HORTICULTURAL REPORT

1998 WEED CONTROL RESEARCH ON HORTICULTURAL CROPS

NUMBER 57 **NOVEMBER 1998**

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WEED CONTROL IN HORTICULTURAL CROPS - 1998
FORWARD

This report summarizes the results of weed control experiments on horticultural crops in Michigan in 1998. It is intended to inform industry and university research and extension colleagues of our current results.

We greatly appreciate the support for our weed control research and extension program from commodity groups, chemical companies, MSU Extension, and the Michigan Agricultural Experiment Station. The following companies and organizations provided financial support, chemicals, equipment, seeds, plants, or other support for our program:

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TABLE OF CONTENTS

PAGE

PAGE

B. <u>Fruit Crops</u>

METHODS

Chemical Application and Incorporation

Herbicides were applied with a small plot sprayer using carbon dioxide as a source of pressure. Spray volumes are specified in each experiment. All herbicide rates are expressed as pounds of active ingredient per acre.

Visual Evaluations

In most instances, weed control ratings were made on individual weed species. General ratings for broad-leaved weeds and grasses were sometimes used in orchard studies or for late-season assessments.

Weed control and crop injury are rated on a 1 to 10 scale; 1 = no visible injury or reduction in growth; 10 = complete kill of plants. The ratings can be roughly translated into percentages as follows:

10 = 100% kill, all the plants are dead or none are visible.
9 = 90-100% kill or reduction in growth and stand.
8 = 80-90% kill or reduction in growth and stand.
7 = 70-80% kill or reduction in growth and stand.
This is a still commercially acceptable control.
6 = 60-70% kill or reduction in growth and stand.
5 = 50% kill or reduction in growth and stand.
4 = 30-40% kill or reduction in growth and stand.
3 = 20-30% reduction in growth and stand.
2 = 10-20% reduction in growth and stand.
1 = 0-10% reduction in growth, no obvious effect of herbicide.

Experimental Design and Statistical Analysis

Experiments were set up and analyzed in the program Pesticide Research Manager (PRM) edition 5.0, from Gylling Data Management, Inc. (RR 4 405 Martin Boulevard, Brookings, SD 57006). Unless otherwise specified, the experiments were laid out as randomized complete blocks. The data were subjected to analysis of variance and the means were compared with the LSD test at the 5% level. Since data transformations were not used, the coefficient of variation for skewed ratings or weed densities may be misleading. In some instances, yields for weeded check plots may be low because of severe early weed competition. In these cases, it may be more desirable to compare new herbicides with standard treatments.

WEED LIST

Abbreviations for the common names of weeds correspond to those presented in the NCWSS proceedings volume 28 (1973), 143.

Abbr.	Common Name	Botanical Name
ANBG	annual bluegrass	*Poa annua* L.
BHPL	buckhorn plantain	*Plantago lanceolata* L.
BRPL	broadleaf plantain	*Plantago major* L.
BSPL	blackseed plantain	*Plantago rugelii* Dcne.
BYGR	barnyardgrass	*Echinochloa crus-galli* (L.) Beauv.
CATH	Canada thistle	*Cirsium arvense* (L.) Scop.
CAWE	carpetweed	*Mollugo verticillata* L.
COBU	cocklebur	*Xanthium strumarium* L.
COCW	common chickweed	*Stellaria media* (L.) Cyrillo
COGR	common groundsel	*Senecio vulgaris* L.
COLQ	common lambsquarters	*Chenopodium album* L.
COPU	common purslane	*Portulaca oleracea* L.
CORW	common ragweed	*Ambrosia artemisiifolia* L.
CUDO	curly dock	*Rumex crispus* L.
DAND	dandelion	*Taraxacum officinale* Weber
EBNS	eastern black nightshade	*Solanum ptycanthum* Dun.
FAPA	fall panicum	*Panicum dichotomiflorum* Michx.
FIPA	field pansy	*Viola rafinesquii* Greene
FIPC	field pennycress	*Thlaspi arvense* L.
GIRW	giant ragweed	*Ambrosia trifida* L.
GORO	goldenrod	*Solidago nemoralis* Ait.
GIFT	giant foxtail	*Setaria faberi* Hermm.
GRFT	green foxtail	*Setaria viridis* (L.) Beauv.
GFPW	greenflower pepperweed	*Lepidium densiflorum* Schmd.
HOAL	hoary alyssum	*Berteroa incana* (L.) DC.
HOWE	horseweed (marestail)	*Conyza canadensis* (L.) Scop.
JIWE	jimsonweed	*Datura stramonium* L.
LACG	large crabgrass	*Digitaria sanguinalis* (L.) Scop
LATH	ladysthumb	*Polygonum persicaria* L.
MATA	marestail (horseweed)	*Conyza canadensis* (L.) Scop.
MAYC	marsh yellowcress	*Rorippa islandica* (Oeder) Barbs
MECW	mouseear chickweed	*Cerastium vulgatum* L.
MONO	monolepis	*Monolepis nuttaliane* Greene
MWCH	mayweed chamomile	*Anthemis cotula* L.
NLLQ	narrowleaf lambsquarters	*Chenopodium desiccatum* A. Nels
OEDA	oxeye daisy	*Chrysanthemum leucanthemum* L.
PAWE	pineappleweed	*Matricaria matricariodes* (Less)C.L.Porter
PESW	Pennsylvania smartweed	*Polygonum pennsylvanicum* L.
POIV	poison ivy	*Rhus radicans* L.
PRKW	prostrate knotweed	*Polygonum aviculare* L.
PRLE	prickly lettuce	*Lactuca serriola* L.
PRSP	prostrate spurge	*Euphorbia maculata* L.
PRPW	prostrate pigweed	*Amaranthus blitoides* S. Wats.
PUSW	purslane speedwell	*Veronica serpyllifolia* L.
QUGR	quackgrass	*Agropyron repens* (L.) Beauv.
RECL	red clover	*Trifolium pratense* L.

Abbr.	Common Name	Botanical Name
REFE	red fescue	*Festuca rubra* L.
RESO	red sorrel	*Rumex acetosella* L.
ROFB	rough fleabane	*Erigeron strigosus* Muhl. ex Willd.
RRPW	redroot pigweed	*Amaranthus retroflexus* L.
SHPU	shepherdspurse	*Capsella bursa-pastoris* (L.) Medic.
TUPW	tumble pigweed	*Amaranthus albus* L.
VELE	velvetleaf	*Abutilon theophrasti* Medic.
VIPW	Virginia pepperweed	*Lepidium virginicum* L.
WHCA	white campion	*Silene alba* (Mill.) E.H.L. Krause
WHCL	white clover	*Trifolium repens* L.
WIBW	wild buckwheat	*Polygonum convolvulus* L.
WICA	wild carrot	*Daucus carota* L.
WICH	wild chamomile	*Matricaria chamomilla* L.
WIGR	witchgrass	*Panicum capillare* L.
WIMU	wild mustard	*Sinapis arvensis* L.
WIRA	wild radish	*Raphanus raphanistrum* L.
WLDGRP	wild grape	*Vitis* sp.
WLDRASP	wild raspberry	*Rubus* sp.
YEFT	yellow foxtail	*Setaria glauca* (L.) Beauv.
YENS	yellow nutsedge	*Cyperus esculentus* L.
YERO	yellow rocket	*Barbarea vulgaris* R. Br.

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
2,4-D amine	Weedar 64	3.8 L	Sedagri Inc.
acetochlor	Harness	7 EC	Monsanto
acetochlor	Surpass	6.4 EC	Zeneca
acifluorfen	Blazer	2 EC	BASF
alachlor	Lasso	4 EC	Monsanto
atrazine	Aatrex	90 DF	Novartis
azafenidin	Milestone	80 DF	DuPont
bensulide	Prefar	4 EC, 6 EC	Gowan
bentazon	Basagran	4 L	BASF
bromoxynil	Buctril	2 EC	Rhone-Poulenc
carfentrazone	Aim	40 DF	FMC
CGA 248757	Action	4.75 WP	Novartis
chlorimuron	Classic	25 WG	DuPont
clethodim	Select	2 EC	Valent
clomazone	Command	4 EC,3 ME	FMC
clopyralid	Stinger	3 EC	Dow Agrisciences
cyanazine	Bladex	90 DF, 4 L	DuPont
cycloate	Ro-Neet	6 EC	Zeneca
desmedipham	Betanex	1.3 L	Agrevo
dicamba	Banvel	4 EC	Sandoz
diclobenil	Casoron	50 WP	Uniroyal
dimethenamid	Frontier	6 EC	BASF
diquat	Diquat	2 EC	Zeneca
diuron	Karmex	80 DF	Griffin
endothall	Desicate	0.52 EC	Atochem
ethalfluralin	Curbit	3 EC	Platte
ethofumesate	Nortron	4L	Agrevo
flimioxazin	V-53482	50 WP	Valent
fluazifop-P	Fusilade DX	2 EC	Zeneca
flumiclorac	Resource	0.86 EC	Valent
fomesafen	Reflex	2 LC	Zeneca
glufosinate	Rely	1 L	Agrevo
glufosinate	Liberty	1.67 EC	Agrevo
glyphosate	Roundup	4 L	Monsanto
halosulfuron	Permit	75 WG	Monsanto
imazamox	Raptor	1 AS	American Cyanamid
imazaquin	Scepter	1.5 EC	American Cyanamid
imazethapyr	Pursuit	2 L	American Cyanamid
isoxaben	Gallery	75 DF	Dow Agrisciences
isoxaben .5% + trifluralin 2%	Snapshot	2.5 G	Dow Agrisciences
isoxaben 20% + oryzalin 60%	Snapshot	80 DF	Dow Agrisciences
isoxaflutole	Balance	75 WG	Rhone Poulenc
linuron	Lorox	50 DF	Griffin
metolachlor	Dual	8 EC	Ciba

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
metribuzin	Lexone, Sencor	75 DF	DuPont, Bayer
napropamide	Devrinol	50 DF	United Phosphorus
naptalam	Alanap	2 EC	Uniroyal
nicosulfuron	Accent	75 DF	DuPont
norflurazon	Solicam	80 DF	Novartis
oryzalin	Surflan	4 AS	Dow Agrisciences
oxyfluorfen	Goal XL	2 L	Rohm and Haas
PCC 1170	PCC 170	L	Platte Chem. Co.
paraquat	Gramoxone Extra	2.5 L	Zeneca
pendimethalin	Prowl	3.3 EC	American Cyanamid
phenmedipham	Spin-Aid	1.3 L	Agrevo
phenmedipham + desmedipham	Betamix	1.3 L	Agrevo
phenmedipham + desmedipham + ethofumesate	Betamix Progress	1.8 L	Agrevo
primisulfuron	Beacon	75 WDG	Novartis
primisulfuron + prosulfuron	Exceed	57 WG	Novartis
prometryn	Caparol	4 L	Novartis
pronamide	Kerb	50 WP	Rohm and Haas
prosulfuron	Peak	57 WG	Novartis
pyrazon	Pyramin	4.2 FL, 68 DF	BASF
pyridate	Lentagran	45WP	Novartis
pyridate	Tough	3.75 EC	Novartis
quizalofop	Assure II	0.88 L	DuPont
rimsulfuron	Matrix	25 DF	DuPont
rimsulfuron	Shadeout	25 DF	DuPont
s-dimethenamid	BAS65607 H	6 EC	BASF
s-metolachlor	Dual Magnum	7.6 EC	Novartis
sethoxydim	Poast	1.53 EC	BASF
simazine	Princep	90 DF	Novartis
sulfentrazone	Authority	75 DF	FMC
sulfosate	Touchdown	6 L	Zeneca
terbacil	Sinbar	80 WP	DuPont
triclopyr	Grandstand	3 EC	Dow Agrisciences
trifluralin	Treflan	4 EC	Dow Agrisciences
triflusulfuron	Upbeet	50 WG	DuPont

ADJUVANTS

TRADE NAME	ABBREVIATION	DESCRIPTION	MANUFACTURER
Activator 90	NIS	nonionic surfactant	Loveland
AG98	AG98	nonionic surfactant Alkylarylpolyoxyethylene	Rohm and Haas
ammonium nitrate		100% salt	
ammonium sulfate	AMS	spray grade fertilizer	
Cayuse		Ammonium salts + NIS	Wilbur Ellis
copper sulfate		100% salt	
Dash		proprietary surfactant	BASF
Dash HC		proprietary surfactant	BASF
Herbimax	COC	80% paraffin base petroleum oil 20% surfactant	Loveland
28% Nitrogen	UAN	28% urea ammonia nitrate solution	
Silwet L-77		organosilicone surfactant	Loveland
Sylgard 309		organosilicone surfactant	DowCorning
X-77	Ortho X-77	Alkylarylpolyoxyethylene glycol free fatty acids, isopropanol	Loveland

ABBREVIATIONS USED IN THE REPORT

A = Acre
AI = Active Ingredient
ASPA = Asparagus
BLBE = Blueberry
CEC = Cation Exchange Capacity
Cont. = Control
CV = Coefficient of Variability
D = Days
DF = Dry Flowable
DG = Dispersible granular
DS = Dry Soluble
Dev = Deviation
EC = Emulsifiable Concentrate
EP = Early Postemergence
F = Fahrenheit Temperature
FORMU = Formulation
FT = Distance in Feet
G / GR = Gram
GAL = Gallon
GERM. = Germination
GPA = Gallons per acre
GROW STG = Growth Stage at time of application
GRN. PLT = Green Plants
HTRC = Horticulture Teaching and Research Station
IMM = Immature
IN = Inch
KG = Kilogram
L = Liquid
LSD = Least Significant Difference
LB = Pounds
M = Meter
MAT = Mature
M.E. = Milliequivalent
MPH = Mile(s) per hour
MSU = Michigan State University
N/A = Not Applicable / Not Available
No. = Number
OM = Organic Matter
OZ = Ounce
PLNT = Planting
PO = Postemergence
POH = Post harvest
POT = Post Transplant
PPI = Preplant Incorporated
PR = product
PRE = Preemergence
PREC. = Precipitation (inches)
PRT = Pretransplant
PSI = Pounds per square inch
PT = Pint
QT = Quart
R. Beet = Red Beet
RCBD = Randomized Complete Block Design
RH = Relative Humidity
REPS = Replication
SNBE = Snapbean
SP = Soluble Powder
SQM = Square Meter
STBE = Strawberry
S. BEET = Sugar Beet
SURF = Surface
Sw Corn = Sweet Corn
TRT = Treatment
TOT.YLD = Total Yield
WG = Wettable Dry Crystal
WP = Wettable Powder
WS = Water Soluble
WT = Weight
" = Inches

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
1998

APRIL				MAY				JUNE			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	56.9	37.6	0.26	**1**	69.2	53.9	0.87	**1**	68.7	40.5	
2	45.5	37.1	0.05	**2**	59.3	51.5	0.18	**2**	74.0	49.6	
3	42.1	36.9		**3**	64.7	49.8	0.04	**3**	59.7	41.5	
4	49.2	32.0		**4**	71.3	49.4	0.09	**4**	63.9	35.4	
5	51.6	26.1		**5**	74.0	45.2	0.01	**5**	56.3	38.8	
6	57.1	25.4		**6**	75.3	54.6		**6**	58.3	35.9	
7	58.6	33.7		**7**	72.7	55.4		**7**	62.6	39.4	
8	47.6	39.0	0.47	**8**	65.3	52.1	0.04	**8**	68.0	37.2	
9	42.5	37.7	0.17	**9**	67.0	49.4		**9**	65.0	49.5	0.24
10	50.5	33.0		**10**	69.7	44.4		**10**	64.5	53.8	0.09
11	58.9	28.6		**11**	64.4	49.5	0.04	**11**	67.9	54.7	0.15
12	68.4	39.0		**12**	71.8	46.4		**12**	80.9	62.3	0.08
13	68.9	49.6		**13**	79.3	54.3	0.06	**13**	71.6	57.7	0.29
14	57.5	46.6	0.08	**14**	83.8	49.6		**14**	75.9	55.1	
15	55.7	39.5		**15**	87.0	56.4		**15**	78.4	58.1	0.05
16	64.3	37.8	0.22	**16**	77.2	62.0		**16**	78.7	57.7	0.11
17	48.1	33.8		**17**	80.3	53.9		**17**	79.6	58.7	
18	59.6	37.0		**18**	85.0	62.0		**18**	83.5	56.8	
19	58.4	38.5		**19**	84.1	59.8		**19**	80.8	63.7	
20	65.0	36.5		**20**	80.2	48.4		**20**	86.8	60.6	
21	62.1	40.7		**21**	70.4	48.4		**21**	85.5	65.2	
22	65.2	38.6		**22**	65.8	40.0		**22**	84.9	62.8	
23	66.0	36.5		**23**	70.3	36.8		**23**	86.3	67.3	
24	69.2	41.4		**24**	64.0	46.9	0.12	**24**	87.6	60.0	0.28
25	63.4	36.4	0.11	**25**	60.3	47.5		**25**	91.2	67.4	0.61
26	49.3	34.6	1.09	**26**	76.7	42.0		**26**	83.8	64.9	0.09
27	52.2	29.8		**27**	80.2	47.4		**27**	82.7	64.6	0.04
28	61.4	28.4		**28**	82.2	51.6		**28**	83.8	67.3	
29	62.5	32.5		**29**	80.6	60.3		**29**	85.0	62.5	
30	61.8	50.1	0.31	**30**	83.5	51.3		**30**	73.2	63.6	0.14
				31	74.1	53.2	0.49				

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MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
1998

JULY				AUGUST				SEPTEMBER			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	78.6	56.6		**1**	80.0	49.8		**1**	76.5	49.1	
2	79.4	51.4		**2**	82.2	49.4		**2**	71.6	52.8	0.48
3	82.0	59.4	0.03	**3**	80.3	53.7		**3**	74.2	49.2	
4	70.3	56.8	0.26	**4**	70.9	63.3		**4**	75.8	51.4	
5	77.6	50.6		**5**	70.7	64.8	0.14	**5**	82.2	51.2	
6	80.3	58.9	0.53	**6**	77.8	66.3	0.67	**6**	85.3	65.0	
7	75.4	65.2	0.85	**7**	81.1	67.3	0.22	**7**	74.8	55.5	0.17
8	78.9	63.3		**8**	85.4	65.0	0.52	**8**	65.3	49.1	
9	80.2	58.8		**9**	80.3	65.4	0.07	**9**	69.0	47.6	
10	74.6	56.2		**10**	81.7	63.9	0.50	**10**	73.5	41.7	
11	77.7	48.3		**11**	73.9	59.8		**11**	80.9	55.0	
12	80.2	51.8		**12**	76.8	52.2		**12**	85.0	55.2	
13	80.9	54.7		**13**	79.2	53.2		**13**	87.4	55.4	
14	85.3	60.3		**14**	79.1	55.2		**14**	81.5	61.4	
15	85.3	64.1		**15**	77.4	61.1		**15**	73.0	64.6	0.36
16	83.4	66.3	0.09	**16**	81.1	59.3		**16**	75.4	56.7	
17	78.9	59.5		**17**	81.7	61.0	0.58	**17**	77.5	50.9	
18	82.5	50.8		**18**	72.9	52.1	0.01	**18**	80.6	48.4	
19	84.4	63.4	0.07	**19**	74.4	46.1		**19**	81.2	50.3	
20	86.9	65.0		**20**	77.8	51.0		**20**	83.7	58.7	0.02
21	89.0	64.3	0.41	**21**	83.2	64.8		**21**	72.6	57.9	0.01
22	80.3	66.3		**22**	82.8	64.0		**22**	64.3	46.2	
23	76.4	57.4		**23**	85.9	67.7		**23**	62.8	35.7	
24	73.4	51.2		**24**	85.9	67.4		**24**	64.7	40.4	
25	74.1	51.9		**25**	79.9	63.3	0.46	**25**	74.5	53.3	
26	79.4	49.2		**26**	79.1	56.2		**26**	86.1	63.4	0.03
27	78.0	57.0		**27**	83.3	55.7		**27**	81.7	56.6	
28	82.7	61.3		**28**	72.0	62.5	0.07	**28**	70.2	47.5	
29	79.6	58.8		**29**	80.9	61.2		**29**	74.7	42.4	
30	77.9	61.0		**30**	79.2	59.1		**30**	72.6	52.5	0.18
31	78.7	53.4		**31**	77.1	48.4					

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
1998

OCTOBER

Date	High Temp F	Low Temp F	Total Prec. in.
1	58.2	40.3	
2	55.9	36.2	
3	50.6	44.4	0.14
4	62.4	38.2	
5	66.1	48.5	0.18
6	77.6	58.0	0.95
7	58.0	52.9	0.35
8	53.2	47.6	
9	59.7	40.4	
10	63.8	34.3	
11	68.3	38.4	
12	70.3	42.0	
13	54.7	38.4	
14	48.8	39.1	
15	61.1	42.9	
16	72.5	42.6	
17	74.0	58.2	0.04
18	66.8	44.4	0.15
19	63.8	41.4	
20	50.6	37.2	
21	49.7	35.4	
22	49.0	31.8	
23	63.5	33.5	
24	62.7	37.8	
25	67.1	41.9	
26	68.2	40.7	
27	60.6	42.2	
28	63.4	41.1	0.01
29	61.2	32.7	
30	52.1	42.3	0.21
31	55.2	38.9	

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
1998

APRIL				MAY				JUNE			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1				**1**	67	53	1.12	**1**	70	38	
2				**2**	56	50	0.38	**2**	76	40	0.02
3				**3**	66	49	0.17	**3**	64	39	
4				**4**	69	45	0.04	**4**	66	34	
5			0.54	**5**	74	42		**5**	56	38	
6				**6**	74	52	0.02	**6**	60	32	
7				**7**	73	54		**7**	62	36	
8				**8**	66	52	0.08	**8**	66	33	
9			0.08	**9**	66	47		**9**	64	41	0.54
10				**10**	69	40		**10**	64	58	
11				**11**	62	45		**11**	70	55	0.27
12				**12**	70	45	0.06	**12**	85	62	0.22
13				**13**	78	55		**13**	74	57	0.12
14				**14**	83	46		**14**	77	52	
15				**15**	88	52		**15**	81	55	0.08
16			0.20	**16**	79	50		**16**	81	58	0.01
17				**17**	82	48		**17**	84	59	
18				**18**	86	50		**18**	86	54	
19				**19**	85	57		**19**	84	67	
20				**20**	81	59		**20**	89	57	
21				**21**	72	40		**21**	89	65	0.15
22				**22**	65	36		**22**	87	60	
23				**23**	72	32		**23**	90	69	
24	70	37		**24**	66	41		**24**	90	59	
25	61	33		**25**	62	53	0.12	**25**	93	69	0.70
26			0.57	**26**	79	39		**26**	88	65	
27	52	25		**27**	80	45		**27**	84	63	0.05
28				**28**	83	49		**28**	88	67	
29	62	31		**29**	81	62		**29**	90	59	
30	64	43		**30**	84	50		**30**	75	67	0.17
				31	75	48	0.95				

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
1998

JULY				AUGUST				SEPTEMBER			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	80	53		**1**	83	45		**1**	81	48	
2	84	48		**2**	85	47		**2**	74	55	0.58
3	84	55	0.17	**3**	83	52		**3**	77	47	
4	82	58		**4**	74	67		**4**	78	44	
5	78	45		**5**	74	68	0.03	**5**	85	47	
6	81	58	0.17	**6**	79	68	0.42	**6**	89	66	
7	76	68	0.02	**7**	83	70		**7**	76	58	0.84
8	81	66		**8**	88	69	0.14	**8**	64	45	
9	84	58		**9**	81	65	0.75	**9**	71	40	
10	78	58		**10**	84	62	0.59	**10**	78	38	
11	81	44		**11**	76	56		**11**	86	55	
12	84	49		**12**	79	49		**12**	86	60	
13	85	51		**13**	81	49		**13**	90	56	
14	89	59	0.02	**14**	82	52		**14**	82	62	
15	91	62		**15**	81	59		**15**	76	66	0.57
16	88	64		**16**	83	58	0.30	**16**	78	57	
17	84	60		**17**	86	59		**17**	79	48	
18	79	50		**18**	76	52		**18**	82	44	
19	84	46	0.09	**19**	74	40		**19**	83	48	
20	88	66		**20**	81	48		**20**	88	58	
21	92	69	0.17	**21**	87	64		**21**	74	54	
22	84	68		**22**	86	63		**22**	65	52	
23	81	55		**23**	89	70		**23**	65	31	
24	76	47		**24**	92	75		**24**	68	36	
25	78	49		**25**	84	60	0.45	**25**	76	57	
26	81	48		**26**	83	52		**26**	86	64	0.06
27	81	52		**27**	86	53		**27**	82	54	
28	86	54		**28**	76	64	0.23	**28**	71	40	
29	83	57		**29**	83	61		**29**	77	35	
30	79	59		**30**	82	57		**30**	75	51	0.43
31	80	50		**31**	81	46					

Weed Control in Asparagus - HTRC

Project Code: WC 120-98-01 **Location :East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Asparagus **Variety: Jersey Knight** **Field or Block: 128-129**
Planting Method: Crowns **Planting Date: 1993** **Harvest: see Notes**
Spacing: 1 ft **Row Spacing: 6 ft** **Perennial Age: 5 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide * 100 ft long

Soil Type: Spinks Sandy Loam **OM: 1.7%** **pH: 6.0**
Sand: 67% **Silt: 19%** **Clay: 13%** **CEC: 5.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-21	2:30 pm	64 F/ 54 F	dry	SE 2-3	52F/64F	42%	100%	N
PO1	5-20	10:45am	82 F/ 70 F	dry	NW 3-5	66F/82F	44%	10% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-21-98	Asparagus	0-3"	-	few are up
	QUGR	2-3"	many	many
5-20-98	Asparagus	4-6"	none	good
	QUGR	10-12"	many	many
	YENS	3-5"	many	many
	COLQ	4-6"	10-12	moderate
	MATA	2-6"	many	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 4-21: quackgrass are mostly found in rows 8-13.
4. 4-21: East end rows 9, 10, 11, 12 sprayed with thiazopyr (Visor) 1 lb. East end rows 5, 6, 7, 8 sprayed with dithiopyr (Dimension) 0.5 lb.
5. QUGR, BLPL, DAND came thru thiazopyr and dithiopyr; neither stunted ASPA.
6. Harvest dates: 5-5, 5-7, 5-11, 5-13, 5-15, 5-18, 5-20, 5-22, 5-25, 5-27, 5-29, 6-1, 6-3, 6-5, 6-8, 6-10, 6-12-98.

