HORTICULTURAL REPORT

2000 WEED CONTROL RESEARCH ON HORTICULTURAL CROPS

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By

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WEED CONTROL IN HORTICULTURAL CROPS - 2000
FORWARD

This report summarizes the results of weed control experiments on horticultural crops in Michigan in 2000. 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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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 Agriculture Research Manager (ARM) version 6.1.4, 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.
CWBS	catchweed bedstraw	*Galium aparine* 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.
FISB	field sandbur	*Cenchrus incertus* M.A.Curtis
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.
HONE	horsenettle	*Solanum carolinense* L.
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.
ORGR	orchardgrass	*Dactylis glomerata* 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.

WEED LIST

Abbr.	Common Name	Botanical Name
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.
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.
RUTH	russian thistle	*Salsola iberica* 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.
VOAS	volunteer asparagus	*Asparagus officinalis* 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	Aventis
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	Aventis
bromoxynil	TADS 13169	20 WP	Aventis
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 Agrosciences
cyanazine	Bladex	90 DF, 4 L	DuPont
cycloate	Ro-Neet	6 EC	Zeneca
desmedipham	Betanex	1.3 L	Aventis
dicamba	Banvel	4 EC	BASF
diclobenil	Casoron/ Clarity	50 WP	Uniroyal
diflufenzopyr + dicamba	Distinct	70 WG	BASF
dimethenamid	Frontier	6 EC	BASF
s-dimethenamid	Outlook	6 EC	BASF
diquat	Diquat	2 EC	Zeneca
diuron	Karmex	80 DF	Griffin
endothall	Desicate	0.52 EC	Atochem
EPTC	Eptam	7 EC	
ethalfluralin	Curbit	3 EC	Platte
ethalfluralin + clomazone	PCC 170	3 L	UAP
ethofumesate	Nortron	4L	Aventis
flumioxazin	Valor	50 WP	Valent
fluazifop-P	Fusilade DX	2 EC	Zeneca
flufenacet	BAYFOE 5043	60 DF	Bayer
flufenacet + metribuzin	Axiom	68 DF	Bayer
flufenpyr	S-3153	57.6 WG	Valent
flumiclorac	Resource	0.86 EC	Valent
fluroxypyr	Starane	1.5 L	Dow Agrosciences
fomesafen	Reflex	2 LC	Zeneca
glufosinate	Rely	1 L	Aventis
glufosinate	Liberty	1.67 EC	Aventis
glyphosate	Roundup Ultra	4 L	Monsanto
halosulfuron	Permit, Sempra, Sandea	75 WG	Monsanto, Gowan
imazamox	Raptor	1 AS	American Cyanamid

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
imazaquin	Scepter	1.5 EC	American Cyanamid
imazethapyr	Pursuit	2 L	American Cyanamid
isoxaben	Gallery	75 DF	Dow Agrosciences
isoxaben .5% + trifluralin 2%	Snapshot	2.5 G	Dow Agrosciences
isoxaben 20% + oryzalin 60%	Snapshot	80 DF	Dow Agrosciences
isoxaflutole	Balance	75 WG	Aventis
linuron	Lorox	50 DF	Griffin
s-metolachlor	Dual Magnum	7.6 EC	Novartis
s-metolachlor II	Dual Magnum II	7.6 EC	Novartis
metribuzin	Sencor	75 DF	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 Agrosciences
oxyfluorfen	Goal XL	2 L	Rohm and Haas
oxyfluorfen	Goal LO	2 L	Rohm and Haas
oxyfluorfen	Goal	4 F, 40 WP	Rohm and Haas
paraquat	Gramoxone Extra	2.5 L	Zeneca
pendimethalin	Prowl	3.3 EC	American Cyanamid
phenmedipham	Spin-Aid	1.3 L	Aventis
phenmedipham + desmedipham	Betamix	1.3 L	Aventis
phenmedipham + desmedipham + ethofumesate	Betamix Progress	1.8 L	Aventis
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, 5 EC	Novartis
pyrithiobac	Staple	85 SP	DuPont
quizalofop	Assure II	0.88 L	DuPont
rimsulfuron	Matrix	25 DF	DuPont
rimsulfuron	Shadeout	25 DF	DuPont
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 Agrosciences
trifluralin	Treflan	4 EC	Dow Agrosciences
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	
copper sulfate		100% salt	
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	NIS	Alkylarylpolyoxyethylene glycol free fatty acids, isopropanol	Loveland

ABBREVIATIONS USED IN THE REPORT

A = Acre
ai = Active Ingredient
Amt = Amount
AS = Aqueous Solution
ASPA = Asparagus
CEC = Cation Exchange Capacity
CV = Coefficient of Variability
DF = Dry Flowable
DS = Designator
EC = Emulsifiable Concentrate
F = Flowable
FORM = Formulation
FM = Formulation
FT = Distance in Feet
g / gr = Gram
GAL = Gallon
GPA = Gallons per acre
GROW STG = Growth Stage at time of application
HTRC = Horticulture Teaching and Research Station
IN = Inch
KG = Kilogram
L = Liquid
LPRE = Late PRE
LO = Low Odor
LSD = Least Significant Difference
LB = Pounds
ME = Microencapsulated
MPH = Mile(s) per hour
MSU = Michigan State University
N = No
N/A = Not Applicable / Not Available
No. = Number
OM = Organic Matter
oz = Ounce
P = Probability
POH = Post harvest
PO1 = Postemergence 1
PO2 = Postemergence 2
POT = Post Transplant
PPI = Preplant Incorporated
PRE = Preemergence
PREC. = Precipitation (inches)
PRT = Pretransplant
PSI = Pounds per square inch
QT = Quart
RCBD = Randomized Complete Block Design
RH = Relative Humidity
REPS = Replication
SNBE = Snapbean
SP = Soluble Powder
STBE = Strawberry
SURF = Surface
T = Temperature
TRT = Treatment
VOAS = Volunteer Asparagus
WG = Wettable Dry Crystal
WP = Wettable Powder
WT = Weight
" = Inches
Y = Yes

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2000

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	63.3	35.2		**1**	60.8	46.8	0.36	**1**	86.2	60.9	0.19
2	53.2	43.1	0.06	**2**	67.9	41.8		**2**	67.9	51.2	0.07
3	58.7	44.5		**3**	72.4	45.8		**3**	63.3	42.9	
4	46.4	27.8		**4**	79.6	52.6		**4**	67.2	44.1	
5	52.1	23.6		**5**	83.0	62.2		**5**	58.7	46.2	0.15
6	53.4	35.5		**6**	85.1	61.4		**6**	71.7	41.4	
7	46.6	31.7	0.29	**7**	82.5	64.7		**7**	76.4	44.3	0.01
8	39.0	26.8	0.12	**8**	84.0	67.3		**8**	83.7	60.0	
9	49.0	23.8		**9**	74.8	59.3	1.14	**9**	86.1	65.9	
10	41.3	27.3		**10**	63.5	44.3	0.11	**10**	88.7	67.4	
11	36.6	30.2	0.14	**11**	64.5	48.7	0.05	**11**	77.9	61.2	
12	46.1	29.5	0.02	**12**	80.1	63.3	0.70	**12**	63.2	54.8	0.52
13	54.2	26.5		**13**	67.6	47.9		**13**	78.1	61.9	0.43
14	74.0	35.2		**14**	54.5	39.5		**14**	84.8	67.9	0.30
15	74.4	46.5		**15**	63.4	38.1		**15**	73.8	62.8	
16	52.8	39.0		**16**	53.7	40.8	0.30	**16**	80.0	61.2	
17	53.9	37.3	0.03	**17**	71.2	46.1	0.02	**17**	71.7	57.8	
18	64.6	39.7		**18**	65.7	43.1	1.36	**18**	70.2	57.0	0.04
19	53.5	46.0	0.06	**19**	51.5	41.2	0.35	**19**	78.7	54.0	
20	53.0	45.0	2.16	**20**	64.1	42.6		**20**	76.3	56.3	0.03
21	48.4	38.3	0.06	**21**	68.3	44.4		**21**	78.8	66.3	0.16
22	62.6	39.0		**22**	68.1	49.1	0.28	**22**	74.7	61.6	
23	61.6	35.6		**23**	73.5	56.1	0.05	**23**	79.7	53.1	
24	59.6	38.9		**24**	76.6	50.9		**24**	78.9	65.2	0.25
25	58.1	35.6		**25**	67.1	46.7		**25**	80.5	65.0	0.26
26	65.1	32.2		**26**	72.2	41.1		**26**	79.4	60.5	0.29
27	62.0	35.3		**27**	61.2	54.9	0.02	**27**	74.3	55.2	
28	66.3	33.2		**28**	64.8	48.7	0.59	**28**	71.0	48.8	0.05
29	65.1	36.2		**29**	71.0	44.3		**29**	72.4	56.2	0.01
30	69.4	34.9		**30**	72.9	48.7		**30**	76.5	47.4	
				31	79.6	59.8					

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2000

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	81.0	52.7		**1**	77.2	64.6	0.10	**1**	89.2	63.1	
2	84.2	59.9	0.49	**2**	81.6	62.1	0.51	**2**	81.2	65.9	
3	72.9	61.2	0.53	**3**	71.1	54.3		**3**	81.1	64.8	
4	83.1	56.7		**4**	76.1	50.8		**4**	70.2	52.2	
5	82.0	61.5		**5**	78.0	52.1	0.55	**5**	65.8	46.5	
6	71.2	54.2		**6**	82.6	59.4	0.89	**6**	72.4	43.2	
7	74.6	50.3		**7**	81.1	65.2		**7**	81.5	47.8	
8	70.2	53.4		**8**	83.0	66.3	0.01	**8**	76.3	66.5	0.02
9	81.3	62.9	0.09	**9**	83.6	66.4		**9**	79.7	66.5	
10	74.9	62.0	0.06	**10**	78.7	60.7		**10**	72.9	64.3	1.50
11	77.8	56.7		**11**	77.8	57.4	0.04	**11**	76.1	65.8	0.02
12	76.6	49.2		**12**	80.2	50.9		**12**	73.0	54.6	0.03
13	82.3	51.3		**13**	77.6	55.1		**13**	73.1	44.1	
14	83.7	62.3	0.28	**14**	83.5	61.7		**14**	63.9	49.2	0.79
15	74.9	59.7	0.35	**15**	86.8	66.3	0.12	**15**	61.5	45.9	
16	79.7	60.2	0.01	**16**	75.4	57.4		**16**	62.7	40.9	
17	83.2	59.6		**17**	62.1	57.4	0.48	**17**	72.8	47.0	
18	70.7	54.2		**18**	75.4	58.6	0.01	**18**	78.4	44.8	
19	72.3	54.9		**19**	69.2	48.2		**19**	81.3	60.7	
20	74.4	48.0		**20**	69.9	45.4		**20**	71.1	51.3	0.34
21	70.3	57.7		**21**	73.0	46.4		**21**	57.1	40.6	0.09
22	69.9	47.3		**22**	80.1	54.3	0.60	**22**	60.9	38.8	0.49
23	74.6	51.5		**23**	80.5	62.5	0.08	**23**	71.6	53.6	1.10
24	77.4	50.2		**24**	80.1	59.0		**24**	56.1	45.7	
25	80.2	50.4		**25**	80.4	53.9		**25**	53.5	38.8	
26	84.3	57.4	0.01	**26**	77.9	63.9		**26**	64.5	35.5	
27	85.1	64.9	0.02	**27**	77.8	61.7		**27**	69.8	45.8	
28	79.3	61.5	1.25	**28**	78.8	63.2		**28**	59.0	34.1	
29	78.8	61.1		**29**	82.0	65.2		**29**	69.2	40.1	
30	75.4	66.1	0.57	**30**	81.6	64.8		**30**	73.7	46.4	
31	81.9	64.4		**31**	86.3	65.2					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2000

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**	66	42	0.33	**1**	85	62	0.10
2				**2**	73	32		**2**	69	61	0.48
3				**3**	74	41		**3**	72	40	
4				**4**	79	53		**4**	725	44	
5				**5**	81	59		**5**	56	51	0.07
6				**6**	84	54		**6**	75	43	
7				**7**	83	62		**7**	79	42	
8				**8**	85	65	0.43	**8**	86	64	
9				**9**	72	59	0.09	**9**	88	67	
10				**10**	64	42		**10**	88	66	0.23
11				**11**	66	42		**11**	84	57	0.20
12				**12**	80	62		**12**	68	60	0.26
13				**13**	62	48		**13**	83	67	
14				**14**		39		**14**	88	68	0.18
15				**15**	62	30		**15**	80	67	
16				**16**	49	36	0.41	**16**	83	62	
17	52	34	0.15	**17**	71	38		**17**	74	52	0.03
18	64	39		**18**	52	45	1.59	**18**	77	57	
19	56	44		**19**	58	40	1.34	**19**	82	52	
20	54	44	1.90	**20**	62	38	0.03	**20**	79	55	0.10
21	44	40	0.25	**21**	66	40		**21**	81	67	
22	65	38		**22**	68	46	0.34	**22**	79	63	
23	64	33		**23**	75	58	0.06	**23**	84	49	0.04
24	56	33		**24**	77	58		**24**	83	65	0.35
25	58	32		**25**	71	47		**25**	88	66	
26	62	24		**26**	71	40		**26**	81	56	0.12
27	66	33		**27**	70	55		**27**	80	57	
28	64	32		**28**	67	49	0.52	**28**	77	52	0.03
29	63	42		**29**	77	40	0.03	**29**	77	52	
30	67	29		**30**	76	39		**30**	80	42	
				31	80	59					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2000

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	88	48		**1**	80	64	0.20	**1**	91	60	
2	85	59	0.57	**2**	84	60	0.19	**2**	84	64	
3	74	66	0.03	**3**	72	55		**3**	82	65	
4	84	52		**4**		47		**4**	76	56	
5	82	57		**5**		48	0.49	**5**	68	45	
6	80	54		**6**	86		0.04	**6**	75	34	
7	75	43		**7**	84	66		**7**	84	45	
8	74	52	0.04	**8**	85	64		**8**	76	63	0.10
9	80	58	0.60	**9**	82	65		**9**	83	62	
10	79	62	0.26	**10**	79	56		**10**	73	68	1.24
11	78	56		**11**	80	55		**11**	76	64	0.29
12	78	55		**12**	81	45		**12**	75	64	0.02
13	84	45		**13**	78	51		**13**	77	39	
14	83	58		**14**	85	67	0.14	**14**	76	44	0.58
15	78	53	0.37	**15**	89	65		**15**	62	44	0.02
16	81	55		**16**	77	51		**16**	66	35	
17	82	59		**17**		52	0.54	**17**	75	43	
18	72	53		**18**				**18**	80	41	
19	76	55		**19**	76			**19**	82	52	
20	78	42		**20**	70	40		**20**	68	64	0.44
21	74	49		**21**	76	39		**21**	56	45	
22	74	43		**22**	83	42	0.81	**22**	64	34	2.54
23	76	48		**23**	83	59		**23**	75	50	
24	77	47		**24**		57		**24**	62	47	
25	82	45		**25**	85	50		**25**	55	34	
26	87	56		**26**	83			**26**	65	30	
27	90	64		**27**	77	60		**27**	68	45	
28	83	62	0.50	**28**	80	63		**28**	64	30	
29	76	58	0.24	**29**	84	65		**29**	69	37	
30	74	58		**30**	89	64		**30**	73	42	
31	84	64	0.59	**31**							

Weed Control in Asparagus - Hart

Project Code: WC 120-00-01 **Location:** Hart, MI

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Asparagus **Variety:** Syn 4-56 **Field or Block:** N/A
Planting Method: Crowns **Planting Date:** May 1990 **Harvest:** see Notes
Spacing: 12" **Row Spacing:** 4.5 ft **Perennial Age:** 10 years
Tillage Type: Conventional **Study Design:** RCBD **Replications:** 3
Plot Size: 4.5 ft wide * 50 ft long

Soil Type: Spinks Loamy Fine Sand **OM:** 3.5% **pH:** 6.4
Sand: 81% **Silt:** 12% **Clay:** 7% **CEC:** 7.7

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-24	12 pm	60 F/ 54 F	damp	NE 4-7	53F/60F	60%	clear	N
PO1	6-6	10 am	62 F/ 57 F	damp	NW 1-3	52F/62F	52%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-24-00	Asparagus	Preemerge		
6-6-00	Asparagus	Harvested		good
	VOAS	1-4"	many	moderate
	RRPW	1-3"	4-8	many
	RUTH	1-3"	3-7	moderate

Notes and Comments

1. Sprays applied with 3-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. In the azafenidin plots, the asparagus had some cracks and white bracts.
4. Harvest Dates: 5-2-00 to 6-6-00.

Weed Control in Asparagus - Hart

Project Code: WC 120-00-01 **Location: Hart, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	VOAS RATING 6-06-00	RRPW RATING 6-06-00	RUTH RATING 6-06-00	ASPA RATING 6-22-00	RRPW RATING 6-22-00	RUTH RATING 6-22-00	VOAS RATING 6-22-00
1	diuron	80	DF	1.2	PRE	5.0	4.7	6.7	2.0	8.0	9.7	7.7
	Distinct	70	WG	0.175	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	6.3	9.3	9.0	1.3	2.3	9.0	7.7
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	3.7	2.0	7.0	1.0	7.0	8.3	8.3
4	norflurazon	80	DF	2	PRE	5.0	3.0	5.3	2.0	8.0	9.0	7.7
5	s-metolachlor	7.6	EC	1.5	PRE	5.7	8.7	6.0	1.0	1.3	1.7	4.7
6	sulfentrazone	75	DF	0.25	PRE	6.7	10.0	9.7	1.3	9.3	10.0	7.0
7	halosulfuron	75	WG	0.032	PRE	7.3	10.0	8.7	1.3	9.7	10.0	8.3
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	5.0	7.3	8.7	1.7	4.0	7.0	7.0
9	pendimethalin	3.3	EC	1.5	PRE	5.0	7.0	9.0	1.3	7.3	9.3	8.7
10	azafenidin	80	WG	0.5	PRE	8.3	10.0	10.0	1.0	9.7	10.0	9.0
11	azafenidin	80	WG	1	PRE	9.0	10.0	10.0	1.7	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	9.7	10.0	10.0	3.0	10.0	10.0	10.0
13	untreated				PRE	6.0	1.7	8.0	1.0	7.3	10.0	9.0
	sethoxydim	1.53	EC	0.19	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						3.18	2.70	3.79	0.78	2.16	2.98	2.49
Standard Deviation						1.89	1.60	2.25	0.46	1.28	1.77	1.48
CV						29.69	22.26	27.06	30.71	17.76	20.16	18.29

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	FISB RATING 6-22-00	MATA RATING 6-22-00	ASPA YIELD KG/PLOT 5-02-00	ASPA YIELD KG/PLOT 5-04-00	ASPA YIELD KG/PLOT 5-05-00	ASPA YIELD KG/PLOT 5-06-00	ASPA YIELD KG/PLOT 5-07-00
1	diuron	80	DF	1.2	PRE	9.3	9.7	0.987	0.802	0.488	0.310	0.261
	Distinct	70	WG	0.175	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	8.0	9.7	0.589	0.650	0.372	0.257	0.224
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	9.0	9.3	0.884	0.720	0.421	0.386	0.292
4	norflurazon	80	DF	2	PRE	10.0	8.3	0.809	0.631	0.315	0.262	0.350
5	s-metolachlor	7.6	EC	1.5	PRE	9.3	4.7	0.980	0.983	0.473	0.438	0.365
6	sulfentrazone	75	DF	0.25	PRE	7.7	8.3	0.805	1.072	0.426	0.361	0.399
7	halosulfuron	75	WG	0.032	PRE	1.0	9.7	0.983	0.864	0.441	0.397	0.355
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	9.7	5.0	0.611	0.582	0.294	0.374	0.222
9	pendimethalin	3.3	EC	1.5	PRE	10.0	8.3	0.685	0.771	0.357	0.331	0.325
10	azafenidin	80	WG	0.5	PRE	10.0	8.0	1.087	0.740	0.641	0.363	0.398
11	azafenidin	80	WG	1	PRE	10.0	8.7	0.697	0.757	0.540	0.390	0.301
12	azafenidin	80	WG	2	PRE	10.0	9.0	0.674	0.508	0.421	0.335	0.285
13	untreated				PRE	10.0	8.7	0.896	0.792	0.503	0.347	0.329
	sethoxydim	1.53	EC	0.19	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						2.07	2.80	0.35	0.45	0.15	0.17	0.11
Standard Deviation						1.23	1.66	0.21	0.27	0.09	0.10	0.06
CV						14.04	20.11	25.95	35.72	21.32	29.86	20.99

Weed Control in Asparagus - Hart

Project Code: WC 120-00-01 **Location: Hart, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-09-00	ASPA YIELD KG/PLOT 5-12-00	ASPA YIELD KG/PLOT 5-16-00	ASPA YIELD KG/PLOT 5-19-00	ASPA YIELD KG/PLOT 5-21-00	ASPA YIELD KG/PLOT 5-23-00	ASPA YIELD KG/PLOT 5-25-00
1	diuron	80	DF	1.2	PRE	0.714	0.464	0.508	0.418	0.385	0.298	0.522
	Distinct	70	WG	0.175	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	0.519	0.381	0.489	0.289	0.342	0.262	0.312
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	0.714	0.421	0.482	0.403	0.354	0.363	0.347
4	norflurazon	80	DF	2	PRE	0.519	0.410	0.513	0.272	0.408	0.251	0.294
5	s-metolachlor	7.6	EC	1.5	PRE	0.686	0.537	0.509	0.363	0.436	0.364	0.478
6	sulfentrazone	75	DF	0.25	PRE	0.815	0.458	0.495	0.296	0.398	0.269	0.507
7	halosulfuron	75	WG	0.032	PRE	0.743	0.515	0.582	0.475	0.376	0.262	0.432
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	0.354	0.387	0.358	0.328	0.326	0.274	0.402
9	pendimethalin	3.3	EC	1.5	PRE	0.558	0.516	0.391	0.342	0.334	0.305	0.400
10	azafenidin	80	WG	0.5	PRE	0.644	0.555	0.570	0.437	0.388	0.349	0.394
11	azafenidin	80	WG	1	PRE	0.692	0.401	0.337	0.428	0.399	0.241	0.577
12	azafenidin	80	WG	2	PRE	0.537	0.263	0.316	0.247	0.250	0.232	0.461
13	untreated				PRE	0.646	0.436	0.441	0.371	0.411	0.284	0.365
	sethoxydim	1.53	EC	0.19	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						0.24	0.19	0.17	0.18	0.12	0.12	0.18
Standard Deviation						0.14	0.11	0.10	0.10	0.07	0.07	0.10
CV						22.85	25.57	22.93	30.54	20.69	26.38	25.50

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-27-00	ASPA YIELD KG/PLOT 5-30-00	ASPA YIELD KG/PLOT 6-01-00	ASPA YIELD KG/PLOT 6-03-00	ASPA YIELD KG/PLOT 6-06-00	ASPA TOT. YLD KG/PLOT
1	diuron	80	DF	1.2	PRE	0.367	0.419	0.371	0.233	0.456	8.004
	Distinct	70	WG	0.175	PO1						
	28% UAN		L	1.25%	PO1						
	NIS		L	0.5%	PO1						
2	diuron	80	DF	1.2	PRE	0.374	0.288	0.317	0.172	0.339	6.177
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	0.423	0.405	0.430	0.285	0.371	7.703
4	norflurazon	80	DF	2	PRE	0.349	0.271	0.370	0.177	0.306	6.508
5	s-metolachlor	7.6	EC	1.5	PRE	0.467	0.429	0.439	0.288	0.659	8.894
6	sulfentrazone	75	DF	0.25	PRE	0.366	0.358	0.389	0.234	0.374	8.022
7	halosulfuron	75	WG	0.032	PRE	0.451	0.413	0.396	0.292	0.473	8.449
	halosulfuron	75	WG	0.032	PO1						
8	clomazone	3	ME	0.5	PRE	0.284	0.245	0.282	0.198	0.294	5.816
9	pendimethalin	3.3	EC	1.5	PRE	0.368	0.352	0.376	0.161	0.337	6.909
10	azafenidin	80	WG	0.5	PRE	0.501	0.369	0.384	0.320	0.414	8.553
11	azafenidin	80	WG	1	PRE	0.390	0.453	0.414	0.234	0.410	7.660
12	azafenidin	80	WG	2	PRE	0.321	0.332	0.312	0.210	0.302	6.007
13	untreated				PRE	0.352	0.331	0.296	0.243	0.366	7.409
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.15	0.20	0.12	0.12	0.18	1.90
Standard Deviation						0.08	0.11	0.07	0.07	0.10	1.13
CV						23.25	33.33	20.91	31.15	27.45	15.32

Weed Control in Asparagus - HTRC

Project Code: WC 120-00-02 **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: 7 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide * 80 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	4-18	9:25am	48 F/46 F	dry	N 2-3	44F/48F	72%	100%	N
PO1	5-12	1:30pm	77 F/ 66 F	moist	SW 4-6	73F/77F	82%	100%	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-18-00	Asparagus	Preemerge		
5-12-00	Asparagus	1-6"		good
	QUGR	6-12"	many	spotty
	YENS	0-0.5"	3-5	spotty
	COCW	6-12"	many	spotty
	DAND	4-12"	6-10	moderate
	BHPL	6-10"	many	few
	COLQ	1-2"	2-4	few
	COBU	1-3"	2-4	spotty
	MATA	1-6"	2-16	many
	BSPL	4-6"	2-6	spotty

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Harvest Dates: 4-26-00 to 6-2-00.

