	75	94	100	100	100	100	100	100	100	98	75
Gly + velpar	3/8 + 3/4	97	98	100	100	100	100	93	100	100	98	97
Gly + metribuzin	3/8 + 3/4	85	100	90	100	100	100	100	100	95	94	85
Gly + penoxalin	3/8 + 2	93	91	73	100	75	100	98	80	100	88	93
Gly + diuron + propachlor	3/8 + 1 + 3	79	75	100	100	100	100	98	100	100	96	79
Gly + atrazine + propachlor	3/8 + 1 + 3	60	99	90	100	100	100	100	99	100	96	60
Control	---	0	0	0	0	0	0	0	0	0	0	0
LSD (0.05)		12	18	19	17	19	9	10	14	20	11	12
Weed density as percent of total weed population		50	10	5	2	5	5	10	10	3	50	50

Continued on next page

Table 10b. Evaluation of herbicides on July 14, 1975.

Herbicide	Rate lb/A	Percent control										
		Grft	Mesa	Tamu	Colq	KOCZ	Prle	Ruth	Howe	Wibu	Bdlf	Grass
Gly + VEL-5026	3/8 + 2	100	95	100	100	100	100	100	100	100	98	100
Gly + VEL-4207	3/8 + 2	13	100	95	100	100	96	99	100	100	97	13
Gly + SD-50093	3/8 + 3	71	100	100	100	100	100	100	100	100	100	71
Gly + cyanazine + propachlor	3/8 + 1 + 3	10	92	100	100	100	100	98	100	100	96	10
Glyphosate	3/8	0	98	83	85	73	91	5	100	10	65	0
Gly + cyanazine	3/8 + 2	31	94	100	100	100	100	100	100	100	99	31
Gly + propachlor	3/8 + 5	8	30	45	61	79	40	0	98	25	44	8
Gly + diuron	3/8 + 2	79	79	100	100	100	100	83	100	100	95	79
Gly + procyazine	3/8 + 2.5	29	94	100	100	100	100	100	100	100	99	29
Gly + velpar	3/8 + 3/4	96	98	100	100	100	100	93	100	100	98	96
Gly + metribuzin	3/8 + 3/4	58	100	90	100	100	100	100	100	76	92	58
Gly + penoxalin	3/8 + 2	84	91	70	100	100	98	45	74	100	80	84
Gly + diuron + propachlor	3/8 + 1 + 3	45	75	100	100	95	100	98	100	100	95	45
Gly + atrazine + propachlor	3/8 + 1 + 3	8	94	90	100	95	98	100	99	100	93	8
Control	---	0	0	0	0	0	0	0	0	0	0	0
LSD (0.05)		16	18	18	17	17	9	18	18	15	11	16
Weed density as percent of total weed population		50	10	5	2	5	5	10	10	3 : 50		50

Glyphosate at 3/8 lb/A alone was effective for controlling many weeds, except Russia thistle and wild buckwheat which are resistant to glyphosate and green foxtail which would have emerged after glyphosate treatment. VEL-5026 and velpar provided the best residual control of both broadleaf and grassy weeds for the rates used in these studies.

Table 11. Evaluation of herbicides for chemical fallow, Langdon 1975.

Herbicide	Rate lb/A	Percent control						
		Foxtail spp.	Rrpw	Wibw	Nfcf	Colq	Bygr	Coma
Gly + VEL-5026	3/8 + 2	99	100	100	100	100	76	100
Gly + VEL-4207	3/8 + 2	25	49	49	46	50	24	49
Gly + SD-50093	3/8 + 3	100	100	100	100	100	83	100
Gly + cyanazine + propachlor	3/8 + 1 + 3	100	100	100	100	100	49	100
Gly + atrazine + propachlor	3/8 + 1 + 3	100	100	100	100	100	43	100
Glyphosate	3/8	80	79	85	99	88	81	84
Gly + cyanazine	3/8 + 2	100	100	100	100	100	83	98
Gly + propachlor	3/8 + 5	100	96	98	100	100	69	98
Gly + diuron	3/8 + 2	100	100	100	100	100	83	100
Gly + procyazine	3/8 + 2.5	99	100	100	100	100	46	99
Gly + velpar	3/8 + 3/4	100	97	98	99	100	79	99
Gly + metribuzin	3/8 + 3/4	100	100	100	100	100	65	100
Gly + penoxalin	3/8 + 2	99	100	99	100	100	95	100
Gly + diuron + propachlor	3/8 + 1 + 3	74	75	75	75	75	34	75
Control	---	0	0	0	0	0	0	0
LSD (0.05)		26	28	29	26	28	34	29

Glyphosate at 3/8 lb/A was included in all treatments to control established plants, and the other herbicides were intended to provide a residual effect. Treatments were applied at 17 gpa with a back-pack sprayer on June 23, 1975. The plots were evaluated visually for percent reduction in dry weight on July 24, 1975. The grass and broadleaf weeds were 2 to 4 inches tall when sprayed.

Glyphosate at 3/8 lb/A alone gave approximately 80% control or more for all weeds. VEL-4207 apparently was antagonistic with glyphosate, because the weed control for all weeds was reduced as compared to glyphosate alone. Barnyardgrass was the most difficult weed to control.

Table 12. Evaluation of herbicides for chemical fallow, Fargo 1975.

Herbicide	Rate lb/A	Percent Control				
		Biww	Wimu	Colq	Wioa	KOCZ
Gly + VEL-5026	3/8 + 2	94	90	96	75	74
Gly + VEL-4207	3/8 + 2	86	93	100	96	98
Gly + SD-50093	3/8 + 3	71	83	83	83	66
Para + SD-50093	3/8 + 3	95	100	99	96	98
Gly + cyanazine + atrazine	3/8 + 3 + 1	75	83	50	88	38
Para + cyanazine + atrazine	3/8 + 3 + 1	97	100	92	100	100
Gly + cyanazine + propachlor	3/8 + 1 + 3	46	83	70	96	55
Gly + cyanazine + propachlor	3/8 + 2 + 5	74	90	80	88	71
Gly + atrazine + propachlor	3/8 + 1 + 3	33	81	59	89	53
Glyphosate	3/8	73	83	62	98	65
Control	---	0	0	0	0	0
LSD (0.05)		20	9	29	23	27

Glyphosate at 3/8 lb/A or paraquat at 3/8 lb/A were included in all treatments to control established plants, and the other herbicides were intended to provide a residual effect. Treatments were applied on June 16, 1975 with a bicycle-wheel sprayer at 17 gpa and 30 psi. Wild mustard was in full bloom and the other weeds were less than 1 inch tall. Treatments were evaluated visually on July 15, 1975 for percent reduction in dry weight. There was a medium to heavy infestation of biennial wormwood and wild mustard, a light to medium infestation of common lambsquarters and kochia, and a light infestattion of wild oats.

Glyphosate at 3/8 lb/A alone gave moderate to good control of all weeds. SD-50093 and cyanazine + atrazine apparently were antagonistic with glyphosate as indicated by reduced weed control as compared to glyphosate alone, while paraquat was not antagonistic with these same herbicides.