Weed Control in Asparagus - HTRC

Project Code: WC 120-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Rate	Rate Unit	Grow Stg	ASPA QUGR RATING 5-14-98	YENS RATING 5-14-98	BSPL RATING 5-14-98	COLQ RATING 5-14-98	LATH RATING 5-14-98	MATA RATING 5-14-98	ASPA RATING 5-14-98	ASPA RATING 6-8-98
1	diuron	80	DF	3.2	lb ai/A	PRE	1.0	5.7	5.7	3.7	9.0	9.3	5.7	1.3
2	metribuzin	75	DF	2	lb ai/A	PRE	1.7	8.7	4.0	10.0	10.0	10.0	10.0	2.7
3	norflurazon	80	DF	4	lb ai/A	PRE	1.0	5.7	8.0	10.0	10.0	10.0	4.7	2.3
4	terbacil	80	WP	2	lb ai/A	PRE	1.7	9.3	4.7	10.0	10.0	10.0	10.0	1.7
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	1.0	4.7	10.0	7.0	7.0	4.7	6.3	2.0
6	dimethenamid	6	EC	1.5	lb ai/A	PRE	1.3	5.0	9.3	6.3	7.7	7.7	4.7	1.7
7	isoxaflutole	75	WG	0.094	lb ai/A	PRE	1.3	6.7	5.7	9.0	10.0	10.0	10.0	2.0
8	linuron	50	DF	2	lb ai/A	PRE	1.0	1.3	3.3	9.7	10.0	10.0	5.3	1.7
9	sulfentrazone	75	DF	0.375	lb ai/A	PRE	1.3	7.3	10.0	8.0	10.0	10.0	9.7	1.7
10	azafenidin	80	DF	0.75	lb ai/A	PRE	1.3	7.7	9.0	10.0	10.0	10.0	10.0	2.3
11	azafenidin	80	DF	1.5	lb ai/A	PRE	2.3	8.7	10.0	10.0	10.0	10.0	9.7	1.7
12	Untreated					PRE	1.0	1.7	1.0	1.0	1.0	1.0	1.7	2.7
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	.38	lb ai/A	PO1								
	clopyralid	3	EC	0.19	lb ai/A	PO1								
	COC		L	1	% v/v	PO1								
13	Untreated Control						1.3	1.0	1.0	1.0	1.7	4.0	1.0	2.3
LSD (P=.05)							0.89	4.32	2.83	3.77	3.22	3.54	4.35	1.97
Standard Deviation							0.53	2.56	1.68	2.24	1.91	2.10	2.58	1.17
CV							39.53	45.45	26.77	30.38	23.36	25.57	37.84	58.38

Trt No	Treatment Name	Form Amt	Form Ds	Rate	Rate Unit	Grow Stg	QUGR RATING 6-8-98	YENS RATING 6-8-98	BSPL RATING 6-8-98	COLQ RATING 6-8-98	MATA RATING 6-8-98	ASPA YIELD KG/PLOT 5-5-98	ASPA YIELD KG/PLOT 5-7-98	ASPA YIELD KG/PLOT 5-11-98
1	diuron	80	DF	3.2	lb ai/A	PRE	7.0	1.0	7.0	10.0	9.0	0.7	1.0	1.7
2	metribuzin	75	DF	2	lb ai/A	PRE	9.7	6.7	10.0	10.0	10.0	0.5	0.6	1.2
3	norflurazon	80	DF	4	lb ai/A	PRE	5.7	3.0	10.0	10.0	5.7	0.7	0.7	1.4
4	terbacil	80	WP	2	lb ai/A	PRE	0.0	8.3	10.0	10.0	10.0	0.6	0.7	1.1
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	4.7	8.7	7.0	4.7	5.0	0.4	0.6	1.0
6	dimethenamid	6	EC	1.5	lb ai/A	PRE	6.3	8.0	7.0	7.0	3.3	0.5	0.6	1.3
7	isoxaflutole	75	WG	0.094	lb ai/A	PRE	6.7	1.3	10.0	9.7	10.0	0.4	0.4	1.0
8	linuron	50	DF	2	lb ai/A	PRE	2.3	1.3	7.0	10.0	4.7	0.6	0.9	1.8
9	sulfentrazone	75	DF	0.375	lb ai/A	PRE	6.3	8.3	7.0	10.0	7.7	0.4	0.7	1.3
10	azafenidin	80	DF	0.75	lb ai/A	PRE	6.7	5.7	10.0	10.0	6.7	0.4	0.7	1.1
11	azafenidin	80	DF	1.5	lb ai/A	PRE	9.3	7.7	9.3	10.0	5.0	0.4	0.5	1.4
12	Untreated					PRE	7.3	4.0	8.3	10.0	9.0	0.9	0.8	2.0
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	.38	lb ai/A	PO1								
	clopyralid	3	EC	0.19	lb ai/A	PO1								
	COC		L	1	% v/v	PO1								
13	Untreated Control						1.0	1.0	3.0	1.0	1.0	0.4	0.7	1.0
LSD (P=.05)							4.83	1.68	4.97	2.77	4.58	0.54	0.49	1.05
Standard Deviation							2.86	1.00	2.95	1.64	2.72	0.32	0.29	0.63
CV							44.87	19.98	36.25	19.02	40.6	59.35	42.47	46.76

Weed Control in Asparagus - HTRC

Project Code: WC 120-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	ASPA YIELD KG/PLOT 5-13-98	ASPA YIELD KG/PLOT 5-15-98	ASPA YIELD KG/PLOT 5-18-98	ASPA YIELD KG/PLOT 5-20-98	ASPA YIELD KG/PLOT 5-22-98	ASPA YIELD KG/PLOT 5-25-98	ASPA YIELD KG/PLOT 5-27-98	ASPA YIELD KG/PLOT 5-29-98
1	diuron	80 DF	3.2	lb ai/A	PRE		0.5	0.7	1.0	0.7	0.6	0.7	0.5	0.8
2	metribuzin	75 DF	2	lb ai/A	PRE		0.4	0.6	0.8	0.5	0.4	0.3	0.3	0.4
3	norflurazon	80 DF	4	lb ai/A	PRE		0.4	0.7	1.0	0.5	0.5	0.5	0.3	0.6
4	terbacil	80 WP	2	lb ai/A	PRE		0.4	0.6	1.0	0.5	0.5	0.5	0.3	0.5
5	s-metolachlor	7.6 EC	1.6	lb ai/A	PRE		0.4	0.7	0.9	0.6	0.5	0.4	0.3	0.6
6	dimethenamid	6 EC	1.5	lb ai/A	PRE		0.3	0.6	0.8	0.7	0.5	0.6	0.4	0.5
7	isoxaflutole	75 WG	0.094	lb ai/A	PRE		0.3	0.4	0.6	0.3	0.4	0.4	0.3	0.4
8	linuron	50 DF	2	lb ai/A	PRE		0.3	0.7	1.1	0.6	0.6	0.6	0.4	0.5
9	sulfentrazone	75 DF	0.375	lb ai/A	PRE		0.4	0.7	1.1	0.8	0.4	0.7	0.4	0.5
10	azafenidin	80 DF	0.75	lb ai/A	PRE		0.4	0.7	1.0	0.6	0.5	0.6	0.4	0.5
11	azafenidin	80 DF	1.5	lb ai/A	PRE		0.3	0.8	0.9	0.5	0.4	0.5	0.4	0.5
12	Untreated				PRE		0.4	0.9	1.2	0.5	0.5	0.6	0.3	0.4
	linuron	50 DF	1	lb ai/A	PO1									
	sethoxydim	1.53 EC	.38	lb ai/A	PO1									
	clopyralid	3 EC	0.19	lb ai/A	PO1									
	COC	L	1	% v/v	PO1									
13	Untreated Control						0.3	0.5	0.9	0.4	0.4	0.3	0.2	0.3
LSD (P=.05)							0.27	0.40	0.55	0.39	0.30	0.34	0.20	0.30
Standard Deviation							0.16	0.24	0.32	0.23	0.18	0.20	0.12	0.18
CV							43.74	36.26	34.31	41.77	36.89	39.09	33.48	36.11

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	ASPA YIELD KG/PLOT 6-1-98	ASPA YIELD KG/PLOT 6-3-98	ASPA YIELD KG/PLOT 6-5-98	ASPA YIELD KG/PLOT 6-8-98	ASPA YIELD KG/PLOT 6-10-98	ASPA YIELD KG/PLOT 6-12-98	TOT. YLD KG/PLOT
1	diuron	80 DF	3.2	lb ai/A	PRE		0.7	0.3	0.2	0.5	0.3	0.6	11.55
2	metribuzin	75 DF	2	lb ai/A	PRE		0.4	0.3	0.1	0.4	0.2	0.3	7.82
3	norflurazon	80 DF	4	lb ai/A	PRE		0.5	0.3	0.3	0.2	0.2	0.5	9.21
4	terbacil	80 WP	2	lb ai/A	PRE		0.6	0.3	0.2	0.3	0.2	0.5	8.74
5	s-metolachlor	7.6 EC	1.6	lb ai/A	PRE		0.5	0.2	0.2	0.3	0.2	0.3	8.03
6	dimethenamid	6 EC	1.5	lb ai/A	PRE		0.5	0.2	0.2	0.3	0.2	0.4	8.50
7	isoxaflutole	75 WG	0.094	lb ai/A	PRE		0.4	0.3	0.2	0.3	0.2	0.3	6.51
8	linuron	50 DF	2	lb ai/A	PRE		0.5	0.4	0.3	0.2	0.3	0.6	10.38
9	sulfentrazone	75 DF	0.375	lb ai/A	PRE		0.6	0.3	0.2	0.3	0.3	0.5	9.60
10	azafenidin	80 DF	0.75	lb ai/A	PRE		0.5	0.4	0.2	0.4	0.3	0.4	9.24
11	azafenidin	80 DF	1.5	lb ai/A	PRE		0.5	0.4	0.2	0.2	0.4	0.4	8.87
12	Untreated				PRE		0.6	0.3	0.2	0.2	0.2	0.6	10.71
	linuron	50 DF	1	lb ai/A	PO1								
	sethoxydim	1.53 EC	.38	lb ai/A	PO1								
	clopyralid	3 EC	0.19	lb ai/A	PO1								
	COC	L	1	% v/v	PO1								
13	Untreated Control						0.4	0.2	0.1	0.1	0.1	0.3	6.62
LSD (P=.05)							0.22	0.23	0.12	0.18	0.15	0.31	4.54
Standard Deviation							0.13	0.14	0.07	0.10	0.09	0.18	2.69
CV							24.72	45.8	35.55	35.68	38.72	43.26	30.31

Weed Control in Snapbean - HTRC

Project Code:WC 120-98-01 **Location :East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Snapbean **Variety: Strike** **Field or Block: 124**
Planting Method: Seed **Planting Date: 5-27-98** **Harvest: 8-3-98**
Spacing: 3.1 inches **Row Spacing: 28 inches,2/plot** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 7 ft wide * 50 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.7%** **pH: 6.2**
Sand: 65% **Silt: 22%** **Clay: 13%** **CEC: 3.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	5-27	9:20am	68 F/ 62 F	moist	calm	61F/68F	68%	0%	N
PRE	5-28	8:30am	69 F/ 64 F	dry	SW 4-6	65F/69F	82%	5%	N
PO1	6-23	7:30am	74 F/ 75 F	dry	SW 1-3	68F/74F	70%	80% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-23-98	Snapbean	3-4"	2 trifol.	good
	YEFT	1-4"	2-6	many
	COLQ	1-2"	2-4	many
	RRPW	1-2"	3-4	many

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 8-3-98: Harvested 10 feet of 2 rows per plot.

Weed Control in Snapbean - HTRC

Project Code:WC 120-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	SNBE RATING 6-22-98	BYGR RATING 6-22-98	YEFT RATING 6-22-98	COLQ RATING 6-22-98	COPU RATING 6-22-98	RRPW RATING 6-22-98	WIRA RATING 6-22-98	SNBE RATING 7-3-98
1	trifluralin	4 EC	1	lb ai/A	PPI	1.3	9.7	9.7	6.7	9.3	8.3	6.3	1.7	
2	pendimethalin	3.3 EC	1.5	lb ai/A	PPI	1.3	10.0	9.7	9.7	9.7	9.7	7.0	2.3	
3	trifluralin	4 EC	1	lb ai/A	PPI	1.3	9.3	10.0	6.7	10.0	9.3	6.7	1.3	
	clomazone	4 EC	.5	lb ai/A	PPI									
4	clomazone	4 EC	.5	lb ai/A	PPI	2.3	10.0	10.0	10.0	10.0	9.7	9.7	2.0	
5	clomazone	3 ME	.5	lb ai/A	PRE	2.0	10.0	10.0	9.7	10.0	9.7	8.7	1.3	
6	metolachlor	8 EC	2	lb ai/A	PRE	2.3	10.0	10.0	10.0	10.0	10.0	9.0	3.0	
7	s-metolachlor	7.6 EC	1.6	lb ai/A	PRE	2.0	10.0	10.0	9.3	10.0	9.3	7.3	2.3	
8	s-dimethenamid	6 EC	.65	lb ai/A	PRE	2.3	10.0	10.0	9.7	10.0	9.7	9.7	2.0	
9	dimethenamid	6 EC	1	lb ai/A	PRE	1.7	10.0	10.0	9.3	10.0	9.7	9.0	2.3	
10	imazamox	1 AS	.016	lb ai/A	PO1	1.0	1.0	1.0	4.0	1.0	1.0	1.0	2.0	
	NIS	L	.25	% v/v	PO1									
11	imazamox	1 AS	.024	lb ai/A	PO1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	
	NIS	L	.25	% v/v	PO1									
12	imazamox	1 AS	.032	lb ai/A	PO1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.3	
	NIS	L	.25	% v/v	PO1									
13	imazamox	1 AS	.016	lb ai/A	PO1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.7	
	NIS	L	.25	% v/v	PO1									
	UAN 28%	L	1	% v/v	PO1									
14	imazamox	1 AS	.024	lb ai/A	PO1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.7	
	NIS	L	.25	% v/v	PO1									
	UAN 28%	L	1	% v/v	PO1									
15	imazamox	1 AS	.032	lb ai/A	PO1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	
	NIS	L	.25	% v/v	PO1									
	UAN 28%	L	1	% v/v	PO1									
16	trifluralin	4 EC	1	lb ai/A	PPI	1.7	9.7	10.0	10.0	9.3	8.0	8.3	1.3	
	fomesafen	2 EC	.25	lb ai/A	PO1									
	NIS	L	.25	% v/v	PO1									
17	trifluralin	4 EC	1	lb ai/A	PPI	1.3	9.3	9.7	9.7	9.7	8.0	9.3	3.0	
	bentazon	4 L	1	lb ai/A	PO1									
	quizalofop	.88 L	.06	lb ai/A	PO1									
	NIS	L	.25	% v/v	PO1									
18	trifluralin	4 EC	1	lb ai/A	PPI	1.3	9.3	9.7	10.0	9.3	9.0	8.0	2.0	
	bentazon	4 L	1	lb ai/A	PO1									
	sethoxydim	1.53 EC	.19	lb ai/A	PO1									
	NIS	L	.25	% v/v	PO1									
LSD (P=.05)							0.89	0.48	0.41	3.60	0.48	1.04	2.61	1.15
Standard Deviation							0.53	0.29	0.25	2.16	0.29	0.62	1.56	0.69
CV							35.55	4.23	3.57	32.44	4.23	9.64	26.78	33.27

Weed Control in Snapbean - HTRC

Project Code:WC 120-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	SNBE YEFT RATING 7-3-98	SNBE COLQ RATING 7-3-98	SNBE COPU RATING 7-3-98	SNBE EBNS RATING 7-3-98	SNBE RRPW RATING 7-3-98	SNBE WIRA RATING 7-3-98	PLANT WT KG/PLOT 8-3-98	YIELD KG/PLOT 8-3-98
1	trifluralin	4	EC	1	lb ai/A	PPI	7.7	5.3	5.7	1.0	7.0	1.7	4.5	4.7
2	pendimethalin	3.3	EC	1.5	lb ai/A	PPI	7.7	10.0	9.0	2.3	6.3	3.7	3.9	4.2
3	trifluralin	4	EC	1	lb ai/A	PPI	8.0	7.0	9.3	2.3	6.0	6.3	5.4	6.4
	clomazone	4	EC	.5	lb ai/A	PPI								
4	clomazone	4	EC	.5	lb ai/A	PPI	7.3	10.0	9.7	3.7	6.0	7.3	4.4	5.0
5	clomazone	3	ME	.5	lb ai/A	PRE	9.7	10.0	10.0	9.3	8.7	4.0	6.2	6.4
6	metolachlor	8	EC	2	lb ai/A	PRE	10.0	5.3	10.0	10.0	8.3	4.7	5.3	4.7
7	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	9.7	3.7	10.0	10.0	7.7	5.3	5.3	4.8
8	s-dimethenamid	6	EC	.65	lb ai/A	PRE	10.0	5.7	9.7	10.0	10.0	7.3	4.9	5.0
9	dimethenamid	6	EC	1	lb ai/A	PRE	9.7	6.0	10.0	10.0	9.0	6.7	5.5	5.0
10	imazamox	1	AS	.016	lb ai/A	PO1	10.0	9.7	9.7	10.0	10.0	10.0	4.4	5.6
	NIS	L		.25	% v/v	PO1								
11	imazamox	1	AS	.024	lb ai/A	PO1	10.0	9.3	10.0	10.0	9.7	9.7	4.6	6.4
	NIS	L		.25	% v/v	PO1								
12	imazamox	1	AS	.032	lb ai/A	PO1	10.0	10.0	10.0	10.0	9.7	10.0	4.4	5.2
	NIS	L		.25	% v/v	PO1								
13	imazamox	1	AS	.016	lb ai/A	PO1	10.0	9.0	10.0	10.0	10.0	9.7	5.9	6.6
	NIS	L		.25	% v/v	PO1								
	UAN 28%	L		1	% v/v	PO1								
14	imazamox	1	AS	.024	lb ai/A	PO1	10.0	9.3	10.0	10.0	9.7	10.0	4.4	4.2
	NIS	L		.25	% v/v	PO1								
	UAN 28%	L		1	% v/v	PO1								
15	imazamox	1	AS	.032	lb ai/A	PO1	10.0	9.7	10.0	10.0	10.0	10.0	4.5	5.1
	NIS	L		.25	% v/v	PO1								
	UAN 28%	L		1	% v/v	PO1								
16	trifluralin	4	EC	1	lb ai/A	PPI	9.3	10.0	10.0	10.0	9.7	10.0	6.7	5.3
	fomesafen	2	EC	.25	lb ai/A	PO1								
	NIS	L		.25	% v/v	PO1								
17	trifluralin	4	EC	1	lb ai/A	PPI	10.0	10.0	10.0	10.0	9.0	10.0	5.8	5.2
	bentazon	4	L	1	lb ai/A	PO1								
	quizalofop	.88	L	.06	lb ai/A	PO1								
	NIS	L		.25	% v/v	PO1								
18	trifluralin	4	EC	1	lb ai/A	PPI	10.0	10.0	10.0	10.0	10.0	10.0	4.9	5.0
	bentazon	4	L	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	.19	lb ai/A	PO1								
	NIS	L		.25	% v/v	PO1								
LSD (P=.05)							2.28	2.24	1.19	1.66	1.91	3.98	1.85	2.29
Standard Deviation							1.37	1.35	0.71	0.99	1.15	2.38	1.11	1.37
CV							14.57	16.15	7.41	12.04	13.18	31.48	21.89	26.03

Sensitivity of Snapbean Cultivars to Preemergence Herbicides

Project Code:WC 120-98-02

Location: Plant Science Greenhouses, MSU

Cooperator: Dennis Goodemoot, Twin City Foods

Personnel: Bernard H. Zandstra, Joseph G. Masabni

Crop: Snapbean

Varieties: Hystyle (Harris Moran)
Minuette (Harris Moran)
Labrador (Asgrow)
Pureline 5402 (Pureline)

Planting Method: Four snapbean varieties seeded in one flat, 1 row per variety.

Flat Size: 11 inch wide * 22 inch long

In Row Spacing: 1 inch

Study Design:
Split-plot design with herbicide treatments as main factor, and snapbean varieties as the split-factor.

Replications: 3

Soil Type: BACCTO greenhouse soil mix.

Planting / Spraying Date: 6-17-98

Plant Harvest Date: 7-8-98

Herbicide Application:
PPI and PRE treatments were applied with a bench sprayer @ 25 gpa using an 8001 nozzle, on the day of seeding.