Weed Control in Asparagus - HTRC

Project Code: WC 120-00-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 5-12-00	QUGR RATING 5-12-00	YENS RATING 5-12-00	BSPL RATING 5-12-00	COCW RATING 5-12-00	COLQ RATING 5-12-00	DAND RATING 5-12-00
1	diuron	80	DF	1.2	PRE	1.7	4.7	4.0	7.7	6.3	7.0	5.0
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	1.0	6.0	7.0	10.0	10.0	9.7	9.7
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	1.7	5.7	4.3	7.0	10.0	9.0	7.3
4	norflurazon	80	DF	2	PRE	1.0	6.7	9.0	10.0	9.7	6.7	4.3
5	s-metolachlor	7.6	EC	1.5	PRE	1.0	7.0	10.0	8.3	7.7	10.0	4.3
6	sulfentrazone	75	DF	0.25	PRE	2.0	4.7	10.0	9.0	10.0	10.0	2.7
7	halosulfuron	75	WG	0.032	PRE	1.0	6.0	10.0	7.3	6.3	7.3	7.7
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	1.7	6.3	6.7	9.0	10.0	9.0	5.3
9	pendimethalin	3.3	EC	1.5	PRE	2.3	3.0	7.7	9.0	9.3	10.0	3.3
	sethoxydim	1.53	EC	0.38	PO1							
	clopyralid	3	EC	0.19	PO1							
	COC		L	1%	PO1							
10	azafenidin	80	WG	0.5	PRE	1.0	7.0	10.0	10.0	10.0	10.0	10.0
11	azafenidin	80	WG	1	PRE	1.0	9.0	10.0	10.0	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	2.0	9.3	10.0	10.0	10.0	10.0	10.0
13	untreated				PRE	3.0	2.3	10.0	4.7	6.7	4.7	1.0
	sethoxydim	1.53	EC	0.38	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						1.10	4.49	4.10	4.65	4.07	3.57	3.59
Standard Deviation						0.66	2.67	2.43	2.76	2.41	2.12	2.13
CV						41.90	44.61	29.08	32.00	27.04	24.33	34.32

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	MATA RATING 5-12-00	ASPA RATING 6-01-00	QUGR RATING 6-01-00	YENS RATING 6-01-00	BSPL RATING 6-01-00	COCW RATING 6-01-00	COLQ RATING 6-01-00
1	diuron	80	DF	1.2	PRE	4.7	1.7	5.3	3.3	9.0	9.7	10.0
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	10.0	2.3	6.7	2.3	10.0	10.0	10.0
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	1.7	1.3	4.3	1.0	7.0	10.0	10.0
4	norflurazon	80	DF	2	PRE	5.7	2.0	6.7	8.0	9.0	10.0	3.3
5	s-metolachlor	7.6	EC	1.5	PRE	1.7	2.0	7.7	10.0	5.7	7.7	9.3
6	sulfentrazone	75	DF	0.25	PRE	3.7	3.7	5.3	10.0	7.3	10.0	10.0
7	halosulfuron	75	WG	0.032	PRE	6.3	2.3	6.7	10.0	7.7	10.0	9.3
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	3.0	1.3	4.0	4.0	9.3	10.0	7.0
9	pendimethalin	3.3	EC	1.5	PRE	1.0	4.0	7.3	2.3	9.0	9.0	10.0
	sethoxydim	1.53	EC	0.38	PO1							
	clopyralid	3	EC	0.19	PO1							
	COC		L	1%	PO1							
10	azafenidin	80	WG	0.5	PRE	6.0	1.7	8.3	8.3	10.0	10.0	10.0
11	azafenidin	80	WG	1	PRE	8.0	3.0	9.7	9.7	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	8.7	3.0	10.0	10.0	10.0	10.0	10.0
13	untreated				PRE	1.0	3.3	6.7	5.3	10.0	10.0	9.7
	sethoxydim	1.53	EC	0.38	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						2.40	1.76	4.40	3.85	4.24	2.03	2.43
Standard Deviation						1.43	1.04	2.61	2.29	2.51	1.20	1.44
CV						30.21	42.90	38.28	35.23	28.67	12.37	15.81

Weed Control in Asparagus - HTRC

Project Code: WC 120-00-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	DAND RATING 6-01-00	MATA RATING KG/PLOT 6-01-00	ASPA YIELD KG/PLOT 4-26-00	ASPA YIELD KG/PLOT 5-01-00	ASPA YIELD KG/PLOT 5-03-00	ASPA YIELD KG/PLOT 5-05-00	ASPA YIELD KG/PLOT 5-08-00
1	diuron	80	DF	1.2	PRE	9.0	9.7	0.03	0.43	0.38	0.74	1.28
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	8.3	10.0	0.08	0.47	0.27	0.76	1.31
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	4.0	1.7	0.04	0.73	0.42	0.75	1.12
4	norflurazon	80	DF	2	PRE	4.3	4.0	0.24	1.02	0.58	1.11	1.82
5	s-metolachlor	7.6	EC	1.5	PRE	3.7	1.7	0.19	0.70	0.68	0.99	1.55
6	sulfentrazone	75	DF	0.25	PRE	3.3	2.3	0.11	0.38	0.24	0.59	1.36
7	halosulfuron	75	WG	0.032	PRE	8.0	7.7	0.15	0.41	0.25	0.51	1.29
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	5.3	3.0	0.24	0.85	0.47	0.76	1.55
9	pendimethalin	3.3	EC	1.5	PRE	8.0	8.3	0.06	0.34	0.26	0.67	1.31
	sethoxydim	1.53	EC	0.38	PO1							
	clopyralid	3	EC	0.19	PO1							
	COC		L	1%	PO1							
10	azafenidin	80	WG	0.5	PRE	9.7	3.3	0.06	0.39	0.45	0.86	1.48
11	azafenidin	80	WG	1	PRE	10.0	6.3	0.09	0.81	0.79	1.02	1.67
12	azafenidin	80	WG	2	PRE	10.0	7.3	0.04	0.37	0.51	0.62	1.25
13	untreated				PRE	6.0	1.7	0.44	1.04	0.50	0.95	1.80
	sethoxydim	1.53	EC	0.38	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						3.70	2.11	0.34	0.93	0.48	0.58	0.83
Standard Deviation						2.20	1.25	0.20	0.55	0.28	0.34	0.49
CV						31.82	24.28	150.75	90.26	64.87	43.36	34.38

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-09-00	ASPA YIELD KG/PLOT 5-11-00	ASPA YIELD KG/PLOT 5-12-00	ASPA YIELD KG/PLOT 5-15-00	ASPA YIELD KG/PLOT 5-17-00	ASPA YIELD KG/PLOT 5-18-00	ASPA YIELD KG/PLOT 5-22-00
1	diuron	80	DF	1.2	PRE	0.65	0.29	0.27	0.47	0.19	0.47	1.23
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	0.34	0.46	0.29	0.41	0.22	0.31	0.98
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	0.54	0.42	0.33	0.54	0.11	0.31	1.50
4	norflurazon	80	DF	2	PRE	0.49	0.39	0.30	0.42	0.39	0.59	1.37
5	s-metolachlor	7.6	EC	1.5	PRE	0.49	0.43	0.43	0.57	0.22	0.31	1.23
6	sulfentrazone	75	DF	0.25	PRE	0.61	0.46	0.22	0.35	0.09	0.41	1.35
7	halosulfuron	75	WG	0.032	PRE	0.41	0.31	0.35	0.51	0.28	0.41	0.77
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	0.37	0.34	0.41	0.67	0.31	0.45	1.17
9	pendimethalin	3.3	EC	1.5	PRE	0.56	0.54	0.27	0.48	0.46	0.42	1.17
	sethoxydim	1.53	EC	0.38	PO1							
	clopyralid	3	EC	0.19	PO1							
	COC		L	1%	PO1							
10	azafenidin	80	WG	0.5	PRE	0.73	0.51	0.33	0.45	0.21	0.42	2.10
11	azafenidin	80	WG	1	PRE	0.52	0.29	0.40	0.64	0.34	0.34	1.13
12	azafenidin	80	WG	2	PRE	0.36	0.18	0.32	0.22	0.15	0.25	0.47
13	untreated				PRE	0.43	0.39	0.35	0.48	0.35	0.59	0.92
	sethoxydim	1.53	EC	0.38	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						0.44	0.26	0.31	0.33	0.29	0.31	0.63
Standard Deviation						0.26	0.15	0.18	0.19	0.17	0.18	0.37
CV						52.48	40.94	56.42	41.44	69.18	45.61	31.71

Weed Control in Asparagus - HTRC

Project Code: WC 120-00-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-24-00	ASPA YIELD KG/PLOT 5-26-00	ASPA YIELD KG/PLOT 5-30-00	ASPA YIELD KG/PLOT 5-31-00	ASPA YIELD KG/PLOT 6-01-00	ASPA YIELD KG/PLOT 6-02-00	ASPA TOT. YLD KG/PLOT
1	diuron	80	DF	1.2	PRE	0.38	0.53	0.92	0.34	0.28	0.25	9.12
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	0.45	0.57	0.65	0.26	0.25	0.20	8.30
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	0.32	0.59	0.73	0.31	0.29	0.24	9.30
4	norflurazon	80	DF	2	PRE	0.45	0.71	0.86	0.34	0.32	0.31	11.71
5	s-metolachlor	7.6	EC	1.5	PRE	0.59	0.41	1.01	0.25	0.26	0.21	10.53
6	sulfentrazone	75	DF	0.25	PRE	0.41	0.54	0.69	0.27	0.14	0.15	8.36
7	halosulfuron	75	WG	0.032	PRE	0.43	0.51	0.59	0.27	0.24	0.21	7.91
	halosulfuron	75	WG	0.032	PO1							
8	clomazone	3	ME	0.5	PRE	0.74	0.70	0.75	0.41	0.38	0.19	10.76
9	pendimethalin	3.3	EC	1.5	PRE	0.46	0.57	0.57	0.35	0.25	0.13	8.87
	sethoxydim	1.53	EC	0.38	PO1							
	clopyralid	3	EC	0.19	PO1							
	COC		L	1%	PO1							
10	azafenidin	80	WG	0.5	PRE	0.49	0.79	0.83	0.38	0.33	0.24	11.07
11	azafenidin	80	WG	1	PRE	0.31	0.57	0.65	0.41	0.20	0.31	10.50
12	azafenidin	80	WG	2	PRE	0.24	0.43	0.59	0.22	0.25	0.18	6.64
13	untreated				PRE	0.56	0.67	0.91	0.29	0.25	0.34	11.26
	sethoxydim	1.53	EC	0.38	PO1							
	linuron	50	DF	1	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						0.32	0.41	0.39	0.19	0.20	0.18	4.80
Standard Deviation						0.19	0.24	0.23	0.11	0.12	0.11	2.84
CV						42.98	42.18	31.08	36.68	46.74	48.23	29.79

Weed Control in Snapbean - HTRC

Project Code: WC 125-00-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni, William R Chase
Crop: Snapbean **Variety: Strike** **Field or Block: 124**
Planting Method: Seed **Planting Date: 5-26-00** **Harvest: 7-31-00**
Spacing: 3.1" in row **Row Spacing: 28",2 rows/plot** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 7 ft wide * 35 ft long

Soil Type: Colwood-Brookston Loam OM: 2.0 pH: 6.3
Sand: 46% Silt: 31% Clay: 23% CEC: 9.5

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	5-26	2 pm	74 F/ 66 F	moist	W 4-6	62F/74F	52%	100%cloud	N
PRE	5-26	4 pm	73 F/ 66 F	moist	W 1-2	60F/73F	73%	100%cloud	N
PO1	6-23	8:50am	70 F/ 63 F	dry	calm	63F/70F	69%	clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-23-00	Snapbean	4-5"	2nd trif	good
	BYGR	3-4"	4-5	moderate
	COLQ	1.5-2"	6-8	moderate
	CORW	2-3"	4-6	few
	RRPW	2-3"	8-10	few
	WIRA	10-12"	4-6	few

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 7-31-00: Harvested 35 ft of 2 rows / plot.

Weed Control in Snapbean - HTRC

Project Code: WC 125-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SNBE RATING 6-23-00	GRFT RATING 6-23-00	COLQ RATING 6-23-00	RRPW RATING 6-23-00	WIRA RATING 6-23-00	SNBE RATING 6-30-00
1	trifluralin	4	EC	1	PPI	3.7	7.0	5.7	6.7	2.7	3.3
2	trifluralin	4	EC	1	PPI	3.3	9.3	8.0	8.3	5.7	4.7
	EPTC	7	EC	3	PPI						
3	pendimethalin	3.3	EC	1.5	PPI	4.7	7.3	5.3	7.3	2.0	4.0
4	s-metolachlor	7.6	EC	1.33	PRE	2.0	10.0	9.0	9.3	4.0	3.3
5	s-dimethenamid	6	EC	0.75	PRE	1.3	10.0	10.0	10.0	4.3	3.3
6	clomazone	3	ME	0.5	PRE	1.7	10.0	10.0	10.0	7.3	2.7
7	clomazone	3	ME	0.5	PRE	2.7	10.0	10.0	10.0	8.0	3.7
	sulfentrazone	75	DF	0.1	PRE						
8	sulfentrazone	75	DF	0.25	PRE	4.3	10.0	10.0	10.0	8.0	6.7
9	flufenacet	60	DF	0.6	PRE	4.0	10.0	10.0	10.0	9.3	4.3
10	halosulfuron	75	WG	0.032	PRE	1.7	6.0	10.0	10.0	10.0	2.3
11	flumioxazin	50	WP	0.02	PRE	3.3	8.0	10.0	10.0	7.7	4.3
12	flufenpyr	57.6	WG	0.009	PRE	2.3	2.7	1.3	3.0	1.0	3.3
13	trifluralin	4	EC	1	PPI	2.3	6.0	8.7	8.3	3.0	2.7
	fomesafen	2	EC	0.25	PO1						
14	trifluralin	4	EC	1	PPI	3.3	5.0	7.3	7.3	1.7	4.0
	imazamox	1	AS	0.016	PO1						
	NIS		L	0.5%	PO1						
15	trifluralin	4	EC	1	PPI	1.7	6.0	8.7	8.3	3.3	2.7
	imazamox	1	AS	0.016	PO1						
	bentazon	4	L	0.5	PO1						
	COC		L	1%	PO1						
16	trifluralin	4	EC	1	PPI	1.7	7.0	8.0	9.0	4.3	2.3
	halosulfuron	75	WG	0.032	PO1						
LSD (P=.05)						2.21	3.04	1.98	2.03	3.43	2.49
Standard Deviation						1.33	1.82	1.19	1.22	2.06	1.49
CV						48.26	23.46	14.43	14.17	39.98	41.40

Weed Control in Snapbean - HTRC

Project Code: WC 125-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BYGR RATING 6-30-00	GRFT RATING 6-30-00	COLQ RATING 6-30-00	EBNS RATING 6-30-00	RRPW RATING 6-30-00	WIRA RATING 6-30-00
1	trifluralin	4	EC	1	PPI	7.3	7.3	6.0	4.0	4.3	1.3
2	trifluralin	4	EC	1	PPI	9.0	9.0	7.7	5.3	7.0	2.3
	EPTC	7	EC	3	PPI						
3	pendimethalin	3.3	EC	1.5	PPI	7.3	7.7	4.3	6.3	7.7	1.7
4	s-metolachlor	7.6	EC	1.33	PRE	10.0	10.0	9.3	9.3	10.0	2.0
5	s-dimethenamid	6	EC	0.75	PRE	10.0	10.0	10.0	10.0	10.0	4.0
6	clomazone	3	ME	0.5	PRE	10.0	10.0	10.0	10.0	10.0	4.3
7	clomazone	3	ME	0.5	PRE	10.0	10.0	10.0	10.0	10.0	4.0
	sulfentrazone	75	DF	0.1	PRE						
8	sulfentrazone	75	DF	0.25	PRE	10.0	10.0	10.0	10.0	10.0	6.3
9	flufenacet	60	DF	0.6	PRE	10.0	10.0	10.0	10.0	10.0	5.7
10	halosulfuron	75	WG	0.032	PRE	6.7	6.7	10.0	7.7	10.0	10.0
11	flumioxazin	50	WP	0.02	PRE	9.0	9.0	10.0	10.0	10.0	7.7
12	flufenpyr	57.6	WG	0.009	PRE	3.0	3.0	1.0	1.0	1.0	1.0
13	trifluralin	4	EC	1	PPI	9.0	9.0	9.3	10.0	9.3	10.0
	fomesafen	2	EC	0.25	PO1						
14	trifluralin	4	EC	1	PPI	9.0	9.0	9.0	9.3	10.0	10.0
	imazamox	1	AS	0.016	PO1						
	NIS		L	0.5%	PO1						
15	trifluralin	4	EC	1	PPI	9.0	9.7	10.0	10.0	10.0	10.0
	imazamox	1	AS	0.016	PO1						
	bentazon	4	L	0.5	PO1						
	COC		L	1%	PO1						
16	trifluralin	4	EC	1	PPI	6.7	6.7	5.7	4.7	9.3	9.3
	halosulfuron	75	WG	0.032	PO1						
LSD (P=.05)						2.21	2.17	1.86	3.01	1.98	3.05
Standard Deviation						1.32	1.30	1.11	1.81	1.19	1.83
CV						15.57	15.18	13.48	22.65	13.71	32.61

Weed Control in Snapbean - HTRC

Project Code: WC 125-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SNAPBEAN PLANT No. 7-31-00	SNAPBEAN PLANT WT KG/PLOT 7-31-00	SNAPBEAN BEAN WT KG/PLOT 7-31-00
1	trifluralin	4	EC	1	PPI	62.3	5.92	5.75
2	trifluralin	4	EC	1	PPI	54.0	4.89	4.31
	EPTC	7	EC	3	PPI			
3	pendimethalin	3.3	EC	1.5	PPI	50.3	4.34	3.53
4	s-metolachlor	7.6	EC	1.33	PRE	75.0	6.57	6.63
5	s-dimethenamid	6	EC	0.75	PRE	73.7	6.71	6.34
6	clomazone	3	ME	0.5	PRE	73.3	7.72	7.05
7	clomazone	3	ME	0.5	PRE	64.7	4.87	4.20
	sulfentrazone	75	DF	0.1	PRE			
8	sulfentrazone	75	DF	0.25	PRE	47.0	2.67	1.68
9	flufenacet	60	DF	0.6	PRE	56.3	5.01	4.13
10	halosulfuron	75	WG	0.032	PRE	78.3	6.51	5.55
11	flumioxazin	50	WP	0.02	PRE	41.3	4.09	4.04
12	flufenpyr	57.6	WG	0.009	PRE	65.0	4.53	4.64
13	trifluralin	4	EC	1	PPI	102.0	8.19	7.79
	fomesafen	2	EC	0.25	PO1			
14	trifluralin	4	EC	1	PPI	61.3	4.88	4.46
	imazamox	1	AS	0.016	PO1			
	NIS		L	0.5%	PO1			
15	trifluralin	4	EC	1	PPI	84.3	7.55	7.60
	imazamox	1	AS	0.016	PO1			
	bentazon	4	L	0.5	PO1			
	COC		L	1%	PO1			
16	trifluralin	4	EC	1	PPI	101.3	8.31	9.08
	halosulfuron	75	WG	0.032	PO1			
LSD (P=.05)						29.03	2.31	2.85
Standard Deviation						17.41	1.38	1.71
CV						25.55	23.93	31.56

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

Project Code: WC 109-00-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: R + S Beet,Chard,Sp. **Variety: see Notes** **Field or Block: 77**
Planting Method: Seed **Planting Date: 6-5-00** **Harvest: see Notes**
Spacing: 3.1" in row **Row Spacing: 14"** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide * 40 ft long, mow back 5' of each replication

Soil Type: Marlette Sandy Loam **OM: 2.5%** **pH: 7.3**
Sand: 54% **Silt: 23%** **Clay: 23%** **CEC: 14.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-22	2 pm	70 F/ 64 F	moist	S 2-4	60F/70F	58%	100%cloud	N
PO1	6-7	9 am	65 F/ 58 F	damp	W 2-4	54F/65F	49%	5% cloud	N
PO2	6-9	8 am	69 F/ 68F	dry	W 3-5	61F/69F	64%	50% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-7-00	Sugar Beet	1-3"	3-4	good
	Spinach	1-3"	4	good
	Chard	1-2"	2-3	good
	Red Beet	1-2"	2-3	good
	COLQ	0.5-1"	2-4	moderate
	COPU	0.5-1"	4-6	many
	LATH	1-2"	2-3	moderate
	RRPW	0.5-1"	2-4	moderate
6-9-00	Sugar Beet	2-4"	4-6	good
	Spinach	2-4"	6	good
	Chard	2-4"	3-4	good
	Red Beet	1-3"	3-4	good
	COLQ	1-2"	3-4	moderate
	COPU	1-2"	6-10	many
	LATH	2-3"	4-6	moderate

Notes and Comments

1. Sprays applied with tractor mounted CO2 research sprayer, 12 8002 nozzles, 30 psi, 20 gpa, 3.2 mph, a 16 ft band sprayed over seeded area in each plot.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. PO1 = 4 leaf stage (4 LS); PO2 = 6 leaf stage (LS) of spinach.
4. Cultivars: Red Beet : Green Top Bunching, Lot #133681 (Harris Moran).
   Sugar Beet : E-17 Pelleted.
   Chard : Large White Ribbed, Lot #4865 (Seedway).
   Spinach : Space, Lot #66706 (Seedway).
5. Harvest: Spinach - 6-30-00; Chard - 7-17-00; Red Beet - 8-3-00;
   Sugar Beet -9-20-00.