Sensitivity of Snapbean Cultivars to Preemergence Herbicides

			Plant Count 6 DAT	Plant Count 9 DAT	Plant Count 15 DAT	Plant Count 21 DAT
Herbicide Treatment						
1. Metolachlor	1 lb/a	PPI	12.1	15.6	15.8	16.0
2. Metolachlor	2 lb/a	PPI	8.4	13.8	14.8	15.3
3. Metolachlor	1 lb/a	PRE	13.1	14.5	15.9	16.3
4. Metolachlor	2 lb/a	PRE	14.5	16.5	16.7	17.2
5. Trifluralin	1 lb/a	PPI	9.9	14.5	14.7	15.2
6. Pendimethalin	1.5 lb/a	PPI	7.2	14.1	14.9	16.3
7. Pendimethalin	1.5 lb/a	PRE	8.9	14.7	14.6	15.8
8. Control			15.8	16.5	17.1	17.3
		LSD	2.2	1.6	NS	NS
Variety						
Hystyle			9.4	14.3	14.5	15.6
Labrador			14.1	16.6	16.9	17.6
Minuette			12.6	15.9	16.8	17.8
Pureline 5402			6.7	12.5	13.5	13.7
		LSD	1.8	1.4	1.6	1.3
		CV	25.7	13.9	15.9	11.9
Interaction						
Treatment * Variety			NS	NS	NS	NS

			Shoot Length (cm) 20 DAT	Shoot Fresh Weight (g) 21 DAT	Shoot Dry Weight (g) 21 DAT	Root Fresh Weight (g) 21 DAT	Root Dry Weight (g) 21 DAT
Herbicide Treatment							
1. Metolachlor	1 lb/a	PPI	17.6	34.3	3.8	7.7	1.6
2. Metolachlor	2 lb/a	PPI	13.7	23.8	2.9	7.6	1.5
3. Metolachlor	1 lb/a	PRE	14.3	27.1	3.4	7.6	1.9
4. Metolachlor	2 lb/a	PRE	15.8	29.9	3.8	7.7	2.1
5. Trifluralin	1 lb/a	PPI	13.6	27.5	3.2	8.1	1.2
6. Pendimethalin	1.5 lb/a	PPI	9.3	19.0	2.7	3.4	0.8
7. Pendimethalin	1.5 lb/a	PRE	10.4	22.2	3.0	4.4	1.0
8. Control			15.4	29.5	3.7	10.3	2.6
		LSD	1.7	3.5	0.5	2.1	0.4
Variety							
Hystyle			13.3	24.7	2.8	6.7	1.3
Labrador			15.6	33.0	4.1	8.4	1.8
Minuette			13.6	29.3	3.9	6.7	1.8
Pureline 5402			11.5	17.3	2.2	3.7	1.0
		LSD	1.1	2.8	0.4	1.8	0.3
		CV	11.9	16.1	19.8	42.2	30.4
Interaction							
Treatment * Variety			NS	NS	NS	NS	NS

Weed Control in Red Beet, Sugar Beet, Chard, Spinach - HTRC

Project Code:WC 109-98-01 Location :East Lansing, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Red+S.beet,chard,spin Variety: see Notes Field or Block: 121
Planting Method: Heath Planting Date: 5-7-98 Harvest: see Notes
Spacing: 3.1 inch Row Spacing: 14 inch(see Notes) Perennial Age: N/A
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 10 ft wide * 50 ft long

Soil Type: Spinks Sandy Loam OM: 0.8% pH: 5.0
Sand: 73% Silt: 17% Clay: 10% CEC: 3.1

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-7	2:30pm	80 F/ 66 F	dry	W 4-6	67F/80F	52%	90% cloud	N
PO1	6-9	10:30am	65 F/ 59 F	dry	NE 4-6	58F/65F	64%	100%	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-9-98	Red beet	3-4"	5-6	good
	Sugar beet	3-4"	4-6	good
	Chard	3-5"	4-5	good
	Spinach	2-3"	6-8	good
	BYGR	1-3"	3-5	moderate
	YEFT	2-4"	4-7	many
	COLQ	1-4"	4-6	moderate
	LATH	2-4"	4-6	moderate
	RRPW	1-5"	4-10	many
	WIRA	3-12"	4-12	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 5-7-98: Plots sprayed with 10′ boom, 8002.
4. 5-7-98: Planting: each plot has 1 row each of red beet, chard, spinach; 2 rows of sugar beet.
5. Planting pattern: (west) sugar beet - spinach - red beet - chard - sugar beet (east).
6. Varieties: red beet: Red Cloud F1; sugar beet - American Crystal 319; chard: Large White Ribbed; spinach: Space.
7. 6-9-98: we sprayed 64" band.
8. Field was handweeded on 6-16-98.
9. Harvest: Spinach 45′- 6-22-98, Swiss chard 45′- 7-10-98, Red beet 45′- 7-22-98. Sugar beet 45′- 10-12-98.

Weed Control in Red Beet, Sugar Beet, Chard, Spinach - HTRC

Project Code:WC 109-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	RED BEET RATING 6-8-98	SUGAR BEET RATING 6-8-98	CHARD RATING 6-8-98	SPINACH RATING 6-8-98	BYGR RATING 6-8-98	YEFT RATING 6-8-98	COLQ RATING 6-8-98	LATH RATING 6-8-98	RRPW RATING 6-8-98
1	pyrazon	68	DF	4	lb ai/A	PRE	1.3	1.3	1.3	1.3	4.0	4.0	3.7	8.3	7.7
	pyrazon	68	DF	4	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
2	dimethenamid	6	EC	1.5	lb ai/A	PRE	1.7	1.7	2.7	4.0	7.7	8.3	6.3	9.3	8.3
	dimethenamid	6	EC	1.5	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
3	ethofumesate	4	L	2	lb ai/A	PRE	2.0	2.0	2.0	2.7	6.0	6.0	8.0	8.7	8.7
	ethofumesate	4	L	0.5	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
4	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	1.0	1.3	1.7	1.7	8.3	8.3	4.3	8.0	7.7
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
5	Untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	phenmedipham	1.3	L	1	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
6	Untreated					PRE	1.3	1.0	1.0	1.3	1.0	1.0	1.0	1.0	1.0
	Betamix	1.3	L	2	pt pr/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
7	Untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Betamix Progress	1.8	L	2	pt pr/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
8	Untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	triflusulfuron	50	WG	.031	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
9	Untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.7	1.0	3.3	3.0
	clopyralid	3	EC	0.188	lb ai/A	PO1									
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
10	Handweeded Ctrl						1.0	1.3	1.3	1.3	1.0	1.0	3.0	5.3	3.7
	sethoxydim	1.53	EC	.19	lb ai/A	PO1									
	COC	L		1	% v/v	PO1									
LSD (P=.05)							0.90	0.90	1.23	1.86	2.68	2.66	3.19	3.20	2.66
Standard Deviation							0.52	0.53	0.72	1.09	1.56	1.55	1.86	1.87	1.55
CV							42.45	41.61	51.25	66.55	48.82	46.44	61.25	39.72	36.0

Weed Control in Red Beet, Sugar Beet, Chard, Spinach - HTRC

Project Code:WC 109-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	WIRA RED BEET RATING 6-8-98	SUGAR BEET RATING 6-15-98	CHARD RATING 6-15-98	SPINACH RATING 6-15-98	BYGR RATING 6-15-98	COLQ RATING 6-15-98	RATING 6-15-98
1	pyrazon	68	DF	4	lb ai/A	PRE	4.0	1.0	1.7	1.3	2.7	9.0	8.0
	pyrazon	68	DF	4	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
2	dimethenamid	6	EC	1.5	lb ai/A	PRE	1.7	1.3	1.3	1.7	3.0	9.7	8.0
	dimethenamid	6	EC	1.5	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
3	ethofumesate	4	L	2	lb ai/A	PRE	7.0	1.3	2.3	2.0	3.0	9.3	8.0
	ethofumesate	4	L	0.5	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
4	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	2.3	7.7	7.3	8.3	8.7	9.7	8.0
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
5	Untreated					PRE	3.0	1.3	1.3	1.3	1.0	9.3	5.7
	phenmedipham	1.3	L	1	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
6	Untreated					PRE	3.3	1.0	1.0	1.3	2.3	9.3	7.3
	Betamix	1.3	L	2	pt pr/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
7	Untreated					PRE	1.0	1.0	1.0	1.7	1.0	8.7	5.0
	Betamix Progress	1.8	L	2	pt pr/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
8	Untreated					PRE	3.3	1.0	1.3	1.3	3.0	4.0	1.0
	triflusulfuron	50	WG	.031	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
9	Untreated					PRE	1.0	1.7	1.7	1.7	1.7	6.0	4.7
	clopyralid	3	EC	0.188	lb ai/A	PO1							
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
10	Handweeded Ctrl						4.0	1.0	1.3	1.3	1.7	7.0	10.0
	sethoxydim	1.53	EC	.19	lb ai/A	PO1							
	COC		L	1	% v/v	PO1							
LSD (P=.05)							5.88	1.06	1.54	1.56	2.70	4.44	2.03
Standard Deviation							3.43	0.62	0.90	0.91	1.58	2.59	1.18
CV							111.75	33.69	44.09	41.22	56.3	31.54	17.99

Weed Control in Red Beet, Sugar Beet, Chard, Spinach - HTRC

Project Code:WC 109-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	SPINACH CHARD EBNS RATING 6-15-98	SPINACH CHARD LATH RATING 6-15-98	SPINACH CHARD RRPW RATING 6-15-98	SPINACH CHARD WIRA RATING 6-15-98	YIELD KG/PLOT 6-22-98	YIELD KG/PLOT 7-10-98
1	pyrazon	68	DF	4	lb ai/A	PRE	9.7	9.0	7.7	2.7	1.2	15.9
	pyrazon	68	DF	4	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
2	dimethenamid	6	EC	1.5	lb ai/A	PRE	7.3	7.0	8.3	1.7	1.4	11.4
	dimethenamid	6	EC	1.5	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
3	ethofumesate	4	L	2	lb ai/A	PRE	5.0	8.3	8.3	5.3	1.5	14.2
	ethofumesate	4	L	0.5	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
4	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	9.3	7.0	8.3	2.3	0.1	0.8
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
5	Untreated					PRE	1.7	4.7	1.0	5.3	2.6	13.2
	phenmedipham	1.3	L	1	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
6	Untreated					PRE	2.0	3.0	5.0	2.7	1.6	13.0
	Betamix	1.3	L	2	pt pr/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
7	Untreated					PRE	1.7	2.3	2.7	3.3	1.9	11.2
	Betamix Progress	1.8	L	2	pt pr/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
8	Untreated					PRE	1.3	4.0	1.7	4.0	0.8	10.6
	triflusulfuron	50	WG	.031	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
9	Untreated					PRE	4.0	5.3	2.7	2.7	1.6	10.2
	clopyralid	3	EC	0.188	lb ai/A	PO1						
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
10	Handweeded Ctrl						10.0	10.0	10.0	10.0	2.7	14.4
	sethoxydim	1.53	EC	.19	lb ai/A	PO1						
	COC	L		1	% v/v	PO1						
LSD (P=.05)							4.55	3.42	2.22	4.20	1.48	4.37
Standard Deviation							2.65	1.99	1.30	2.45	0.86	2.55
CV							51.0	32.83	23.27	61.22	56.12	22.14

Weed Control in Red Beet, Sugar Beet, Chard, Spinach - HTRC

Project Code:WC 109-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	RED BEET LEAF WT KG/PLOT 7-22-98	RED BEET ROOT WT KG/PLOT 7-22-98	SUGAR BEET RED BEET YIELD ROOT No. 7-22-98	SUGAR BEET RED BEET YIELD KG/PLOT 10-12-98
1	pyrazon	68	DF	4	lb ai/A	PRE	6.1	19.0	80.7	183.5
	pyrazon	68	DF	4	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
2	dimethenamid	6	EC	1.5	lb ai/A	PRE	4.5	14.1	79.0	176.8
	dimethenamid	6	EC	1.5	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
3	ethofumesate	4	L	2	lb ai/A	PRE	5.1	14.7	102.7	183.4
	ethofumesate	4	L	0.5	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
4	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	3.7	7.8	47.7	91.8
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
5	Untreated					PRE	5.6	16.7	91.3	173.6
	phenmedipham	1.3	L	1	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
6	Untreated					PRE	5.6	21.1	113.3	184.7
	Betamix	1.3	L	2	pt pr/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
7	Untreated					PRE	4.5	13.8	83.7	177.0
	Betamix Progress	1.8	L	2	pt pr/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
8	Untreated					PRE	5.4	14.8	89.3	172.9
	triflusulfuron	50	WG	.031	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
9	Untreated					PRE	3.5	7.8	50.7	165.5
	clopyralid	3	EC	0.188	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
10	Handweeded Ctrl						4.4	14.3	85.7	168.5
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
LSD (P=.05)							1.92	8.12	37.52	30.39
Standard Deviation							1.12	4.73	21.87	17.72
CV							23.14	32.83	26.55	10.56

Weed Control in Carrot - Grant

Project Code:WC 107-98-01 **Location :Grant, MI**
Cooperator :Brink Farm

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Carrot **Variety: Apache** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 4-27-98** **Harvest: 8-19-98**
Spacing: 20 seeds / ft **Row Spacing: 34 inch,2 rows/plot** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 64 inch wide * 30 ft long

Soil Type: Carlisle Muck **OM: 60%** **pH: 6.5**
Sand: N/A Silt: N/A Clay: N/A CEC: N/A

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-8	9:30 am	65 F/ 58 F	dry	NE 6-8	59F/65F	70%	50% cloud	N
PO1	6-3	12:30pm	60 F/ 60 F	dry	NW 7-10	51F/60F	52%	80% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-8-98	Carrot	0-0.5"	cotyledon	50% up
6-3-98	Carrot	8-10″	many	good
	COPU	1-4″	8-10	moderate
	LATH	2-4″	6-8	few
	RRPW	1-3″	4-6	moderate
	PRSP	1-2″	many	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 8-19-98: Harvested 5 feet of 2 rows.

Weed Control in Carrot - Grant

Project Code:WC 107-98-01 **Location :Grant, MI**
Cooperator :Brink Farm

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	CARROT RATING 6-3-98	COPU RATING 6-3-98	LATH RATING 6-3-98	PRSP RATING 6-3-98	RRPW RATING 6-3-98	CARROT RATING 7-9-98	COPU RATING 7-9-98	LATH RATING 7-9-98
1	linuron	50	DF	1	lb ai/A	PRE	1.3	9.3	9.3	8.0	8.0	1.3	8.7	9.7
	linuron	50	DF	1	lb ai/A	PO1								
	NIS	L		0.5	% v/v	PO1								
2	linuron	50	DF	1	lb ai/A	PRE	1.3	9.7	10.0	9.0	9.3	1.7	9.0	9.0
	pendimethalin	3.3	EC	2	lb ai/A	PRE								
	linuron	50	DF	1	lb ai/A	PO1								
3	pendimethalin	3.3	EC	2	lb ai/A	PRE	1.3	9.7	9.7	8.7	9.7	2.7	9.0	9.7
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	NIS	L		0.5	% v/v	PO1								
4	metolachlor	8	EC	2	lb ai/A	PRE	1.0	8.0	8.3	7.7	6.0	1.3	8.7	9.0
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	2.3	8.7	7.3	8.7	7.7	3.0	9.3	9.0
	fluazifop-p	2	EC	.16	lb ai/A	PO1								
	linuron	50	DF	1	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
6	dimethenamid	6	EC	1	lb ai/A	PRE	3.0	9.0	9.0	8.0	6.7	3.0	9.0	8.3
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
7	pendimethalin	3.3	EC	2	lb ai/A	PRE	1.3	9.7	10.0	9.3	8.0	3.0	9.3	10.0
	prometryn	4	L	1	lb ai/A	PO1								
8	linuron	50	DF	1	lb ai/A	PRE	2.0	10.0	10.0	9.7	9.0	3.3	8.3	9.0
	flimioxazin	50	WP	.025	lb ai/A	PO1								
9	sulfentrazone	75	DF	0.25	lb ai/A	PRE	5.7	9.0	9.0	2.0	7.3	5.0	9.3	10.0
	linuron	50	DF	1	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
	clethodim	2	EC	0.25	lb ai/A	PO1								
10	ethofumesate	4	L	1	lb ai/A	PRE	2.3	10.0	10.0	3.7	7.0	2.7	9.3	9.3
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	ethofumesate	4	L	0.5	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
LSD (P=.05)							1.49	1.50	2.54	1.83	2.95	1.34	1.18	2.04
Standard Deviation							0.87	0.87	1.48	1.07	1.72	0.78	0.69	1.19
CV							40.12	9.39	15.97	14.3	21.87	28.95	7.62	12.79

Weed Control in Carrot - Grant

Project Code:WC 107-98-01 **Location :Grant, MI**
Cooperator :Brink Farm

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	CARROT PRSP RATING 7-9-98	CARROT RRPW RATING 7-9-98	CARROT YIELD KG/5 FT 8-19-98
1	linuron	50	DF	1	lb ai/A	PRE	9.0	9.3	13.9
	linuron	50	DF	1	lb ai/A	PO1			
	NIS	L		0.5	% v/v	PO1			
2	linuron	50	DF	1	lb ai/A	PRE	8.0	8.7	13.9
	pendimethalin	3.3	EC	2	lb ai/A	PRE			
	linuron	50	DF	1	lb ai/A	PO1			
3	pendimethalin	3.3	EC	2	lb ai/A	PRE	8.0	10.0	11.9
	linuron	50	DF	1	lb ai/A	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1			
	NIS	L		0.5	% v/v	PO1			
4	metolachlor	8	EC	2	lb ai/A	PRE	9.0	8.0	15.8
	linuron	50	DF	1	lb ai/A	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1			
	COC	L		1	% v/v	PO1			
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	8.7	9.3	13.6
	fluazifop-p	2	EC	.16	lb ai/A	PO1			
	linuron	50	DF	1	lb ai/A	PO1			
	COC	L		1	% v/v	PO1			
6	dimethenamid	6	EC	1	lb ai/A	PRE	8.7	9.0	14.2
	linuron	50	DF	1	lb ai/A	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1			
	COC	L		1	% v/v	PO1			
7	pendimethalin	3.3	EC	2	lb ai/A	PRE	8.3	8.3	12.4
	prometryn	4	L	1	lb ai/A	PO1			
8	linuron	50	DF	1	lb ai/A	PRE	2.7	7.0	13.2
	flimioxazin	50	WP	.025	lb ai/A	PO1			
9	sulfentrazone	75	DF	0.25	lb ai/A	PRE	7.0	8.7	10.2
	linuron	50	DF	1	lb ai/A	PO1			
	COC	L		1	% v/v	PO1			
	clethodim	2	EC	0.25	lb ai/A	PO1			
10	ethofumesate	4	L	1	lb ai/A	PRE	6.7	9.3	14.0
	linuron	50	DF	1	lb ai/A	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1			
	ethofumesate	4	L	0.5	lb ai/A	PO1			
	COC	L		1	% v/v	PO1			
LSD (P=.05)							2.52	1.84	2.06
Standard Deviation							1.47	1.07	1.20
CV							19.35	12.24	9.03

Weed Control in Carrot - HTRC

Project Code:WC 107-98-02 Location :East Lansing, MI
Cooperator :Bill Chase

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Carrot Variety: Caro Pride Field or Block: 25
Planting Method: Seed Planting Date: 6-3-98 Harvest: 9-22-98
Spacing: 12 plants/foot Row Spacing: 28", 2 rows/plot Perennial Age: N/A
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 64 inch wide * 35 ft long

Soil Type: Loamy sand OM: 1.8% pH: 6.5
Sand: 82% Silt: 10% Clay: 8% CEC: 4.3

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	6-4	9 am	46 F/ 56 F	dry	SW 4-8	46F/50F	74%	clear	N
PRE	6-4	1:30pm	66 F/ 65 F	dry	calm	55F/66F	50%	80% cloud	N
PO1	7-2	1:30pm	85 F/ 80 F	dry	NW 3-5	76F/85F	66%	5% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-2-98	Carrot	2-3″	2-3	moderate
	BYGR	1-3″	2-3	few
	LACG	1-2″	3-5	few
	COLQ	1-4″	3-10	moderate
	COPU	1-6″	6-10	moderate
	RRPW	1-4″	2-10	many

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 9-22-98: All carrots from each plot were harvested.

Weed Control in Carrot - HTRC

Project Code:WC 107-98-02 **Location :East Lansing, MI**
Cooperator :Bill Chase

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	CARROT RATING 7-2-98	BYGR RATING 7-2-98	LACG RATING 7-2-98	COLQ RATING 7-2-98	COPU RATING 7-2-98	RRPW RATING 7-2-98	CARROT RATING 7-15-98	BYGR RATING 7-15-98
1	linuron	50	DF	1	lb ai/A	PRE	5.7	6.7	8.0	8.7	7.0	7.0	3.0	8.7
	linuron	50	DF	1	lb ai/A	PO1								
	NIS	L		0.5	% v/v	PO1								
2	linuron	50	DF	.75	lb ai/A	PRE	6.3	8.0	9.7	9.7	8.3	8.0	3.3	7.0
	pendimethalin	3.3	EC	2	lb ai/A	PRE								
	linuron	50	DF	1	lb ai/A	PO1								
3	pendimethalin	3.3	EC	2	lb ai/A	PRE	5.0	8.0	8.7	10.0	9.0	6.7	5.3	10.0
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	NIS	L		0.5	% v/v	PO1								
4	metolachlor	8	EC	1.5	lb ai/A	PRE	6.7	9.0	9.3	7.7	4.3	6.0	5.3	10.0
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
5	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	8.3	8.3	9.0	7.7	6.0	6.3	7.7	10.0
	fluazifop-p	2	EC	.16	lb ai/A	PO1								
	linuron	50	DF	1	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
6	dimethenamid	6	EC	.75	lb ai/A	PRE	9.0	8.3	9.7	8.3	7.7	7.0	8.0	9.3
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
7	pendimethalin	3.3	EC	2	lb ai/A	PRE	3.0	8.7	10.0	9.0	9.0	7.7	3.7	7.7
	prometryn	4	L	1	lb ai/A	PO1								
8	flimioxazin	50	WP	.063	lb ai/A	PRE	10.0	8.7	9.3	8.3	9.7	9.3	9.7	5.7
	linuron	50	DF	1	lb ai/A	PO1								
9	trifluralin	4	EC	.75	lb ai/A	PPI	4.0	8.3	9.7	7.3	6.3	6.3	2.3	10.0
	linuron	50	DF	1	lb ai/A	PO1								
	clethodim	2	EC	0.25	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
10	ethofumesate	4	L	1	lb ai/A	PRE	4.7	6.0	8.7	3.3	4.3	3.3	4.0	9.7
	linuron	50	DF	1	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	ethofumesate	4	L	0.5	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
LSD (P=.05)							2.69	2.54	1.80	2.75	3.43	3.33	2.69	2.76
Standard Deviation							1.57	1.48	1.05	1.60	2.00	1.94	1.57	1.61
CV							25.02	18.49	11.42	20.05	27.89	28.71	29.94	18.27

Weed Control in Carrot - HTRC

Project Code:WC 107-98-02 **Location :East Lansing, MI**
Cooperator :Bill Chase

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	CARROT LACG RATING 7-15-98	CARROT COLQ RATING 7-15-98	CARROT COPU RATING 7-15-98	CARROT RRPW RATING 7-15-98	CARROT YIELD KG/PLOT 9-22-98
1	linuron	50	DF	1	lb ai/A	PRE	9.7	10.0	10.0	10.0	10.9
	linuron	50	DF	1	lb ai/A	PO1					
	NIS	L		0.5	% v/v	PO1					
2	linuron	50	DF	.75	lb ai/A	PRE	4.7	10.0	9.7	9.3	13.8
	pendimethalin	3.3	EC	2	lb ai/A	PRE					
	linuron	50	DF	1	lb ai/A	PO1					
3	pendimethalin	3.3	EC	2	lb ai/A	PRE	8.7	10.0	10.0	9.7	18.1
	linuron	50	DF	1	lb ai/A	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1					
	NIS	L		0.5	% v/v	PO1					
4	metolachlor	8	EC	1.5	lb ai/A	PRE	9.7	10.0	10.0	10.0	11.6
	linuron	50	DF	1	lb ai/A	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
5	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	10.0	10.0	10.0	9.7	5.6
	fluazifop-p	2	EC	.16	lb ai/A	PO1					
	linuron	50	DF	1	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
6	dimethenamid	6	EC	.75	lb ai/A	PRE	9.3	10.0	10.0	10.0	3.9
	linuron	50	DF	1	lb ai/A	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
7	pendimethalin	3.3	EC	2	lb ai/A	PRE	5.3	10.0	10.0	8.3	19.4
	prometryn	4	L	1	lb ai/A	PO1					
8	flimioxazin	50	WP	.063	lb ai/A	PRE	4.7	10.0	10.0	10.0	0.5
	linuron	50	DF	1	lb ai/A	PO1					
9	trifluralin	4	EC	.75	lb ai/A	PPI	10.0	10.0	10.0	10.0	19.6
	linuron	50	DF	1	lb ai/A	PO1					
	clethodim	2	EC	0.25	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
10	ethofumesate	4	L	1	lb ai/A	PRE	10.0	10.0	10.0	10.0	15.4
	linuron	50	DF	1	lb ai/A	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1					
	ethofumesate	4	L	0.5	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
LSD (P=.05)							2.68	0.0	0.31	0.98	10.48
Standard Deviation							1.56	0.0	0.18	0.57	6.11
CV							19.04	0.0	1.83	5.89	51.47

Weed Control in Sweet Corn - HTRC

Project Code:WC 106-98-01 Location :East Lansing, MI
Cooperator : By:Dr. Bernard Zandstra

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Sweet Corn Variety: see Notes Field or Block: 122-123
Planting Method: Seed Planting Date: 5-20-98 Harvest: see Notes
Spacing: 11.6 inches Row Spacing: 42 inch Perennial Age: N/A
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 10 ft wide * 50 ft long

Soil Type: Marlette Fine Sandy Loam OM: 1.7% pH: 6.2
Sand: 65% Silt: 22% Clay: 13% CEC: 3.4

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-22	10:50am	65 F/ 58 F	moist	W 3-5	57F/65F	62%	10%	N
PO1	6-22	1:30pm	93 F/ 81 F	dry	SW 1-3	73F/93F	40%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-22-98	Sweet Corn	6-10"	6-8	good
	BYGR	1-6"	2-8	moderate
	YEFT	1-2"	2-4	few
	COLQ	1-4"	2-10	moderate
	LATH	1-4"	2-6	few
	WIRA	2-10"	6-12	moderate

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Exceed = primisulfuron + prosulfuron.
4. Ignore #1. Sprays applied with 6 nozzle, 10 ft boom.
5. One row of each variety/plot. Varieties: West row: Saturn, yellow sh2, 75 days. East row: Majesty, bicolor sh2, 78 days.
6. Harvest: Saturn on 8-10 and 8-17-98; Majesty on 8-14 and 8-20-98, all mature ears.