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

Project Code: WC 109-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SUG.BEET RATING 6-07-00	SPINACH RATING 6-07-00	CHARD RATING 6-07-00	RED BEET RATING 6-07-00	COLQ RATING 6-07-00	COPU RATING 6-07-00
1	untreated				PRE	1.0	1.0	1.0	1.0	1.0	1.0
2	clopyralid	3	EC	0.094	PO1	1.0	1.0	1.0	1.0	1.0	1.0
3	flufenacet	60	DF	0.4	PRE	8.0	7.3	9.0	8.7	7.3	9.0
4	flufenacet	60	DF	0.8	PRE	9.3	7.7	8.7	9.7	8.3	9.3
5	fluroxypyr	1.5	L	0.094	PO1	1.0	1.0	1.0	1.0	1.0	1.0
6	fluroxypyr	1.5	L	0.094	PO2	1.0	1.0	1.0	1.0	1.0	1.0
7	napropramide	50	DF	2	PRE	9.0	9.0	9.0	9.0	9.3	9.3
8	napropramide	50	DF	4	PRE	9.0	9.3	9.0	9.3	9.7	9.7
9	s-dimethenamid	6	EC	0.66	PRE	6.7	7.7	7.3	7.7	7.3	10.0
10	s-dimethenamid	6	EC	1.32	PRE	8.3	10.0	9.3	8.7	9.0	10.0
11	triflusulfuron	50	WG	0.032	PO1	1.0	1.0	1.0	1.0	1.0	1.0
12	pyrazon	68	DF	4	PRE	5.0	5.3	6.3	7.0	10.0	10.0
LSD (P=.05)						1.30	1.00	1.41	1.06	1.85	0.82
Standard Deviation						0.77	0.59	0.83	0.63	1.09	0.48
CV						15.26	11.51	15.71	11.59	19.83	8.00

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	LATH RATING 6-07-00	RRPW RATING 6-07-00	SHPU RATING 6-07-00	SUG.BEET RATING 6-19-00	SPINACH RATING 6-19-00	CHARD RATING 6-19-00
1	untreated				PRE	1.7	1.7	1.0	1.0	2.7	1.3
2	clopyralid	3	EC	0.094	PO1	1.0	1.0	1.0	1.0	3.0	1.7
3	flufenacet	60	DF	0.4	PRE	9.0	9.3	10.0	6.3	6.7	8.0
4	flufenacet	60	DF	0.8	PRE	9.3	10.0	10.0	9.0	8.0	7.7
5	fluroxypyr	1.5	L	0.094	PO1	1.0	1.0	1.0	2.3	5.7	6.7
6	fluroxypyr	1.5	L	0.094	PO2	1.0	1.0	1.0	4.7	7.3	7.0
7	napropramide	50	DF	2	PRE	9.0	9.0	8.7	8.1	9.0	8.6
8	napropramide	50	DF	4	PRE	10.0	9.7	10.0	8.3	9.7	9.3
9	s-dimethenamid	6	EC	0.66	PRE	10.0	10.0	10.0	4.3	6.7	5.3
10	s-dimethenamid	6	EC	1.32	PRE	10.0	10.0	10.0	5.0	9.0	8.3
11	triflusulfuron	50	WG	0.032	PO1	1.0	1.0	1.0	1.0	9.3	1.0
12	pyrazon	68	DF	4	PRE	10.0	9.7	10.0	3.7	5.0	3.7
LSD (P=.05)						1.21	0.88	0.75	2.00	2.20	3.19
Standard Deviation						0.71	0.52	0.44	1.18	1.29	1.88
CV						11.71	8.51	7.18	25.81	18.94	32.81

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	RED BEET RATING 6-19-00	COCW RATING 6-19-00	COLQ RATING 6-19-00	COPU RATING 6-19-00	LATH RATING 6-19-00	RRPW RATING 6-19-00
1	untreated				PRE	2.0	1.0	1.0	1.0	1.0	1.0
2	clopyralid	3	EC	0.094	PO1	1.3	2.3	1.7	3.7	5.0	1.3
3	flufenacet	60	DF	0.4	PRE	7.3	7.7	5.0	8.7	7.0	9.3
4	flufenacet	60	DF	0.8	PRE	8.3	7.3	5.3	7.0	7.7	9.3
5	fluroxypyr	1.5	L	0.094	PO1	6.7	8.7	2.0	9.0	1.7	2.7
6	fluroxypyr	1.5	L	0.094	PO2	4.3	9.0	1.7	9.7	4.0	3.0
7	napropramide	50	DF	2	PRE	8.5	9.3	9.8	8.7	7.6	8.6
8	napropramide	50	DF	4	PRE	9.0	10.0	10.0	10.0	9.3	9.7
9	s-dimethenamid	6	EC	0.66	PRE	4.7	10.0	5.7	10.0	10.0	10.0
10	s-dimethenamid	6	EC	1.32	PRE	6.0	10.0	8.7	10.0	10.0	10.0
11	triflusulfuron	50	WG	0.032	PO1	2.7	4.3	1.3	4.0	5.3	3.0
12	pyrazon	68	DF	4	PRE	4.0	10.0	9.0	10.0	10.0	10.0
LSD (P=.05)						3.34	2.44	3.11	3.42	3.46	0.81
Standard Deviation						1.96	1.44	1.83	2.01	2.04	0.48
CV						36.35	19.21	35.93	26.32	31.12	7.38

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

Project Code: WC 109-00-01 **Location: East Lansing, MI**

Trt No	Weed/Crop Code Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SHPU RATING 6-19-00	SPINACH YIELD KG/PLOT 6-30-00	CHARD YIELD KG/PLOT 7-17-00	RED BEET PLANT No./PLOT 8-03-00	RED BEET LEAF WT KG/ PLOT 8-03-00	RED BEET ROOT WT KG/PLOT 8-03-00
1	untreated				PRE	1.0	0.86	9.529	60.0	4.38	10.30
2	clopyralid	3	EC	0.094	PO1	2.3	1.53	11.61	98.0	7.24	16.61
3	flufenacet	60	DF	0.4	PRE	10.0	0.76	3.43	35.7	3.98	7.40
4	flufenacet	60	DF	0.8	PRE	8.7	0.58	3.06	9.3	3.60	2.45
5	fluroxypyr	1.5	L	0.094	PO1	4.3	0.59	1.12	18.0	1.30	2.11
6	fluroxypyr	1.5	L	0.094	PO2	4.7	0.47	1.04	42.3	2.69	6.32
7	napropramide	50	DF	2	PRE	4.9	0.15	10.61	23.7	3.51	6.44
8	napropramide	50	DF	4	PRE	8.7	0.03	6.04	24.3	3.64	6.24
9	s-dimethenamid	6	EC	0.66	PRE	10.0	0.72	14.85	67.0	8.72	16.57
10	s-dimethenamid	6	EC	1.32	PRE	10.0	0.08	8.21	53.0	6.41	19.17
11	triflusulfuron	50	WG	0.032	PO1	7.3	0.00	14.30	56.3	7.17	15.30
12	pyrazon	68	DF	4	PRE	10.0	1.93	19.41	57.3	8.44	17.12
LSD (P=.05)						2.49	0.69	4.93	32.95	3.65	8.97
Standard Deviation						1.47	0.41	2.91	19.46	2.15	5.29
CV						21.51	63.64	33.87	42.84	42.37	50.45

Trt No	Weed/Crop Code Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SUG.BEET YIELD No./PLOT 9-20-00	SUG.BEET YIELD KG/PLOT 9-20-00
1	untreated				PRE	102.7	80.22
2	clopyralid	3	EC	0.094	PO1	75.3	69.53
3	flufenacet	60	DF	0.4	PRE	52.3	61.16
4	flufenacet	60	DF	0.8	PRE	20.0	25.35
5	fluroxypyr	1.5	L	0.094	PO1	85.3	60.77
6	fluroxypyr	1.5	L	0.094	PO2	70.3	51.72
7	napropramide	50	DF	2	PRE	55.7	55.98
8	napropramide	50	DF	4	PRE	37.3	55.15
9	s-dimethenamid	6	EC	0.66	PRE	72.7	79.61
10	s-dimethenamid	6	EC	1.32	PRE	70.3	87.28
11	triflusulfuron	50	WG	0.032	PO1	103.3	87.47
12	pyrazon	68	DF	4	PRE	79.0	81.29
LSD (P=.05)						33.16	26.50
Standard Deviation						19.58	15.65
CV						28.50	23.61

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Broccoli,Cabbage **Variety: Packman,M. Prize** **Field or Block: 143**
Planting Method: Transplant **Planting Date: 5-22-00** **Harvest: see Notes**
Spacing: 2 ft in row **Row Spacing: 36 inches** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide * 30 ft long

Soil Type: Capac Loam **OM: 2.5%** **pH: 6.2**
Sand: 63% **Silt: 26%** **Clay: 11%** **CEC: 9.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	5-17	4 pm	73 F/ 65 F	moist	NE 1-3	64F/73F	62%	95% cloud	N
PRT	5-22	3:40pm	69 F/ 63 F	moist	SW 4-6	61F/69F	64%	100%cloud	N
POT	5-25	12 pm	66 F/ 58 F	moist	NW 6-8	57F/66F	58%	50% cloud	N
PO1	6-20	1:20pm	78 F/ 77 F	dry	S 8-10	69F/76F	65%	100%cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20-00	Cabbage	6-10"	10-14	good
	Broccoli	10-12"	12-14	good
	BYGR	2-3"	5-6	few
	COLQ	1-2"	many	few
	RRPW	2-3"	many	few

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 6-20-00: Treatment 8 (PO1) was sprayed with 2X rate.
4. Harvest dates: Broccoli - 7-17, 7-20, 7-24, 7-27, and 7-31-00;
   Cabbage - 7-27, 7-31, 8-4, 8-9, and 8-14-00.

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI RATING 6-19-00	CABBAGE RATING 6-19-00	BROCCOLI RATING 6-30-00	CABBAGE RATING 6-30-00	COLQ RATING 6-30-00	EBNS RATING 6-30-00	RRPW RATING 6-30-00
1	trifluralin	4	EC	1	PPI	1.3	1.0	1.3	1.0	7.0	6.7	9.0
2	trifluralin	4	EC	1	PPI	1.3	1.7	1.3	1.3	10.0	10.0	10.0
	oxyfluorfen XL	2	L	0.5	PRT							
3	trifluralin	4	EC	1	PPI	1.7	2.0	1.7	1.7	9.0	9.0	8.7
	clomazone	3	ME	0.25	PRT							
4	s-metolachlor	7.6	EC	1.33	POT	2.0	2.0	2.7	1.7	9.3	10.0	10.0
5	flufenacet	60	DF	0.68	POT	2.3	1.7	2.0	1.3	9.3	10.0	10.0
6	trifluralin	4	EC	1	PPI	2.0	1.3	2.3	2.7	10.0	10.0	10.0
	oxyfluorfen LO	2	L	0.03	PO1							
7	trifluralin	4	EC	1	PPI	1.3	1.3	3.3	4.0	10.0	10.0	10.0
	oxyfluorfen LO	2	L	0.12	PO1							
8	trifluralin	4	EC	1	PPI	1.7	1.0	2.3	2.3	10.0	10.0	10.0
	oxyfluorfen	4	F	0.03	PO1							
9	trifluralin	4	EC	1	PPI	1.7	1.0	2.7	3.0	10.0	10.0	10.0
	oxyfluorfen	4	F	0.12	PO1							
10	trifluralin	4	EC	1	PPI	1.7	1.3	1.7	1.7	7.3	9.7	9.7
	oxyfluorfen	40	WP	0.03	PO1							
11	trifluralin	4	EC	1	PPI	1.3	1.0	1.7	1.7	10.0	10.0	10.0
	oxyfluorfen	40	WP	0.12	PO1							
12	trifluralin	4	EC	1	PPI	1.3	1.0	1.7	1.3	10.0	10.0	10.0
	pyridate	5	EC	0.9	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
13	trifluralin	4	EC	1	PPI	1.3	1.0	2.0	1.3	10.0	10.0	10.0
	clopyralid	3	EC	0.188	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						1.06	0.74	1.14	0.88	1.28	2.15	1.25
Standard Deviation						0.63	0.44	0.68	0.52	0.76	1.28	0.74
CV						38.92	33.07	32.97	27.09	8.09	13.24	7.55

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD No./PLOT 7-17-00	BROCCOLI YIELD KG/PLOT 7-17-00	BROCCOLI YIELD No./PLOT 7-20-00	BROCCOLI YIELD KG/PLOT 7-20-00	BROCCOLI YIELD No./PLOT 7-24-00	BROCCOLI YIELD KG/PLOT 7-24-00
1	trifluralin	4	EC	1	PPI	4.0	1.222	3.0	0.66	2.3	0.57
2	trifluralin	4	EC	1	PPI	3.3	1.172	4.7	1.39	1.0	0.23
	oxyfluorfen XL	2	L	0.5	PRT						
3	trifluralin	4	EC	1	PPI	4.7	1.951	2.0	0.47	1.7	0.51
	clomazone	3	ME	0.25	PRT						
4	s-metolachlor	7.6	EC	1.33	POT	1.7	0.717	2.3	0.60	2.3	0.53
5	flufenacet	60	DF	0.68	POT	2.3	0.784	3.3	0.81	3.3	0.91
6	trifluralin	4	EC	1	PPI	3.3	1.293	4.0	0.99	1.3	0.49
	oxyfluorfen LO	2	L	0.03	PO1						
7	trifluralin	4	EC	1	PPI	3.3	1.332	3.7	0.90	2.7	0.75
	oxyfluorfen LO	2	L	0.12	PO1						
8	trifluralin	4	EC	1	PPI	2.3	0.911	3.3	0.79	3.7	1.05
	oxyfluorfen	4	F	0.03	PO1						
9	trifluralin	4	EC	1	PPI	2.0	0.762	3.0	0.60	2.7	0.69
	oxyfluorfen	4	F	0.12	PO1						
10	trifluralin	4	EC	1	PPI	3.7	1.367	2.7	0.71	2.3	0.63
	oxyfluorfen	40	WP	0.03	PO1						
11	trifluralin	4	EC	1	PPI	3.7	1.322	2.0	0.46	3.7	1.12
	oxyfluorfen	40	WP	0.12	PO1						
12	trifluralin	4	EC	1	PPI	4.7	1.675	2.3	0.52	1.7	0.48
	pyridate	5	EC	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	trifluralin	4	EC	1	PPI	2.0	0.876	2.0	0.47	2.3	0.64
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						2.89	1.26	2.37	0.62	2.72	0.75
Standard Deviation						1.71	0.74	1.41	0.37	1.61	0.44
CV						54.35	63.34	47.65	51.67	67.65	67.72

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD No./PLOT 7-27-00	BROCCOLI YIELD KG/PLOT 7-27-00	BROCCOLI YIELD No./PLOT 7-31-00	BROCCOLI YIELD KG/PLOT 7-31-00	BROCCOLI TOT YLD No./PLOT	BROCCOLI TOT YLD KG/PLOT
1	trifluralin	4	EC	1	PPI	2.3	0.61	2.0	0.43	13.7	3.49
2	trifluralin	4	EC	1	PPI	4.0	1.09	1.0	0.24	14.0	4.11
	oxyfluorfen XL	2	L	0.5	PRT						
3	trifluralin	4	EC	1	PPI	2.3	0.66	3.0	0.73	13.7	4.32
	clomazone	3	ME	0.25	PRT						
4	s-metolachlor	7.6	EC	1.33	POT	3.3	0.73	2.7	0.57	12.3	3.16
5	flufenacet	60	DF	0.68	POT	4.7	1.19	2.7	0.57	16.3	4.28
6	trifluralin	4	EC	1	PPI	2.7	0.65	2.7	0.69	14.0	4.11
	oxyfluorfen LO	2	L	0.03	PO1						
7	trifluralin	4	EC	1	PPI	3.0	0.79	2.0	0.52	14.7	4.29
	oxyfluorfen LO	2	L	0.12	PO1						
8	trifluralin	4	EC	1	PPI	2.3	0.58	1.3	0.35	13.0	3.68
	oxyfluorfen	4	F	0.03	PO1						
9	trifluralin	4	EC	1	PPI	4.0	0.96	1.7	0.37	13.3	3.39
	oxyfluorfen	4	F	0.12	PO1						
10	trifluralin	4	EC	1	PPI	4.0	0.93	2.3	0.47	15.0	4.10
	oxyfluorfen	40	WP	0.03	PO1						
11	trifluralin	4	EC	1	PPI	3.7	1.02	1.7	0.43	14.7	4.36
	oxyfluorfen	40	WP	0.12	PO1						
12	trifluralin	4	EC	1	PPI	2.7	0.86	2.7	0.63	14.0	4.17
	pyridate	5	EC	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	trifluralin	4	EC	1	PPI	3.3	0.75	3.7	1.03	13.3	3.78
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						2.84	0.83	2.21	0.49	3.01	1.01
Standard Deviation						1.69	0.49	1.31	0.29	1.79	0.60
CV						51.79	59.24	58.05	54.43	12.76	15.24

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 7-27-00	CABBAGE YIELD KG/PLOT 7-27-00	CABBAGE YIELD No./PLOT 7-31-00	CABBAGE YIELD KG/PLOT 7-31-00	CABBAGE YIELD No./PLOT 8-04-00	CABBAGE YIELD KG/PLOT 8-04-00
1	trifluralin	4	EC	1	PPI	1.0	1.64	3.3	5.53	5.7	7.78
2	trifluralin	4	EC	1	PPI	0.3	0.48	3.0	4.82	7.0	10.90
	oxyfluorfen XL	2	L	0.5	PRT						
3	trifluralin	4	EC	1	PPI	0.0	0.00	2.7	4.87	6.7	9.57
	clomazone	3	ME	0.25	PRT						
4	s-metolachlor	7.6	EC	1.33	POT	0.3	0.61	0.7	1.36	9.0	12.18
5	flufenacet	60	DF	0.68	POT	1.0	1.06	3.0	4.72	8.0	11.19
6	trifluralin	4	EC	1	PPI	0.7	0.87	2.7	4.12	8.0	11.65
	oxyfluorfen LO	2	L	0.03	PO1						
7	trifluralin	4	EC	1	PPI	0.0	0.00	1.0	1.46	6.7	8.87
	oxyfluorfen LO	2	L	0.12	PO1						
8	trifluralin	4	EC	1	PPI	0.0	0.00	1.0	1.61	9.7	15.39
	oxyfluorfen	4	F	0.03	PO1						
9	trifluralin	4	EC	1	PPI	0.3	0.39	1.3	2.11	8.3	12.17
	oxyfluorfen	4	F	0.12	PO1						
10	trifluralin	4	EC	1	PPI	0.3	0.43	2.3	3.89	8.3	13.51
	oxyfluorfen	40	WP	0.03	PO1						
11	trifluralin	4	EC	1	PPI	0.3	0.33	1.7	2.93	7.7	12.21
	oxyfluorfen	40	WP	0.12	PO1						
12	trifluralin	4	EC	1	PPI	1.0	1.47	2.7	4.33	6.7	9.77
	pyridate	5	EC	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	trifluralin	4	EC	1	PPI	0.0	0.00	4.3	7.66	5.3	7.45
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						1.24	1.81	2.85	4.81	2.99	4.67
Standard Deviation						0.74	1.07	1.69	2.85	1.77	2.77
CV						179.57	192.14	74.15	75.12	23.75	25.28

Weed Control in Broccoli and Cabbage - HTRC

Project Code: WC 114-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 8-09-00	CABBAGE YIELD KG/PLOT 8-09-00	CABBAGE YIELD No./PLOT 8-14-00	CABBAGE YIELD KG/PLOT 8-14-00	CABBAGE TOT. YLD No./PLOT	CABBAGE TOT. YLD KG/PLOT
1	trifluralin	4	EC	1	PPI	0.0	0.00	4.3	5.65	14.3	20.60
2	trifluralin	4	EC	1	PPI	1.7	2.70	3.3	4.42	15.3	23.32
	oxyfluorfen XL	2	L	0.5	PRT						
3	trifluralin	4	EC	1	PPI	1.0	1.36	3.7	4.33	14.0	20.13
	clomazone	3	ME	0.25	PRT						
4	s-metolachlor	7.6	EC	1.33	POT	0.7	1.01	3.7	4.42	14.3	19.57
5	flufenacet	60	DF	0.68	POT	0.3	0.41	4.0	5.69	16.3	23.08
6	trifluralin	4	EC	1	PPI	1.3	1.91	2.7	3.58	15.3	22.13
	oxyfluorfen LO	2	L	0.03	PO1						
7	trifluralin	4	EC	1	PPI	2.0	3.09	3.3	4.81	13.0	18.23
	oxyfluorfen LO	2	L	0.12	PO1						
8	trifluralin	4	EC	1	PPI	0.0	0.00	5.0	7.04	15.7	24.04
	oxyfluorfen	4	F	0.03	PO1						
9	trifluralin	4	EC	1	PPI	1.0	1.49	3.7	4.97	14.7	21.13
	oxyfluorfen	4	F	0.12	PO1						
10	trifluralin	4	EC	1	PPI	1.3	1.96	3.3	4.31	15.7	24.09
	oxyfluorfen	40	WP	0.03	PO1						
11	trifluralin	4	EC	1	PPI	1.3	1.79	3.3	4.79	14.3	22.05
	oxyfluorfen	40	WP	0.12	PO1						
12	trifluralin	4	EC	1	PPI	1.0	1.14	4.0	5.19	15.3	21.90
	pyridate	5	EC	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	trifluralin	4	EC	1	PPI	2.0	3.06	3.3	3.80	15.0	21.97
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						1.75	2.54	2.81	3.86	2.79	3.94
Standard Deviation						1.04	1.51	1.67	2.29	1.65	2.34
CV						98.91	98.55	45.49	47.36	11.12	10.79

Weed Control in Processing Carrot - Hart

Project Code: WC 107-00-02 **Location: Oomen Bros, Hart, MI**

Personnel: Bernard Zandstra, Joseph Masabni, Norm Myers

Crop: Carrot	**Variety: Goliath**	**Field or Block: N/A**
Planting Method: Seed	**Planting Date: 5-10-00**	**Harvest: 9-7-00**
Spacing: 15 seeds / ft	**Row Spacing: 18",3rows/plot**	**Perennial Age: N/A**
Tillage Type: Conventional	**Study Design: RCBD**	**Replications: 3**

Plot Size: 66" wide * 30 ft long

Soil Type: Spinx-Benona Complex **OM: 1.6%** **pH: 6.7**
Sand: 83% **Silt: 11%** **Clay: 6%** **CEC: 5.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-16	2 pm	56 F/ 56 F	wet	SW 3-5	54F/56F	88%	100%cloud	N
PO1	6-22	12:15pm	74 F/ 71 F	dry	NW 7-10	66F/74F	67$	25% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-22-00	Carrot	3-5"	3-4	moderate
	RRPW	1-4"	4-8	moderate

Notes and Comments

1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **9-7-00: Harvested 5 ft of 3 rows per plot.**

Weed Control in Processing Carrot - Hart

Project Code: WC 107-00-02 **Location: Oomen Bros, Hart, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BARLEY RATING 6-06-00	CARROT RATING 6-22-00	RRPW RATING 6-22-00	CARROT RATING 7-19-00	RRPW RATING 7-19-00
1	linuron	50	DF	0.5	PRE	9.7	3.7	6.3	3.0	8.7
	linuron	50	DF	1	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
2	linuron	50	DF	0.5	PRE	9.3	3.7	3.7	2.0	4.7
	linuron	50	DF	0.5	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
3	linuron	50	DF	0.3	PRE	6.7	2.3	5.7	2.0	6.7
	linuron	50	DF	0.5	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
4	flumioxazin	50	WP	0.01	PRE	10.0	9.7	10.0	9.7	10.0
	linuron	50	DF	0.5	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
5	flumioxazin	50	WP	0.01	PRE	10.0	10.0	10.0	10.0	10.0
	flumioxazin	50	WP	0.025	PO1					
6	flumioxazin	50	WP	0.01	PRE	10.0	9.7	10.0	10.0	10.0
	flumioxazin	50	WP	0.025	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
7	flufenacet	60	DF	0.4	PRE	3.0	7.7	7.7	7.0	10.0
	linuron	50	DF	1	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
8	flufenpyr	57.6	WG	0.018	PRE	2.0	3.3	6.7	3.3	3.0
9	s-metolachlor	7.6	EC	0.6	PRE	4.3	5.3	7.3	3.3	8.7
	linuron	50	DF	0.5	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
10	pendimethalin	3.3	EC	0.75	PRE	3.0	3.3	9.0	3.3	8.3
	linuron	50	DF	0.5	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
11	linuron	50	DF	1	PRE	10.0	2.3	8.3	4.3	6.7
	fluroxypyr	1.5	L	0.094	PO1					
12	linuron	50	DF	1	PRE	10.0	2.3	7.0	8.7	10.0
	pyrithiobac	85	SP	0.054	PO1					
LSD (P=.05)						2.65	1.84	2.98	1.21	2.21
Standard Deviation						1.57	1.09	1.76	0.72	1.31
CV						21.36	20.58	23.06	12.89	16.23

Weed Control in Processing Carrot - Hart

Project Code: WC 107-00-02 **Location: Oomen Bros, Hart, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 9-07-00	RRPW RATING 9-07-00	CARROT YIELD KG/ 5 FT 9-07-00
1	linuron	50	DF	0.5	PRE	2.7	8.0	9.01
	linuron	50	DF	1	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
2	linuron	50	DF	0.5	PRE	2.7	3.7	8.19
	linuron	50	DF	0.5	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
3	linuron	50	DF	0.3	PRE	2.7	5.3	8.46
	linuron	50	DF	0.5	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
4	flumioxazin	50	WP	0.01	PRE	9.7	9.0	0.55
	linuron	50	DF	0.5	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
5	flumioxazin	50	WP	0.01	PRE	10.0	9.7	0.31
	flumioxazin	50	WP	0.025	PO1			
6	flumioxazin	50	WP	0.01	PRE	10.0	10.0	0.28
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
7	flufenacet	60	DF	0.4	PRE	5.0	7.7	3.60
	linuron	50	DF	1	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
8	flufenpyr	57.6	WG	0.018	PRE	3.7	3.7	5.16
9	s-metolachlor	7.6	EC	0.6	PRE	2.7	6.3	7.67
	linuron	50	DF	0.5	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
10	pendimethalin	3.3	EC	0.75	PRE	2.0	5.7	9.23
	linuron	50	DF	0.5	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
11	linuron	50	DF	1	PRE	3.0	4.7	6.43
	fluroxypyr	1.5	L	0.094	PO1			
12	linuron	50	DF	1	PRE	5.0	8.7	1.35
	pyrithiobac	85	SP	0.054	PO1			
LSD (P=.05)						2.48	2.73	2.86
Standard Deviation						1.47	1.61	1.69
CV						29.83	23.48	33.73

Postemergence Weed Control in Carrot with Proptec Sprayer - MSU Muck Farm

Project Code: WC 107-00-04 **Location: Laingsburg, MI**

Personnel: Bernard Zandstra, Joseph Masabni, Gary Van Ee, Richard Ledebuhr
Crop: Carrot **Variety: Goliath, Premium** **Field or Block: C6,7,8**
Planting Method: Seed **Planting Date: 6-14-00** **Harvest: 9-19-00**
Spacing: 1 inch **Row Spacing: 16 inches** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: see Notes

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-A	7-18	11 am	64 F/ 69 F	dry	NW 5-7	57F/64F	67%	10% cloud	N
PO1-B	7-18	1:30pm	69 F/ 70 F	dry	NW 1-3	60F/69F	60%	90% cloud	N
PO2-A	8-1	10:30am	70 F/ 70 F	damp	calm	69F/70F	97%	100%cloud	Y
PO2-B	8-1	10 am	70 F/ 70 F	damp	calm	69F/70F	97%	100%cloud	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-18-00	Carrot (C7,8)	3-5"	3-4	good
	YENS	4-8"	many	many
	Carrot (C6)	6-12"	4-5	moderate
8-1-00	Carrot (C7,8)	6-8"	many	good
	YENS (C7,8)	8-12"	many	many
	Carrot (C6)	14-16"	many	good
	YENS (C6)	4-5"	many	few

Notes and Comments

1. PO1-A sprays applied with Proptec sprayer, 5 gpa.
   PO1-B sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Proptec sprayer: each treatment covers 3 beds (5.3 ft wide each * 50 ft long).
4. Boom sprayer: each treatment covers 1 bed (5.3 ft wide * 50 ft long).
5. 9-9-00 Harvest: 5 ft of 3 rows were harvested from one bed per plot.
6. Carrots in block C6 were planted on 5-3-00, variety Goliath; carrots in block C7,8 were planted on 6-14-00, variety Premium.