Weed Control in Sweet Corn - HTRC

Project Code:WC 106-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	SATURN RATING 6-22-98	MAJESTY RATING 6-22-98	BYGR RATING 6-22-98	COLQ RATING 6-22-98	RRPW RATING 6-22-98	WIRA RATING 6-22-98
1	metolachlor	8	EC	2	lb ai/A	PRE	2.7	3.3	10.0	8.7	8.7	9.0
2	s-metolachlor	7.6	EC	1.67	lb ai/A	PRE	2.7	3.0	6.3	7.7	6.7	8.3
3	dimethenamid	6	EC	1.5	lb ai/A	PRE	2.7	4.0	10.0	9.3	9.3	9.3
4	s-dimethenamid	6	EC	.98	lb ai/A	PRE	2.7	3.7	9.7	8.7	8.3	6.0
5	acetochlor	6.4	EC	1.5	lb ai/A	PRE	3.0	3.3	10.0	9.3	10.0	8.7
6	isoxaflutole	75	WG	.06	lb ai/A	PRE	2.3	2.3	9.7	10.0	10.0	9.0
7	isoxaflutole	75	WG	.12	lb ai/A	PRE	3.0	2.7	10.0	10.0	10.0	10.0
8	atrazine	90	DF	2	lb ai/A	PRE	1.3	2.0	10.0	10.0	10.0	10.0
9	metolachlor	8	EC	2	lb ai/A	PRE	1.3	2.0	9.7	8.0	8.0	6.7
	carfentrazone	40	DF	.008	lb ai/A	PO1						
10	metolachlor	8	EC	2	lb ai/A	PRE	1.3	2.7	10.0	9.3	6.7	9.0
	carfentrazone	40	DF	.008	lb ai/A	PO1						
	atrazine	90	DF	0.5	lb ai/A	PO1						
11	metolachlor	8	EC	2	lb ai/A	PRE	2.7	3.3	10.0	8.0	8.3	8.0
	carfentrazone	40	DF	.008	lb ai/A	PO1						
	2,4-D	3.8	L	0.25	lb ai/A	PO1						
12	metolachlor	8	EC	2	lb ai/A	PRE	1.7	2.3	10.0	8.3	8.3	5.3
	isoxaflutole	75	WG	0.047	lb ai/A	PO1						
13	metolachlor	8	EC	2	lb ai/A	PRE	2.0	2.3	10.0	7.3	8.0	7.7
	rimsulfuron	25	DF	.031	lb ai/A	PO1						
14	metolachlor	8	EC	2	lb ai/A	PRE	1.7	2.0	9.7	8.7	8.3	5.0
	bentazon	4	L	1	lb ai/A	PO1						
	clopyralid	3	EC	.188	lb ai/A	PO1						
	NIS		L	0.5	% v/v	PO1						
15	metolachlor	8	EC	2	lb ai/A	PRE	2.0	2.7	10.0	8.7	7.7	6.7
	pyridate	3.75	EC	.9	lb ai/A	PO1						
16	metolachlor	8	EC	2	lb ai/A	PRE	1.0	2.0	9.7	7.0	7.7	7.3
	flumiclorac	.86	EC	.04	lb ai/A	PO1						
	COC		L	1	% v/v	PO1						
17	metolachlor	8	EC	2	lb ai/A	PRE	2.3	3.0	9.7	7.7	7.7	7.3
	halosulfuron	75	WG	.063	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
18	metolachlor	8	EC	2	lb ai/A	PRE	1.7	2.0	10.0	6.7	8.0	5.7
	nicosulfuron	75	DF	.032	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
19	metolachlor	8	EC	2	lb ai/A	PRE	2.3	2.7	10.0	7.3	7.3	5.3
	primisulfuron	75	WG	.036	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
20	metolachlor	8	EC	2	lb ai/A	PRE	2.0	2.7	9.0	7.7	7.7	6.3
	Exceed	57	WG	.036	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
LSD (P=.05)							2.02	1.54	1.12	2.25	2.04	3.66
Standard Deviation							1.22	0.93	0.68	1.36	1.24	2.22
CV							57.81	34.57	7.05	16.17	14.86	29.43

Weed Control in Sweet Corn - HTRC

Project Code:WC 106-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	SATURN RATING 7-3-98	MAJESTY RATING 7-3-98	BYGR RATING 7-3-98	YEFT RATING 7-3-98	COLQ RATING 7-3-98	LATH RATING 7-3-98	RRPW RATING 7-3-98	WIRA RATING 7-3-98
1	metolachlor	8	EC	2	lb ai/A	PRE	2.0	2.7	10.0	7.7	6.7	7.7	6.7	7.3
2	s-metolachlor	7.6	EC	1.67	lb ai/A	PRE	2.3	3.0	5.0	5.3	5.3	8.0	3.7	9.0
3	dimethenamid	6	EC	1.5	lb ai/A	PRE	2.3	3.0	10.0	10.0	9.0	9.7	8.7	9.0
4	s-dimethenamid	6	EC	.98	lb ai/A	PRE	2.0	2.7	10.0	10.0	5.3	10.0	8.7	8.3
5	acetochlor	6.4	EC	1.5	lb ai/A	PRE	2.0	2.0	10.0	10.0	10.0	10.0	9.3	6.7
6	isoxaflutole	75	WG	.06	lb ai/A	PRE	1.7	2.0	9.0	9.3	10.0	10.0	9.7	8.3
7	isoxaflutole	75	WG	.12	lb ai/A	PRE	2.0	1.7	8.7	10.0	10.0	10.0	10.0	9.0
8	atrazine	90	DF	2	lb ai/A	PRE	1.0	1.3	9.3	9.7	10.0	10.0	10.0	10.0
9	metolachlor	8	EC	2	lb ai/A	PRE	1.3	1.7	9.0	10.0	7.3	8.7	9.0	7.7
	carfentrazone	40	DF	.008	lb ai/A	PO1								
10	metolachlor	8	EC	2	lb ai/A	PRE	1.3	1.7	9.7	10.0	9.0	9.7	9.0	10.0
	carfentrazone	40	DF	.008	lb ai/A	PO1								
	atrazine	90	DF	0.5	lb ai/A	PO1								
11	metolachlor	8	EC	2	lb ai/A	PRE	2.3	2.3	9.0	10.0	7.7	9.7	9.0	10.0
	carfentrazone	40	DF	.008	lb ai/A	PO1								
	2,4-D	3.8	L	0.25	lb ai/A	PO1								
12	metolachlor	8	EC	2	lb ai/A	PRE	1.7	1.0	9.7	10.0	8.0	9.7	8.7	9.3
	isoxaflutole	75	WG	0.047	lb ai/A	PO1								
13	metolachlor	8	EC	2	lb ai/A	PRE	3.7	2.7	10.0	10.0	5.7	9.3	10.0	10.0
	rimsulfuron	25	DF	.031	lb ai/A	PO1								
14	metolachlor	8	EC	2	lb ai/A	PRE	1.0	1.0	10.0	9.3	10.0	9.7	9.0	10.0
	bentazon	4	L	1	lb ai/A	PO1								
	clopyralid	3	EC	.188	lb ai/A	PO1								
	NIS		L	0.5	% v/v	PO1								
15	metolachlor	8	EC	2	lb ai/A	PRE	1.3	1.7	10.0	9.3	5.3	8.3	4.7	8.0
	pyridate	3.75	EC	.9	lb ai/A	PO1								
16	metolachlor	8	EC	2	lb ai/A	PRE	1.0	1.3	9.7	8.7	6.3	8.7	8.7	5.3
	flumiclorac	.86	EC	.04	lb ai/A	PO1								
	COC		L	1	% v/v	PO1								
17	metolachlor	8	EC	2	lb ai/A	PRE	2.0	2.7	10.0	10.0	6.0	10.0	9.0	10.0
	halosulfuron	75	WG	.063	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
18	metolachlor	8	EC	2	lb ai/A	PRE	1.7	1.3	10.0	10.0	7.7	10.0	9.7	10.0
	nicosulfuron	75	DF	.032	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
19	metolachlor	8	EC	2	lb ai/A	PRE	2.3	2.7	8.7	9.0	7.3	10.0	8.3	10.0
	primisulfuron	75	WG	.036	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
20	metolachlor	8	EC	2	lb ai/A	PRE	2.3	2.3	9.7	10.0	9.3	10.0	9.3	10.0
	Exceed	57	WG	.036	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
LSD (P=.05)							1.17	1.26	1.93	2.14	3.19	2.08	2.28	2.62
Standard Deviation							0.71	0.77	1.17	1.30	1.93	1.26	1.38	1.59
CV							38.05	37.67	12.52	13.79	24.8	13.34	16.13	17.84

Weed Control in Sweet Corn - HTRC

Project Code:WC 106-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	SATURN YIELD 8-10-98 No./PLOT	SATURN YIELD 8-10-98 KG/PLOT	SATURN YIELD 8-17-98 No./PLOT	SATURN YIELD 8-17-98 KG/PLOT	SATURN TOT. YLD No./PLOT	SATURN TOT. YLD KG/PLOT
1	metolachlor	8 EC	2	lb ai/A	PRE	32.7	8.4	14.3	3.8	47.0	12.2
2	s-metolachlor	7.6 EC	1.67	lb ai/A	PRE	27.0	7.3	9.3	2.2	36.3	9.4
3	dimethenamid	6 EC	1.5	lb ai/A	PRE	37.0	9.8	13.3	3.4	50.3	13.2
4	s-dimethenamid	6 EC	.98	lb ai/A	PRE	25.7	6.7	8.7	2.1	34.3	8.8
5	acetochlor	6.4 EC	1.5	lb ai/A	PRE	35.0	10.5	13.7	3.4	48.6	13.9
6	isoxaflutole	75 WG	.06	lb ai/A	PRE	40.3	10.9	13.7	3.6	54.0	14.6
7	isoxaflutole	75 WG	.12	lb ai/A	PRE	41.3	10.9	10.3	2.5	51.7	13.4
8	atrazine	90 DF	2	lb ai/A	PRE	57.0	16.1	6.7	1.7	63.6	17.8
9	metolachlor	8 EC	2	lb ai/A	PRE	56.3	16.4	7.3	1.8	63.6	18.2
	carfentrazone	40 DF	.008	lb ai/A	PO1						
10	metolachlor	8 EC	2	lb ai/A	PRE	61.3	16.5	6.0	1.5	67.3	18.1
	carfentrazone	40 DF	.008	lb ai/A	PO1						
	atrazine	90 DF	0.5	lb ai/A	PO1						
11	metolachlor	8 EC	2	lb ai/A	PRE	47.0	13.1	5.7	1.5	52.7	14.6
	carfentrazone	40 DF	.008	lb ai/A	PO1						
	2,4-D	3.8 L	0.25	lb ai/A	PO1						
12	metolachlor	8 EC	2	lb ai/A	PRE	55.7	15.0	4.7	1.0	60.3	16.1
	isoxaflutole	75 WG	0.047	lb ai/A	PO1						
13	metolachlor	8 EC	2	lb ai/A	PRE	24.3	6.3	7.7	1.9	32.0	8.2
	rimsulfuron	25 DF	.031	lb ai/A	PO1						
14	metolachlor	8 EC	2	lb ai/A	PRE	45.7	13.2	7.0	1.8	52.7	15.0
	bentazon	4 L	1	lb ai/A	PO1						
	clopyralid	3 EC	.188	lb ai/A	PO1						
	NIS	L	0.5	% v/v	PO1						
15	metolachlor	8 EC	2	lb ai/A	PRE	48.3	13.7	8.0	1.9	56.3	15.6
	pyridate	3.75 EC	.9	lb ai/A	PO1						
16	metolachlor	8 EC	2	lb ai/A	PRE	49.7	14.0	6.0	1.4	55.7	15.4
	flumiclorac	.86 EC	.04	lb ai/A	PO1						
	COC	L	1	% v/v	PO1						
17	metolachlor	8 EC	2	lb ai/A	PRE	41.7	11.1	3.7	0.9	45.3	12.0
	halosulfuron	75 WG	.063	lb ai/A	PO1						
	NIS	L	.25	% v/v	PO1						
18	metolachlor	8 EC	2	lb ai/A	PRE	45.3	12.2	5.3	1.3	50.7	13.5
	nicosulfuron	75 DF	.032	lb ai/A	PO1						
	NIS	L	.25	% v/v	PO1						
19	metolachlor	8 EC	2	lb ai/A	PRE	31.3	8.2	12.7	3.1	44.0	11.3
	primisulfuron	75 WG	.036	lb ai/A	PO1						
	NIS	L	.25	% v/v	PO1						
20	metolachlor	8 EC	2	lb ai/A	PRE	42.7	11.1	5.0	1.2	47.7	12.3
	Exceed	57 WG	.036	lb ai/A	PO1						
	NIS	L	.25	% v/v	PO1						
LSD (P=.05)							22.66	6.27	9.86	2.66	17.5	4.9
Standard Deviation							13.73	3.80	5.97	1.61	10.6	3.0
CV							32.49	32.86	70.69	76.88	20.95	21.82

Weed Control in Sweet Corn - HTRC

Project Code:WC 106-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	MAJESTY YIELD No./PLOT 8-14-98	MAJESTY YIELD KG/PLOT 8-14-98	MAJESTY YIELD No./PLOT 8-20-98	MAJESTY YIELD KG/PLOT 8-20-98	MAJESTY TOT. YLD No./PLOT	MAJESTY TOT. YLD KG/PLOT
1	metolachlor	8	EC	2	lb ai/A	PRE	34.0	9.9	17.3	5.0	51.3	14.9
2	s-metolachlor	7.6	EC	1.67	lb ai/A	PRE	23.3	7.1	8.3	2.2	31.7	9.3
3	dimethenamid	6	EC	1.5	lb ai/A	PRE	32.3	8.8	12.7	3.8	45.0	12.6
4	s-dimethenamid	6	EC	.98	lb ai/A	PRE	25.0	7.3	15.7	4.4	40.7	11.8
5	acetochlor	6.4	EC	1.5	lb ai/A	PRE	41.3	12.5	16.0	4.9	57.3	17.4
6	isoxaflutole	75	WG	.06	lb ai/A	PRE	52.3	16.1	18.3	5.7	70.7	21.8
7	isoxaflutole	75	WG	.12	lb ai/A	PRE	51.7	16.0	16.7	5.0	68.3	21.0
8	atrazine	90	DF	2	lb ai/A	PRE	58.3	18.2	14.0	4.3	72.3	22.4
9	metolachlor	8	EC	2	lb ai/A	PRE	57.3	18.1	12.0	3.6	69.3	21.7
	carfentrazone	40	DF	.008	lb ai/A	PO1						
10	metolachlor	8	EC	2	lb ai/A	PRE	46.3	15.2	17.3	5.3	63.7	20.6
	carfentrazone	40	DF	.008	lb ai/A	PO1						
	atrazine	90	DF	0.5	lb ai/A	PO1						
11	metolachlor	8	EC	2	lb ai/A	PRE	42.0	12.8	13.3	3.8	55.3	16.6
	carfentrazone	40	DF	.008	lb ai/A	PO1						
	2,4-D	3.8	L	0.25	lb ai/A	PO1						
12	metolachlor	8	EC	2	lb ai/A	PRE	60.7	19.3	9.3	2.4	70.0	21.8
	isoxaflutole	75	WG	0.047	lb ai/A	PO1						
13	metolachlor	8	EC	2	lb ai/A	PRE	49.7	13.8	10.3	2.9	60.0	16.7
	rimsulfuron	25	DF	.031	lb ai/A	PO1						
14	metolachlor	8	EC	2	lb ai/A	PRE	46.7	15.4	16.0	4.5	62.7	20.0
	bentazon	4	L	1	lb ai/A	PO1						
	clopyralid	3	EC	.188	lb ai/A	PO1						
	NIS		L	0.5	% v/v	PO1						
15	metolachlor	8	EC	2	lb ai/A	PRE	46.3	15.5	8.3	2.3	54.7	17.8
	pyridate	3.75	EC	.9	lb ai/A	PO1						
16	metolachlor	8	EC	2	lb ai/A	PRE	59.3	17.8	17.0	5.0	76.3	22.7
	flumiclorac	.86	EC	.04	lb ai/A	PO1						
	COC		L	1	% v/v	PO1						
17	metolachlor	8	EC	2	lb ai/A	PRE	41.3	13.0	14.3	4.0	55.7	17.0
	halosulfuron	75	WG	.063	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
18	metolachlor	8	EC	2	lb ai/A	PRE	51.0	15.2	20.3	6.0	71.3	21.2
	nicosulfuron	75	DF	.032	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
19	metolachlor	8	EC	2	lb ai/A	PRE	50.0	15.8	17.3	5.1	67.3	20.9
	primisulfuron	75	WG	.036	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
20	metolachlor	8	EC	2	lb ai/A	PRE	44.0	13.9	12.3	3.3	56.3	17.2
	Exceed	57	WG	.036	lb ai/A	PO1						
	NIS		L	.25	% v/v	PO1						
LSD (P=.05)							20.53	6.96	6.85	2.11	21.1	7.2
Standard Deviation							12.44	4.22	4.15	1.28	12.8	4.4
CV							27.26	29.98	28.93	30.67	21.36	24.01

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Project Code:WC 108-98-01 **Location :East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cuc.,squash,pumpkin **Variety: see Notes** **Field or Block: 137,141**
Planting Method: Seed **Planting Date: 6-9-98** **Harvest: see Notes**
Spacing: see Notes **Row Spacing: see Notes** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 30 ft wide * 40 ft long + spray alley

Soil Type: Capac Loam **OM: 2.4%** **pH: 6.9**
Sand: 58% **Silt: 21%** **Clay: 21%** **CEC: 8.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	6-9	12:15pm	64 F/ 68 F	dry	3-5	57F/64F	41%	100%	N
PO1	7-2	3 pm	84 F/ 81 F	dry	NW 3-5	76F/84F	70%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-2-98	Cucumber	1-4"	2-4	good
	Squash	2-8"	2-6	moderate
	Pumpkin	6-10"	3-5	good
	RRPW	1-6"	2-10	many
	BYGR	1-6"	2-5	few
	COPU	2-6"	many	moderate
	EBNS	1-3"	2-5	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Ignore item 1. Sprays applied with 6 nozzles, 10 ft boom.
4. Row spacing: Cucumber - 3 rows @ 14 inches * 3 inches in row; Pumpkin and Squash - 28 inches beyond cucumbers on each side of cucumbers * 6 inches in row.
5. Cultivars: Cucumber - Vlaspik M; Pumpkin - Howden; Squash - Golden Hubbard.
6. 6-9-98: Plot 307 (treatment 9) was not sprayed due to insufficient herbicide mix.
7. Harvest: Cucumber on 7-27-98; Pumpkin and Squash on 10-6-98, all fruit from each plot.