Postemergence Weed Control in Carrot with Proptec Sprayer - MSU Muck Farm

Project Code: WC 107-00-04 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-26-00	YENS RATING 7-26-00	CARROT RATING 8-16-00	YENS RATING 8-16-00
1	linuron - Boom	50	DF	0.25	PO1,2	1.7	3.3	1.7	6.0
2	linuron - Proptec	50	DF	0.25	PO1,2	1.0	4.3	1.7	5.7
3	linuron - Boom	50	DF	0.25	PO1,2	2.0	5.3	2.0	6.3
	L-77		L	0.25%	PO1,2				
4	linuron - Proptec	50	DF	0.25	PO1,2	1.3	3.3	1.7	5.0
	L-77		L	0.25%	PO1,2				
5	linuron - Boom	50	DF	0.5	PO1,2	1.7	3.7	2.0	7.0
6	linuron - Proptec	50	DF	0.5	PO1,2	2.0	4.7	2.3	7.3
7	linuron - Boom	50	DF	0.5	PO1,2	2.3	6.3	2.0	7.7
	L-77		L	0.25%	PO1,2				
8	linuron - Proptec	50	DF	0.5	PO1,2	2.3	7.3	2.0	8.0
	L-77		L	0.25%	PO1,2				
9	linuron - Boom	50	DF	1	PO1,2	2.3	5.7	2.3	8.3
10	linuron - Proptec	50	DF	1	PO1,2	2.3	7.0	2.3	8.7
11	linuron - Boom	50	DF	1	PO1,2	2.7	7.3	2.7	9.3
	L-77		L	0.25%	PO1,2				
12	linuron - Proptec	50	DF	1	PO1,2	2.3	8.0	2.0	8.7
	L-77		L	0.25%	PO1,2				
LSD (P=.05)						0.92	1.64	1.18	1.36
Standard Deviation						0.54	0.97	0.69	0.80
CV						27.18	17.51	33.79	10.94

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	YENS RATING 9-19-00	LACG RATING 9-19-00	CARROT YIELD KG/PLOT 9-19-00
1	linuron - Boom	50	DF	0.25	PO1,2	4.0	5.3	5.19
2	linuron - Proptec	50	DF	0.25	PO1,2	5.0	4.0	5.07
3	linuron - Boom	50	DF	0.25	PO1,2	5.3	3.7	5.96
	L-77		L	0.25%	PO1,2			
4	linuron - Proptec	50	DF	0.25	PO1,2	4.3	4.0	4.82
	L-77		L	0.25%	PO1,2			
5	linuron - Boom	50	DF	0.5	PO1,2	5.3	5.7	7.76
6	linuron - Proptec	50	DF	0.5	PO1,2	7.0	4.7	6.16
7	linuron - Boom	50	DF	0.5	PO1,2	6.7	5.3	6.93
	L-77		L	0.25%	PO1,2			
8	linuron - Proptec	50	DF	0.5	PO1,2	7.7	5.0	6.21
	L-77		L	0.25%	PO1,2			
9	linuron - Boom	50	DF	1	PO1,2	8.0	6.7	7.80
10	linuron - Proptec	50	DF	1	PO1,2	8.3	6.7	6.44
11	linuron - Boom	50	DF	1	PO1,2	8.7	8.0	6.09
	L-77		L	0.25%	PO1,2			
12	linuron - Proptec	50	DF	1	PO1,2	8.3	7.3	7.55
	L-77		L	0.25%	PO1,2			
LSD (P=.05)						2.41	2.68	2.66
Standard Deviation						1.42	1.59	1.57
CV						21.68	28.68	24.79

Weed Control in Carrot - Fremont 1

Project Code: WC 107-00-01 **Location: Vogel Farm, Fremont**

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Jim Breinling
Crop: Processing Carrot **Variety: Bergen (Bejo)** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 5-5-00** **Harvest: 9-7-00**
Spacing: 15 seeds / ft **Row Spacing: 18",3 rows/plot** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 66 inches wide * 30 ft long

Soil Type: Pipestone Sand **OM: 2.4%** **pH: 6.9**
Sand: 88% **Silt: 7%** **Clay: 5%** **CEC: 6.6**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-16	10 am	53 F/ 52 F	wet	SW 3-5	51F/53F	88%	100%cloud	N
PO1	6-16	9:45am	71 F/ 67 F	moist	W 6-8	65F/71F	73%	100%cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-16-00	Carrot	1-2"	2-4	good
	COLQ	2-3"	4-6	few
	RRPW	2-3"	4-6	few

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 9-7-00: Harvested 5 ft of 3 rows per plot.

Weed Control in Carrot - Fremont 1

Project Code: WC 107-00-01 **Location: Vogel Farm, Fremont**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 6-16-00	COLQ RATING 6-16-00	RRPW RATING 6-16-00	CARROT RATING 6-22-00	CARROT RATING 7-13-00	LACG RATING 7-13-00	RRPW RATING 7-13-00
1	linuron	50	DF	1	PRE	3.0	10.0	10.0	5.0	3.0	10.0	7.3
	linuron	50	DF	1	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
2	linuron	50	DF	1	PRE	3.0	10.0	10.0	5.3	3.3	8.3	6.7
	flumioxazin	50	WP	0.025	PO1							
3	linuron	50	DF	1	PRE	3.0	10.0	10.0	8.3	4.7	9.0	7.3
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
4	flufenacet	60	DF	0.75	PRE	7.7	9.7	5.0	9.7	7.7	10.0	9.0
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
5	s-dimethenamid	6	EC	0.65	PRE	8.7	9.0	10.0	10.0	8.3	10.0	9.0
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
6	flumioxazin	50	WP	0.01	PRE	6.7	10.0	9.7	9.3	7.7	8.3	7.0
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
7	flumioxazin	50	WP	0.02	PRE	8.3	10.0	10.0	9.3	8.7	9.7	7.0
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
8	flumioxazin	50	WP	0.04	PRE	9.3	10.0	10.0	10.0	9.3	7.7	7.0
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
9	flumioxazin	50	WP	0.06	PRE	10.0	10.0	10.0	10.0	10.0	9.3	8.3
	flumioxazin	50	WP	0.025	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
10	s-metolachlor	7.6	EC	1.33	PRE	6.3	10.0	9.3	7.7	5.0	10.0	10.0
	linuron	50	DF	0.5	PO1							
	clethodim	2	EC	0.1	PO1							
	NIS		L	0.5%	PO1							
11	pendimethalin	3.3	EC	2	PRE	3.0	10.0	7.7	8.0	4.7	10.0	7.3
	flumioxazin	50	WP	0.025	PO1							
	fluazifop-P	2	EC	0.16	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						1.51	0.57	1.81	0.91	1.44	1.85	2.03
Standard Deviation						0.89	0.33	1.06	0.54	0.85	1.09	1.19
CV						14.18	3.39	11.47	6.37	12.89	11.69	15.25

Weed Control in Carrot - Fremont 1

Project Code: WC 107-00-01 **Location: Vogel Farm, Fremont**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 9-07-00	RRPW RATING 9-07-00	CARROT YIELD KG/5 FT 9-07-00
1	linuron	50	DF	1	PRE	1.3	7.3	8.27
	linuron	50	DF	1	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
2	linuron	50	DF	1	PRE	1.7	6.7	7.59
	flumioxazin	50	WP	0.025	PO1			
3	linuron	50	DF	1	PRE	1.7	7.7	7.85
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
4	flufenacet	60	DF	0.75	PRE	6.3	7.7	3.24
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
5	s-dimethenamid	6	EC	0.65	PRE	6.0	7.3	3.73
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
6	flumioxazin	50	WP	0.01	PRE	5.3	5.3	4.37
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
7	flumioxazin	50	WP	0.02	PRE	7.7	5.0	2.24
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
8	flumioxazin	50	WP	0.04	PRE	8.3	5.0	0.38
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
9	flumioxazin	50	WP	0.06	PRE	10.0	7.7	0.18
	flumioxazin	50	WP	0.025	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
10	s-metolachlor	7.6	EC	1.33	PRE	3.7	8.0	7.49
	linuron	50	DF	0.5	PO1			
	clethodim	2	EC	0.1	PO1			
	NIS		L	0.5%	PO1			
11	pendimethalin	3.3	EC	2	PRE	2.0	6.7	8.45
	flumioxazin	50	WP	0.025	PO1			
	fluazifop-P	2	EC	0.16	PO1			
	NIS		L	0.5%	PO1			
LSD (P=.05)						1.14	2.31	2.54
Standard Deviation						0.67	1.36	1.49
CV						13.64	20.05	30.59

Postemergence Weed Control in Carrot - Fremont 2

Project Code: WC 107-00-05 **Location: Vogel Farm, Fremont**

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Jim Breinling
Crop: Processing Carrot **Variety: Dundee (SunSeeds)** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 6-10-00** **Harvest: 9-26-00**
Spacing: 25 seeds / ft **Row Spacing: 3 rows * 18"** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 66 inches wide * 30 ft long

Soil Type: Kingsville Mucky Sand **OM: 2.7%** **pH: 5.2**
Sand: 81% **Silt: 12%** **Clay: 7%** **CEC: 10.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PO2	7-13	10:30am	70 F/ 71 F	dry	SW 2-4	68F/75F	70%	90% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-13-00	Carrot	3-4"	3-4	good
	RRPW	.5-3"	2-6	moderate

Notes and Comments
1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **7-01-00: Whole block treated with Lorox 0.25.**
4. **9-26-00: Harvest plot size - 5 ft of 3 rows.**

Postemergence Weed Control in Carrot - Fremont 2

Project Code: WC 107-00-05 **Location: Vogel Farm, Fremont**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-19-00	RRPW RATING 7-19-00	CARROT RATING 7-25-00	CARROT YIELD KG/PLOT 9-26-00
1	linuron	50	DF	0.5	PO2	3.0	10.0	2.7	12.61
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
2	linuron	50	DF	1	PO2	3.0	10.0	3.0	11.05
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
3	flumioxazin	50	WP	0.025	PO2	7.3	10.0	6.7	10.40
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
4	flumioxazin	50	WP	0.05	PO2	8.0	10.0	7.3	9.87
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
5	flumioxazin	50	WP	0.1	PO2	8.3	10.0	7.7	9.40
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
6	metribuzin	75	DF	0.25	PO2	3.0	10.0	3.3	11.93
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
7	prometryn	4	L	1	PO2	4.3	10.0	4.7	10.93
	sethoxydim	1.53	EC	0.19	PO2				
	NIS		L	0.5%	PO2				
8	oxyfluorfen	2	L	0.031	PO2	3.0	9.3	2.0	12.61
9	azafenidin	80	WG	0.1	PO2	5.3	10.0	4.7	11.61
10	sulfentrazone	75	DF	0.1	PO2	5.7	10.0	4.3	10.37
11	flumiclorac	0.86	EC	0.04	PO2	4.7	10.0	3.3	11.54
LSD (P=.05)						1.07	0.30	0.96	1.68
Standard Deviation						0.63	0.17	0.56	0.99
CV						12.45	1.75	12.43	8.91

Yellow Nutsedge Control in Carrot - Muck Farm

Project Code: WC 107-00-03 **Location: Laingsburg, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Ron Gnagey
Crop: Carrot **Variety: Premium** **Field or Block: C-20**
Planting Method: Seed **Planting Date: 6-13-00** **Harvest: 9-19-00**
Spacing: 1 inch **Row Spacing: 16 inch** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 50 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	6-23	10:30am	77 F/ 66 F	dry	calm	70F/77F	72%	50% cloud	N
PO1	7-7	10:20am	73 F/ 65 F	dry	SE 2-4	62F/73F	53%	5% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-23-00	Carrot	0.5"	cotyledon	good
	YENS	2-3"	4-5	good
7-7-00	Carrot	1-1.5"	3-4	good
	YENS	3-6"	many	many

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. The field was replanted after being flooded out in May. Some carrots had emerged before the preemergence application.
4. 9-19-00: Harvest plot size = 10 ft of 3 rows/plot.

Yellow Nutsedge Control in Carrot - Muck Farm

Project Code: WC 107-00-03 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-05-00	YENS RATING 7-05-00	CARROT RATING 7-18-00	YENS RATING 7-18-00	LACG RATING 7-18-00	COPU RATING 7-18-00
1	linuron	50	DF	1	PRE	2.3	5.0	7.0	8.3	10.0	10.0
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	Sylgard		L	0.5%	PO1						
2	s-metolachlor	7.6	EC	2	PRE	3.0	3.0	7.3	8.3	10.0	10.0
	s-metolachlor	7.6	EC	2	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
3	s-dimethenamid	6	EC	0.65	PRE	2.7	2.0	7.7	8.3	10.0	10.0
	s-dimethenamid	6	EC	0.65	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
4	halosulfuron	75	WG	0.032	PRE	10.0	8.3	10.0	10.0	1.7	5.0
	halosulfuron	75	WG	0.032	PO1						
5	linuron	50	DF	1	PRE	2.0	4.0	5.0	6.0	10.0	10.0
	linuron	50	DF	0.5	PO1						
	oxyfluorfen	2	L	0.032	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
6	flumioxazin	50	WP	0.063	PRE	6.7	4.0	10.0	8.7	4.3	9.0
	flumioxazin	50	WP	0.025	PO1						
	halosulfuron	75	WG	0.032	PO1						
7	pendimethalin	3.3	EC	2	PRE	1.3	1.3	1.7	2.3	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	1	PO1						
	Sylgard		L	0.5%	PO1						
8	pendimethalin	3.3	EC	2	PRE	1.7	1.0	1.3	2.7	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	2	PO1						
	Sylgard		L	0.5%	PO1						
9	s-metolachlor	7.6	EC	2	PRE	2.3	4.0	7.0	9.3	10.0	10.0
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	2	PO1						
	Sylgard		L	0.5%	PO1						
10	ethofumesate	4	L	2	PRE	3.7	7.7	8.3	9.7	10.0	10.0
	linuron	50	DF	1	PRE						
	ethofumesate	4	L	2	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
LSD (P=.05)						1.89	2.06	1.49	1.63	1.34	2.49
Standard Deviation						1.10	1.20	0.87	0.95	0.78	1.45
CV						30.86	29.76	13.34	12.90	9.06	15.42

Yellow Nutsedge Control in Carrot - Muck Farm

Project Code: WC 107-00-03 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	YENS RATING 9-19-00	LACG RATING 9-19-00	COLQ RATING 9-19-00	MAYC RATING 9-19-00	RRPW RATING 9-19-00	CARROT YIELD KG/PLOT 9-19-00
1	linuron	50	DF	1	PRE	7.0	5.3	8.7	6.0	8.0	5.48
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	Sylgard		L	0.5%	PO1						
2	s-metolachlor	7.6	EC	2	PRE	7.3	8.0	9.3	8.3	8.7	7.11
	s-metolachlor	7.6	EC	2	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
3	s-dimethenamid	6	EC	0.65	PRE	7.3	7.0	9.7	6.7	9.3	6.02
	s-dimethenamid	6	EC	0.65	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
4	halosulfuron	75	WG	0.032	PRE	9.7	1.0	10.0	10.0	9.7	1.04
	halosulfuron	75	WG	0.032	PO1						
5	linuron	50	DF	1	PRE	4.7	6.7	10.0	8.7	7.0	3.03
	linuron	50	DF	0.5	PO1						
	oxyfluorfen	2	L	0.032	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
6	flumioxazin	50	WP	0.063	PRE	10.0	1.0	9.3	9.3	9.7	1.94
	flumioxazin	50	WP	0.025	PO1						
	halosulfuron	75	WG	0.032	PO1						
7	pendimethalin	3.3	EC	2	PRE	1.7	9.7	10.0	9.7	9.3	2.38
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	1	PO1						
	Sylgard		L	0.5%	PO1						
8	pendimethalin	3.3	EC	2	PRE	2.0	9.7	10.0	9.7	9.7	2.56
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	2	PO1						
	Sylgard		L	0.5%	PO1						
9	s-metolachlor	7.6	EC	2	PRE	8.7	9.0	9.7	5.0	7.7	6.24
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	ethofumesate	4	L	2	PO1						
	Sylgard		L	0.5%	PO1						
10	ethofumesate	4	L	2	PRE	8.7	8.0	10.0	4.0	7.3	3.62
	linuron	50	DF	1	PRE						
	ethofumesate	4	L	2	PO1						
	linuron	50	DF	1	PO1						
	Sylgard		L	0.5%	PO1						
LSD (P=.05)						2.00	1.61	1.58	3.61	1.23	4.44
Standard Deviation						1.17	0.94	0.92	2.11	0.72	2.59
CV						17.40	14.34	9.53	27.25	8.31	65.74

Weed Control in Celery - Hudsonville

Project Code: WC 113-00-01 **Location: Hudsonville, MI**
Cooperator: Schreur Farms

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Celery **Variety: Peto 285** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 6-6-00** **Harvest: 8-24-00**
Spacing: 8 inches **Row Spacing: 20",2 rows/plot** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 40 in. wide * 30 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
POT	6-6	3:30pm	70 F/ 61 F	dry	SW 6-8	56F/70F	42%	clear	N
PO1	7-13	3 pm	85 F/ 70 F	dry	W 2-4	72F/85F	54%	10% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-13-00	Celery	8-10"	6-8	good
	COPU	3-6"	many	many
	LATH	3-10"	6-12	moderate
	RRPW	1-6"	many	many
	WIMU	3-6"	4-8	many
	PRSP	3-4"	many	moderate

Notes and Comments

1. Sprays applied with 2-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 8-24-00: Harvested 10 plants/row x 2 rows/plot = 20 plants/plot.
4. Fluroxypyr caused curling and twisting of celery petioles making them unsuitable for market.

Weed Control in Celery - Hudsonville

Project Code: WC 113-00-01 **Location: Hudsonville, MI**
Cooperator: Schreur Farms

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CELERY RATING 7-13-00	COPU RATING 7-13-00	LATH RATING 7-13-00	PRSP RATING 7-13-00	RRPW RATING 7-13-00	WIMU RATING 7-13-00
1	prometryn	4	L	1	POT	1.3	5.0	6.7	4.3	8.3	7.7
	prometryn	4	L	1	PO1						
2	prometryn	4	L	1	POT	1.0	5.3	7.0	4.3	8.0	7.0
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
3	s-metolachlor	7.6	EC	1.9	POT	1.3	4.3	9.3	9.0	9.7	7.7
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
4	prometryn	4	L	1	POT	1.3	3.3	7.7	3.0	8.0	8.3
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
5	flumioxazin	50	WP	0.03	POT	1.3	7.7	9.3	8.3	9.3	8.7
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
6	flumioxazin	50	WP	0.06	POT	3.0	7.7	9.0	9.3	9.7	9.3
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
7	prometryn	4	L	1	POT	1.3	2.3	3.7	4.7	5.3	3.3
	flumioxazin	50	WP	0.025	PO1						
8	prometryn	4	L	2	POT	1.0	4.0	6.3	5.7	4.3	5.3
	prometryn	4	L	2	PO1						
9	prometryn	4	L	1	POT	1.3	3.0	4.0	3.7	6.7	3.0
	fluroxypyr	1.5	L	0.094	PO1						
10	prometryn	4	L	1	POT	1.0	3.0	5.0	4.0	6.0	3.3
	prometryn	4	L	1	PO1						
	fluroxypyr	1.5	L	0.094	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
LSD (P=.05)						0.79	3.31	3.91	4.96	3.52	4.26
Standard Deviation						0.46	1.93	2.28	2.89	2.05	2.48
CV						32.82	42.29	33.50	51.35	27.24	38.98

Weed Control in Celery - Hudsonville

Project Code: WC 113-00-01 **Location: Hudsonville, MI**
Cooperator: Schreur Farms

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CELERY RATING 7-25-00	COPU RATING 7-25-00	LATH RATING 7-25-00	PRSP RATING 7-25-00	WIMU RATING 7-25-00	CELERY YIELD KG/20PLT 8-24-00
1	prometryn	4	L	1	POT	1.7	7.0	8.7	7.0	8.0	33.04
	prometryn	4	L	1	PO1						
2	prometryn	4	L	1	POT	3.0	7.7	9.0	8.3	10.0	32.48
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
3	s-metolachlor	7.6	EC	1.9	POT	3.0	9.0	9.3	10.0	10.0	31.62
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
4	prometryn	4	L	1	POT	2.7	8.3	8.3	8.0	9.3	29.06
	linuron	50	DF	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
5	flumioxazin	50	WP	0.03	POT	2.0	9.0	8.3	8.3	8.3	30.96
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
6	flumioxazin	50	WP	0.06	POT	2.7	9.0	10.0	9.7	10.0	31.20
	prometryn	4	L	1	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
7	prometryn	4	L	1	POT	2.7	4.3	6.3	4.3	3.0	31.67
	flumioxazin	50	WP	0.025	PO1						
8	prometryn	4	L	2	POT	2.0	8.7	8.7	7.3	9.3	30.77
	prometryn	4	L	2	PO1						
9	prometryn	4	L	1	POT	5.0	7.3	5.3	3.7	3.0	26.96
	fluroxypyr	1.5	L	0.094	PO1						
10	prometryn	4	L	1	POT	5.7	7.0	7.7	5.7	6.0	27.04
	prometryn	4	L	1	PO1						
	fluroxypyr	1.5	L	0.094	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
LSD (P=.05)						1.33	2.81	2.16	3.27	2.78	3.07
Standard Deviation						0.78	1.64	1.26	1.91	1.62	1.79
CV						25.61	21.22	15.45	26.35	21.07	5.88

Weed Control in Sweet Corn - HTRC

Project Code: WC 106-00-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni

Crop: Sweet Corn	**Variety: see Notes**	**Field or Block: 137**
Planting Method: Seed	**Planting Date: 5-26-00**	**Harvest: 9-1-00**
Spacing: 11.6 inches	**Row Spacing: 42 inches**	**Perennial Age: N/A**
Tillage Type: Conventional	**Study Design: RCBD**	**Replications: 3**

Plot Size: 8 ft wide * 50 ft long

Soil Type: Marlette Sandy Loam **OM: 2.3%** **pH: 6.4**
Sand: 52% **Silt: 29%** **Clay: 19%** **CEC: 8.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-30	9 am	64 F/	moist	S 3-4	60F/64F	80%	100%cloud	Y
PO1	6-26	10:30am	80 F/ 72 F	moist	SE 4-6	74F/80F	76%	50% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-26-00	GSS 0951	5-7"	4-5	good
	GSS 0966	8-12"	6-7	good
	COLQ	3-4"	many	few