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Project Code:WC 108-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	SQUASH RATING 6-30-98	CUCUMBER RATING 6-30-98	PUMPKIN RATING 6-30-98	BYGR RATING 6-30-98	COLQ RATING 6-30-98	COPU RATING 6-30-98	RRPW RATING 6-30-98
1	ethalfluralin	3 EC	0.75	lb ai/A	PRE		3.7	1.3	1.0	7.3	7.0	5.0	5.3
2	ethalfluralin	3 EC	1.13	lb ai/A	PRE		3.7	2.3	2.0	9.3	8.7	9.0	7.0
3	ethalfluralin	3 EC	0.75	lb ai/A	PRE		4.0	2.3	1.7	10.0	10.0	10.0	9.3
	clomazone	3 ME	0.25	lb ai/A	PRE								
4	ethalfluralin	3 EC	0.75	lb ai/A	PRE		1.3	2.3	1.0	7.0	7.0	7.0	6.7
	clomazone	3 ME	0.25	lb ai/A	PRE								
	sulfentrazone	75 DF	0.1	lb ai/A	PRE								
5	ethalfluralin	3 EC	0.75	lb ai/A	PRE		3.3	6.7	3.7	10.0	10.0	10.0	10.0
	clomazone	3 ME	0.25	lb ai/A	PRE								
	sulfentrazone	75 DF	0.2	lb ai/A	PRE								
6	clomazone	3 ME	0.25	lb ai/A	PRE		3.3	4.3	2.3	10.0	10.0	10.0	9.3
	sulfentrazone	75 DF	0.1	lb ai/A	PRE								
7	clomazone	3 ME	0.25	lb ai/A	PRE		3.3	4.3	3.0	10.0	10.0	10.0	10.0
	sulfentrazone	75 DF	0.2	lb ai/A	PRE								
8	PCC 170	L	1	qt pr/A	PRE		3.7	1.7	1.7	10.0	8.3	9.7	6.7
9	PCC 170	L	2	qt pr/A	PRE		2.0	1.7	1.3	7.0	7.0	7.0	6.0
10	ethalfluralin	3 EC	0.75	lb ai/A	PRE		2.3	1.3	1.3	9.7	8.3	9.0	6.3
	halosulfuron	75 WG	0.047	lb ai/A	PO1								
	NIS	L	0.25	% v/v	PO1								
11	metolachlor	8 EC	1	lb ai/A	PRE		2.3	3.0	1.3	9.3	5.0	9.3	8.7
12	ethalfluralin	3 EC	0.75	lb ai/A	PRE		1.0	1.0	1.0	9.3	8.7	8.3	6.0
	naptalam	2 EC	3	lb ai/A	PO1								
	sethoxydim	1.53 EC	0.19	lb ai/A	PO1								
	NIS	L	.25	% v/v	PO1								
13	ethalfluralin	3 EC	0.75	lb ai/A	PRE		1.7	1.3	1.7	9.7	9.0	8.7	6.3
	sethoxydim	1.53 EC	0.19	lb ai/A	PO1								
	bentazon	4 L	0.75	lb ai/A	PO1								
	COC	L	1	% v/v	PO1								
14	flimioxazin	50 WP	0.063	lb ai/A	PRE		7.0	10.0	8.7	9.0	10.0	10.0	9.7
15	flimioxazin	50 WP	0.094	lb ai/A	PRE		9.3	10.0	10.0	9.3	10.0	10.0	10.0
16	Weeded Control						1.3	1.3	1.7	1.7	1.7	1.0	1.7
LSD (P=.05)							3.08	1.23	1.24	3.35	3.26	3.43	3.32
Standard Deviation							1.85	0.74	0.74	2.01	1.96	2.06	1.99
CV							55.51	21.49	27.49	23.15	23.98	24.55	26.78

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Project Code:WC 108-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	SQUASH RATING 7-9-98	CUCUMBER RATING 7-9-98	PUMPKIN RATING 7-9-98	BYGR RATING 7-9-98	COLQ RATING 7-9-98	COPU RATING 7-9-98	EBNS RATING 7-9-98	RRPW RATING 7-9-98
1	ethalfluralin	3	EC	0.75	lb ai/A	PRE	4.0	1.0	1.7	7.7	3.0	4.0	2.0	3.7
2	ethalfluralin	3	EC	1.13	lb ai/A	PRE	5.3	2.7	2.0	7.7	8.0	8.3	4.3	5.7
3	ethalfluralin	3	EC	0.75	lb ai/A	PRE	4.0	3.0	2.3	10.0	10.0	10.0	6.3	9.0
	clomazone	3	ME	0.25	lb ai/A	PRE								
4	ethalfluralin	3	EC	0.75	lb ai/A	PRE	2.3	2.3	1.3	7.3	7.0	7.0	7.0	7.0
	clomazone	3	ME	0.25	lb ai/A	PRE								
	sulfentrazone	75	DF	0.1	lb ai/A	PRE								
5	ethalfluralin	3	EC	0.75	lb ai/A	PRE	2.7	6.7	4.0	10.0	10.0	10.0	10.0	9.3
	clomazone	3	ME	0.25	lb ai/A	PRE								
	sulfentrazone	75	DF	0.2	lb ai/A	PRE								
6	clomazone	3	ME	0.25	lb ai/A	PRE	3.7	2.7	2.3	10.0	10.0	10.0	10.0	8.7
	sulfentrazone	75	DF	0.1	lb ai/A	PRE								
7	clomazone	3	ME	0.25	lb ai/A	PRE	3.0	5.0	3.0	10.0	10.0	10.0	10.0	10.0
	sulfentrazone	75	DF	0.2	lb ai/A	PRE								
8	PCC 170	L		1	qt pr/A	PRE	3.0	2.0	1.7	9.7	6.7	10.0	4.0	4.3
9	PCC 170	L		2	qt pr/A	PRE	2.0	2.0	1.3	7.0	7.0	6.7	3.7	5.3
10	ethalfluralin	3	EC	0.75	lb ai/A	PRE	4.7	2.7	3.3	9.3	7.0	8.0	1.7	6.0
	halosulfuron	75	WG	0.047	lb ai/A	PO1								
	NIS	L		0.25	% v/v	PO1								
11	metolachlor	8	EC	1	lb ai/A	PRE	1.3	2.7	1.0	10.0	2.0	9.0	10.0	8.0
12	ethalfluralin	3	EC	0.75	lb ai/A	PRE	2.0	2.0	2.3	9.3	7.0	9.3	3.3	7.7
	naptalam	2	EC	3	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	NIS	L		.25	% v/v	PO1								
13	ethalfluralin	3	EC	0.75	lb ai/A	PRE	7.0	1.7	2.3	10.0	7.3	8.7	3.0	4.3
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	bentazon	4	L	0.75	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
14	flimioxazin	50	WP	0.063	lb ai/A	PRE	7.0	9.7	8.3	6.7	10.0	10.0	10.0	9.7
15	flimioxazin	50	WP	0.094	lb ai/A	PRE	9.0	10.0	9.7	9.3	10.0	10.0	10.0	10.0
16	Weeded Control						2.7	3.0	2.3	9.0	9.7	7.7	7.7	8.7
LSD (P=.05)							3.19	1.19	1.23	3.70	4.06	3.62	3.79	3.87
Standard Deviation							1.91	0.71	0.74	2.22	2.43	2.17	2.27	2.32
CV							48.09	19.31	24.12	24.85	31.21	25.03	35.29	31.68

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Project Code:WC 108-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	CUCUMBER PLANT WT KG/PLOT 7-27-98	CUCUMBER SIZE 1 KG/PLOT 7-27-98	CUCUMBER SIZE 2 KG/PLOT 7-27-98	CUCUMBER SIZE 3 KG/PLOT 7-27-98	CUCUMBER OVERSIZE KG/PLOT 7-27-98	CUCUMBER TOT. YLD KG/PLOT
1	ethalfluralin	3 EC		0.75 lb ai/A	PRE		39.9	2.2	6.8	9.9	0.1	18.9
2	ethalfluralin	3 EC		1.13 lb ai/A	PRE		32.8	2.0	5.2	8.9	0.3	16.4
3	ethalfluralin	3 EC		0.75 lb ai/A	PRE		35.6	2.2	6.5	7.2	0.2	16.1
	clomazone	3 ME		0.25 lb ai/A	PRE							
4	ethalfluralin	3 EC		0.75 lb ai/A	PRE		26.0	1.1	3.2	4.4	0.1	8.9
	clomazone	3 ME		0.25 lb ai/A	PRE							
	sulfentrazone	75 DF		0.1 lb ai/A	PRE							
5	ethalfluralin	3 EC		0.75 lb ai/A	PRE		8.6	0.5	1.3	0.3	0.0	2.1
	clomazone	3 ME		0.25 lb ai/A	PRE							
	sulfentrazone	75 DF		0.2 lb ai/A	PRE							
6	clomazone	3 ME		0.25 lb ai/A	PRE		25.7	1.1	2.2	2.9	0.1	6.3
	sulfentrazone	75 DF		0.1 lb ai/A	PRE							
7	clomazone	3 ME		0.25 lb ai/A	PRE		15.9	1.0	2.3	1.8	0.0	5.1
	sulfentrazone	75 DF		0.2 lb ai/A	PRE							
8	PCC 170	L		1 qt pr/A	PRE		35.7	2.0	6.4	6.3	0.1	14.8
9	PCC 170	L		2 qt pr/A	PRE		30.3	1.5	4.8	5.1	0.3	11.6
10	ethalfluralin	3 EC		0.75 lb ai/A	PRE		38.4	2.5	9.4	5.3	0.1	17.4
	halosulfuron	75 WG		0.047 lb ai/A	PO1							
	NIS	L		0.25 % v/v	PO1							
11	metolachlor	8 EC		1 lb ai/A	PRE		28.3	0.8	1.7	0.9	0.0	3.4
12	ethalfluralin	3 EC		0.75 lb ai/A	PRE		38.7	1.7	5.1	4.3	0.1	11.2
	naptalam	2 EC		3 lb ai/A	PO1							
	sethoxydim	1.53 EC		0.19 lb ai/A	PO1							
	NIS	L		.25 % v/v	PO1							
13	ethalfluralin	3 EC		0.75 lb ai/A	PRE		40.6	2.1	6.4	8.6	0.4	17.5
	sethoxydim	1.53 EC		0.19 lb ai/A	PO1							
	bentazon	4 L		0.75 lb ai/A	PO1							
	COC	L		1 % v/v	PO1							
14	flimioxazin	50 WP		0.063 lb ai/A	PRE		0.1	0.0	0.0	0.0	0.0	0
15	flimioxazin	50 WP		0.094 lb ai/A	PRE		0.0	0.0	0.0	0.0	0.0	0
16	Weeded Control						29.4	1.7	6.0	7.9	0.3	15.9
LSD (P=.05)							8.91	0.75	2.66	4.87	0.29	7.2
Standard Deviation							5.34	0.45	1.60	2.92	0.17	4.3
CV							20.06	32.3	37.96	63.38	130.07	41.82

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Project Code:WC 108-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	PUMPKIN YIELD No./PLOT 10-2-98	PUMPKIN YIELD KG/PLOT 10-2-98	SQUASH YIELD No./PLOT 10-2-98	SQUASH YIELD KG/PLOT 10-2-98
1	ethalfluralin	3	EC	0.75	lb ai/A	PRE	44.0	311.9	30.0	72.9
2	ethalfluralin	3	EC	1.13	lb ai/A	PRE	43.7	312.5	25.0	64.5
3	ethalfluralin	3	EC	0.75	lb ai/A	PRE	45.7	315.8	31.3	78.4
	clomazone	3	ME	0.25	lb ai/A	PRE				
4	ethalfluralin	3	EC	0.75	lb ai/A	PRE	46.7	375.0	52.0	146.8
	clomazone	3	ME	0.25	lb ai/A	PRE				
	sulfentrazone	75	DF	0.1	lb ai/A	PRE				
5	ethalfluralin	3	EC	0.75	lb ai/A	PRE	31.3	291.2	61.3	177.0
	clomazone	3	ME	0.25	lb ai/A	PRE				
	sulfentrazone	75	DF	0.2	lb ai/A	PRE				
6	clomazone	3	ME	0.25	lb ai/A	PRE	45.3	396.6	47.7	132.6
	sulfentrazone	75	DF	0.1	lb ai/A	PRE				
7	clomazone	3	ME	0.25	lb ai/A	PRE	40.3	335.3	44.3	126.0
	sulfentrazone	75	DF	0.2	lb ai/A	PRE				
8	PCC 170	L		1	qt pr/A	PRE	40.3	287.1	42.0	89.7
9	PCC 170	L		2	qt pr/A	PRE	42.3	309.9	34.7	83.9
10	ethalfluralin	3	EC	0.75	lb ai/A	PRE	42.7	283.6	37.7	84.0
	halosulfuron	75	WG	0.047	lb ai/A	PO1				
	NIS	L		0.25	% v/v	PO1				
11	metolachlor	8	EC	1	lb ai/A	PRE	43.0	350.8	49.7	140.1
12	ethalfluralin	3	EC	0.75	lb ai/A	PRE	45.7	317.0	65.3	139.4
	naptalam	2	EC	3	lb ai/A	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1				
	NIS	L		.25	% v/v	PO1				
13	ethalfluralin	3	EC	0.75	lb ai/A	PRE	37.7	216.3	33.7	66.7
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1				
	bentazon	4	L	0.75	lb ai/A	PO1				
	COC	L		1	% v/v	PO1				
14	flimioxazin	50	WP	0.063	lb ai/A	PRE	15.3	166.5	34.0	112.5
15	flimioxazin	50	WP	0.094	lb ai/A	PRE	3.0	41.4	14.3	39.9
16	Weeded Control						36.3	223.8	36.7	70.1
LSD (P=.05)							9.91	103.78	33.30	94.97
Standard Deviation							5.94	62.24	19.97	56.96
CV							15.76	21.96	49.95	56.1

Weed Control in Lettuce - Imlay City

Project Code: WC 116-98-01 **Location :** Van Dyk Farm
Cooperator : Doug Van Dyk

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Lettuce **Variety:** Ithaca **Field or Block:** N/A
Planting Method: Seed **Planting Date:** 6-25-98 **Harvest:** see Notes
Spacing: 11 inches **Row Spacing:** 17", 2 rows/plot **Perennial Age:** N/A
Tillage Type: Conventional **Study Design:** RCBD **Replications:** 3
Plot Size: 36" wide * 35 ft long

Soil Type: Carlisle Muck **OM:** 60% **pH:** 6.5
Sand: N/A **Silt:** N/A **Clay:** N/A **CEC:** N/A

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	6-26	9:30am	80 F /76 F	dry	SW 8-10	74F/80F	73%	80% cloud	N
PO1	7-23	10 am	74 F /73 F	dry	NW 3-5	68F/74F	76%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-23-98	Lettuce	2-3″	4-6	good
	COPU	3-10″	many	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Ignore item 1 above, sprays applied with 2-nozzle boom, 11002 nozzles.
4. 8-21-98: Harvested all heads from 5 ft of 2 rows.
5. 8-26-98: Harvested 10 good heads from each plot, if available.

Weed Control in Lettuce - Imlay City

Project Code:WC 116-98-01 **Location :Van Dyk Farm**
Cooperator :Doug Van Dyk

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	LETTUCE COPU RATING 7-23-98	LETTUCE YIELD RATING 7-23-98	LETTUCE YIELD RATING 8-6-98	LETTUCE YIELD RATING 8-21-98	LETTUCE YIELD No./5FT 8-21-98	LETTUCE YIELD KG/5FT 8-21-98	LETTUCE YIELD KG/HEAD 8-21-98
1	pronamide	50 WP		6	lb ai/A	PRE	1.7	7.7	1.7	10.3	8.6		0.83
2	imazethapyr	2 EC		.032	lb ai/A	PRE	3.3	8.3	3.0	11.0	8.2		0.75
3	imazamox	1 AS		.016	lb ai/A	PRE	3.3	6.3	3.0	10.0	7.9		0.79
4	imazamox	1 AS		.032	lb ai/A	PRE	7.0	7.0	6.3	10.7	4.5		0.42
5	dimethenamid	6 EC		1	lb ai/A	PRE	8.0	8.3	7.3	7.3	3.5		0.47
6	metolachlor	8 EC		1.6	lb ai/A	PRE	7.3	8.7	7.3	6.0	3.7		0.62
7	Untreated Ctrl						1.3	3.3	3.0	9.7	7.9		0.82
8	flimioxazin	50 WP		.063	lb ai/A	PRE	8.7	9.0	8.3	2.0	1.4		0.72
9	imazamox	1 AS		.016	lb ai/A	PO1	1.3	10.0	2.3	10.7	9.7		0.91
10	imazamox	1 AS		.032	lb ai/A	PO1	1.0	9.3	1.7	10.7	9.7		0.91
11	imazethapyr	2 EC		.032	lb ai/A	PO1	1.3	8.3	2.0	10.3	9.6		0.93
12	flimioxazin	50 WP		.078	lb ai/A	PO1	2.0	8.3	2.7	10.0	8.6		0.86
LSD (P=.05)							1.61	3.00	1.90	2.80	2.09		0.14
Standard Deviation							0.95	1.77	1.12	1.65	1.23		0.08
CV							24.56	22.47	27.62	18.23	17.75		11.0

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	LETTUCE YIELD No. HEAD 8-26-98	LETTUCE YIELD KG 8-26-98	LETTUCE YIELD KG/HEAD 8-26-98
1	pronamide	50 WP		6	lb ai/A	PRE	10.0	10.0	1.00
2	imazethapyr	2 EC		.032	lb ai/A	PRE	9.7	9.5	0.99
3	imazamox	1 AS		.016	lb ai/A	PRE	8.7	9.0	1.11
4	imazamox	1 AS		.032	lb ai/A	PRE	7.3	7.1	0.98
5	dimethenamid	6 EC		1	lb ai/A	PRE	3.3	4.4	1.64
6	metolachlor	8 EC		1.6	lb ai/A	PRE	5.3	5.7	0.97
7	Untreated Ctrl						8.7	10.5	1.28
8	flimioxazin	50 WP		.063	lb ai/A	PRE	5.0	4.3	0.97
9	imazamox	1 AS		.016	lb ai/A	PO1	8.7	10.4	1.26
10	imazamox	1 AS		.032	lb ai/A	PO1	9.3	10.6	1.15
11	imazethapyr	2 EC		.032	lb ai/A	PO1	9.3	10.3	1.11
12	flimioxazin	50 WP		.078	lb ai/A	PO1	8.3	9.0	1.18
LSD (P=.05)							3.26	2.63	0.75
Standard Deviation							1.93	1.55	0.44
CV							24.7	18.49	39.4

Preemergence Weed Control in Spearmint

Project Code:WC 121-98-01 Location :St. Johns, MI
Cooperator :Tom Irrer

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Spearmint Variety: N83-5 Native Field or Block: N/A
Planting Method: N/A Planting Date: 1997 Harvest: N/A
Spacing: Solid Cover Row Spacing: N/A Perennial Age: 1 year
Tillage Type: N/A Study Design: RCBD Replications: 3
Plot Size: 20 ft wide * 100 ft long

Soil Type: Gilford Sandy Loam OM: 3.2 pH: 7.7
Sand: 69% Silt: 13% Clay: 13% CEC: 14.2

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-15	11 am	50 F/ 50 F	damp	NE 5-7	47F/50F	80%	70% cloud	N
PO1	5-27	2 pm	84 F/ 67 F	dry	W 3-5	71F/84F	54%	50%	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-15-98	Mint	2-3"	many	good
	COCW	3-4"	many	many
	FIPA	3-4"	many	moderate
5-27-98	Mint	12-14"	many	good
	COCW	6-8"	many	many
	FIPA	4-6"	many	moderate
	PRLE	14-16"	many	moderate
	PRPW	4-5"	many	few
	MATA	12-14"	many	moderate
	SHPU	16-18"	many	many/dying

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.

Preemergence Weed Control in Spearmint

Project Code:WC 121-98-01 **Location :St. Johns, MI**
Cooperator :Tom Irrer

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	MINT RATING 5-27-98	COCW RATING 5-27-98	FIPA RATING 5-27-98	MATA RATING 5-27-98	PRLE RATING 5-27-98	SHPU RATING 5-27-98	PUSW RATING 5-27-98	TUPW RATING 5-27-98
1	terbacil	80 WP		0.4	lb ai/A	PRE	1.0	10.0	4.0	10.0	3.3	10.0	4.0	3.7
2	terbacil	80 WP		0.4	lb ai/A	PRE	5.0	10.0	4.0	10.0	6.0	10.0	5.3	10.0
	sulfentrazone	75 DF		0.125	lb ai/A	PRE								
3	clomazone	3 ME		0.25	lb ai/A	PRE	1.7	10.0	3.7	1.0	5.3	9.0	9.0	5.3
4	clomazone	3 ME		0.25	lb ai/A	PRE	4.3	10.0	7.0	5.0	4.7	10.0	7.7	9.0
	sulfentrazone	75 DF		0.125	lb ai/A	PRE								
5	sulfentrazone	75 DF		0.125	lb ai/A	PRE	4.7	6.0	4.0	2.3	1.7	10.0	4.7	10.0
6	pendimethalin	3.3 EC		1.0	lb ai/A	PRE	4.7	8.0	4.0	1.0	1.7	10.0	7.0	7.7
7	pendimethalin	3.3 EC		1.0	lb ai/A	PRE	6.7	7.0	10.0	1.0	3.0	7.0	4.7	8.3
	sulfentrazone	75 DF		0.125	lb ai/A	PRE								
8	oxyfluorfen	2 L		0.2	lb ai/A	PRE	5.3	7.0	10.0	3.7	6.0	10.0	9.3	7.7
9	oxyfluorfen	2 L		0.2	lb ai/A	PRE	5.7	10.0	10.0	10.0	6.7	10.0	9.0	9.7
	paraquat	2.5 EC		0.31	lb ai/A	PRE								
10	azafenidin	80 DF		0.37	lb ai/A	PRE	9.7	3.7	8.3	4.3	9.3	10.0	8.7	10.0
11	diuron	80 DF		2.4	lb ai/A	PRE	8.0	7.7	7.7	10.0	10.0	10.0	2.3	10.0
12	Untreated Control					PRE	1.3	4.7	4.7	1.7	1.0	7.0	1.0	1.0
	clopyralid	3 EC		0.188	lb ai/A	PO1								
	sethoxydim	1.53 EC		0.19	lb ai/A	PO1								
	bentazon	4 L		1.0	lb ai/A	PO1								
	terbacil	80 WP		0.25	lb ai/A	PO1								
	pyridate	3.75 EC		0.45	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
LSD (P=.05)							1.34	4.91	6.52	3.13	4.96	3.42	4.48	3.50
Standard Deviation							0.79	2.90	3.85	1.85	2.93	2.02	2.65	2.07
CV							16.41	37.0	59.76	36.97	59.89	21.42	43.68	26.86

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	MINT RATING 6-24-98	FIPA RATING 6-24-98	MATA RATING 6-24-98	TUPW RATING 6-24-98	ROFB RATING 6-24-98
1	terbacil	80 WP		0.4	lb ai/A	PRE	1.0	8.3	8.7	5.7	9.3
2	terbacil	80 WP		0.4	lb ai/A	PRE	2.7	6.0	7.3	9.7	9.7
	sulfentrazone	75 DF		0.125	lb ai/A	PRE					
3	clomazone	3 ME		0.25	lb ai/A	PRE	1.7	7.7	1.0	7.3	7.7
4	clomazone	3 ME		0.25	lb ai/A	PRE	3.0	6.3	1.3	9.3	9.3
	sulfentrazone	75 DF		0.125	lb ai/A	PRE					
5	sulfentrazone	75 DF		0.125	lb ai/A	PRE	3.0	4.7	2.3	9.0	4.0
6	pendimethalin	3.3 EC		1.0	lb ai/A	PRE	3.0	7.0	1.0	8.3	7.3
7	pendimethalin	3.3 EC		1.0	lb ai/A	PRE	3.3	10.0	1.0	8.0	8.3
	sulfentrazone	75 DF		0.125	lb ai/A	PRE					
8	oxyfluorfen	2 L		0.2	lb ai/A	PRE	3.0	9.3	1.3	8.0	8.0
9	oxyfluorfen	2 L		0.2	lb ai/A	PRE	2.7	10.0	8.0	8.0	9.7
	paraquat	2.5 EC		0.31	lb ai/A	PRE					
10	azafenidin	80 DF		0.37	lb ai/A	PRE	8.0	10.0	2.7	9.7	9.0
11	diuron	80 DF		2.4	lb ai/A	PRE	5.7	10.0	9.0	10.0	10.0
12	Untreated Control					PRE	4.0	9.0	8.7	6.0	9.7
	clopyralid	3 EC		0.188	lb ai/A	PO1					
	sethoxydim	1.53 EC		0.19	lb ai/A	PO1					
	bentazon	4 L		1.0	lb ai/A	PO1					
	terbacil	80 WP		0.25	lb ai/A	PO1					
	pyridate	3.75 EC		0.45	lb ai/A	PO1					
	COC	L		1	% v/v	PO1					
LSD (P=.05)							1.39	5.55	1.61	2.95	2.56

Standard Deviation		0.82	3.27	0.95	1.74	1.51
CV	24.03	39.96	21.83	21.13	17.77	

Preemergence Weed Control in Onion - Muck Farm

Project Code:WC 112-98-01 Location :Laingsburg, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion Variety: Hustler Field or Block: E-1
Planting Method: Seed Planting Date: 4-24-98 Harvest: 9-1-98
Spacing: 16 seeds /ft Row Spacing: 16 inch,3 rows/plot Perennial Age: N/A
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 5.3 ft wide * 16.7 ft long

Soil Type: Houghton Muck OM: 80% pH: 6.3
Sand: N/A Silt: N/A Clay: N/A CEC: N/A

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-05	3 pm	79 F /60 F	wet	SW 3-5	68F/79F	59%	30% cloud	N
PO1	5-29	9:30am	68 F /65 F	dry	SW 1-3	64F/68F	80%	100%	N
PO2	6-24	11:30am	87 F /73 F	damp	SE 3-5	73F/87F	52%	50%	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-29-98	Onion	3-5"	2	good
	YENS	3-5"	many	many
6-24-98	Onion	10-12"	5-6	good
	YENS	4-10"	many	many

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. PRE: Carfentrazone .15 on west guard, pendimethalin 2 on east guard.
4. Goal 0.063 + Poast 0.19 + COC 1% applied twice for postemergence weed control. Surviving broadleaves were removed by hand.