Notes and Comments

1. **PRE sprays applied with tractor mounted CO2 research sprayer, 12 8002 nozzles, 30 psi, 20 gpa, 3.2 mph, a 16 ft band sprayed over seeded area in each plot.**
2. **PO1 sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
3. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
4. **Rows are east to west. GSS 0951 is planted on the north, and GSS 0966 is planted on the south side of the plot.**
5. **9-1-00: Harvested all mature ears from each plot. The cultivars were evaluated separately.**

Weed Control in Sweet Corn - HTRC

Project Code: WC 106-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS 0951 RATING 6-26-00	GSS 0966 RATING 6-26-00	GSS 0951 RATING 7-06-00	GSS 0966 RATING 7-06-00	COLQ RATING 7-06-00
1	s-metolachlor	7.6	EC	1.33	PRE	2.3	1.3	2.3	1.3	8.3
2	s-metolachlor	7.6	EC	1.67	PRE	2.3	1.7	3.0	2.0	8.0
3	s-metolachlor II	7.6	EC	1.67	PRE	2.3	1.3	2.0	1.0	10.0
	atrazine	4	L	1	PRE					
4	s-dimethenamid	6	EC	0.98	PRE	2.7	1.0	2.3	1.3	8.7
5	s-dimethenamid	6	EC	0.67	PRE	2.0	1.7	1.3	1.3	10.0
	atrazine	4	L	1	PRE					
6	flufenacet	60	DF	0.68	PRE	2.7	1.7	2.3	1.7	9.0
7	Axiom	68	DF	0.77	PRE	2.7	2.0	2.3	1.3	10.0
8	isoxaflutole	75	WG	0.12	PRE	2.0	1.7	1.7	1.0	10.0
9	s-metolachlor	7.6	EC	1.67	PRE	2.0	1.3	2.0	1.7	8.3
	halosulfuron	75	WG	0.047	PO1					
	NIS		L	0.5%	PO1					
10	s-metolachlor	7.6	EC	1.33	PRE	2.3	1.3	3.0	1.7	10.0
	flumiclorac	0.86	L	0.04	PO1					
	COC		L	0.5%	PO1					
11	s-metolachlor	7.6	EC	1.33	PRE	2.0	1.3	2.7	1.3	10.0
	carfentrazone	40	DF	0.008	PO1					
	NIS		L	0.5%	PO1					
12	s-metolachlor	7.6	EC	1.33	PRE	1.7	1.0	2.7	1.3	10.0
	carfentrazone	40	DF	0.008	PO1					
	atrazine	4	L	0.5	PO1					
	NIS		L	0.5%	PO1					
13	s-metolachlor	7.6	EC	1.33	PRE	1.7	1.3	2.3	1.3	10.0
	carfentrazone	40	DF	0.008	PO1					
	atrazine	4	L	0.4	PO1					
	bentazon	4	L	0.4	PO1					
	NIS		L	0.5%	PO1					
14	s-dimethenamid	6	EC	0.65	PRE	2.3	1.0	2.0	1.3	9.3
	Distinct	70	WG	0.088	PO1					
	28% UAN		L	1.25%	PO1					
	NIS		L	0.5%	PO1					
15	s-dimethenamid	6	EC	0.65	PRE	2.0	1.3	2.0	1.0	9.7
	Distinct	70	WG	0.132	PO1					
	28% UAN		L	1.25%	PO1					
	NIS		L	0.5%	PO1					
16	s-dimethenamid	6	EC	0.65	PRE	1.7	1.0	2.0	1.7	10.0
	Distinct	70	WG	0.175	PO1					
	28% UAN		L	1.25%	PO1					
	NIS		L	0.5%	PO1					
17	s-metolachlor	7.6	EC	1.33	PRE	1.7	1.3	1.7	1.0	8.7
	clopyralid	3	EC	0.19	PO1					
	bentazon	4	L	0.5	PO1					
	NIS		L	0.5%	PO1					
18	s-metolachlor	7.6	EC	1.33	PRE	2.0	1.7	2.3	1.3	9.0
	glufosinate	1.67	EC	0.26	PO1					
19	s-metolachlor	7.6	EC	1.33	PRE	2.3	1.3	2.0	1.3	10.0
	pyridate	5	EC	0.9	PO1					
	clopyralid	3	EC	0.19	PO1					
20	atrazine	4	L	1	PRE	1.7	1.3	1.7	1.3	10.0
	glufosinate	1.67	EC	0.26	PO1					
LSD (P=.05)						1.21	0.89	1.03	0.82	0.82
Standard Deviation						0.73	0.54	0.62	0.50	0.49
CV						34.62	39.01	28.55	36.33	5.24

Weed Control in Sweet Corn - HTRC

Project Code: WC 106-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS 0951 YIELD No./PLOT 9-01-00	GSS 0951 YIELD KG/PLOT 9-01-00	GSS 0966 YIELD No./PLOT 9-01-00	GSS 0966 YIELD KG/PLOT 9-01-00
1	s-metolachlor	7.6	EC	1.33	PRE	51.7	14.87	74.0	19.78
2	s-metolachlor	7.6	EC	1.67	PRE	39.3	11.05	71.7	21.09
3	s-metolachlor II	7.6	EC	1.67	PRE	54.7	15.97	85.7	25.97
	atrazine	4	L	1	PRE				
4	s-dimethenamid	6	EC	0.98	PRE	42.3	11.87	71.7	20.22
5	s-dimethenamid	6	EC	0.67	PRE	67.3	20.09	93.0	27.22
	atrazine	4	L	1	PRE				
6	flufenacet	60	DF	0.68	PRE	53.7	15.31	84.7	23.44
7	Axiom	68	DF	0.77	PRE	59.7	17.90	86.0	24.94
8	isoxaflutole	75	WG	0.12	PRE	36.0	10.07	64.0	18.57
9	s-metolachlor	7.6	EC	1.67	PRE	58.3	14.45	68.3	19.39
	halosulfuron	75	WG	0.047	PO1				
	NIS		L	0.5%	PO1				
10	s-metolachlor	7.6	EC	1.33	PRE	58.7	16.39	87.7	25.34
	flumiclorac	0.86	L	0.04	PO1				
	COC		L	0.5%	PO1				
11	s-metolachlor	7.6	EC	1.33	PRE	52.0	14.17	79.7	22.18
	carfentrazone	40	DF	0.008	PO1				
	NIS		L	0.5%	PO1				
12	s-metolachlor	7.6	EC	1.33	PRE	45.0	12.74	85.3	24.13
	carfentrazone	40	DF	0.008	PO1				
	atrazine	4	L	0.5	PO1				
	NIS		L	0.5%	PO1				
13	s-metolachlor	7.6	EC	1.33	PRE	47.7	13.75	90.3	25.55
	carfentrazone	40	DF	0.008	PO1				
	atrazine	4	L	0.4	PO1				
	bentazon	4	L	0.4	PO1				
	NIS		L	0.5%	PO1				
14	s-dimethenamid	6	EC	0.65	PRE	59.3	18.37	93.7	26.71
	Distinct	70	WG	0.088	PO1				
	28% UAN		L	1.25%	PO1				
	NIS		L	0.5%	PO1				
15	s-dimethenamid	6	EC	0.65	PRE	65.0	19.98	99.3	28.91
	Distinct	70	WG	0.132	PO1				
	28% UAN		L	1.25%	PO1				
	NIS		L	0.5%	PO1				
16	s-dimethenamid	6	EC	0.65	PRE	48.7	14.01	87.7	24.71
	Distinct	70	WG	0.175	PO1				
	28% UAN		L	1.25%	PO1				
	NIS		L	0.5%	PO1				
17	s-metolachlor	7.6	EC	1.33	PRE	43.3	13.13	78.7	23.28
	clopyralid	3	EC	0.19	PO1				
	bentazon	4	L	0.5	PO1				
	NIS		L	0.5%	PO1				
18	s-metolachlor	.6	EC	1.33	PRE	47.7	14.31	77.7	20.29
	glufosinate	1.67	EC	0.26	PO1				
19	s-metolachlor	7.6	EC	1.33	PRE	43.7	13.59	80.0	25.69
	pyridate	5	EC	0.9	PO1				
	clopyralid	3	EC	0.19	PO1				
20	atrazine	4	L	1	PRE	59.3	18.75	86.7	28.85
	glufosinate	1.67	EC	0.26	PO1				
LSD (P=.05)						19.92	6.63	20.84	6.48
Standard Deviation						12.07	4.02	12.63	3.92
CV						23.36	26.73	15.35	16.49

Herbicide Screen on Cucurbits - IR-4

Project Code: WC 108-00-01 Location: HTRC, East Lansing, MI
Cooperator: IR-4

Personnel: Bernard Zandstra, Joseph Masabni, Maralyn Probst, Anne Boone
Crop: Cuc.,Pumpkin,Squash Variety: see Notes Field or Block: 121-123
Planting Method: Seed Planting Date: 5-30-00 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

Soil Type: Marlette Sandy Loam OM: 1% pH: 6.2
Sand: 64% Silt: 23% Clay: 13% CEC: 5.4

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-30	3:45pm	74 F/ 65 F	dry	SE 4-7	64F/74F	58%	80%cloud	N
PRE	5-31	9:40am	71 F/ 62 F	dry	S 1-2	71F/67F	82%	100%cloud	N
PO1	6-19	1:10pm	79 F/ 70 F	dry	S 4-6	68F/79F	58%	20% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-19-00	Pumpkin	3-4"	2	good
	Cucumber	2-3"	1-2	good
	Squash	2-4"	1-2	good
	GRFT	1-2"	2-3	moderate
	COLQ	1-3"	2-6	moderate
	RRPW	0.5-2"	1-4	moderate
	WIRA	1-4"	2-6	moderate

Notes and Comments
1. Sprays applied with tractor-mounted CO2 sprayer. 12 8002 nozzles, 30 psi, 20 gpa, 3.2 mph. A 16 ft strip was sprayed over the middle of each plot, which covered the seeded area.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Cultivars: Pickling Cucumber - Vlaspic M GGE 0059-001
   Pumpkin - Howden - 143910012
   Butternut Squash - Waltham - 142399
4. Spacing: Cucumber - 3 inches in row, 3 rows x 14 inches; pumpkin and squash - 6 inches in row, 1 row each x 28 inches beyond cucumbers.
5. Plots include a 10 ft spray alley between R1+R2, no alley between R2+R3.
6. Treatments 11-15 applied on 5-31-00.
7. Harvest Dates: Cucumber - 7-25-00; Pumpkin - 9-27-00; Squash - 9-27-00.
8. This plot suffered serious water damage soon after planting.

Herbicide Screen on Cucurbits - IR-4

Project Code: WC 108-00-01 **Location: HTRC, East Lansing, MI**
Cooperator: IR-4

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PUMPKIN RATING 6-19-00	CUCUMBER RATING 6-19-00	SQUASH RATING 6-19-00	GRFT RATING 6-19-00	LACG RATING 6-19-00	COLQ RATING 6-19-00
1	untreated					3.7	1.7	1.7	1.0	1.0	1.0
2	halosulfuron	75	DF	0.024	PRE	2.3	1.7	3.0	4.0	7.3	6.7
3	halosulfuron	75	DF	0.024	PO1	3.0	1.7	1.7	1.0	1.7	1.0
4	flufenacet	60	DF	0.5	PRE	1.0	3.0	1.7	9.0	9.3	5.7
5	flufenacet	60	DF	1	PRE	4.0	7.7	5.0	9.7	10.0	9.7
6	flumiclorac	0.86	EC	0.04	PO1	2.0	1.7	1.7	1.7	3.0	1.7
7	flumioxazin	50	DF	0.025	PRE	8.0	9.3	8.3	10.0	10.0	10.0
8	pyrithiobac	85	DF	0.054	PRE	8.0	6.7	7.7	9.7	10.0	9.3
9	pyrithiobac	85	DF	0.054	PO1	1.0	1.0	1.0	1.0	3.3	3.0
10	s-dimethenamid	6	EC	0.66	PRE	3.3	4.3	4.3	10.0	10.0	10.0
11	s-dimethenamid	6	EC	1.32	PRE	4.7	7.7	3.7	9.3	10.0	10.0
12	s-metolachlor	7.6	EC	1.33	PRE	4.0	4.3	3.3	7.0	9.0	5.0
13	sulfentrazone	75	DF	0.1	PRE	2.7	6.0	3.7	9.3	10.0	10.0
14	sulfentrazone	75	DF	0.2	PRE	7.0	8.3	7.7	10.0	10.0	10.0
15	ethalfluralin	3	EC	1.13	PRE	1.0	1.3	1.0	10.0	10.0	9.0
LSD (P=.05)						3.16	2.13	2.61	1.96	2.93	3.07
Standard Deviation						1.89	1.27	1.56	1.17	1.75	1.84
CV						50.95	28.80	42.36	17.16	22.94	27.00

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	RRPW RATING 6-19-00	WIRA RATING 6-19-00	PUMPKIN RATING 6-30-00	CUCUMBER RATING 6-30-00	SQUASH RATING 6-30-00	BYGR RATING 6-30-00
1	untreated					1.0	1.0	4.3	3.0	3.7	3.0
2	halosulfuron	75	DF	0.024	PRE	6.7	8.7	2.3	1.3	3.3	4.7
3	halosulfuron	75	DF	0.024	PO1	1.0	1.0	4.3	2.3	3.0	5.0
4	flufenacet	60	DF	0.5	PRE	5.7	4.3	2.0	4.3	1.7	9.0
5	flufenacet	60	DF	1	PRE	9.7	8.3	5.3	7.0	7.3	10.0
6	flumiclorac	0.86	EC	0.04	PO1	1.7	1.0	4.0	5.3	3.3	3.0
7	flumioxazin	50	DF	0.025	PRE	10.0	9.0	9.7	10.0	9.0	10.0
8	pyrithiobac	85	DF	0.054	PRE	9.3	10.0	8.3	9.0	9.3	9.0
9	pyrithiobac	85	DF	0.054	PO1	3.3	3.7	5.7	7.7	6.7	5.0
10	s-dimethenamid	6	EC	0.66	PRE	10.0	9.3	5.3	6.7	6.7	10.0
11	s-dimethenamid	6	EC	1.32	PRE	10.0	6.3	7.0	8.0	6.3	10.0
12	s-metolachlor	7.6	EC	1.33	PRE	4.0	4.0	4.7	5.0	4.7	8.0
13	sulfentrazone	75	DF	0.1	PRE	10.0	4.7	4.3	7.0	4.3	10.0
14	sulfentrazone	75	DF	0.2	PRE	10.0	9.0	8.0	9.3	8.3	10.0
15	ethalfluralin	3	EC	1.13	PRE	9.7	1.0	2.0	2.3	2.3	9.3
LSD (P=.05)						3.41	4.23	3.22	2.76	3.00	2.79
Standard Deviation						2.04	2.53	1.93	1.65	1.79	1.67
CV						30.00	46.65	37.37	27.99	33.64	21.58

Herbicide Screen on Cucurbits - IR-4

Project Code: WC 108-00-01 **Location: HTRC, East Lansing, MI**
Cooperator: IR-4

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GRFT RATING 6-30-00	LACG RATING 6-30-00	COLQ RATING 6-30-00	EBNS RATING 6-30-00	RRPW RATING 6-30-00	WIRA RATING 6-30-00
1	untreated					3.0	5.0	1.0	3.0	1.7	1.0
2	halosulfuron	75	DF	0.024	PRE	4.3	5.3	6.7	1.3	7.3	8.7
3	halosulfuron	75	DF	0.024	PO1	6.7	7.7	1.7	3.0	7.3	9.7
4	flufenacet	60	DF	0.5	PRE	9.3	9.3	4.3	6.7	5.3	3.7
5	flufenacet	60	DF	1	PRE	10.0	10.0	8.7	10.0	10.0	9.3
6	flumiclorac	0.86	EC	0.04	PO1	3.3	3.3	7.3	9.0	8.7	2.3
7	flumioxazin	50	DF	0.025	PRE	9.7	10.0	9.7	10.0	10.0	7.0
8	pyrithiobac	85	DF	0.054	PRE	9.3	10.0	10.0	10.0	10.0	10.0
9	pyrithiobac	85	DF	0.054	PO1	4.3	7.7	2.3	10.0	7.7	7.0
10	s-dimethenamid	6	EC	0.66	PRE	10.0	10.0	8.7	10.0	10.0	4.7
11	s-dimethenamid	6	EC	1.32	PRE	10.0	10.0	9.3	10.0	10.0	8.0
12	s-metolachlor	7.6	EC	1.33	PRE	8.3	9.0	5.3	8.0	5.7	4.0
13	sulfentrazone	75	DF	0.1	PRE	10.0	10.0	10.0	10.0	10.0	3.0
14	sulfentrazone	75	DF	0.2	PRE	10.0	10.0	10.0	10.0	10.0	8.0
15	ethalfluralin	3	EC	1.13	PRE	9.0	9.7	7.0	5.3	7.7	1.0
LSD (P=.05)						2.69	3.25	2.76	2.76	3.01	4.65
Standard Deviation						1.61	1.94	1.65	1.65	1.80	2.78
CV						20.59	22.92	24.25	21.29	22.29	47.80

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CUCUMBER PLANT WT KG/PLOT 7-25-00	CUCUMBER FRUIT WT KG/PLOT 7-25-00	CUCUMBER GRADE 1 KG/PLOT 7-25-00	CUCUMBER GRADE 2 KG/PLOT 7-25-00	CUCUMBER GRADE 3 KG/PLOT 7-25-00	CUCUMBER OVERSIZE KG/PLOT 7-25-00
1	untreated					7.04	8.02	0.61	1.88	4.63	0.63
2	halosulfuron	75	DF	0.024	PRE	28.13	22.92	1.03	4.71	14.51	4.37
3	halosulfuron	75	DF	0.024	PO1	15.95	10.44	0.67	2.81	5.61	0.99
4	flufenacet	60	DF	0.5	PRE	19.07	17.34	1.37	3.66	10.29	1.67
5	flufenacet	60	DF	1	PRE	0.55	0.11	0.05	0.04	0.00	0.00
6	flumiclorac	0.86	EC	0.04	PO1	16.37	11.51	2.00	3.45	4.84	0.83
7	flumioxazin	50	DF	0.025	PRE	0.13	0.23	0.01	0.00	0.13	0.08
8	pyrithiobac	85	DF	0.054	PRE	0.37	0.13	0.05	0.03	0.03	0.00
9	pyrithiobac	85	DF	0.054	PO1	2.39	2.04	0.17	0.45	1.31	0.00
10	s-dimethenamid	6	EC	0.66	PRE	5.61	3.61	0.45	1.44	1.45	0.00
11	s-dimethenamid	6	EC	1.32	PRE	1.31	0.57	0.15	0.19	0.13	0.06
12	s-metolachlor	7.6	EC	1.33	PRE	9.53	8.02	0.44	1.52	4.67	1.12
13	sulfentrazone	75	DF	0.1	PRE	4.69	6.23	0.64	1.53	3.35	0.46
14	sulfentrazone	75	DF	0.2	PRE	0.23	0.08	0.04	0.03	0.04	0.00
15	ethalfluralin	3	EC	1.13	PRE	24.78	32.63	1.34	4.68	14.40	4.99
LSD (P=.05)						10.89	13.33	0.67	1.88	7.58	3.79
Standard Deviation						6.51	7.97	0.40	1.12	4.53	2.27
CV						71.79	96.54	66.78	63.97	104.00	224.25

Herbicide Screen on Cucurbits - IR-4

Project Code: WC 108-00-01 **Location: HTRC, East Lansing, MI**
Cooperator: IR-4

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PUMPKIN GOOD No./PLOT 9-27-00	PUMPKIN GOOD KG/PLOT 9-27-00	PUMPKIN GREEN No./PLOT 9-27-00	PUMPKIN GREEN KG/PLOT 9-27-00	PUMPKIN TOTAL No./PLOT 9-27-00	PUMPKIN TOTAL KG/PLOT 9-27-00
1	untreated					4.0	25.20	1.3	4.11	5.3	29.31
2	halosulfuron	75	DF	0.024	PRE	12.7	99.95	5.0	33.82	17.7	133.77
3	halosulfuron	75	DF	0.024	PO1	8.7	44.36	4.0	27.55	12.7	71.91
4	flufenacet	60	DF	0.5	PRE	15.0	128.61	4.7	22.99	19.7	151.60
5	flufenacet	60	DF	1	PRE	10.3	68.63	6.3	34.09	16.7	102.72
6	flumiclorac	0.86	EC	0.04	PO1	9.3	93.65	6.7	43.56	16.0	137.21
7	flumioxazin	50	DF	0.025	PRE	1.0	6.67	1.3	13.85	2.3	20.51
8	pyrithiobac	85	DF	0.054	PRE	2.0	11.11	1.7	7.11	3.7	18.22
9	pyrithiobac	85	DF	0.054	PO1	5.7	36.86	6.0	35.09	11.7	71.95
10	s-dimethenamid	6	EC	0.66	PRE	7.7	40.68	8.0	35.23	15.7	75.91
11	s-dimethenamid	6	EC	1.32	PRE	7.0	59.69	5.3	32.30	12.3	91.99
12	s-metolachlor	7.6	EC	1.33	PRE	8.7	65.63	3.0	19.20	11.7	84.83
13	sulfentrazone	75	DF	0.1	PRE	12.3	108.81	7.7	46.84	20.0	155.65
14	sulfentrazone	75	DF	0.2	PRE	3.7	24.57	5.3	37.04	9.0	61.61
15	ethalfluralin	3	EC	1.13	PRE	9.8	61.01	5.0	31.86	14.7	92.87
LSD (P=.05)						9.40	81.99	5.17	35.92	12.95	107.84
Standard Deviation						5.61	48.93	3.09	21.44	7.73	64.37
CV						71.49	83.85	64.95	75.74	61.31	74.27

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH YIELD No./PLOT 9-27-00	SQUASH YIELD KG/PLOT 9-27-00
1	untreated					2.0	1.87
2	halosulfuron	75	DF	0.024	PRE	33.3	41.91
3	halosulfuron	75	DF	0.024	PO1	27.3	25.97
4	flufenacet	60	DF	0.5	PRE	31.0	38.01
5	flufenacet	60	DF	1	PRE	25.0	31.21
6	flumiclorac	0.86	EC	0.04	PO1	36.7	45.05
7	flumioxazin	50	DF	0.025	PRE	14.0	18.93
8	pyrithiobac	85	DF	0.054	PRE	1.0	1.25
9	pyrithiobac	85	DF	0.054	PO1	7.7	6.66
10	s-dimethenamid	6	EC	0.66	PRE	25.0	21.23
11	s-dimethenamid	6	EC	1.32	PRE	26.7	34.67
12	s-metolachlor	7.6	EC	1.33	PRE	27.0	30.32
13	sulfentrazone	75	DF	0.1	PRE	41.7	53.23
14	sulfentrazone	75	DF	0.2	PRE	24.7	27.89
15	ethalfluralin	3	EC	1.13	PRE	34.0	28.96
LSD (P=.05)						26.38	35.50
Standard Deviation						15.75	21.19
CV						66.17	78.07

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cucumber, Pumpkin, Squash **Variety: see Notes** **Field or Block: 65-66**
Planting Method: Seed **Planting Date: 5-30-00** **Harvest: 9-27-00**
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: Marlette Fine Sandy Loam **OM: 2.7%** **pH: 5.8**
Sand: 53% **Silt: 30%** **Clay: 17%** **CEC: 13.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	5-31	12:40pm	82 F/ 65 F	dry	SW 2-4	73F/82F	66%	100%cloud	N
PO1	6-19	2:25pm	85 F/ 78 F	dry	SW 3-6	72F/85F	54%	25% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-19-00	Pumpkin	3-5"	2-3	good
	Cucumber	2-3"	1-2	good
	Squash	2-4"	1-2	good
	CORW	2-3"	3-4	few
	COLQ	1-3"	4-6	moderate
	RRPW	0.5-2"	1-4	moderate

Notes and Comments

1. Sprays applied with tractor mounted CO2 research sprayer, 12 8002 nozzles, 30 psi, 20 gpa, 3.2 mph, a 16 ft band sprayed over seeded area in each plot.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. A 10 ft spray alley between reps 1+2; no spray alley between reps 2+3.
4. Spacing: Cucumber - 3 rows * 14 inches * 3 inches in row; Pumpkin and Squash 28 inches beyond cucumbers on each side of cucumber * 6 inches in row.
5. Cultivars: Cucumber - Vlaspik M; Pumpkin - Howden; Squash - Burgess Buttercup.
6. PO1 applied at cucumber tip-over stage.