Preemergence Weed Control in Onion - Muck Farm

Project Code:WC 112-98-01 **Location :Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	ONION RATING 5-28-98	BYGR RATING 5-28-98	LACG RATING 5-28-98	YENS RATING 5-28-98	COPU RATING 5-28-98	MAYC RATING 5-28-98	NLLQ RATING 5-28-98	PRPW RATING 5-28-98
1	pendimethalin	3.3 EC		2	lb ai/A	PRE	1.0	10.0	10.0	1.0	10.0	6.7	9.3	10.0
	pendimethalin	3.3 EC		2	lb ai/A	PO1,2								
2	pendimethalin	3.3 EC		2	lb ai/A	PRE	1.0	10.0	10.0	2.7	10.0	5.7	10.0	10.0
	metolachlor	8 EC		2	lb ai/A	PRE								
	pendimethalin	3.3 EC		2	lb ai/A	PO1,2								
	metolachlor	8 EC		2	lb ai/A	PO1,2								
3	metolachlor	8 EC		2	lb ai/A	PRE	1.3	10.0	10.0	3.0	8.3	5.7	9.3	9.0
	metolachlor	8 EC		2	lb ai/A	PO1,2								
4	s-metolachlor	7.6 EC		1.3	lb ai/A	PRE	1.0	10.0	10.0	2.7	6.0	5.7	6.0	10.0
	s-metolachlor	7.6 EC		1.3	lb ai/A	PO1,2								
5	s-metolachlor	7.6 EC		1.6	lb ai/A	PRE	1.0	10.0	10.0	4.3	6.7	4.0	6.3	9.7
	s-metolachlor	7.6 EC		1.6	lb ai/A	PO1,2								
6	s-metolachlor	7.6 EC		1.9	lb ai/A	PRE	1.7	10.0	9.7	3.0	7.7	4.0	8.7	10.0
	s-metolachlor	7.6 EC		1.9	lb ai/A	PO1,2								
7	dimethenamid	6 EC		1.17	lb ai/A	PRE	1.3	10.0	10.0	2.7	10.0	4.0	8.0	10.0
	dimethenamid	6 EC		1.17	lb ai/A	PO1,2								
8	s-dimethenamid	6 EC		0.64	lb ai/A	PRE	1.0	10.0	10.0	1.7	10.0	5.0	9.3	10.0
	s-dimethenamid	6 EC		0.64	lb ai/A	PO1,2								
9	s-dimethenamid	6 EC		0.64	lb ai/A	PRE	1.0	10.0	10.0	2.3	9.7	4.3	9.7	10.0
	s-dimethenamid	6 EC		0.64	lb ai/A	PO1,2								
	oxyfluorfen	2 EC		0.063	lb ai/A	PO1,2								
	sethoxydim	1.53 EC		0.25	lb ai/A	PO1,2								
	COC	L		1	% v/v	PO1,2								
10	pendimethalin	3.3 EC		2	lb ai/A	PRE	1.0	10.0	10.0	3.7	10.0	6.0	9.3	10.0
	s-dimethenamid	6 EC		0.64	lb ai/A	PRE								
	pendimethalin	3.3 EC		2	lb ai/A	PO1,2								
	s-dimethenamid	6 EC		0.64	lb ai/A	PO1,2								
	oxyfluorfen	2 EC		0.063	lb ai/A	PO1,2								
	sethoxydim	1.53 EC		0.19	lb ai/A	PO1,2								
	COC	L		1	% v/v	PO1,2								
11	dimethenamid	6 EC		1.5	lb ai/A	PRE	1.7	10.0	10.0	3.3	10.0	5.3	10.0	10.0
	metolachlor	8 EC		2	lb ai/A	PO1,2								
12	s-dimethenamid	6 EC		0.825	lb ai/A	PRE	1.0	10.0	10.0	4.3	10.0	3.7	10.0	10.0
	metolachlor	8 EC		2	lb ai/A	PO1,2								
13	pendimethalin	3.3 EC		2	lb ai/A	PRE	3.0	10.0	10.0	3.0	10.0	6.3	10.0	10.0
	ethofumesate	4 L		1	lb ai/A	PRE								
	pendimethalin	3.3 EC		2	lb ai/A	PO1,2								
	ethofumesate	4 L		0.5	lb ai/A	PO1,2								
	metolachlor	8 EC		2	lb ai/A	PO1,2								
14	pendimethalin	3.3 EC		2	lb ai/A	PRE	1.0	10.0	10.0	2.0	10.0	6.7	10.0	10.0
	pendimethalin	3.3 EC		2	lb ai/A	PO1								
	metolachlor	8 EC		2	lb ai/A	PO1								
	dimethenamid	6 EC		1.5	lb ai/A	PO2								
15	Handweeded						1.0	1.0	1.0	1.3	1.0	1.0	1.0	1.0
LSD (P=.05)							0.78	0.0	0.25	2.36	2.89	3.91	2.60	0.77
Standard Deviation							0.47	0.0	0.15	1.41	1.73	2.34	1.56	0.46
CV							36.95	0.0	1.59	51.68	20.05	47.46	18.37	4.95

Preemergence Weed Control in Onion - Muck Farm

Project Code:WC 112-98-01 **Location :Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate Rate	Unit	Grow Stg	RRPW RATING 5-28-98	ONION RATING 6-9-98	YENS RATING 6-9-98	COPU RATING 6-9-98	LATH RATING 6-9-98	MAYC RATING 6-9-98	NLLQ RATING 6-9-98	PRPW RATING 6-9-98	RRPW RATING 6-9-98
1	pendimethalin	3.3	EC	2	lb ai/A	PRE	9.0	1.0	1.7	9.3	9.7	5.7	9.0	9.7	9.3
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2									
2	pendimethalin	3.3	EC	2	lb ai/A	PRE	10.0	1.7	5.0	10.0	10.0	5.0	10.0	10.0	9.7
	metolachlor	8	EC	2	lb ai/A	PRE									
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2									
	metolachlor	8	EC	2	lb ai/A	PO1,2									
3	metolachlor	8	EC	2	lb ai/A	PRE	8.7	1.0	5.7	8.3	8.0	5.3	6.3	9.7	9.3
	metolachlor	8	EC	2	lb ai/A	PO1,2									
4	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	10.0	6.0	8.0	8.3	9.3	8.3	10.0	10.0	10.0
	s-metolachlor	7.6	EC	1.3	lb ai/A	PO1,2									
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	9.7	6.7	7.7	9.0	8.7	8.7	10.0	10.0	10.0
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1,2									
6	s-metolachlor	7.6	EC	1.9	lb ai/A	PRE	10.0	6.3	7.0	9.3	9.7	8.7	10.0	10.0	10.0
	s-metolachlor	7.6	EC	1.9	lb ai/A	PO1,2									
7	dimethenamid	6	EC	1.17	lb ai/A	PRE	10.0	1.0	5.0	9.0	9.0	3.7	6.0	10.0	9.7
	dimethenamid	6	EC	1.17	lb ai/A	PO1,2									
8	s-dimethenamid	6	EC	0.64	lb ai/A	PRE	10.0	1.0	4.0	8.7	8.7	2.3	7.3	10.0	10.0
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2									
9	s-dimethenamid	6	EC	0.64	lb ai/A	PRE	10.0	1.3	7.7	10.0	10.0	8.7	9.7	10.0	10.0
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2									
	oxyfluorfen	2	EC	0.063	lb ai/A	PO1,2									
	sethoxydim	1.53	EC	0.25	lb ai/A	PO1,2									
	COC		L	1	% v/v	PO1,2									
10	pendimethalin	3.3	EC	2	lb ai/A	PRE	10.0	1.3	7.0	10.0	10.0	9.0	10.0	10.0	10.0
	s-dimethenamid	6	EC	0.64	lb ai/A	PRE									
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2									
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2									
	oxyfluorfen	2	EC	0.063	lb ai/A	PO1,2									
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1,2									
	COC		L	1	% v/v	PO1,2									
11	dimethenamid	6	EC	1.5	lb ai/A	PRE	10.0	1.3	3.9	10.0	8.7	4.7	7.3	10.0	10.0
	metolachlor	8	EC	2	lb ai/A	PO1,2									
12	s-dimethenamid	6	EC	0.825	lb ai/A	PRE	10.0	1.0	5.7	10.0	9.0	3.7	8.7	10.0	10.0
	metolachlor	8	EC	2	lb ai/A	PO1,2									
13	pendimethalin	3.3	EC	2	lb ai/A	PRE	9.7	1.7	6.3	10.0	10.0	6.0	10.0	10.0	10.0
	ethofumesate	4	L	1	lb ai/A	PRE									
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2									
	ethofumesate	4	L	0.5	lb ai/A	PO1,2									
	metolachlor	8	EC	2	lb ai/A	PO1,2									
14	pendimethalin	3.3	EC	2	lb ai/A	PRE	10.0	1.3	3.3	9.3	10.0	6.3	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/A	PO1									
	metolachlor	8	EC	2	lb ai/A	PO1									
	dimethenamid	6	EC	1.5	lb ai/A	PO2									
15	Handweeded						1.0	1.7	8.3	2.7	7.0	4.3	5.7	3.7	7.7
LSD (P=.05)							0.84	0.94	2.08	1.31	1.41	3.43	1.11	1.28	0.71
Standard Deviation							0.50	0.56	1.24	0.78	0.84	2.05	0.66	0.77	0.42
CV							5.46	24.43	21.6	8.74	9.2	34.08	7.64	8.03	4.36

Preemergence Weed Control in Onion - Muck Farm

Project Code:WC 112-98-01 **Location :Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	ONION YENS RATING 7-3-98	ONION YENS RATING 7-3-98	ONION YIELD KG/PLOT 9-1-98
1	pendimethalin	3.3	EC	2	lb ai/A	PRE	3.7	1.0	12.7
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2			
2	pendimethalin	3.3	EC	2	lb ai/A	PRE	2.3	5.3	25.9
	metolachlor	8	EC	2	lb ai/A	PRE			
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2			
	metolachlor	8	EC	2	lb ai/A	PO1,2			
3	metolachlor	8	EC	2	lb ai/A	PRE	1.7	5.3	29.1
	metolachlor	8	EC	2	lb ai/A	PO1,2			
4	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	4.3	6.7	22.1
	s-metolachlor	7.6	EC	1.3	lb ai/A	PO1,2			
5	s-metolachlor	7.6	EC	1.6	lb ai/A	PRE	5.0	6.7	21.2
	s-metolachlor	7.6	EC	1.6	lb ai/A	PO1,2			
6	s-metolachlor	7.6	EC	1.9	lb ai/A	PRE	5.7	6.7	18.5
	s-metolachlor	7.6	EC	1.9	lb ai/A	PO1,2			
7	dimethenamid	6	EC	1.17	lb ai/A	PRE	2.0	5.0	23.3
	dimethenamid	6	EC	1.17	lb ai/A	PO1,2			
8	s-dimethenamid	6	EC	0.64	lb ai/A	PRE	1.3	3.7	23.4
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2			
9	s-dimethenamid	6	EC	0.64	lb ai/A	PRE	1.7	7.7	38.2
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2			
	oxyfluorfen	2	EC	0.063	lb ai/A	PO1,2			
	sethoxydim	1.53	EC	0.25	lb ai/A	PO1,2			
	COC	L		1	% v/v	PO1,2			
10	pendimethalin	3.3	EC	2	lb ai/A	PRE	2.0	7.7	37.3
	s-dimethenamid	6	EC	0.64	lb ai/A	PRE			
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2			
	s-dimethenamid	6	EC	0.64	lb ai/A	PO1,2			
	oxyfluorfen	2	EC	0.063	lb ai/A	PO1,2			
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1,2			
	COC	L		1	% v/v	PO1,2			
11	dimethenamid	6	EC	1.5	lb ai/A	PRE	2.3	4.0	25.6
	metolachlor	8	EC	2	lb ai/A	PO1,2			
12	s-dimethenamid	6	EC	0.825	lb ai/A	PRE	1.3	5.0	31.5
	metolachlor	8	EC	2	lb ai/A	PO1,2			
13	pendimethalin	3.3	EC	2	lb ai/A	PRE	1.7	7.0	30.5
	ethofumesate	4	L	1	lb ai/A	PRE			
	pendimethalin	3.3	EC	2	lb ai/A	PO1,2			
	ethofumesate	4	L	0.5	lb ai/A	PO1,2			
	metolachlor	8	EC	2	lb ai/A	PO1,2			
14	pendimethalin	3.3	EC	2	lb ai/A	PRE	1.3	3.7	26.0
	pendimethalin	3.3	EC	2	lb ai/A	PO1			
	metolachlor	8	EC	2	lb ai/A	PO1			
	dimethenamid	6	EC	1.5	lb ai/A	PO2			
15	Handweeded						1.3	6.3	30.9
LSD (P=.05)							1.57	1.31	8.47
Standard Deviation							0.94	0.79	5.06
CV							37.44	14.43	19.18

Postemergence Weed Control in Onion - Muck Farm

Project Code:WC 12-98-02 **Location :Laingsburg, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion **Variety: Hustler** **Field or Block: C-16**
Planting Method: Seed **Planting Date: 4-24-98** **Harvest: 9-18-98**
Spacing: 16 seeds / ft **Row Spacing: 16 inch/ 3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 16.7 ft long

Soil Type: Houghton Muck **OM: 80%** **pH: 6.3**
Sand: N/A **Silt: N/A** **Clay: N/A** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PO1	5-29	1 pm	85 F/ 67 F	dry	SW 5-7	70F/85F	48%	50% cloud	N
PO2	6-4	11 am	63 F/ 58F	dry	SW 3-5	54F/63F	58%	10% cloud	N
PO3	6-18	10:30am	71 F/ 69 F	dry	SW 1-3	69F/71F	90%	20% cloud	N
PO4	6-23	9 am	76 F/ 74 F	damp	N 3-4	72F/76F	84%	10% cloud	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-29-98	Onion	4-5"	2	good
_____	LACG	1-2"	3-4	moderate
_____	YENS	1-4"	many	moderate
_____	COCW	1-2"	8-10	moderate
_____	COPU	.5-1"	6-8	moderate
_____	LATH	1-3"	4-6	many
_____	MAYC	.5-3"	2-6	many
_____	RRPW	.5-4"	2-10	many
6-4-98	Onion	4-6"	2-3	good
_____	YENS	2-4"	many	moderate
_____	COPU	1-2"	10-12	moderate
_____	LATH	2-4"	6-8	many
_____	MAYC	1-3"	4-6	many
_____	RRPW	4-6"	4-10	many
6-18-98	Onion	12-14″	4-5	good
	YENS	4-5″	many	many
	MAYC	4-5″	many	many
	RRPW	12-14″	many	many

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. IGNORE ITEM 1. TREATMENTS APPLIED WITH 8001 NOZZLES, 10 GPA.
4. 7-6-98: All plots handweeded.

Postemergence Weed Control in Onion - Muck Farm

Project Code:WC 12-98-02 **Location :Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Ds	Fm Rate	Rate Unit	Grow Stg	ONION 6-9-98	YENS 6-9-98	LACG 6-9-98	COCW 6-9-98	COLQ 6-9-98	COPU 6-9-98	LATH 6-9-98	MAYC 6-9-98	RRPW 6-9-98
							RATING	RATING	RATING	RATING	RATING	RATING	RATING	RATING	RATING
1	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.7	3.3	10.0	2.0	10.0	10.0	9.3	7.0	5.3
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	NIS		L	.5	% v/v	PO1,3									
2	oxyfluorfen	2	L	.125	lb ai/A	PO1,3	3.0	3.3	10.0	2.3	10.0	10.0	10.0	8.0	8.7
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	NIS		L	.5	% v/v	PO1,3									
3	oxyfluorfen	2	L	.031	lb ai/A	PO1,3	2.7	2.3	10.0	6.3	10.0	9.3	10.0	9.3	7.7
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	bromoxynil	2	EC	.125	lb ai/A	PO1,3									
4	clethodim	2	EC	.125	lb ai/A	PO1,3	1.7	3.7	10.0	3.3	10.0	10.0	9.7	7.3	6.3
	COC		L	1	% v/v	PO1,3									
	oxyfluorfen	2	L	.063	lb ai/A	PO2,4									
5	clethodim	2	EC	.188	lb ai/A	PO1,3	2.0	5.7	10.0	3.0	10.0	10.0	9.0	5.7	7.7
	COC		L	1	% v/v	PO1,3									
	oxyfluorfen	2	L	.063	lb ai/A	PO2,4									
6	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	2.7	5.3	10.0	1.0	10.0	10.0	9.3	7.3	8.0
	clethodim	2	EC	.125	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
7	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	2.3	3.7	10.0	1.7	10.0	10.0	9.0	7.7	8.3
	sethoxydim	1.53	EC	.28	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
8	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	3.0	7.0	10.0	1.7	10.0	10.0	9.0	8.3	8.0
	fluazifop-p	2	EC	.156	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
9	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3	1.0	2.0	10.0	1.0	7.0	2.3	2.3	2.0	3.3
	pyridate	3.75	EC	.45	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
10	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3	1.3	3.7	10.0	2.0	10.0	7.7	5.3	3.7	5.3
	pyridate	3.75	EC	.9	lb ai/A	PO1,3									
11	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	2.7	6.7	10.0	7.7	10.0	10.0	9.7	8.3	9.0
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	ethofumesate	4	L	.5	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
12	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	2.0	6.3	10.0	7.7	10.0	10.0	9.3	8.0	9.0
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	ethofumesate	4	L	1	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
13	carfentrazone	40	DF	.008	lb ai/A	PO1,3	1.0	2.0	2.3	1.0	7.0	4.0	4.0	2.0	2.0
14	carfentrazone	40	DF	.008	lb ai/A	PO1,3	1.3	3.7	7.0	3.0	10.0	5.7	4.0	2.7	5.0
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3									
	COC		L	1	% v/v	PO1,3									
15	flimioxazin	50	DF	.078	lb ai/A	PO1,3	1.3	4.0	6.7	4.0	8.7	8.7	9.0	6.7	6.3
16	Weeded Control						1.0	3.7	1.7	1.3	4.0	1.0	1.0	1.0	1.3
LSD (P=.05)							0.96	3.82	2.71	2.36	3.80	2.84	2.81	2.09	2.19
Standard Deviation							0.58	2.29	1.63	1.42	2.28	1.70	1.68	1.26	1.31
CV							30.06	55.26	18.91	46.26	24.84	21.2	22.47	21.15	20.76

Postemergence Weed Control in Onion - Muck Farm

Project Code:WC 12-98-02 **Location :Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	ONION ONION 7-3-98	ONION YENS 7-3-98	LACG 7-3-98	MAYC 7-3-98	RRPW 7-3-98	LATH 7-3-98	YIELD RATING KG/PLOT 9-18-98
1	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.7	2.0	10.0	5.7	6.3	9.3	19.9
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	NIS		L	.5	% v/v	PO1,3							
2	oxyfluorfen	2	L	.125	lb ai/A	PO1,3	1.7	1.7	10.0	6.7	7.7	9.0	22.8
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	NIS		L	.5	% v/v	PO1,3							
3	oxyfluorfen	2	L	.031	lb ai/A	PO1,3	2.3	2.0	10.0	9.3	8.3	10.0	22.6
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	bromoxynil	2	EC	.125	lb ai/A	PO1,3							
4	clethodim	2	EC	.125	lb ai/A	PO1,3	1.7	2.7	10.0	5.3	5.7	9.3	18.8
	COC		L	1	% v/v	PO1,3							
	oxyfluorfen	2	L	.063	lb ai/A	PO2,4							
5	clethodim	2	EC	.188	lb ai/A	PO1,3	2.0	3.3	10.0	6.0	6.3	10.0	29.6
	COC		L	1	% v/v	PO1,3							
	oxyfluorfen	2	L	.063	lb ai/A	PO2,4							
6	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.3	3.7	10.0	7.3	6.7	9.0	26.7
	clethodim	2	EC	.125	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
7	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.3	3.3	10.0	6.7	7.0	9.7	28.8
	sethoxydim	1.53	EC	.28	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
8	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.7	6.3	10.0	4.0	6.0	10.0	32.7
	fluazifop-p	2	EC	.156	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
9	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3	3.0	3.3	10.0	3.3	6.0	3.0	15.8
	pyridate	3.75	EC	.45	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
10	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3	2.0	7.7	7.7	1.3	3.3	1.7	31.3
	pyridate	3.75	EC	.9	lb ai/A	PO1,3							
11	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.3	6.7	10.0	7.3	8.0	9.7	38.0
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	ethofumesate	4	L	.5	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
12	oxyfluorfen	2	L	.063	lb ai/A	PO1,3	1.0	7.0	10.0	6.7	9.3	9.7	34.8
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	ethofumesate	4	L	1	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
13	carfentrazone	40	DF	.008	lb ai/A	PO1,3	3.0	2.7	7.0	6.3	7.3	4.3	15.8
14	carfentrazone	40	DF	.008	lb ai/A	PO1,3	4.7	4.3	10.0	6.7	7.3	3.7	9.4
	sethoxydim	1.53	EC	.19	lb ai/A	PO1,3							
	COC		L	1	% v/v	PO1,3							
15	flimioxazin	50	DF	.078	lb ai/A	PO1,3	1.3	5.0	8.0	8.3	7.7	9.3	31.9
16	Weeded Control						2.0	9.3	8.3	9.3	8.7	8.3	34.9
LSD (P=.05)							1.13	2.59	2.95	2.47	2.24	2.92	10.05
Standard Deviation							0.68	1.55	1.77	1.48	1.34	1.75	6.03
CV							33.9	35.0	18.74	23.62	19.26	22.21	23.31

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 Location :East Lansing, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Pepper, Tomato Variety: see Notes Field or Block: 87
Planting Method: Transplant Planting Date: 6-2-98 Harvest: see Notes
Spacing: 2 ft in row Row Spacing: 3 ft Perennial Age: N/A
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 7 ft wide * 30 ft long

Soil Type: Marlette Fine Sandy Loam OM: 2.0% pH: 6.7
Sand: 67% Silt: 16% Clay: 17% CEC: 8

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	6-1	3:45pm	74 F/ 71 F	moist	SW 4-6	59F/74F	42%	5%	N
POT	6-2	11 am	74 F/ 68 F	moist	SW 4-6	65F/74F	61%	100%	N
PO1	6-25	9:30am	83 F/ 75 F	damp	SW 5-7	78F/83F	80%	60% cloud	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-25-98	Pepper	6-7″	4-6	good
	Tomato	8-10″	4-7	good
	YEFT	3-4″	4-5	moderate
	COLQ	1-4″	2-6	moderate
	COPU	1-4″	many	moderate
	RRPW	1-4″	2-6	moderate