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 Location: East Lansing, MI

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH RATING 6-19-00	CUCUMBER RATING 6-19-00	PUMPKIN RATING 6-19-00	COLQ RATING 6-19-00	CORW RATING 6-19-00	RRPW RATING 6-19-00
1	ethalfluralin	3	EC	0.56	PRE	1.0	1.3	1.3	8.3	6.0	8.3
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
2	ethalfluralin	3	EC	1.5	PRE	1.7	2.7	1.7	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
3	ethalfluralin	3	EC	1.13	PRE	1.7	1.7	1.3	9.3	7.0	9.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
4	ethalfluralin	3	EC	0.75	PRE	1.7	1.7	2.7	10.0	9.0	10.0
	clomazone	3	ME	0.25	PRE						
5	ethalfluralin	3	EC	0.75	PRE	2.3	4.3	3.3	10.0	10.0	10.0
	clomazone	3	ME	0.25	PRE						
	sulfentrazone	75	DF	0.1	PRE						
6	PCC 170	2.1	SE	1 QT	PRE	1.3	1.7	1.3	10.0	8.3	8.3
7	PCC 170	2.1	SE	1.5 QT	PRE	2.0	2.0	2.7	10.0	10.0	10.0
8	PCC 170	2.1	SE	1.75 QT	PRE	1.3	2.0	1.3	10.0	9.3	10.0
9	clomazone	3	ME	0.25	PRE	2.7	4.0	3.0	10.0	10.0	10.0
	sulfentrazone	75	DF	0.08	PRE						
	halosulfuron	75	WG	0.032	PRE						
10	ethalfluralin	3	EC	1.5	PRE	1.0	1.3	3.3	10.0	10.0	10.0
	halosulfuron	75	WG	0.032	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
11	ethalfluralin	3	EC	1.5	PRE	1.7	1.7	2.0	10.0	8.7	10.0
	naptalam	2	EC	3	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
12	ethalfluralin	3	EC	1.5	PRE	2.0	1.7	2.0	10.0	9.0	10.0
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	Weeded Control					1.7	1.0	5.0	4.7	6.0	5.7
LSD (P=.05)						1.45	1.20	3.26	1.66	3.36	2.29
Standard Deviation						0.86	0.71	1.94	0.99	2.00	1.36
CV						50.96	34.26	81.21	10.48	22.90	14.57

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH RATING 7-03-00	CUCUMBER RATING 7-03-00	PUMPKIN RATING 7-03-00	GRFT RATING 7-03-00	COLQ RATING 7-03-00	CORW RATING 7-03-00
1	ethalfluralin	3	EC	0.56	PRE	1.7	1.7	1.3	10.0	8.3	9.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
2	ethalfluralin	3	EC	1.5	PRE	3.0	2.7	2.7	10.0	8.3	8.3
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
3	ethalfluralin	3	EC	1.13	PRE	1.0	1.3	1.0	10.0	8.0	9.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
4	ethalfluralin	3	EC	0.75	PRE	1.3	1.3	1.0	10.0	8.3	8.0
	clomazone	3	ME	0.25	PRE						
5	ethalfluralin	3	EC	0.75	PRE	2.0	3.7	1.3	10.0	9.7	9.3
	clomazone	3	ME	0.25	PRE						
	sulfentrazone	75	DF	0.1	PRE						
6	PCC 170	2.1	SE	1 QT	PRE	1.3	1.3	1.3	10.0	9.0	8.0
7	PCC 170	2.1	SE	1.5 QT	PRE	2.7	2.0	1.7	10.0	9.7	8.7
8	PCC 170	2.1	SE	1.75 QT	PRE	1.0	1.3	1.0	10.0	9.3	6.7
9	clomazone	3	ME	0.25	PRE	3.0	2.7	2.7	10.0	10.0	10.0
	sulfentrazone	75	DF	0.08	PRE						
	halosulfuron	75	WG	0.032	PRE						
10	ethalfluralin	3	EC	1.5	PRE	2.0	2.0	2.3	10.0	9.7	10.0
	halosulfuron	75	WG	0.032	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
11	ethalfluralin	3	EC	1.5	PRE	1.7	1.3	2.3	10.0	9.7	8.0
	naptalam	2	EC	3	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
12	ethalfluralin	3	EC	1.5	PRE	6.3	5.7	6.3	10.0	9.7	10.0
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	Weeded Control					1.7	1.3	2.7	7.0	1.7	1.7
LSD (P=.05)						1.51	1.55	2.02	0.00	1.59	2.54
Standard Deviation						0.90	0.92	1.20	0.00	0.94	1.51
CV						40.59	42.10	56.43	0.00	11.02	18.37

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	EBNS RATING 7-03-00	LATH RATING 7-03-00	RRPW RATING 7-03-00	CUCUMBER PLANT WT KG/PLOT 7-24-00	CUCUMBER YIELD KG/PLOT 7-24-00
1	ethalfluralin	3	EC	0.56	PRE	9.3	7.7	9.0	24.27	22.97
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
2	ethalfluralin	3	EC	1.5	PRE	9.0	8.3	9.7	16.73	18.83
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
3	ethalfluralin	3	EC	1.13	PRE	9.0	8.7	8.7	16.44	21.45
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
4	ethalfluralin	3	EC	0.75	PRE	8.3	9.0	8.3	28.13	28.78
	clomazone	3	ME	0.25	PRE					
5	ethalfluralin	3	EC	0.75	PRE	9.3	10.0	9.3	17.11	19.97
	clomazone	3	ME	0.25	PRE					
	sulfentrazone	75	DF	0.1	PRE					
6	PCC 170	2.1	SE	1 QT	PRE	6.3	10.0	7.3	18.86	23.73
7	PCC 170	2.1	SE	1.5 QT	PRE	8.0	10.0	8.3	19.13	23.90
8	PCC 170	2.1	SE	1.75 QT	PRE	6.0	9.7	8.0	22.70	23.29
9	clomazone	3	ME	0.25	PRE	10.0	10.0	10.0	15.22	17.68
	sulfentrazone	75	DF	0.08	PRE					
	halosulfuron	75	WG	0.032	PRE					
10	ethalfluralin	3	EC	1.5	PRE	7.0	9.3	10.0	22.58	22.19
	halosulfuron	75	WG	0.032	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
11	ethalfluralin	3	EC	1.5	PRE	7.3	8.0	9.7	23.50	23.22
	naptalam	2	EC	3	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
12	ethalfluralin	3	EC	1.5	PRE	10.0	9.0	10.0	16.74	18.17
	clopyralid	3	EC	0.188	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
13	Weeded Control					2.0	1.7	1.0	17.90	26.62
LSD (P=.05)						3.06	1.70	1.86	12.27	11.95
Standard Deviation						1.82	1.01	1.11	7.28	7.09
CV						23.24	11.81	13.16	36.52	31.70

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CUCUMBER YIELD GRADE 1 KG/PLOT 7-24-00	CUCUMBER YIELD GRADE 2 KG/PLOT 7-24-00	CUCUMBER YIELD GRADE 3 KG/PLOT 7-24-00	CUCUMBER YIELD OVERSIZE KG/PLOT 7-24-00
1	ethalfluralin	3	EC	0.56	PRE	1.19	6.24	14.05	1.15
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
2	ethalfluralin	3	EC	1.5	PRE	1.03	4.71	11.23	1.35
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
3	ethalfluralin	3	EC	1.13	PRE	0.97	4.77	12.36	3.06
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
4	ethalfluralin	3	EC	0.75	PRE	1.20	6.39	16.15	4.57
	clomazone	3	ME	0.25	PRE				
5	ethalfluralin	3	EC	0.75	PRE	1.13	5.53	11.62	1.25
	clomazone	3	ME	0.25	PRE				
	sulfentrazone	75	DF	0.1	PRE				
6	PCC 170	2.1	SE	1 QT	PRE	1.06	6.01	14.62	1.83
7	PCC 170	2.1	SE	1.5 QT	PRE	0.97	5.63	13.81	2.97
8	PCC 170	2.1	SE	1.75 QT	PRE	0.99	5.77	13.98	1.93
9	clomazone	3	ME	0.25	PRE	1.00	5.16	10.49	0.69
	sulfentrazone	75	DF	0.08	PRE				
	halosulfuron	75	WG	0.032	PRE				
10	ethalfluralin	3	EC	1.5	PRE	1.04	4.91	13.07	2.67
	halosulfuron	75	WG	0.032	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
11	ethalfluralin	3	EC	1.5	PRE	1.25	5.93	14.15	1.58
	naptalam	2	EC	3	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
12	ethalfluralin	3	EC	1.5	PRE	0.30	3.23	9.79	3.27
	clopyralid	3	EC	0.188	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
13	Weeded Control					0.67	3.67	11.77	8.87
LSD (P=.05)						0.45	2.94	7.06	4.53
Standard Deviation						0.26	1.74	4.19	2.69
CV						27.24	33.42	32.61	99.38

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PUMPKIN YIELD GOOD No./PLOT 9-27-00	PUMPKIN YIELD GOOD KG/PLOT 9-27-00	PUMPKIN YIELD GREEN No./PLOT 9-27-00	PUMPKIN YIELD GREEN KG/PLOT 9-27-00	PUMPKIN YIELD TOTAL No./PLOT 9-27-00	PUMPKIN YIELD TOTAL KG/PLOT 9-27-00
1	ethalfluralin	3	EC	0.56	PRE	13.0	81.18	11.3	51.71	24.3	132.89
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
2	ethalfluralin	3	EC	1.5	PRE	14.7	74.79	9.0	48.33	23.7	123.12
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
3	ethalfluralin	3	EC	1.13	PRE	7.7	55.27	11.3	42.22	19.0	97.49
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
4	ethalfluralin	3	EC	0.75	PRE	10.3	78.27	8.0	37.02	18.3	115.29
	clomazone	3	ME	0.25	PRE						
5	ethalfluralin	3	EC	0.75	PRE	17.0	131.29	7.3	39.49	24.3	170.78
	clomazone	3	ME	0.25	PRE						
	sulfentrazone	75	DF	0.1	PRE						
6	PCC 170	2.1	SE	1 QT	PRE	12.7	79.10	9.0	33.40	21.7	112.50
7	PCC 170	2.1	SE	1.5 QT	PRE	9.7	63.43	4.7	26.30	14.3	89.73
8	PCC 170	2.1	SE	1.75 QT	PRE	12.0	78.00	7.0	28.15	19.0	106.15
9	clomazone	3	ME	0.25	PRE	13.7	113.63	4.7	19.59	18.3	133.22
	sulfentrazone	75	DF	0.08	PRE						
	halosulfuron	75	WG	0.032	PRE						
10	ethalfluralin	3	EC	1.5	PRE	9.7	65.84	5.3	31.29	15.0	97.13
	halosulfuron	75	WG	0.032	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
11	ethalfluralin	3	EC	1.5	PRE	15.3	99.12	7.3	37.21	22.7	136.33
	naptalam	2	EC	3	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
12	ethalfluralin	3	EC	1.5	PRE	14.3	98.37	7.7	34.37	22.0	132.74
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	Weeded Control					5.0	36.05	3.0	14.61	8.0	50.67
LSD (P=.05)						12.69	83.90	6.90	34.39	17.20	100.27
Standard Deviation						7.53	49.78	4.09	20.41	10.20	59.50
CV						63.18	61.39	55.62	59.80	52.92	51.63

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

Trial ID: WC 108-00-02 **Location: East Lansing, MI**

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH YIELD No./PLOT 9-27-00	SQUASH YIELD KG/PLOT 9-27-00
1	ethalfluralin	3	EC	0.56	PRE	45.3	36.79
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
2	ethalfluralin	3	EC	1.5	PRE	37.0	31.57
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
3	ethalfluralin	3	EC	1.13	PRE	53.3	41.39
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
4	ethalfluralin	3	EC	0.75	PRE	60.0	51.55
	clomazone	3	ME	0.25	PRE		
5	ethalfluralin	3	EC	0.75	PRE	54.3	43.59
	clomazone	3	ME	0.25	PRE		
	sulfentrazone	75	DF	0.1	PRE		
6	PCC 170	2.1	SE	1 QT	PRE	52.3	44.77
7	PCC 170	2.1	SE	1.5 QT	PRE	49.3	42.03
8	PCC 170	2.1	SE	1.75 QT	PRE	52.3	44.61
9	clomazone	3	ME	0.25	PRE	44.3	44.03
	sulfentrazone	75	DF	0.08	PRE		
	halosulfuron	75	WG	0.032	PRE		
10	ethalfluralin	3	EC	1.5	PRE	42.7	40.05
	halosulfuron	75	WG	0.032	PO1		
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
11	ethalfluralin	3	EC	1.5	PRE	36.3	36.93
	naptalam	2	EC	3	PO1		
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
12	ethalfluralin	3	EC	1.5	PRE	46.3	36.23
	clopyralid	3	EC	0.188	PO1		
	sethoxydim	1.53	EC	0.19	PO1		
	NIS		L	0.5%	PO1		
13	Weeded Control					33.7	29.49
LSD (P=.05)						22.21	23.54
Standard Deviation						13.18	13.97
CV						28.21	34.73

Preemergence Weed Control in Mint

Project Code: WC 121-00-01 **Location: St Johns, MI**
Cooperator: Tom Irrer

Personnel: Bernard Zandstra, Joseph Masabni
Crop: Spearmint **Variety: Native spearmint** **Field or Block: N/A**
Planting Method: Stolons **Planting Date: 1996** **Harvest: N/A**
Spacing: Meadow Planting **Row Spacing: N/A** **Perennial Age: 4 years**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 15 ft wide * 120 ft long

Soil Type: Sabewa Sandy Loam **OM: 3.0%** **pH: 6.8**
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	3-31								

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
3-31-00	Spearmint	2"	2-4	

Notes and Comments

1. **Sprays applied with tractor-mounted sprayer 8002 nozzles, 2.27 mph, 15 ft boom, 22 psi, 22 gpa.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**

Preemergence Weed Control in Mint

Project Code: WC 121-00-01 **Location: St Johns, MI**
Cooperator: Tom Irrer

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	MINT RATING 6-09-00	CWBS RATING 6-09-00	MATA RATING 6-09-00	FIPA RATING 6-09-00
1	oxyfluorfen	2	L	0.25	PRE	2.7	7.7	10.0	9.0
	paraquat	2.5	L	0.31	PRE				
2	oxyfluorfen	2	L	0.5	PRE	2.7	7.7	10.0	10.0
	paraquat	2.5	L	0.31	PRE				
	terbacil	80	WP	0.32	PRE				
3	clomazone	3	ME	0.75	PRE	1.7	10.0	7.3	4.7
4	flumioxazin	50	WP	0.047	PRE	5.0	7.3	4.7	4.7
5	flufenacet	60	DF	0.68	PRE	4.0	6.0	3.7	4.7
6	terbacil	80	WP	1	PRE	1.0	10.0	10.0	7.7
LSD (P=.05)						2.07	4.85	3.28	6.52
Standard Deviation						1.14	2.67	1.80	3.59
CV						40.24	32.90	23.71	52.90

Postemergence Weed Control in Mint - 1 - 2000

Project Code: WC 121-00-02 **Location: St Johns, MI**
Cooperator: Tom Irrer

Personnel: Bernard Zandstra, Joseph Masabni
Crop: Native Spearmint **Variety: N-83-5** **Field or Block: N/A**
Planting Method: Stolons **Planting Date: 1992** **Harvest: N/A**
Spacing: Meadow Planting **Row Spacing: N/A** **Perennial Age: 6 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 15 ft wide * 120 ft long

Soil Type: Sabewa Sandy Loam **OM: 3.0%** **pH: 6.8**
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
POST	8-1	4 pm	75 F/ 72 F	damp	W 5	_____	81%	clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
8-1-00	Mint	4"	3-5	good
_____	RRPW	6-12"	10-16	moderate

Notes and Comments

1. **Sprays applied with tractor-mounted sprayer 8002 nozzles, 2.27 mph, 15 ft boom, 22 psi, 22 gpa.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Treatments applied after June 28 harvest and regrowth.**

Postemergence Weed Control in Mint - 1 - 2000

Project Code: WC 121-00-02 **Location: St Johns, MI**
Cooperator: Tom Irrer

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SPRMINT RATING 8-18-00	RRPW RATING 8-18-00
1	terbacil	80	WP	0.25	POST	1.7	10.0
	pyridate	5	EC	0.9	POST		
	sethoxydim	1.53	EC	0.19	POST		
	COC		L	1 qt	POST		
2	terbacil	80	WP	0.25	POST	4.7	10.0
	bentazon	4	L	1	POST		
	pyridate	5	EC	0.45	POST		
	sethoxydim	1.53	EC	0.19	POST		
	COC		L	1 qt	POST		
3	terbacil	80	WP	0.25	POST	2.7	10.0
	bentazon	4	L	1	POST		
	quizalofop	0.88	EC	0.07	POST		
	COC		L	1 qt	POST		
4	bentazon	4	L	1	POST	2.0	5.7
	clopyralid	3	EC	0.19	POST		
	sethoxydim	1.53	EC	0.19	POST		
	COC		L	1 qt	POST		
5	terbacil	80	WP	0.25	POST	5.7	9.3
	clopyralid	3	EC	0.19	POST		
	pyridate	5	EC	0.9	POST		
	quizalofop	0.88	EC	0.07	POST		
	COC		L	1 qt	POST		
6	terbacil	80	WP	0.8	POST	3.0	8.0
	bentazon	4	L	1	POST		
	sethoxydim	1.53	EC	0.19	POST		
	COC		L	1 qt	POST		
LSD (P=.05)						2.34	2.57
Standard Deviation						1.29	1.41
CV						39.25	16.01

Postemergence Weed Control in Mint - 2 - 2000

Project Code: WC 121-00-03 **Location: St Johns, MI**
Cooperator: Tom Irrer

Personnel: Bernard Zandstra, Joseph Masabni
Crop: Native Spearmint **Variety: N-83-5** **Field or Block: N/A**
Planting Method: Stolons **Planting Date: 1992** **Harvest: N/A**
Spacing: Meadow Planting **Row Spacing: N/A** **Perennial Age: 6 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 15 ft wide * 120 ft long

Soil Type: Sabewa Sandy Loam **OM: 3.0%** **pH: 6.8**
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
POST	8-1	4 pm	75 F/ 72 F	damp	W 5	_____	81%	clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
8-1-00	Mint	4"	3-5	good
_____	RRPW	6-12"	10-16	moderate

Notes and Comments
1. **Sprays applied with tractor-mounted sprayer 8002 nozzles, 2.27 mph, 15 ft boom, 22 psi, 22 gpa.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Treatments applied after June 28 harvest and regrowth.**

Postemergence Weed Control in Mint - 2 - 2000

Project Code: WC 121-00-03 **Location: St Johns, MI**
Cooperator: Tom Irrer

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SPRMINT RATING 8-18-00	RRPW RATING 8-18-00
1	pyridate	5	EC	0.63	POST	2.3	10.0
	terbacil	80	WP	0.06	POST		
	quizalofop	0.88	EC	0.06	POST		
	COC		L	1 pt	POST		
2	pyridate	5	EC	0.63	POST	1.3	9.0
	quizalofop	0.88	EC	0.06	POST		
	COC		L	1 pt	POST		
3	pyridate	5	EC	0.94	POST	2.0	9.7
	quizalofop	0.88	EC	0.06	POST		
	terbacil	80	WP	0.06	POST		
	COC		L	1 pt	POST		
4	pyridate	5	EC	0.94	POST	1.7	10.0
	quizalofop	0.88	EC	0.06	POST		
	COC		L	1 pt	POST		
5	pyridate	5	EC	0.63	POST	2.7	9.0
	Cayuse Plus		L	1 qt	POST		
6	pyridate	5	EC	0.94	POST	1.7	10.0
	Cayuse Plus		L	1 qt	POST		
LSD (P=.05)						2.14	1.62
Standard Deviation						1.18	0.89
CV						60.61	9.24

Preemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-01 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion **Variety: Festival (Seedway)** **Field or Block: C-17**
Planting Method: Seed **Planting Date: 4-28-00** **Harvest: 9-18-00**
Spacing: 16 seeds / ft **Row Spacing: 16",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: 77%** **pH: 6.6**
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	4-28	10:25am	61 F/ 50 F	moist	calm	52F/61F	54%	clear	N
PO1	6-9	9 am	74 F/ 65 F	moist	SW 2-4	65F/74F	62%	20% cloud	Y
PO2	7-5	9:30am	74 F/ 69 F	dry	SE 3-5	69F/74F	78%	0% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-9-00	Onion	3-4"	2-3	medium
	YENS	4-6"	many	many
	LATH	1-4"	4-10	many
	MAYC	1-5"	4-10	many
7-5-00	Onion	1-1.5 ft	5-7	medium
	YENS	6-10"	many	moderate

Notes and Comments
1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **6-8-00: Field was flooded for 3 weeks in May. Only the middle row had a good stand, so only this row was rated for phytotoxicity and yield.**
4. **6-9-00: West guard was sprayed with Outlook .98 + Nortron 2 + Goal .125 + Poast .19 + NIS .5%.**
5. **9-18-00: Harvest plot size = center row x 16.5 ft of length.**

Preemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-01 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 6-08-00	YENS RATING 6-08-00	LATH RATING 6-08-00	MAYC RATING 6-08-00	ONION RATING 6-23-00	YENS RATING 6-23-00	MAYC RATING 6-23-00
1	s-dimethenamid	6	EC	0.64	PRE	1.7	7.7	5.0	6.7	2.7	7.7	7.3
	s-dimethenamid	6	EC	0.64	PO1,2							
2	s-dimethenamid	6	EC	0.98	PRE	3.7	8.7	6.0	8.0	4.0	8.7	9.0
	s-dimethenamid	6	EC	0.98	PO1,2							
3	pendimethalin	3.3	EC	2	PRE	3.3	1.7	5.3	4.0	2.3	4.0	5.3
	s-dimethenamid	6	EC	0.64	PO1,2							
4	pendimethalin	3.3	EC	2	PRE	1.0	3.0	7.3	3.7	2.3	4.3	4.7
	s-dimethenamid	6	EC	0.64	PO1,2							
	sethoxydim	1.53	EC	0.19	PO1,2							
	COC		L	1.25%	PO1,2							
5	pendimethalin	3.3	EC	2	PRE	1.3	2.0	7.7	5.7	3.0	5.0	9.0
	s-dimethenamid	6	EC	0.64	PO1,2							
	oxyfluorfen	2	L	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
6	pendimethalin	3.3	EC	2	PRE	2.0	1.0	5.3	5.3	2.3	2.3	7.0
	s-metolachlor	7.6	EC	1.67	PO1,2							
7	pendimethalin	3.3	EC	2	PRE	6.0	8.0	8.0	8.0	5.3	8.0	8.3
	s-metolachlor	7.6	EC	2	PRE							
	pendimethalin	3.3	EC	2	PO1,2							
	s-metolachlor	7.6	EC	2	PO1,2							
8	pendimethalin	3.3	EC	2	PRE	2.0	5.7	7.0	5.7	4.3	7.0	8.0
	ethofumesate	4	L	1	PRE							
	pendimethalin	3.3	EC	2	PO1,2							
	ethofumesate	4	L	1	PO1,2							
	NIS		L	0.5%	PO1,2							
9	pendimethalin	3.3	EC	2	PRE	4.3	7.0	8.0	6.7	5.3	7.7	8.3
	ethofumesate	4	L	2	PRE							
	pendimethalin	3.3	EC	2	PO1,2							
	ethofumesate	4	L	1	PO1,2							
	NIS		L	0.5%	PO1,2							
10	pendimethalin	3.3	EC	2	PRE	5.0	4.7	6.0	8.3	4.3	4.3	7.3
	flufenacet	60	DF	0.75	PRE							
	pendimethalin	3.3	EC	2	PO1,2							
	flufenacet	60	DF	0.75	PO1,2							
11	azafenidin	80	WG	0.25	PRE	3.3	2.0	6.0	5.3	4.0	3.7	8.7
	azafenidin	80	WG	0.25	PO1,2							
12	flumioxazin	50	WP	0.05	PRE	2.3	2.7	4.3	7.3	3.0	4.0	8.7
	flumioxazin	50	WP	0.05	PO1,2							
13	flumioxazin	50	WP	0.1	PRE	3.3	3.0	9.0	9.0	4.0	5.0	9.3
	flumioxazin	50	WP	0.1	PO1,2							
14	flumioxazin	50	WP	0.05	PRE	8.3	9.0	9.3	9.0	9.0	8.7	9.3
	s-dimethenamid	6	EC	0.64	PRE							
	flumioxazin	50	WP	0.05	PO1,2							
	s-dimethenamid	6	EC	0.64	PO1,2							
15	flumioxazin	50	WP	0.05	PRE	8.3	9.3	9.0	9.3	9.0	9.0	10.0
	s-dimethenamid	6	EC	0.98	PRE							
	flumioxazin	50	WP	0.05	PO1,2							
	s-dimethenamid	6	EC	0.98	PO1,2							
16	untreated					1.0	2.3	2.3	3.0	1.0	1.0	1.7
LSD (P=.05)						3.45	2.29	4.79	3.60	2.75	2.26	1.91
Standard Deviation						2.07	1.37	2.87	2.16	1.65	1.36	1.15
CV						58.16	28.28	43.48	32.86	39.95	24.05	15.04

Preemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-01 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 7-05-00	YENS RATING 7-05-00	ONION RATING 7-26-00	YENS RATING 7-26-00	ONION YIELD KG/PLOT 9-18-00
1	s-dimethenamid	6	EC	0.64	PRE	2.3	7.3	1.0	5.7	13.92
	s-dimethenamid	6	EC	0.64	PO1,2					
2	s-dimethenamid	6	EC	0.98	PRE	4.3	8.0	3.0	7.3	9.18
	s-dimethenamid	6	EC	0.98	PO1,2					
3	pendimethalin	3.3	EC	2	PRE	2.3	4.0	1.7	3.0	9.36
	s-dimethenamid	6	EC	0.64	PO1,2					
4	pendimethalin	3.3	EC	2	PRE	1.7	4.7	1.3	3.7	12.53
	s-dimethenamid	6	EC	0.64	PO1,2					
	sethoxydim	1.53	EC	0.19	PO1,2					
	COC		L	1.25%	PO1,2					
5	pendimethalin	3.3	EC	2	PRE	2.0	5.0	1.7	4.7	10.46
	s-dimethenamid	6	EC	0.64	PO1,2					
	oxyfluorfen	2	L	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
6	pendimethalin	3.3	EC	2	PRE	1.7	5.0	1.7	4.3	9.70
	s-metolachlor	7.6	EC	1.67	PO1,2					
7	pendimethalin	3.3	EC	2	PRE	4.7	8.0	4.0	8.3	9.86
	s-metolachlor	7.6	EC	2	PRE					
	pendimethalin	3.3	EC	2	PO1,2					
	s-metolachlor	7.6	EC	2	PO1,2					
8	pendimethalin	3.3	EC	2	PRE	2.7	7.0	3.0	6.7	10.93
	ethofumesate	4	L	1	PRE					
	pendimethalin	3.3	EC	2	PO1,2					
	ethofumesate	4	L	1	PO1,2					
	NIS		L	0.5%	PO1,2					
9	pendimethalin	3.3	EC	2	PRE	5.0	7.3	4.0	7.0	9.09
	ethofumesate	4	L	2	PRE					
	pendimethalin	3.3	EC	2	PO1,2					
	ethofumesate	4	L	1	PO1,2					
	NIS		L	0.5%	PO1,2					
10	pendimethalin	3.3	EC	2	PRE	3.0	3.7	3.0	3.3	6.70
	flufenacet	60	DF	0.75	PRE					
	pendimethalin	3.3	EC	2	PO1,2					
	flufenacet	60	DF	0.75	PO1,2					
11	azafenidin	80	WG	0.25	PRE	3.0	5.0	2.7	5.0	8.64
	azafenidin	80	WG	0.25	PO1,2					
12	flumioxazin	50	WP	0.05	PRE	2.0	5.3	2.3	3.3	8.47
	flumioxazin	50	WP	0.05	PO1,2					
13	flumioxazin	50	WP	0.1	PRE	2.7	4.7	3.0	5.3	7.96
	flumioxazin	50	WP	0.1	PO1,2					
14	flumioxazin	50	WP	0.05	PRE	8.7	8.3	8.3	8.0	2.22
	s-dimethenamid	6	EC	0.64	PRE					
	flumioxazin	50	WP	0.05	PO1,2					
	s-dimethenamid	6	EC	0.64	PO1,2					
15	flumioxazin	50	WP	0.05	PRE	8.3	8.7	8.3	8.7	2.24
	s-dimethenamid	6	EC	0.98	PRE					
	flumioxazin	50	WP	0.05	PO1,2					
	s-dimethenamid	6	EC	0.98	PO1,2					
16	untreated					2.7	1.0	3.0	7.3	8.67
LSD (P=.05)						2.68	1.77	2.79	1.19	5.15
Standard Deviation						1.61	1.06	1.67	0.71	3.09
CV						45.10	18.24	51.44	12.43	35.35

Postemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-02 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion **Variety: Festival (Seedway)** **Field or Block: B-20**
Planting Method: Seed **Planting Date: 4-28-00** **Harvest: 9-18-00**
Spacing: 16 seeds / ft **Row Spacing: 16",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
PO1	6-9	10 am	80 F/ 65 F	moist	SW 1-3	68F/80F	56%	20% cloud	N
PO2	7-5	10:45am	78 F/ 69 F	dry	E 4-6	72F/78F	76%	0% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-9-00	Onion	4-5"	2-3	good
	COCW	1-2"	6-12	moderate
	LATH	1-2"	3-5	moderate
	MAYC	2-4"	6-10	moderate
7-5-00	Onion	1.5 - 2 ft	6-7	good
	COCW	2-3"	many	many
	LATH	3-4"	many	moderate
	MAYC	2-3"	5-6	many

Notes and Comments
1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **6-8-00: Field suffered from flood conditions for about 3 weeks. Most onions survived, but stands were reduced in some plots.**
4. **9-18-00: Harvested all onions in each plot.**

Postemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-02 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 6-23-00	ANBG RATING 6-23-00	YENS RATING 6-23-00	COCW RATING 6-23-00	MAYC RATING 6-23-00	ONION RATING 7-05-00	MAYC RATING 7-05-00
1	oxyfluorfen	2	L	0.063	PO1,2	1.3	1.7	7.3	5.7	6.0	1.7	5.0
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
2	oxyfluorfen	2	L	0.125	PO1,2	2.0	5.3	7.3	7.7	8.0	1.7	6.0
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
3	oxyfluorfen	2	L	0.25	PO1,2	2.7	7.0	8.7	8.3	8.7	2.0	8.0
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
4	oxyfluorfen	4	F	0.063	PO1,2	2.0	2.7	6.3	6.7	6.3	2.3	4.7
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
5	oxyfluorfen	4	F	0.125	PO1,2	1.3	2.7	6.0	4.3	6.3	1.0	6.3
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
6	oxyfluorfen	4	F	0.25	PO1,2	2.7	8.7	9.7	9.3	8.7	2.7	8.3
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
7	oxyfluorfen	2	L	0.063	PO1,2	2.3	4.0	9.3	8.3	7.0	2.3	2.7
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	1	PO1,2							
	NIS		L	0.5%	PO1,2							
8	oxyfluorfen	2	L	0.063	PO1,2	2.7	6.0	8.7	9.7	7.7	2.7	5.3
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	2	PO1,2							
	NIS		L	0.5%	PO1,2							
9	oxyfluorfen	2	L	0.031	PO1,2	2.3	10.0	5.7	8.7	8.0	2.0	7.0
	bromoxynil	2	EC	0.13	PO1,2							
	clethodim	2	EC	0.15	PO1,2							
10	fluroxypyr	1.5	L	0.25	PO1,2	2.7	9.3	7.7	9.0	4.3	3.0	1.0
	clethodim	2	EC	0.15	PO1,2							
	NIS		L	0.5%	PO1,2							
11	oxyfluorfen	2	L	0.063	PO1,2	2.3	9.7	7.0	10.0	8.0	2.7	5.0
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.125	PO1,2							
12	oxyfluorfen	2	L	0.063	PO1,2	2.3	9.3	8.0	10.0	9.0	2.7	8.7
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.25	PO1,2							
13	oxyfluorfen	2	L	0.063	PO1,2	4.3	9.7	9.3	10.0	9.7	4.3	8.7
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.5	PO1,2							
14	oxyfluorfen	2	L	0.063	PO1,2	3.7	10.0	9.3	10.0	9.7	4.3	10.0
	clethodim	2	EC	0.15	PO1,2							
	flumioxazin	50	WP	0.05	PO1,2							
	NIS		L	0.5%	PO1,2							
15	oxyfluorfen	2	L	0.063	PO1,2	3.3	9.3	8.0	10.0	9.3	3.3	9.7
	clethodim	2	EC	0.15	PO1,2							
	flumioxazin	50	WP	0.1	PO1,2							
16	untreated					1.3	1.0	6.7	6.7	1.0	2.7	1.0
LSD (P=.05)						1.50	3.40	2.35	1.59	1.62	2.01	2.90
Standard Deviation						0.90	2.04	1.41	0.96	0.97	1.20	1.74
CV						36.60	30.70	18.01	11.38	13.19	46.59	28.60

Postemergence Weed Control in Onion - MSU Muck Farm

Project Code: WC 112-00-02 **Location: Laingsburg, MI**
Cooperator: Ron Gnagey

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	COCW RATING 7-05-00	ONION RATING 7-17-00	ANBG RATING 7-17-00	COCW RATING 7-17-00	LATH RATING 7-17-00	MAYC RATING 7-17-00	ONION YIELD KG/PLOT 9-18-00
1	oxyfluorfen	2	L	0.063	PO1,2	2.3	2.7	4.3	3.0	8.7	6.7	29.52
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
2	oxyfluorfen	2	L	0.125	PO1,2	5.7	2.7	8.0	8.3	10.0	7.3	26.40
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
3	oxyfluorfen	2	L	0.25	PO1,2	7.0	3.0	8.7	7.7	9.7	9.0	26.84
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
4	oxyfluorfen	4	F	0.063	PO1,2	4.0	3.7	7.3	4.0	7.3	6.7	25.87
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
5	oxyfluorfen	4	F	0.125	PO1,2	5.3	1.3	5.0	4.3	8.7	7.3	32.14
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
6	oxyfluorfen	4	F	0.25	PO1,2	7.7	3.3	7.0	8.7	9.7	9.7	23.90
	sethoxydim	1.53	EC	0.19	PO1,2							
	NIS		L	0.5%	PO1,2							
7	oxyfluorfen	2	L	0.063	PO1,2	10.0	2.3	9.0	10.0	10.0	5.3	27.16
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	1	PO1,2							
	NIS		L	0.5%	PO1,2							
8	oxyfluorfen	2	L	0.063	PO1,2	10.0	3.0	9.0	10.0	10.0	7.0	22.96
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	2	PO1,2							
	NIS		L	0.5%	PO1,2							
9	oxyfluorfen	2	L	0.031	PO1,2	7.3	3.7	8.7	6.7	8.7	8.7	22.67
	bromoxynil	2	EC	0.13	PO1,2							
	clethodim	2	EC	0.15	PO1,2							
10	fluroxypyr	1.5	L	0.25	PO1,2	10.0	3.3	9.3	10.0	9.3	5.0	22.25
	clethodim	2	EC	0.15	PO1,2							
	NIS		L	0.5%	PO1,2							
11	oxyfluorfen	2	L	0.063	PO1,2	10.0	3.3	10.0	10.0	8.7	7.0	23.73
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.125	PO1,2							
12	oxyfluorfen	2	L	0.063	PO1,2	10.0	4.7	10.0	10.0	10.0	9.7	20.60
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.25	PO1,2							
13	oxyfluorfen	2	L	0.063	PO1,2	10.0	5.3	10.0	10.0	9.7	9.7	19.79
	clethodim	2	EC	0.15	PO1,2							
	fluroxypyr	1.5	L	0.5	PO1,2							
14	oxyfluorfen	2	L	0.063	PO1,2	10.0	5.7	10.0	10.0	10.0	10.0	17.68
	clethodim	2	EC	0.15	PO1,2							
	flumioxazin	50	WP	0.05	PO1,2							
	NIS		L	0.5%	PO1,2							
15	oxyfluorfen	2	L	0.063	PO1,2	10.0	4.7	10.0	10.0	10.0	9.7	22.57
	clethodim	2	EC	0.15	PO1,2							
	flumioxazin	50	WP	0.1	PO1,2							
16	untreated					2.7	2.3	6.0	7.7	8.3	6.3	23.21
LSD (P=.05)						2.71	2.31	2.99	1.69	1.28	2.72	6.37
Standard Deviation						1.63	1.38	1.80	1.01	0.77	1.63	3.82
CV						21.35	40.26	21.72	12.42	8.25	20.86	15.80

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop/Variety: Pepper (Karma), Tomato (Sunstart) **Field or Block: 58**
Planting Method: Transplant Planting Date: 5-25-00 **Harvest: see Notes**
Spacing: 2 ft in row **Row Spacing: 36 inches** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide * 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.5%** **pH: 6.7**
Sand: 52% **Silt: 25%** **Clay: 23%** **CEC: 9.5**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PPI	5-25	8:55 am	62 F/ 56 F	moist	W 6-8	53F/62F	56%	clear	N
PRT	5-25	9:05 am	62 F/ 56 F	moist	W 6-8	53F/62F	56%	clear	N
POT	5-25	11 am	65 F/ 58 F	moist	NW 6-8	55F/65F	54%	50% cloud	N
PO1	6-23	1:30pm	80 F/ 76 F	dry	SW 2-4	66F/80F	49%	90% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-23-00	Pepper	6-8"	many	good
	Tomato	8-12"	many	good
	YENS	2-3"	4-6	few
	COLQ	2-3"	8-10	moderate
	CORW	1-2"	4-5	few
	LATH	2-3"	many	few
	RRPW	2-3"	8-10	moderate

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Guard rows planted with Tomato (Plum Dandy) and Pepper (Karma).
4. Harvest dates: Pepper - 8-14, 9-5, 9-15, and 9-27-00.
   Tomato - 8-18, 8-25, 8-30, 9-6, 9-13, 9-21, and 9-29-00.

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER RATING 6-23-00	TOMATO RATING 6-23-00	COLQ RATING 6-23-00	RRPW RATING 6-23-00	TOMATO PLANT # 6-23-00	PEPPER PLANT # 6-23-00
1	trifluralin	4	EC	1	PPI	7.0	4.0	10.0	10.0	9.7	3.7
	metribuzin	75	DF	0.5	PPI						
2	s-metolachlor	7.6	EC	1.33	PRT	3.0	3.3	10.0	10.0	12.7	14.7
3	s-metolachlor	7.6	EC	1.33	POT	1.7	3.0	9.7	10.0	12.7	15.7
4	s-metolachlor	7.6	EC	1.33	POT	3.0	2.0	10.0	10.0	15.3	13.0
	rimsulfuron	25	DF	0.031	POT						
5	s-metolachlor	7.6	EC	1.33	POT	2.3	3.3	9.7	10.0	15.0	14.0
	rimsulfuron	25	DF	0.031	PO1						
6	s-metolachlor	7.6	EC	1.33	POT	2.7	3.3	10.0	10.0	13.3	14.0
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.5%	PO1						
7	flufenacet	60	DF	0.068	POT	1.3	1.7	7.3	7.7	15.3	16.0
8	trifluralin	4	EC	1	PPI	2.7	2.7	10.0	10.0	15.0	16.7
	clomazone	3	ME	0.25	PRT						
9	flumioxazin	50	WP	0.047	PRT	2.3	4.0	10.0	10.0	8.3	13.3
10	trifluralin	4	EC	1	PPI	1.7	2.7	9.0	10.0	13.7	14.7
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
11	napropramide	50	DF	3	POT	1.7	1.3	9.7	9.7	15.0	15.7
	pyridate	5	L	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
12	untreated				PRE	1.3	1.3	2.7	5.7	14.3	14.3
13	oxyfluorfen	2	L	0.3	PRT	3.3	6.0	10.0	10.0	9.0	14.0
14	untreated				PRE	1.0	1.0	1.7	2.0	15.3	16.3
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
LSD (P=.05)						1.45	1.89	1.66	2.47	3.88	2.98
Standard Deviation						0.86	1.13	0.99	1.47	2.31	1.77
CV						34.54	39.76	11.59	16.46	17.51	12.67

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER RATING 7-03-00	TOMATO RATING 7-03-00	COLQ RATING 7-03-00	EBNS RATING 7-03-00	RRPW RATING 7-03-00
1	trifluralin	4	EC	1	PPI	6.3	3.0	9.0	9.0	10.0
	metribuzin	75	DF	0.5	PPI					
2	s-metolachlor	7.6	EC	1.33	PRT	3.0	3.0	8.7	10.0	10.0
3	s-metolachlor	7.6	EC	1.33	POT	2.3	2.7	8.3	10.0	10.0
4	s-metolachlor	7.6	EC	1.33	POT	3.7	2.3	10.0	10.0	10.0
	rimsulfuron	25	DF	0.031	POT					
5	s-metolachlor	7.6	EC	1.33	POT	3.0	3.3	8.7	10.0	10.0
	rimsulfuron	25	DF	0.031	PO1					
6	s-metolachlor	7.6	EC	1.33	POT	3.0	4.7	8.3	10.0	10.0
	halosulfuron	75	WG	0.032	PO1					
	NIS		L	0.5%	PO1					
7	flufenacet	60	DF	0.068	POT	1.7	1.3	4.3	6.0	5.7
8	trifluralin	4	EC	1	PPI	2.3	3.3	10.0	10.0	10.0
	clomazone	3	ME	0.25	PRT					
9	flumioxazin	50	WP	0.047	PRT	2.0	4.7	10.0	10.0	10.0
10	trifluralin	4	EC	1	PPI	3.0	8.0	9.3	10.0	10.0
	clopyralid	3	EC	0.188	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
11	napropramide	50	DF	3	POT	2.3	2.3	10.0	10.0	10.0
	pyridate	5	L	0.9	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
12	untreated				PRE	1.0	1.0	2.0	2.3	4.0
13	oxyfluorfen	2	L	0.3	PRT	4.0	7.3	10.0	10.0	10.0
14	untreated				PRE	1.0	1.0	1.7	4.0	4.7
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
LSD (P=.05)						2.08	2.45	1.83	2.73	2.96
Standard Deviation						1.24	1.46	1.09	1.63	1.77
CV						44.88	42.53	13.80	18.78	19.87

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER YIELD No./PLOT 8-14-00	PEPPER YIELD KG/PLOT 8-14-00	PEPPER YIELD No./PLOT 8-21-00	PEPPER YIELD KG/PLOT 8-21-00	PEPPER YIELD No./PLOT 9-05-00	PEPPER YIELD KG/PLOT 9-05-00
1	trifluralin	4	EC	1	PPI	3.3	0.93	5.7	0.87	4.0	0.72
	metribuzin	75	DF	0.5	PPI						
2	s-metolachlor	7.6	EC	1.33	PRT	14.0	2.78	18.7	3.04	7.3	1.21
3	s-metolachlor	7.6	EC	1.33	POT	13.0	2.72	14.3	2.18	6.0	1.13
4	s-metolachlor	7.6	EC	1.33	POT	8.3	1.50	9.3	1.46	9.3	1.55
	rimsulfuron	25	DF	0.031	POT						
5	s-metolachlor	7.6	EC	1.33	POT	8.7	1.70	6.3	0.86	7.3	1.18
	rimsulfuron	25	DF	0.031	PO1						
6	s-metolachlor	7.6	EC	1.33	POT	8.0	1.51	12.0	1.78	6.3	1.17
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.5%	PO1						
7	flufenacet	60	DF	0.068	POT	18.0	3.62	11.7	1.77	3.7	0.67
8	trifluralin	4	EC	1	PPI	22.0	3.91	12.7	2.09	10.3	1.72
	clomazone	3	ME	0.25	PRT						
9	flumioxazin	50	WP	0.047	PRT	15.0	3.17	19.7	3.43	7.7	1.40
10	trifluralin	4	EC	1	PPI	0.0	0.00	0.0	0.00	0.0	0.00
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
11	napropramide	50	DF	3	POT	16.3	2.85	19.7	2.91	12.0	1.93
	pyridate	5	L	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
12	untreated				PRE	13.3	2.53	12.3	1.83	4.3	0.82
13	oxyfluorfen	2	L	0.3	PRT	10.0	1.89	10.7	1.70	7.0	1.28
14	untreated				PRE	19.0	3.66	15.7	2.35	5.3	0.86
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
LSD (P=.05)						10.86	2.15	11.40	1.77	6.82	1.11
Standard Deviation						6.47	1.28	6.79	1.05	4.07	0.66
CV						53.60	54.88	56.35	56.40	62.77	59.27

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER YIELD No./PLOT 9-15-00	PEPPER YIELD KG/PLOT 9-15-00	PEPPER YIELD No./PLOT 9-27-00	PEPPER YIELD KG/PLOT 9-27-00	PEPPER TOT YLD No./PLOT	PEPPER TOT YLD KG/PLOT
1	trifluralin	4	EC	1	PPI	5.0	0.83	4.0	0.58	22.0	3.93
	metribuzin	75	DF	0.5	PPI						
2	s-metolachlor	7.6	EC	1.33	PRT	5.3	0.95	15.3	2.31	60.7	10.30
3	s-metolachlor	7.6	EC	1.33	POT	10.0	1.75	10.7	1.63	54.0	9.40
4	s-metolachlor	7.6	EC	1.33	POT	6.0	1.00	9.3	1.33	42.3	6.85
	rimsulfuron	25	DF	0.031	POT						
5	s-metolachlor	7.6	EC	1.33	POT	8.3	1.34	7.7	1.17	38.3	6.25
	rimsulfuron	25	DF	0.031	PO1						
6	s-metolachlor	7.6	EC	1.33	POT	6.0	1.08	7.7	1.26	40.0	6.81
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.5%	PO1						
7	flufenacet	60	DF	0.068	POT	7.3	1.13	6.7	1.34	47.3	7.37
8	trifluralin	4	EC	1	PPI	13.3	2.37	15.3	2.57	73.7	12.65
	clomazone	3	ME	0.25	PRT						
9	flumioxazin	50	WP	0.047	PRT	13.3	2.22	13.3	2.09	69.0	12.32
10	trifluralin	4	EC	1	PPI	0.0	0.00	0.0	0.00	0.0	0.00
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
11	napropramide	50	DF	3	POT	11.3	1.84	7.0	1.15	66.3	10.69
	pyridate	5	L	0.9	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
12	untreated				PRE	6.7	1.21	4.0	0.59	40.7	6.97
13	oxyfluorfen	2	L	0.3	PRT	5.3	0.91	7.3	1.32	40.3	7.09
14	untreated				PRE	4.7	0.71	8.3	1.22	53.0	8.79
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
LSD (P=.05)						7.20	1.25	8.39	1.22	27.48	4.74
Standard Deviation						4.29	0.74	5.00	0.72	16.37	2.82
CV						58.52	60.35	59.98	54.72	35.38	36.13

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	TOMATO YIELD KG/PLOT 8-18-00	TOMATO YIELD KG/PLOT 8-25-00	TOMATO YIELD KG/PLOT 8-30-00	TOMATO YIELD KG/PLOT 9-06-00	TOMATO YIELD KG/PLOT 9-13-00
1	trifluralin	4	EC	1	PPI	1.12	3.55	9.10	13.18	8.11
	metribuzin	75	DF	0.5	PPI					
2	s-metolachlor	7.6	EC	1.33	PRT	1.22	3.57	7.82	12.97	8.49
3	s-metolachlor	7.6	EC	1.33	POT	0.65	1.69	9.61	15.75	10.17
4	s-metolachlor	7.6	EC	1.33	POT	1.24	3.37	9.26	15.70	7.85
	rimsulfuron	25	DF	0.031	POT					
5	s-metolachlor	7.6	EC	1.33	POT	1.21	2.09	8.60	17.47	11.15
	rimsulfuron	25	DF	0.031	PO1					
6	s-metolachlor	7.6	EC	1.33	POT	0.60	2.05	7.13	19.54	11.52
	halosulfuron	75	WG	0.032	PO1					
	NIS		L	0.5%	PO1					
7	flufenacet	60	DF	0.068	POT	0.59	5.22	12.25	20.72	11.35
8	trifluralin	4	EC	1	PPI	0.93	3.03	10.45	13.23	9.81
	clomazone	3	ME	0.25	PRT					
9	flumioxazin	50	WP	0.047	PRT	0.93	2.31	7.28	14.77	6.71
10	trifluralin	4	EC	1	PPI	0.00	0.00	0.00	0.00	0.00
	clopyralid	3	EC	0.188	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
11	napropramide	50	DF	3	POT	1.63	1.89	4.63	15.09	20.41
	pyridate	5	L	0.9	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
12	untreated				PRE	2.65	6.03	9.93	23.13	11.10
13	oxyfluorfen	2	L	0.3	PRT	0.27	1.13	4.21	7.00	7.92
14	untreated				PRE	2.48	5.24	8.20	11.27	6.53
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
LSD (P=.05)						1.64	3.05	5.95	14.09	7.38
Standard Deviation						0.97	1.82	3.54	8.39	4.39
CV						88.22	61.97	45.79	58.83	46.94

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	TOMATO YIELD KG/PLOT 9-21-00	TOMATO YIELD KG/PLOT 9-29-00	TOMATO TOT YLD KG/PLOT
1	trifluralin	4	EC	1	PPI	7.55	2.81	45.41
	metribuzin	75	DF	0.5	PPI			
2	s-metolachlor	7.6	EC	1.33	PRT	8.18	5.07	47.77
3	s-metolachlor	7.6	EC	1.33	POT	9.96	4.80	52.63
4	s-metolachlor	7.6	EC	1.33	POT	10.27	4.35	52.05
	rimsulfuron	25	DF	0.031	POT			
5	s-metolachlor	7.6	EC	1.33	POT	11.09	4.33	55.93
	rimsulfuron	25	DF	0.031	PO1			
6	s-metolachlor	7.6	EC	1.33	POT	12.93	5.55	59.32
	halosulfuron	75	WG	0.032	PO1			
	NIS		L	0.5%	PO1			
7	flufenacet	60	DF	0.068	POT	7.83	3.31	61.28
8	trifluralin	4	EC	1	PPI	6.33	5.79	49.57
	clomazone	3	ME	0.25	PRT			
9	flumioxazin	50	WP	0.047	PRT	6.47	3.23	41.68
10	trifluralin	4	EC	1	PPI	0.10	0.00	0.10
	clopyralid	3	EC	0.188	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	COC		L	1%	PO1			
11	napropramide	50	DF	3	POT	18.76	6.42	68.83
	pyridate	5	L	0.9	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	COC		L	1%	PO1			
12	untreated				PRE	4.90	1.85	59.61
13	oxyfluorfen	2	L	0.3	PRT	8.40	5.19	34.12
14	untreated				PRE	2.74	1.44	37.89
	sethoxydim	1.53	EC	0.19	PO1			
	COC		L	1%	PO1			
LSD (P=.05)						7.28	4.07	32.47
Standard Deviation						4.34	2.42	19.31
CV						52.63	62.64	40.58

Weed Control in Spinach - HTRC

Project Code: WC 109-00-02 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Spinach **Variety: Space** **Field or Block: 88**
Planting Method: Seed **Planting Date: 7-5-00** **Harvest: 8-18-00**
Spacing: 3.1" in row **Row Spacing: 14" x 3 rows** **Perennial Age: N/A**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 35 ft long

Soil Type: Capac Loam **OM: 2.5** **pH: 6.3**
Sand: 58% **Silt: 25%** **Clay: 17%** **CEC: 10.9**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	7-6	9:30am	68 F/ 70 F	dry	SE 5-7	61F/68F	69%	50% cloud	N
PO1	7-26	9 am	72 F/ 69 F	dry	calm	69F/72F	87%	hazy	Y
PO2	7-28	2:30pm	79 F/77 F	moist	SE 2-4	72F/79F	74%	100%cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-26-00	Spinach	4-5"	4	good
	COPU	2-3"	many	few
	GRFT	2-3"	many	few
	RRPW	1-2"	2-4	few
	WIMU	4-6"	4-6	moderate
7-28-00	Spinach	5-6"	6	good

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 8-18-00: All spinach in each plot was harvested.