Notes and Comments

1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Varieties: Pepper - Boynton Bell; Tomato - Mt. Fresh, 1 row of each / plot.**
4. **7-6-98: Handweeded all plots.**
5. **Harvest dates: Pepper on 8-20, 9-2, 9-15, 9-15-98. Tomato on 9-2, 9-9, 6-16, 9-23, 9-29, 10-6-98.**

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg	PEPPER RATING 6-25-98	TOMATO RATING 6-25-98	YEFT RATING 6-25-98	COLQ RATING 6-25-98	COPU RATING 6-25-98	RRPW RATING 6-25-98	TOMATO PLANT # 6-25-98	PEPPER PLANT # 6-25-98
1	trifluralin	4 EC	1	lb ai/A	PPI	2.0	1.3	8.0	8.0	7.7	8.7	15.3	15.3
2	trifluralin	4 EC	1	lb ai/A	PPI	2.3	1.7	8.0	8.3	8.7	8.7	15.3	10.3
	metribuzin	75 DF	0.5	lb ai/A	PPI								
3	metolachlor	8 EC	2	lb ai/A	POT	2.3	1.7	10.0	8.0	9.7	9.3	15.7	13.3
4	s-metolachlor	7.6 EC	1.6	lb ai/A	POT	6.7	2.7	2.3	2.0	2.3	3.7	14.0	6.0
5	s-metolachlor	7.6 EC	1.9	lb ai/A	POT	6.0	3.3	2.3	1.7	2.3	5.0	14.3	6.7
6	dimethenamid	6 EC	1.5	lb ai/A	POT	2.0	1.7	10.0	9.0	10.0	10.0	15.3	15.3
7	s-dimethenamid	6 EC	.98	lb ai/A	POT	2.0	3.3	10.0	9.3	10.0	10.0	14.0	15.0
8	flimioxazin	50 WP	.063	lb ai/A	POT	5.0	5.7	9.0	10.0	10.0	10.0	8.3	12.3
9	flimioxazin	50 WP	.094	lb ai/A	POT	7.7	8.7	9.3	10.0	10.0	10.0	3.3	7.0
10	rimsulfuron	25 DF	.031	lb ai/A	POT	4.0	2.7	8.3	9.0	10.0	10.0	15.0	15.7
	rimsulfuron	25 DF	.023	lb ai/A	PO1								
	metribuzin	75 DF	.188	lb ai/A	PO1								
	NIS	L	.25	% v/v	PO1								
11	rimsulfuron	25 DF	.031	lb ai/A	POT	3.3	1.7	8.3	9.3	10.0	10.0	15.0	14.0
	rimsulfuron	25 DF	.031	lb ai/A	PO1								
	NIS	L	.25	% v/v	PO1								
12	metolachlor	8 EC	2	lb ai/A	POT	2.3	1.3	9.3	7.7	9.3	10.0	16.0	14.7
	rimsulfuron	25 DF	.023	lb ai/A	PO1								
	pyridate	3.75 EC	.45	lb ai/A	PO1								
	NIS	L	.25	% v/v	PO1								
13	halosulfuron	75 WG	.047	lb ai/A	POT	3.0	2.0	7.7	9.7	10.0	10.0	16.0	14.7
14	trifluralin	4 EC	1	lb ai/A	PPI	1.7	1.7	7.0	8.0	8.3	8.0	15.3	15.7
	halosulfuron	75 WG	.032	lb ai/A	PO1								
	NIS	L	.25	% v/v	PO1								
15	trifluralin	4 EC	1	lb ai/A	PPI	1.0	1.3	8.0	8.0	8.0	8.3	17.0	15.3
	pyridate	3.75 EC	.9	lb ai/A	PO1								
	sethoxydim	1.53 EC	.19	lb ai/A	PO1								
	COC	L	1	% v/v	PO1								
16	trifluralin	4 EC	1	lb ai/A	PPI	1.3	1.3	7.7	7.0	9.0	8.7	17.0	17.3
	pyridate	45 WP	.9	lb ai/A	PO1								
	sethoxydim	1.53 EC	.19	lb ai/A	PO1								
	COC	L	1	% v/v	PO1								
LSD (P=.05)							1.78	1.68	2.42	1.87	1.80	2.71	3.70	3.53
Standard Deviation							1.07	1.01	1.45	1.12	1.08	1.63	2.22	2.12
CV							32.48	38.41	18.51	14.38	12.79	18.56	15.63	16.26

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	PEPPER RATING 7-3-98	TOMATO RATING 7-3-98	GRFT RATING 7-3-98	YEFT RATING 7-3-98	COLQ RATING 7-3-98	COPU RATING 7-3-98	EBNS RATING 7-3-98	RRPW RATING 7-3-98
1	trifluralin	4	EC	1	lb ai/A	PPI	1.7	1.0	6.3	4.7	4.7	4.0	5.3	6.7
2	trifluralin	4	EC	1	lb ai/A	PPI	3.0	1.7	6.7	4.7	6.0	4.0	7.7	4.7
	metribuzin	75	DF	0.5	lb ai/A	PPI								
3	metolachlor	8	EC	2	lb ai/A	POT	2.3	1.7	10.0	10.0	3.3	9.3	10.0	9.0
4	s-metolachlor	7.6	EC	1.6	lb ai/A	POT	6.0	1.7	4.0	1.0	2.7	1.0	10.0	3.7
5	s-metolachlor	7.6	EC	1.9	lb ai/A	POT	5.7	3.0	2.3	2.3	3.7	1.7	7.0	7.3
6	dimethenamid	6	EC	1.5	lb ai/A	POT	1.7	1.3	10.0	10.0	6.7	10.0	10.0	10.0
7	s-dimethenamid	6	EC	.98	lb ai/A	POT	2.3	3.3	10.0	9.7	8.0	10.0	10.0	9.0
8	flimioxazin	50	WP	.063	lb ai/A	POT	5.0	5.7	9.7	8.7	10.0	10.0	10.0	10.0
9	flimioxazin	50	WP	.094	lb ai/A	POT	8.0	8.3	10.0	9.0	10.0	10.0	10.0	10.0
10	rimsulfuron	25	DF	.031	lb ai/A	POT	6.3	2.3	10.0	10.0	10.0	10.0	5.7	10.0
	rimsulfuron	25	DF	.023	lb ai/A	PO1								
	metribuzin	75	DF	.188	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
11	rimsulfuron	25	DF	.031	lb ai/A	POT	5.3	1.7	10.0	10.0	10.0	10.0	3.3	10.0
	rimsulfuron	25	DF	.031	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
12	metolachlor	8	EC	2	lb ai/A	POT	4.3	1.3	10.0	10.0	10.0	10.0	10.0	10.0
	rimsulfuron	25	DF	.023	lb ai/A	PO1								
	pyridate	3.75	EC	.45	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
13	halosulfuron	75	WG	.047	lb ai/A	POT	4.0	1.3	5.7	3.0	10.0	10.0	2.3	10.0
14	trifluralin	4	EC	1	lb ai/A	PPI	2.7	1.3	6.3	5.7	6.0	7.0	2.3	10.0
	halosulfuron	75	WG	.032	lb ai/A	PO1								
	NIS		L	.25	% v/v	PO1								
15	trifluralin	4	EC	1	lb ai/A	PPI	1.3	1.0	10.0	10.0	5.7	6.3	8.3	6.3
	pyridate	3.75	EC	.9	lb ai/A	PO1								
	sethoxydim	1.53	EC	.19	lb ai/A	PO1								
	COC		L	1	% v/v	PO1								
16	trifluralin	4	EC	1	lb ai/A	PPI	1.7	1.3	10.0	9.7	6.0	6.0	8.7	9.0
	pyridate	45	WP	.9	lb ai/A	PO1								
	sethoxydim	1.53	EC	.19	lb ai/A	PO1								
	COC		L	1	% v/v	PO1								
LSD (P=.05)							2.09	1.47	3.71	2.69	3.55	2.95	3.61	3.06
Standard Deviation							1.25	0.88	2.23	1.62	2.13	1.77	2.17	1.84
CV							32.67	37.0	27.19	21.85	30.26	23.73	28.73	21.67

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	PEPPER YIELD 8-20-98 No./PLOT	PEPPER YIELD 8-20-98 KG/PLOT	PEPPER YIELD 9-2-98 No./PLOT	PEPPER YIELD 9-2-98 KG/PLOT	PEPPER YIELD 9-15-98 No./PLOT	PEPPER YIELD 9-15-98 KG/PLOT
1	trifluralin	4 EC	1	lb ai/A	PPI		24.0	3.5	38.3	6.7	26.0	4.1
2	trifluralin	4 EC	1	lb ai/A	PPI		13.7	2.2	32.0	5.5	23.7	3.9
	metribuzin	75 DF	0.5	lb ai/A	PPI							
3	metolachlor	8 EC	2	lb ai/A	POT		17.0	2.4	49.0	7.9	21.3	3.3
4	metolachlor	7.6 EC	1.6	lb ai/A	POT		3.0	0.5	10.0	1.3	9.3	1.4
5	metolachlor	7.6 EC	1.9	lb ai/A	POT		5.7	0.8	20.3	3.4	5.3	0.9
6	dimethenamid	6 EC	1.5	lb ai/A	POT		28.7	4.8	49.3	8.5	16.7	2.7
7	s-dimethenamid	6 EC	.98	lb ai/A	POT		39.7	6.4	48.0	8.2	29.0	4.7
8	flimioxazin	50 WP	.063	lb ai/A	POT		19.3	3.0	30.3	5.6	14.0	2.4
9	flimioxazin	50 WP	.094	lb ai/A	POT		9.3	1.5	20.7	3.8	9.7	1.6
10	rimsulfuron	25 DF	.031	lb ai/A	POT		4.3	0.4	10.7	1.7	10.7	1.8
	rimsulfuron	25 DF	.023	lb ai/A	PO1							
	metribuzin	75 DF	.188	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
11	rimsulfuron	25 DF	.031	lb ai/A	POT		7.3	0.8	18.7	3.0	10.0	1.6
	rimsulfuron	25 DF	.031	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
12	metolachlor	8 EC	2	lb ai/A	POT		7.7	0.9	15.7	2.5	13.7	2.1
	rimsulfuron	25 DF	.023	lb ai/A	PO1							
	pyridate	3.75 EC	.45	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
13	halosulfuron	75 WG	.047	lb ai/A	POT		15.7	2.5	23.3	3.8	8.7	1.3
14	trifluralin	4 EC	1	lb ai/A	PPI		24.7	3.8	27.7	4.8	22.3	3.7
	halosulfuron	75 WG	.032	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
15	trifluralin	4 EC	1	lb ai/A	PPI		28.3	4.5	44.7	7.7	41.7	6.9
	pyridate	3.75 EC	.9	lb ai/A	PO1							
	sethoxydim	1.53 EC	.19	lb ai/A	PO1							
	COC	L	1	% v/v	PO1							
16	trifluralin	4 EC	1	lb ai/A	PPI		43.0	6.7	54.0	9.1	35.7	5.8
	pyridate	45 WP	.9	lb ai/A	PO1							
	sethoxydim	1.53 EC	.19	lb ai/A	PO1							
	COC	L	1	% v/v	PO1							
LSD (P=.05)							13.97	2.05	15.68	2.77	12.82	2.06
Standard Deviation							8.38	1.23	9.40	1.66	7.69	1.24
CV							46.01	44.09	30.54	31.84	41.33	41.06

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	PEPPER YIELD 9-23-98 No./PLOT	PEPPER YIELD 9-23-98 KG/PLOT	PEPPER TOT. YLD No./PLOT	PEPPER TOT. YLD KG/PLOT
1	trifluralin	4	EC	1	lb ai/A	PPI	17.7	2.5	106.00	16.82
2	trifluralin	4	EC	1	lb ai/A	PPI	8.7	1.4	78.00	12.95
	metribuzin	75	DF	0.5	lb ai/A	PPI				
3	metolachlor	8	EC	2	lb ai/A	POT	21.3	3.2	108.67	16.69
4	s-metolachlor	7.6	EC	1.6	lb ai/A	POT	10.0	1.3	32.33	4.47
5	s-metolachlor	7.6	EC	1.9	lb ai/A	POT	4.7	0.7	36.00	5.75
6	dimethenamid	6	EC	1.5	lb ai/A	POT	28.7	4.1	123.33	20.08
7	s-dimethenamid	6	EC	.98	lb ai/A	POT	20.0	2.9	136.67	22.14
8	flimioxazin	50	WP	.063	lb ai/A	POT	9.7	1.4	73.33	12.47
9	flimioxazin	50	WP	.094	lb ai/A	POT	12.7	1.9	52.33	8.84
10	rimsulfuron	25	DF	.031	lb ai/A	POT	4.7	0.7	30.33	4.52
	rimsulfuron	25	DF	.023	lb ai/A	PO1				
	metribuzin	75	DF	.188	lb ai/A	PO1				
	NIS		L	.25	% v/v	PO1				
11	rimsulfuron	25	DF	.031	lb ai/A	POT	6.0	0.8	42.00	6.22
	rimsulfuron	25	DF	.031	lb ai/A	PO1				
	NIS		L	.25	% v/v	PO1				
12	metolachlor	8	EC	2	lb ai/A	POT	15.3	1.8	52.33	7.40
	rimsulfuron	25	DF	.023	lb ai/A	PO1				
	pyridate	3.75	EC	.45	lb ai/A	PO1				
	NIS		L	.25	% v/v	PO1				
13	halosulfuron	75	WG	.047	lb ai/A	POT	6.7	0.9	54.33	8.55
14	trifluralin	4	EC	1	lb ai/A	PPI	22.0	3.1	96.67	15.41
	halosulfuron	75	WG	.032	lb ai/A	PO1				
	NIS		L	.25	% v/v	PO1				
15	trifluralin	4	EC	1	lb ai/A	PPI	24.7	3.4	139.33	22.53
	pyridate	3.75	EC	.9	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC		L	1	% v/v	PO1				
16	trifluralin	4	EC	1	lb ai/A	PPI	25.0	3.5	157.67	25.07
	pyridate	45	WP	.9	lb ai/A	PO1				
	sethoxydim	1.53	EC	.19	lb ai/A	PO1				
	COC		L	1	% v/v	PO1				
LSD (P=.05)							11.71	1.55	36.13	5.60
Standard Deviation							7.02	0.93	21.67	3.36
CV							47.29	44.4	26.28	25.64

Weed Control in Pepper and Tomato - HTRC

Project Code:WC 101-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Unit	Grow Stg	TOMATO YIELD 9-2-98 KG/PLOT	TOMATO YIELD 9-9-98 KG/PLOT	TOMATO YIELD 9-16-98 KG/PLOT	TOMATO YIELD 9-23-98 KG/PLOT	TOMATO YIELD 9-29-98 KG/PLOT	TOMATO YIELD 10-6-98 KG/PLOT	TOMATO TOT. YLD KG/PLOT
1	trifluralin	4 EC	1	lb ai/A	PPI	16.9	22.0	31.3	26.7	13.1	14.0	123.94
2	trifluralin	4 EC	1	lb ai/A	PPI	12.5	13.8	38.1	37.6	11.1	14.9	128.09
	metribuzin	75 DF	0.5	lb ai/A	PPI							
3	metolachlor	8 EC	2	lb ai/A	POT	13.5	21.2	32.7	31.2	15.5	15.2	129.34
4	s-metolachlor	7.6 EC	1.6	lb ai/A	POT	9.9	10.5	21.0	17.7	10.2	14.9	84.18
5	s-metolachlor	7.6 EC	1.9	lb ai/A	POT	6.5	12.9	26.4	29.7	12.3	14.3	102.14
6	dimethenamid	6 EC	1.5	lb ai/A	POT	18.7	19.5	45.2	26.1	12.9	11.2	133.57
7	s-dimethenamid	6 EC	.98	lb ai/A	POT	11.5	12.6	33.2	26.9	13.7	14.6	112.43
8	flimioxazin	50 WP	.063	lb ai/A	POT	3.8	7.9	12.3	16.3	7.9	9.5	57.64
9	flimioxazin	50 WP	.094	lb ai/A	POT	1.1	1.7	5.3	8.0	3.8	13.1	32.96
10	rimsulfuron	25 DF	.031	lb ai/A	POT	20.0	23.8	36.6	32.4	13.8	17.1	143.68
	rimsulfuron	25 DF	.023	lb ai/A	PO1							
	metribuzin	75 DF	.188	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
11	rimsulfuron	25 DF	.031	lb ai/A	POT	27.2	25.0	42.2	25.7	12.8	19.9	152.83
	rimsulfuron	25 DF	.031	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
12	metolachlor	8 EC	2	lb ai/A	POT	19.4	26.2	42.9	35.9	15.0	18.8	158.21
	rimsulfuron	25 DF	.023	lb ai/A	PO1							
	pyridate	3.75 EC	.45	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
13	halosulfuron	75 WG	.047	lb ai/A	POT	22.2	19.1	41.6	20.8	14.2	13.4	131.25
14	trifluralin	4 EC	1	lb ai/A	PPI	19.2	21.3	34.5	29.2	13.3	15.9	133.44
	halosulfuron	75 WG	.032	lb ai/A	PO1							
	NIS	L	.25	% v/v	PO1							
15	trifluralin	4 EC	1	lb ai/A	PPI	19.9	18.5	38.5	32.2	14.2	13.0	136.34
	pyridate	3.75 EC	.9	lb ai/A	PO1							
	sethoxydim	1.53 EC	.19	lb ai/A	PO1							
	COC	L	1	% v/v	PO1							
16	trifluralin	4 EC	1	lb ai/A	PPI	15.6	21.0	39.7	28.2	10.0	17.0	131.37
	pyridate	45 WP	.9	lb ai/A	PO1							
	sethoxydim	1.53 EC	.19	lb ai/A	PO1							
	COC	L	1	% v/v	PO1							
LSD (P=.05)							10.76	9.00	13.76	12.35	5.69	7.70	33.14
Standard Deviation							6.45	5.40	8.25	7.41	3.41	4.62	19.88
CV							43.4	31.15	25.32	27.92	28.17	31.22	16.82

Weed Control in Established Strawberry - HTRC

Project Code:WC 124-98-01 Location :East Lansing, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Strawberry Variety: Honeoye Field or Block: 24
Planting Method: Transplant Planting Date: 4-25-94 Harvest: see Notes
Spacing: Matted Row Row Spacing: 6 ft Perennial Age: 4 years
Tillage Type: Conventional Study Design: RCBD Replications: 3
Plot Size: 6 ft wide * 30 ft long

Soil Type: Spinks Loamy Sand OM: 2.1% pH: 6.5
Sand: 86% Silt: 6% Clay: 8% CEC: 6.7

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-13	1:30 pm	68 F/ 55 F	dry	SW 10-12	56F/68F	50%	100%	N
PO1	5-20	10:30am	82 F/ 70 F	dry	NW 3-5	66F/82F	44%	10% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-13-98	STBE	4-6"	some new	good
	QUGR	4-5"	many	spotty
	WICA	3-5"	6-10"	moderate
5-20-98	STBE	6-8"	many	in bloom
	QUGR	6-8"	3-5	moderate
	WHCA	10-12"	10-15	moderate

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 4-13-98: Guards sprayed with Goal 0.5 PRE.
4. Harvest dates: 6-1, 6-4, 6-8, 6-12, 6-15, 6-19, 6-22-98.

Weed Control in Established Strawberry - HTRC

Project Code:WC 124-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Rate	Rate Unit	Grow Stg	STBE RATING 4-24-98	STBE RATING 5-14-98	QUGR RATING 5-14-98	WHCA RATING 5-14-98	STBE RATING 6-8-98	QUGR RATING 6-8-98	MWCH RATING 6-8-98	WHCA RATING 6-8-98
1	terbacil	80	WP	0.3	lb ai/A	PRE	2.0	1.0	8.3	8.0	1.7	9.3	9.3	8.3
2	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	2.0	1.0	5.7	5.0	1.3	7.3	8.0	2.7
3	dimethenamid	6	EC	1.5	lb ai/A	PRE	2.0	2.3	4.0	4.7	2.0	6.0	10.0	5.3
4	acifluorfen	2	EC	0.5	lb ai/A	PRE	4.0	3.0	4.0	2.3	3.0	4.3	10.0	2.3
5	oxyfluorfen	2	EC	0.5	lb ai/A	PRE	8.0	3.0	5.3	6.7	2.7	6.0	10.0	7.0
6	sulfentrazone	75	DF	0.375	lb ai/A	PRE	3.7	2.0	6.7	9.0	1.7	7.3	10.0	8.3
7	azafenidin	80	DF	0.75	lb ai/A	PRE	7.0	4.0	10.0	7.0	5.0	10.0	10.0	6.7
8	clomazone	3	ME	0.5	lb ai/A	PRE	3.3	6.3	10.0	9.3	5.3	10.0	7.0	9.7
9	clopyralid	3	EC	0.188	lb ai/A	PO1	1.3	2.7	5.3	5.3	2.7	7.3	7.7	3.0
	sethoxydim	1.53	EC	.38	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
10	Untreated Control						1.7	1.7	5.7	3.7	2.0	8.0	9.3	3.3
LSD (P=.05)							1.76	1.54	6.13	4.73	1.86	5.70	3.98	4.88
Standard Deviation							1.02	0.90	3.58	2.75	1.08	3.32	2.32	2.84
CV							29.25	33.2	55.02	45.16	39.64	43.93	25.38	50.17

Trt No	Treatment Name	Form Amt	Form Ds	Rate	Rate Unit	Grow Stg	STBE YIELD KG/PLOT 6-1-98	STBE YIELD KG/PLOT 6-4-98	STBE YIELD KG/PLOT 6-8-98	STBE YIELD KG/PLOT 6-12-98	STBE YIELD KG/PLOT 6-15-98	STBE YIELD KG/PLOT 6-19-98	STBE YIELD KG/PLOT 6-22-98	STBE TOT. YLD KG/PLOT
1	terbacil	80	WP	0.3	lb ai/A	PRE	1.4	0.8	0.5	0.4	0.4	0.6	0.4	4.46
2	s-metolachlor	7.6	EC	1.3	lb ai/A	PRE	1.3	1.2	0.6	0.4	0.3	0.6	0.6	4.91
3	dimethenamid	6	EC	1.5	lb ai/A	PRE	1.3	0.8	0.5	0.4	0.3	0.6	0.4	4.31
4	acifluorfen	2	EC	0.5	lb ai/A	PRE	1.3	0.6	0.4	0.4	0.5	0.4	0.5	4.11
5	oxyfluorfen	2	EC	0.5	lb ai/A	PRE	1.1	0.7	0.4	0.3	0.3	0.4	0.3	3.40
6	sulfentrazone	75	DF	0.375	lb ai/A	PRE	2.0	1.2	0.6	0.6	0.5	0.6	0.6	5.99
7	azafenidin	80	DF	0.75	lb ai/A	PRE	0.8	0.6	0.4	0.3	0.5	0.3	0.3	3.19
8	clomazone	3	ME	0.5	lb ai/A	PRE	0.8	0.5	0.3	0.3	0.2	0.3	0.2	2.54
9	clopyralid	3	EC	0.188	lb ai/A	PO1	1.1	1.0	0.3	0.8	0.4	1.0	0.6	5.25
	sethoxydim	1.53	EC	.38	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
10	Untreated Control						1.5	1.1	0.5	0.7	0.2	0.4	0.5	4.99
LSD (P=.05)							0.78	0.71	0.39	0.45	0.38	0.53	0.40	2.79
Standard Deviation							0.45	0.41	0.23	0.26	0.22	0.31	0.23	1.63
CV							35.94	48.35	52.27	54.8	61.29	60.43	54.97	37.77

Weed Control in First Year Strawberry - HTRC

Project Code: WC 124-98-02 **Location :** East Lansing, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Strawberry **Variety:** Jewell **Field or Block:** 24
Planting Method: Transplant **Planting Date:** 4-21-98 **Harvest:** N/A
Spacing: 2 ft **Row Spacing:** 6 ft **Perennial Age:** N/A
Tillage Type: Conventional **Study Design:** RCBD **Replications:** 3
Plot Size: 6 ft wide * 20 ft long

Soil Type: Spinks Loamy Sand **OM:** 2.1% **pH:** 6.5
Sand: 86% **Silt:** 6% **Clay:** 8% **CEC:** 6.7

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
POT	4-22	10 am	61 F/ 49 F	dry	NE 1-3	48F/61F	34%	clear	N
PO1	6-9	10 am	64 F/ 60 F	dry	NE 4-6	58F/64F	70%	100%	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-9-98	Strawberry	5-6″	10-15	good
	QUGR	6-10″	many	few
	COLQ	3-5″	4-10	moderate
	MWCH	2-3″	4-6	moderate
	WIBW	1-3″	2-4	few
	RRPW	1-3″	4-6	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 4-22-98: south guard sprayed with Visor, and north guard with Dimension.

Weed Control in First Year Strawberry - HTRC

Project Code:WC 124-98-02 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	STBE COUNT 5-14-98	STBE RATING 5-14-98	STBE RATING 6-8-98	QUGR RATING 6-8-98	COLQ RATING 6-8-98	MWCH RATING 6-8-98	RRPW RATING 6-8-98	WIBW RATING 6-8-98
1	napropramide	50	DF	4	lb ai/A	POT	8.3	1.7	2.0	9.3	9.3	9.0	8.0	4.3
2	s-metolachlor	7.6	EC	1.3	lb ai/A	POT	9.3	1.7	1.7	9.7	8.3	10.0	9.0	4.3
3	sulfentrazone	75	DF	0.25	lb ai/A	POT	8.3	2.0	2.7	8.7	10.0	10.0	10.0	10.0
4	clomazone	3	ME	0.25	lb ai/A	POT	8.3	4.7	4.7	8.7	7.7	10.0	7.0	9.0
5	dimethenamid	6	EC	1.5	lb ai/A	POT	8.3	2.7	4.0	9.7	9.3	9.3	9.7	8.7
6	pendimethalin	3.3	EC	1.0	lb ai/A	POT	9.3	2.0	1.0	6.3	9.3	7.0	5.3	4.7
7	Untreated					POT	9.0	2.3	2.0	1.0	1.0	1.0	1.7	1.0
	clopyralid	3	EC	0.188	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
8	Untreated Control						9.0	1.7	1.3	2.7	1.0	4.0	1.0	1.0
LSD (P=.05)							1.34	1.30	2.46	2.71	1.06	4.27	2.75	4.66
Standard Deviation							0.77	0.74	1.40	1.54	0.60	2.44	1.57	2.66
CV							8.77	31.71	58.08	22.07	8.61	32.3	24.28	49.45

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	STBE COUNT 6-15-98	STBE RATING 6-15-98	YEFT RATING 6-15-98	COLQ RATING 6-15-98	MWCH RATING 6-15-98	RRPW RATING 6-15-98	VIPW RATING 6-15-98	WIBW RATING 6-15-98
1	napropramide	50	DF	4	lb ai/A	POT	8.3	2.0	9.7	8.0	8.7	9.3	9.3	4.0
2	s-metolachlor	7.6	EC	1.3	lb ai/A	POT	9.0	2.3	10.0	5.3	8.3	9.0	7.3	5.7
3	sulfentrazone	75	DF	0.25	lb ai/A	POT	8.3	3.0	10.0	10.0	9.3	10.0	9.3	10.0
4	clomazone	3	ME	0.25	lb ai/A	POT	6.7	4.3	10.0	8.0	8.7	5.0	5.3	7.3
5	dimethenamid	6	EC	1.5	lb ai/A	POT	8.3	3.7	9.7	7.3	8.0	9.0	8.3	7.7
6	pendimethalin	3.3	EC	1.0	lb ai/A	POT	9.3	1.3	9.0	9.0	6.7	5.0	9.0	4.0
7	Untreated					POT	9.0	2.7	10.0	2.3	8.0	2.3	1.0	8.0
	clopyralid	3	EC	0.188	lb ai/A	PO1								
	sethoxydim	1.53	EC	0.19	lb ai/A	PO1								
	COC	L		1	% v/v	PO1								
8	Untreated Control						8.7	1.3	1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.85	2.17	1.22	2.97	3.32	3.18	3.66	5.90
Standard Deviation							1.06	1.24	0.69	1.70	1.89	1.82	2.09	3.37
CV							12.51	47.88	8.01	26.6	25.83	28.7	32.96	56.55

Preemergence Weed Control in Apple - HTRC

Project Code: WC 125-98-01 **Location :HTRC, E. Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Apple **Variety: Several** **Field or Block: 141-148**
Planting Method: N/A **Planting Date: 1987** **Harvest: N/A**
Spacing: 20 ft in row **Row Spacing: 25 ft** **Perennial Age: 11 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 2 trees/plot, spray 64" band on each side of row

Soil Type: Marlette Fine Sandy Loam OM: 1% pH: 6.8
Sand: 59% Silt: 22% Clay: 19% CEC: 9.6

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-23	9 am	64 F/ 49 F	dry	NW 2-4	48F/54F	64%	clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-23-98	Apple	10-12"	1-2"	good
	QUGR	3-6"	8-10"	moderate
	DAND	3-4"	many	many
	WHCA	3-4"	10-12"	moderate
	clover	2-3"	many	moderate

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Trees are 25 ft apart E-W, and 20 ft apart N-S.

Preemergence Weed Control in Apple - HTRC

Project Code: WC 125-98-01 **Location :HTRC, E. Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	APPLE RATING 5-14-98	QUGR RATING 5-14-98	ANBG RATING 5-14-98	LATH RATING 5-14-98	CLOVER RATING 5-14-98	DAND RATING 5-14-98	WHCA RATING 5-14-98
1	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	9.7	10.0	6.7	9.0	8.7	9.3
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
2	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	9.0	10.0	10.0	10.0	8.7	9.7
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
3	azafenidin	80	DF	0.75	lb ai/A	PRE	1.0	9.3	10.0	10.0	9.7	8.3	8.7
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
4	azafenidin	80	DF	1.0	lb ai/A	PRE	1.0	9.0	10.0	9.0	9.3	8.3	9.0
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
5	azafenidin	80	DF	2.0	lb ai/A	PRE	1.0	9.0	10.0	9.0	9.3	7.7	8.7
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
6	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	9.7	10.0	7.7	9.0	7.3	9.7
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE							
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
7	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	9.0	9.7	9.3	10.0	8.3	8.7
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE							
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
8	simazine	90	WP	3.0	lb ai/A	PRE	1.0	7.3	8.7	4.0	7.7	6.7	6.3
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
9	diuron	80	DF	3.2	lb ai/A	PRE	1.0	5.7	9.0	7.3	9.3	5.0	6.7
	glyphosate	4	L	1	lb ai/A	PRE							
	NIS		L	0.25	% v/v	PRE							
10	glyphosate	4	L	1	lb ai/A	PRE	1.0	8.0	9.7	9.0	8.0	6.7	7.7
	NIS		L	0.25	% v/v	PRE							
LSD (P=.05)							0.00	1.48	0.79	3.62	1.47	1.99	1.65
Standard Deviation							0.00	0.86	0.46	2.11	0.86	1.16	0.96
CV							0.0	10.1	4.74	25.75	9.4	15.3	11.43

Preemergence Weed Control in Apple - HTRC

Project Code: WC 125-98-01 **Location :HTRC, E. Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	APPLE RATING 6-29-98	BYGR RATING 6-29-98	QUGR RATING 6-29-98	WIGR RATING 6-29-98	CATH RATING 6-29-98	CLOVER RATING 6-29-98	DAND RATING 6-29-98	MATA RATING 6-29-98
1	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	5.7	7.7	8.0	1.7	7.3	5.3	7.3
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
2	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	8.7	7.7	10.0	10.0	9.3	6.0	7.0
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
3	azafenidin	80	DF	0.75	lb ai/A	PRE	1.0	8.7	8.0	9.7	9.3	9.0	4.7	6.0
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
4	azafenidin	80	DF	1.0	lb ai/A	PRE	1.0	10.0	8.0	10.0	6.7	9.7	6.3	8.7
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
5	azafenidin	80	DF	2.0	lb ai/A	PRE	1.0	10.0	8.7	10.0	7.0	9.3	6.3	7.0
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
6	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	4.0	6.7	8.3	6.3	6.7	5.7	7.3
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE								
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
7	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	8.7	8.7	10.0	7.3	9.0	5.3	9.3
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE								
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
8	simazine	90	WP	3.0	lb ai/A	PRE	1.0	1.0	6.0	1.0	4.7	6.0	3.7	4.0
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
9	diuron	80	DF	3.2	lb ai/A	PRE	1.0	2.3	4.7	5.7	6.7	9.3	5.3	7.0
	glyphosate	4	L	1	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
10	glyphosate	4	L	1	lb ai/A	PRE	1.0	2.3	6.3	2.3	7.7	8.0	6.0	7.0
	NIS		L	0.25	% v/v	PRE								
LSD (P=.05)							0.0	3.17	2.93	2.55	5.86	3.34	3.32	2.76
Standard Deviation							0.0	1.85	1.71	1.49	3.42	1.95	1.93	1.61
CV							0.0	30.15	23.59	19.84	50.74	23.29	35.36	22.77

Preemergence Weed Control in Apple - HTRC

Project Code: WC 125-98-01 **Location :HTRC, E. Lansing, MI**

Trt No	Treatment Name	Form Amt	Form Ds	Fm Rate	Rate Unit	Grow Stg	APPLE RATING 7-15-98	BYGR RATING 7-15-98	QUGR RATING 7-15-98	WIGR RATING 7-15-98	MATA RATING 7-15-98	ROFB RATING 7-15-98
1	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	4.0	7.7	6.0	7.0	9.0
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
2	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	7.3	7.3	9.0	6.7	8.7
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
3	azafenidin	80	DF	0.75	lb ai/A	PRE	1.0	9.0	7.7	9.0	6.3	7.0
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
4	azafenidin	80	DF	1.0	lb ai/A	PRE	1.0	10.0	8.7	10.0	7.7	8.3
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
5	azafenidin	80	DF	2.0	lb ai/A	PRE	1.0	10.0	9.0	10.0	6.3	5.0
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
6	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	4.3	7.0	8.3	7.0	7.3
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE						
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
7	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	6.3	7.3	8.7	7.3	6.0
	2,4-D Amine	3.8	L	1.0	lb ai/A	PRE						
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
8	simazine	90	WP	3.0	lb ai/A	PRE	1.0	3.0	7.3	1.0	6.7	5.3
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
9	diuron	80	DF	3.2	lb ai/A	PRE	1.0	2.7	7.0	3.3	7.7	8.0
	glyphosate	4	L	1	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
10	glyphosate	4	L	1	lb ai/A	PRE	1.0	1.3	7.3	1.3	7.7	8.3
	NIS		L	0.25	% v/v	PRE						
LSD (P=.05)							0.0	4.08	1.42	3.22	2.46	3.79
Standard Deviation							0.0	2.38	0.83	1.88	1.43	2.21
CV							0.0	41.03	10.87	28.15	20.35	30.28

Preemergence Weed Control in Blueberry - HTRC

Project Code:WC 127-98-01 **Location :East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Blueberry **Variety: Jersey** **Field or Block: 114**
Planting Method: Transplant **Planting Date: 1991** **Harvest: N/A**
Spacing: 5 ft **Row Spacing: 10 ft** **Perennial Age: 7 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 4 trees or 20 ft

Soil Type: Capac Loam **OM: 3.5%** **pH: 4.5**
Sand: 65% **Silt: 23%** **Clay: 12%** **CEC: 13.2**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-22	2:30 pm	69 F/ 63 F	damp	NE 4-6	56F/69F	42%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-22-98	Blueberry	3-5′	-	good
	DAND	3-4"	many	moderate
	Sedge	6-8"	many	many

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 4-22: area under trees mostly weed free. Aisles full of weeds mostly dandelion and sedge.
4. South end of each row and 2 west rows were sprayed with 1 lb glyphosate + .25% NIS + 1 lb metolachlor.

Preemergence Weed Control in Blueberry - HTRC

Project Code:WC 127-98-01 **Location :East Lansing, MI**

Trt No	Treatment Name	Form Amt	Ds	Fm Rate	Rate Unit	Grow Stg	BLBE RATING 6-17-98	BYGR RATING 6-17-98	QUGR RATING 6-17-98	CLOVER RATING 6-17-98	MATA RATING 6-17-98	RESO RATING 6-17-98	COGR RATING 6-17-98	BLBE RATING 7-13-98
1	azafenidin	80	DF	0.25	lb ai/A	PRE	1.0	10.0	10.0	10.0	5.7	5.7	8.7	1.0
	glyphosate	4	L	1.0	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
2	azafenidin	80	DF	0.5	lb ai/A	PRE	1.0	10.0	10.0	10.0	7.0	10.0	10.0	1.0
	glyphosate	4	L	1.0	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
3	azafenidin	80	DF	.75	lb ai/A	PRE	1.0	10.0	10.0	10.0	9.0	10.0	10.0	1.0
	glyphosate	4	L	1.0	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
4	azafenidin	80	DF	1.5	lb ai/A	PRE	1.0	10.0	10.0	10.0	9.3	10.0	10.0	1.0
	glyphosate	4	L	1.0	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
5	simazine	90	WP	4.0	lb ai/A	PRE	1.0	9.3	9.3	10.0	5.3	5.0	6.7	1.0
	glyphosate	4	L	1.0	lb ai/A	PRE								
	NIS		L	0.25	% v/v	PRE								
6	glyphosate	4	L	1.0	lb ai/A	PRE	1.0	6.3	7.0	7.0	7.0	4.7	7.7	1.0
	NIS		L	0.25	% v/v	PRE								
LSD (P=.05)							0.0	3.62	4.04	3.86	6.16	6.08	3.94	0.0
Standard Deviation							0.0	1.99	2.22	2.12	3.38	3.34	2.17	0.0
CV							0.0	21.44	23.63	22.33	46.86	44.21	24.54	0.0

Trt No	Treatment Name	Form Amt	Ds	Fm Rate	Rate Unit	Grow Stg	QUGR RATING 7-13-98	MATA RATING 7-13-98	BLBE RATING 8-3-98	YEFT RATING 8-3-98	FAPA RATING 8-3-98	MATA RATING 8-3-98
1	azafenidin	80	DF	0.25	lb ai/A	PRE	9.7	4.0	1.0	10.0	9.0	4.0
	glyphosate	4	L	1.0	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
2	azafenidin	80	DF	0.5	lb ai/A	PRE	10.0	8.0	1.0	10.0	10.0	8.3
	glyphosate	4	L	1.0	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
3	azafenidin	80	DF	.75	lb ai/A	PRE	10.0	8.3	1.0	10.0	10.0	8.3
	glyphosate	4	L	1.0	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
4	azafenidin	80	DF	1.5	lb ai/A	PRE	10.0	9.0	1.0	10.0	10.0	9.0
	glyphosate	4	L	1.0	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
5	simazine	90	WP	4.0	lb ai/A	PRE	7.3	5.3	1.0	8.3	7.0	5.0
	glyphosate	4	L	1.0	lb ai/A	PRE						
	NIS		L	0.25	% v/v	PRE						
6	glyphosate	4	L	1.0	lb ai/A	PRE	5.3	5.3	1.0	6.0	4.0	5.0
	NIS		L	0.25	% v/v	PRE						
LSD (P=.05)							3.40	5.13	0.0	2.19	2.80	4.57
Standard Deviation							1.87	2.82	0.0	1.21	1.54	2.51
CV							21.41	42.34	0.0	13.32	18.46	38.03

Apple Herbicide Trials - McIntosh, Red Delicious - CHES - 1998

J. Hull

Location: CHES
Soil Type: Loam
Plot Size: 6' X 30'
Cultivar: McIntosh, Red Delicious
Age of Trees: 15 years
Experimental Design: RCB
Replications: 6
Vegetation: quackgrass, groundsel, dandelion, thistle, fescue.

Herbicide Application information:

Timing	Date	GPA	Air T
Pink Stage	4-28-98	36	58 F

TRT No	PESTICIDE COMMON NAME	FORMULATION	lbai/A	Overall Rating 8-31-98
1	azafenidin	80 DF	1.5	5.8
2	terbacil	80 WP	1	6.8
	diuron	80 DF	2	
3	azafenidin	80 DF	0.75	7.3
4	azafenidin	80 DF	1.0	7.7
5	azafenidin	80 DF	0.5	8.7
	diuron	80 DF	2	
6	azafenidin	80 DF	0.5	8.8
	simazine	90 DF	3	
7	simazine	90 DF	3	8.2
	oryzalin	4 AS	2	
8	terbacil	80 WP	1	7.8
	oryzalin	4 AS	2	
9	terbacil	80 WP	0.5	7.3
	simazine	90 DF	2	
	oryzalin	4 AS	2	
10	terbacil	80 WP	0.5	8.8
	simazine	90 DF	2	
	norflurazon	80 DF	2	
11	azafenidin	80 DF	0.5	7.3
	diuron	80 DF	1.5	
12	diuron	80 DF	2	8.0
	simazine	90 DF	3	
13	diuron	80 DF	2	6.8
	oryzalin	4 AS	2	
14	simazine	90 DF	2	8.5
	norflurazon	80 DF	2	
15	azafenidin	80 DF	0.75	8.2
	oryzalin	4 AS	2	
16	terbacil	80 WP	1.0	7.3
	napropramide	50 DF	2	
17	azafenidin	80 DF	0.75	8.8
	napropramide	50 DF	2	
18	oryzalin	4 AS	2	5.7
	isoxaben	75 DF	1	
19	glyphosate	4 L	1	4.8
20	sulfosate	5 L	1	3.2
21	oryzalin	4 AS	2	4.2
	sulfosate	5 L	1	
LSD (P=.05)				2.2
Standard Deviation				1.9
CV				26.4

Notes: Glyphosate (1 lb/a) were included with all treatments.

Apple Herbicide Trial - 1998
J. Hull

Location: CHES

Cultivar: Red Delicious **Age of Trees: 16 years**

Experimental Design: RCB **Replications: 3**

Plot Size: 6' X 30'

Herbicide Application information:

Timing	Date	GPA	Air T
Bloom	4-28-98	16	60 F

Vegetation: Thistle, burdock, quackgrass, groundsel, chickweed, dandelion.

PESTICIDE TRT No	COMMON NAME	FORMULATION	Lbai/A	Overall Rating 5-22-98	Overall Rating 6-9-98
1	sulfosate	6 AQ	0.5	7.0	5.3
2	sulfosate	6 AQ	1	7.7	6.7
3	glyphosate	4 L	1	8.3	7.0
4	control			1.0	1.0
LSD (P=.05)				0.8	1.2
Standard Deviation				0.4	0.6
CV				6.8	12.9

Note:
Latron or AG-98 (0.1% v/v) was included with treatments 1-3.

Apple Herbicide Trial - 1998
J. Hull

Location: CHES

Plot Size: 6' X 30'

Cultivar: Idaread, Jonathan **Age of Trees: 16 years**

Experimental Design: RCB **Replications: 3**

Herbicide Application information:

Timing	Date	GPA
Bloom	5-6-98	16

Vegetation: quackgrass, chickweed, groundsel, dandelion, burdock, bluegrass, lettuce.

TRT No	PESTICIDE COMMON NAME	FORMULATION		Lbai/A	Overall Rating 5-22-98	Overall Rating 6-9-98
1	control				1.0	1.0
2	sulfosate	6	AQ	0.5	4.7	5.3
	AG-98		L	.1%		
3	sulfosate	6	AQ	1	6.7	6.3
	AG-98		L	.1%		
4	sulfosate	6	AQ	1	6.3	6.7
5	sulfosate	6	AQ	1.5	7.3	7.7
	AG-98		L	.1%		
6	Roundup Ultra	4	L	1	7.3	8.3
7	Roundup Ultra	4	L	1.5	7.3	8.3
LSD (P=.05)					0.9	0.9
Standard Deviation					0.5	0.5
CV					9.2	8.6

Cherry Herbicide Study - Montmorency – Suttons Bay - 1998

J. Hull, J. Nugent

Location: Jim Bardenhagen
Route 1, PO Box 44
Suttons Bay, MI 49682

Soil Type: Sandy Loam
Plot Size: 6' X 30'

Cultivar: Montmorency

Age of Trees: 2 years

Experimental Design: RCB

Replications: 3 (2 trees/rep)

Herbicide Application information:

Timing	Date	GPA	Air T	Wind
Post Harvest	6-12-98	36	73 F	SW 6-8

TRT No	PESTICIDE COMMON NAME	FORMULATION	lbai/A	Overall Rating 7-21-98	Overall Rating 9-23-98
1	azafenidin	80 DF	0.5	7.7	6.7
2	azafenidin	80 DF	0.75	7.3	7.0
3	azafenidin	80 DF	1	6.7	5.7
4	azafenidin	80 DF	0.5	6.3	6.7
	diuron	80 DF	1.5		
5	azafenidin	80 DF	0.75	7.0	7.0
	diuron	80 DF	2.25		
6	azafenidin	80 DF	0.5	8.7	8.0
	simazine	90 DF	2.0		
7	azafenidin	80 DF	0.75	8.7	8.0
	simazine	90 DF	2.0		
8	azafenidin	80 DF	0.75	6.7	6.7
	norflurazon	80 DF	2.0		
9	azafenidin	80 DF	0.75	6.3	6.7
	oryzalin	4 AS	2		
10	simazine	90 DF	3	8.3	8.0
	oryzalin	4 AS	2		
11	diuron	80 DF	2	9.3	8.7
	simazine	90 DF	3		
12	simazine	90 DF	3	7.7	7.3
	norflurazon	80 DF	2.0		
13	isoxaben	75 DF	1	7.0	6.7
	oryzalin	4 AS	2		
14	azafenidin	80 DF	1.5	7.3	5.7
15	None			2.7	2.0
LSD (P=.05)				2.9	3.0
Standard Deviation				1.7	1.8
CV				24.5	27.2

Note:
Roundup Ultra (1 lb/a) was included with all treatments.

Sweet Cherry Herbicide Trial - 1998

J. Hull, A. Norman

Location: Andrew Norman
2065 Harris Rd
Beulah, MI 49617

Cultivar: Schmidt

Age of Trees: 18 years

Experimental Design: RCB

Replications: 3

Plot Size: 6' X 30'

Herbicide Application information:

Timing	Date	GPA	Air T	Wind
Bloom	5-11-98	36	73 F	N 2-4

Vegetation: Orchard grass, bramble, dandelion.

PESTICIDE TRT No	COMMON NAME	FORMULATION	Lbai/A	Overall Rating 7-21-98
1	azefenidin	80 DF	1	7.7
2	azefenidin	80 DF	0.5	7.7
	diuron	80 DF	1.5	
3	simazine	90 DF	4	7.0
4	simazine	90 DF	3	6.0
4	oryzalin	4 AS	2	
5	simazine	90 DF	3	7.0
5	norflurazon	80 DF	2	
LSD (P=.05)				1.8
Standard Deviation				0.9
CV				13.7

Notes:
1. Glyphosate (1.5 lb/a) was included with all treatments.
2. Weeds not controlled: white campion, wild carrot, wild grape, milkweed.