Weed Control in Spinach - HTRC

Project Code: WC 109-00-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SPINACH RATING 7-26-00	GRFT RATING 7-26-00	COPU RATING 7-26-00	COLQ RATING 7-26-00	EBNS RATING 7-26-00	RRPW RATING 7-26-00
1	untreated				PRE	1.0	1.0	1.0	1.0	1.0	1.0
2	clopyralid	3	EC	0.094	PO1	1.0	1.0	1.0	1.0	1.0	1.0
3	flufenacet	60	DF	0.4	PRE	6.7	10.0	10.0	8.7	10.0	10.0
4	flufenacet	60	DF	0.8	PRE	8.0	9.7	10.0	10.0	10.0	10.0
5	fluroxypyr	1.5	L	0.094	PO1	1.0	1.0	1.0	1.0	1.0	1.0
6	fluroxypyr	1.5	L	0.094	PO2	1.0	1.0	1.0	1.0	1.0	1.0
7	napropamide	50	DF	2	PRE	7.7	7.0	7.0	9.3	3.3	6.0
8	napropamide	50	DF	4	PRE	8.3	9.7	8.7	10.0	6.7	8.3
9	s-dimethenamid	6	EC	0.66	PRE	8.0	10.0	9.3	8.7	10.0	10.0
10	s-dimethenamid	6	EC	1.32	PRE	9.0	10.0	10.0	9.7	10.0	10.0
11	triflusulfuron	50	WG	0.032	PO1	1.0	1.0	1.0	1.0	1.0	1.0
12	pyrazon	68	DF	4	PRE	4.3	9.3	10.0	8.7	10.0	10.0
LSD (P=.05)						0.88	1.84	1.19	1.18	1.79	1.95
Standard Deviation						0.52	1.09	0.70	0.70	1.06	1.15
CV						10.99	18.44	12.03	11.94	19.55	19.91

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SPINACH RATING 8-04-00	GRFT RATING 8-04-00	COLQ RATING 8-04-00	COPU RATING 8-04-00	EBNS RATING 8-04-00	RRPW RATING 8-04-00	SPINACH YIELD KG/PLOT 8-18-00
1	untreated				PRE	2.7	1.0	1.0	2.3	1.0	1.0	0.308
2	clopyralid	3	EC	0.094	PO1	3.3	1.0	3.0	4.3	5.3	2.0	0.637
3	flufenacet	60	DF	0.4	PRE	7.7	10.0	8.3	10.0	10.0	10.0	0.177
4	flufenacet	60	DF	0.8	PRE	9.0	10.0	10.0	10.0	10.0	10.0	0.090
5	fluroxypyr	1.5	L	0.094	PO1	6.0	2.7	4.3	9.7	8.7	3.7	0.034
6	fluroxypyr	1.5	L	0.094	PO2	3.0	3.7	4.3	9.0	4.3	4.0	0.826
7	napropamide	50	DF	2	PRE	7.0	8.0	7.3	6.7	2.3	6.0	0.187
8	napropamide	50	DF	4	PRE	10.0	9.7	10.0	9.3	3.3	7.7	0.004
9	s-dimethenamid	6	EC	0.66	PRE	8.3	10.0	8.7	9.7	10.0	9.7	0.113
10	s-dimethenamid	6	EC	1.32	PRE	9.7	10.0	9.7	10.0	10.0	10.0	0.029
11	triflusulfuron	50	WG	0.032	PO1	9.7	2.7	2.0	5.7	2.3	5.3	0.002
12	pyrazon	68	DF	4	PRE	4.3	8.0	9.0	10.0	9.7	9.7	0.633
LSD (P=.05)						1.36	1.59	2.21	2.14	1.45	2.05	0.39
Standard Deviation						0.81	0.94	1.31	1.26	0.86	1.21	0.23
CV						11.98	14.65	20.20	15.68	13.36	18.37	91.17

Weed Control in Established Strawberry - HTRC

Project Code: WC 124-00-01 **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: see Notes**
Spacing: Matted Row **Row Spacing: 6 ft** **Perennial Age: 2 yrs**
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 pm	51 F/40 F	dry	SE 5-7	45F/51F	62%	90%	N
PO1	5-23	11:30am	67 F/ 62 F	wet	SW 3-5	64F/67F	88%	100%cloud	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-23-00	STBE	6-8"	many	good
	COCW	6-10"	many	moderate

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. 4-13-00: STBE, some green leaves.
4. 5-23-00: some small fruit, many blossoms.
5. Harvest dates: 6-5, 6-8, 6-12, 6-14, 6-16, 6-19, 6-21, and 6-23-00.

Weed Control in Established Strawberry - HTRC

Project Code: WC 124-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE RATING 5-23-00	COCW RATING 5-23-00	MWCH RATING 5-23-00	STBE RATING 5-31-00	STBE RATING 6-30-00	GFPW RATING 6-30-00	MWCH RATING 6-30-00
1	terbacil	80	WP	0.3	PRE	2.0	9.7	8.3	2.0	2.7	10.0	8.3
2	s-metolachlor	7.6	EC	1.5	PRE	3.0	5.7	7.3	3.0	3.7	7.7	6.0
3	s-dimethenamid	6	EC	0.8	PRE	2.3	6.3	8.3	2.3	2.0	7.3	3.7
4	oxyfluorfen	2	EC	0.4	PRE	3.0	6.7	5.3	2.3	3.0	7.7	3.0
5	sulfentrazone	75	DF	0.25	PRE	1.0	6.0	9.3	1.3	1.0	9.3	8.3
6	sulfentrazone	75	DF	0.375	PRE	1.7	9.0	9.3	1.3	2.3	10.0	10.0
7	flumioxazin	50	WP	0.025	PRE	2.3	6.7	8.0	2.0	2.0	9.3	6.3
8	flufenacet	60	DF	0.5	PRE	2.3	6.7	7.7	2.0	2.3	8.0	4.3
9	halosulfuron	75	WG	0.032	PRE	2.7	9.7	8.0	2.3	2.7	9.3	7.7
10	terbacil	80	WP	0.2	PRE	1.7	8.3	8.7	2.0	3.3	10.0	9.3
	clopyralid	3	EC	0.19	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
11	terbacil	80	WP	0.2	PRE	1.7	10.0	9.7	3.7	4.7	10.0	9.3
	fluroxypyr	1.5	EC	0.09	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
12	terbacil	80	WP	0.2	PRE	1.3	10.0	9.7	2.7	3.7	10.0	10.0
	halosulfuron	75	WG	0.032	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
13	prometryn	4	L	0.8	PRE	3.3	10.0	9.7	2.7	3.3	9.0	9.0
14	pendimethalin	3.3	EC	0.8	PRE	2.3	8.7	9.7	1.7	3.0	9.3	7.7
15	untreated Ctrl					2.3	7.0	6.0	2.7	2.7	8.3	3.3
LSD (P=.05)						1.62	3.89	3.29	1.45	1.93	2.39	3.39
Standard Deviation						0.97	2.33	1.97	0.86	1.15	1.43	2.02
CV						44.14	28.99	23.60	38.15	40.89	15.82	28.56

Weed Control in Established Strawberry - HTRC

Project Code: WC 124-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE YIELD KG/PLOT 6-05-00	STBE YIELD KG/PLOT 6-08-00	STBE YIELD KG/PLOT 6-12-00	STBE YIELD KG/PLOT 6-14-00	STBE YIELD KG/PLOT 6-16-00	STBE YIELD KG/PLOT 6-19-00	STBE YIELD KG/PLOT 6-21-00
1	terbacil	80	WP	0.3	PRE	0.51	0.87	4.31	3.14	2.00	1.67	1.16
2	s-metolachlor	7.6	EC	1.5	PRE	0.47	0.67	3.59	2.34	1.34	1.86	0.65
3	s-dimethenamid	6	EC	0.8	PRE	0.55	0.85	3.98	2.84	2.03	2.10	1.03
4	oxyfluorfen	2	EC	0.4	PRE	0.91	1.14	3.37	2.13	1.53	1.89	1.28
5	sulfentrazone	75	DF	0.25	PRE	0.39	0.63	4.71	3.41	2.22	2.82	0.78
6	sulfentrazone	75	DF	0.375	PRE	0.53	1.16	4.40	2.84	1.91	2.09	1.26
7	flumioxazin	50	WP	0.025	PRE	0.49	0.96	3.80	2.89	1.87	2.48	0.73
8	flufenacet	60	DF	0.5	PRE	0.70	0.83	4.17	2.79	2.41	2.43	1.61
9	halosulfuron	75	WG	0.032	PRE	0.16	0.22	2.82	2.29	1.77	2.33	1.08
10	terbacil	80	WP	0.2	PRE	0.31	0.63	3.67	3.46	3.80	3.34	1.31
	clopyralid	3	EC	0.19	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
11	terbacil	80	WP	0.2	PRE	0.13	0.47	4.92	3.17	1.65	2.47	1.56
	fluroxypyr	1.5	EC	0.09	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
12	terbacil	80	WP	0.2	PRE	0.12	0.01	0.71	0.06	0.10	0.03	0.04
	halosulfuron	75	WG	0.032	PO1							
	sethoxydim	1.53	EC	0.3	PO1							
	NIS		L	0.5%	PO1							
13	prometryn	4	L	0.8	PRE	0.33	0.69	2.56	2.38	1.66	1.86	0.90
14	pendimethalin	3.3	EC	0.8	PRE	0.25	0.77	4.53	3.13	1.98	1.93	1.75
15	untreated Ctrl					0.70	0.89	3.28	2.60	1.69	2.33	0.86
LSD (P=.05)						0.47	0.41	1.15	1.22	1.20	1.29	1.05
Standard Deviation						0.28	0.24	0.68	0.73	0.72	0.77	0.62
CV						65.24	34.10	18.82	27.90	38.80	36.65	58.87

Weed Control in Established Strawberry - HTRC

Project Code: WC 124-00-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE YIELD KG/PLOT 6-23-00	STBE TOT YLD KG/PLOT
1	terbacil	80	WP	0.3	PRE	0.56	14.22
2	s-metolachlor	7.6	EC	1.5	PRE	0.53	11.43
3	s-dimethenamid	6	EC	0.8	PRE	0.44	13.80
4	oxyfluorfen	2	EC	0.4	PRE	0.48	12.73
5	sulfentrazone	75	DF	0.25	PRE	0.90	15.86
6	sulfentrazone	75	DF	0.375	PRE	0.58	14.77
7	flumioxazin	50	WP	0.025	PRE	0.78	14.00
8	flufenacet	60	DF	0.5	PRE	0.44	15.38
9	halosulfuron	75	WG	0.032	PRE	0.92	11.59
10	terbacil	80	WP	0.2	PRE	1.02	17.53
	clopyralid	3	EC	0.19	PO1		
	sethoxydim	1.53	EC	0.3	PO1		
	NIS		L	0.5%	PO1		
11	terbacil	80	WP	0.2	PRE	0.19	14.56
	fluroxypyr	1.5	EC	0.09	PO1		
	sethoxydim	1.53	EC	0.3	PO1		
	NIS		L	0.5%	PO1		
12	terbacil	80	WP	0.2	PRE	0.00	1.08
	halosulfuron	75	WG	0.032	PO1		
	sethoxydim	1.53	EC	0.3	PO1		
	NIS		L	0.5%	PO1		
13	prometryn	4	L	0.8	PRE	0.68	11.06
14	pendimethalin	3.3	EC	0.8	PRE	0.61	14.96
15	untreated Ctrl					0.52	12.87
LSD (P=.05)						0.73	4.21
Standard Deviation						0.43	2.52
CV						75.84	19.29

Apple Herbicide Trial 1 - 1999 + 2000

Cooperator: Paul Hubbell **Location: Williamsburg, MI**

Personnel: Jerome Hull, Gary Thornton
Crop: Apple **Variety: Gingergold** **Field or Block: N/A**
Planting Method: N/A **Planting Date: 1995** **Harvest: N/A**
Spacing: 15 ft in row **Row Spacing: 20 ft** **Perennial Age: 5 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide * 30 ft long, 2 trees/plot.

Soil Type: Loam **OM: _____** **pH: ____**
Sand: ____ **Silt: ____** **Clay: ____** **CEC: _____**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
	10-29-99		59 F		W 3-5				

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

Notes and Comments
1. **Sprays applied with 2-nozzle boom FF8004, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Glyphosate (1 lb/a) was included with all treatments.**
4. **Vegetation present at application: dandelion, clover, mallow, plantain, quackgrass sorrel, white campion, lambsquarters, crabgrass, cranesbill.**
5. **Herbicide treatments were applied on 10-29-99.**

Apple Herbicide Trial 1 - 1999 + 2000

Cooperator: Paul Hubbell **Location: Williamsburg, MI**

PESTICIDE TRT No	COMMON NAME	FORMULATION	lb ai/A	OVERALL RATING 6-22-00	OVERALL RATING 8-21-00
1	azafenidin	80 DF	0.75	8.3	6.0
2	azafenidin	80 DF	1.0	8.7	7.3
3	azafenidin	80 DF	0.5	8.0	5.3
	diuron	80 DF	2.0		
4	azafenidin	80 DF	0.5	8.7	5.3
	simazine	90 DF	2.5		
5	azafenidin	80 DF	0.5	8.0	7.0
	norflurazon	80 DF	2.0		
6	azafenidin	80 DF	0.5	6.7	5.3
	napropamide	50 DF	2.0		
7	azafenidin	80 DF	0.5	7.3	6.7
	oryzalin	4 AS	2.0		
8	simazine	90 DF	2.5	8.0	5.3
	oryzalin	4 AS	2.0		
9	simazine	90 DF	2.5	9.3	6.3
	norflurazon	80 DF	2.0		
10	terbacil	80 WP	1.0	8.7	4.0
	diuron	80 DF	2.0		
11	simazine	90 DF	2.0	7.7	4.0
	norflurazon	80 DF	1.0		
	azafenidin	80 DF	0.25		
12	simazine	90 DF	2.0	8.0	4.3
	napropamide	50 DF	1.0		
	azafenidin	80 DF	0.25		
13	simazine	90 DF	2.0	8.3	4.3
	diuron	80 DF	1.0		
	napropamide	50 DF	1.0		
14	simazine	90 DF	2.0	9.0	6.3
	terbacil	80 WP	0.25		
	napropramide	50 DF	1.0		
15	simazine	90 DF	2.0	9.0	8.3
	norflurazon	80 DF	1.0		
	napropramide	50 DF	1.0		
LSD (P=.05)				0.86	1.02
Standard Deviation				0.52	0.61
CV				6.26	10.72

Apple Herbicide Trial 2 - 2000

Cooperator: Paul Hubbell **Location: Williamsburg, MI**

Personnel: Jerome Hull, Gary Thornton
Crop: Apple **Variety: Gingergold** **Field or Block: N/A**
Planting Method: N/A **Planting Date: 1994** **Harvest: N/A**
Spacing: 15 ft in row **Row Spacing: 20 ft** **Perennial Age: 6 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide * 30 ft long, 2 trees/plot.

Soil Type: Loam **OM: _____** **pH: ____**
Sand: ____ **Silt: ____** **Clay: ____** **CEC: _____**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
	5-2		62 F		NNW 8-10				

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

Notes and Comments
1. Sprays applied with 2-nozzle boom FF8004, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Glyphosate (1 lb/a) + Stinger (2.5 ml/qt) were included with all treatments.
4 Vegetation present at application: dandelion, quackgrass, sorrel, white campion.

Apple Herbicide Trial 2 - 2000

Cooperator: Paul Hubbell **Location: Williamsburg, MI**

TRT No	PESTICIDE COMMON NAME	FORMULATION	lb ai/A	Overall Rating 6-22-00	Overall Rating 8-21-00
1	azafenidin	80 DF	0.5	10.0	6.3
2	azafenidin	80 DF	0.25	9.3	5.7
3	azafenidin*	80 DF	0.25	8.7	6.7
4	azafenidin	80 DF	0.5	10.0	9.7
	diuron	80 DF	2.0		
5	terbacil	80 WP	1.0	9.7	9.3
	diuron	80 DF	2.0		
6	azafenidin	80 DF	0.5	9.3	8.7
	simazine	90 DF	2.0		
7	azafenidin	80 DF	0.5	9.3	7.7
	napropamide	50 DF	2.0		
8	azafenidin	80 DF	0.5	9.3	8.3
	oryzalin	4 AS	2.0		
9	simazine	90 DF	2.5	10.0	7.0
	oryzalin	4 AS	2.0		
10	simazine	90 DF	2.5	10.0	8.0
	napropamide	50 DF	2.0		
LSD (P=.05)				0.76	1.16
Standard Deviation				0.45	0.68
CV				4.67	8.83

*** Treatment 3 was repeated on 6-22-00, without adding glyphosate or Stinger.**

Apple Herbicide Trial 3 - 2000

Location: Clarksville, MI

Personnel: Jerome Hull
Crop: Apple **Variety: Delicious, McIntosh, Empire**
Planting Method: N/A **Planting Date: 1989** **Harvest: N/A**
Spacing: 15 ft in row **Row Spacing: 20 ft** **Perennial Age: 19 years**
Tillage Type: None **Study Design: RCBD** **Replications: 6**
Plot Size: 6 ft wide * 30 ft long, 2 trees per plot.

Soil Type: Riddler Sandy Loam **OM: _____** **pH: ____**
Sand: ____ **Silt: ____** **Clay: ____** **CEC: _____**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PRE	4-25	_____	58 F	_____	NE 10-12	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Notes and Comments
1. **Sprays applied with 2-nozzle boom FF8004, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Glyphosate (1 lb/a) + Stinger (2.5 ml/qt) were included with all treatments.**
4. **Vegetation present at application: dandelion, quackgrass, Canada thistle, groundsel, wild lettuce, common chickweed.**
5. **At spray application, apples were in tight cluster-pre pink stages.**

_____
_____
_____
_____
_____
_____
_____
_____

Apple Herbicide Trial 3 - 2000

Location: Clarksville, MI

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 7-05-00	OVERALL RATING 8-07-00
1	azafenidin	80	DF	1.5	PRE	9.0	8.0
2	azafenidin	80	DF	0.4	PRE	9.7	9.3
3	azafenidin	80	DF	0.75	PRE	9.8	8.7
4	terbacil	80	WP	1	PRE	9.5	8.7
	diuron	80	DF	2	PRE		
5	azafenidin	80	DF	0.5	PRE	10.0	9.3
	diuron	80	DF	2	PRE		
6	azafenidin	80	DF	0.5	PRE	9.8	9.2
	simazine	90	DF	2.5	PRE		
7	azafenidin	80	DF	0.5	PRE	9.7	9.2
	oryzalin	4	AS	2	PRE		
	simazine	90	DF	2.5	PRE		
8	oryzalin	4	AS	2	PRE	10.0	6.3
9	terbacil	80	WP	2	PRE	10.0	8.5
	oryzalin	4	AS	2	PRE		
10	terbacil	80	WP	0.75	PRE	9.8	8.7
	napropramide	50	DF	2	PRE		
11	azafenidin	80	DF	0.5	PRE	9.7	9.0
	napropramide	50	DF	2	PRE		
12	azafenidin	80	DF	0.5	PRE	9.7	9.2
	norflurazon	80	DF	2	PRE		
13	terbacil	80	WP	0.5	PRE	8.7	7.8
	simazine	90	DF	2	PRE		
	norflurazon	80	DF	1	PRE		
14	terbacil	80	WP	0.5	PRE	9.7	7.7
	simazine	90	DF	2	PRE		
	oryzalin	4	AS	1	PRE		
LSD (P=.05)						0.68	1.42
Standard Deviation						0.59	1.23
CV						6.07	14.43

Preemergence Weed Control in Blueberry - HTRC

Project Code: WC 127-00-03 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Blueberry **Variety: Jersey** **Field or Block: 114**
Planting Method: Transplant **Planting Date: 1971** **Harvest: N/A**
Spacing: 5 ft **Row Spacing: 10 ft** **Perennial Age: 29 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 4-5 trees or 20 ft long * 10.7 ft wide.

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	5-5	9:30am	73 F/ 59 F	moist	SW 5-7	62F/73F	54%	hazy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-5-00	Blueberry	Prebloom		good
	LACG	3-4"	many	many
	DAND	bloom	many	few
	CATH	4-5"	many	few

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Applications made on both sides of row.

Preemergence Weed Control in Blueberry - HTRC

Project Code: WC 127-00-03 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BLUEBERRY RATING 6-23-00	ANBG RATING 6-23-00	QUGR RATING 6-23-00	DAND RATING 6-23-00	BLUEBERRY RATING 7-20-00	ANBG RATING 7-20-00
1	azafenidin	80	DF	0.25	PRE	1.0	7.7	7.7	6.7	1.0	4.7
	glyphosate	4	L	1.0	PRE						
	NIS		L	0.25%	PRE						
2	azafenidin	80	DF	0.5	PRE	1.0	9.0	7.3	8.3	1.3	7.7
	glyphosate	4	L	1.0	PRE						
	NIS		L	0.25%	PRE						
3	azafenidin	80	DF	0.75	PRE	1.0	9.0	8.0	9.7	1.0	9.3
	glyphosate	4	L	1.0	PRE						
	NIS		L	0.25%	PRE						
4	azafenidin	80	DF	1.5	PRE	1.0	10.0	9.3	10.0	1.0	10.0
	glyphosate	4	L	1.0	PRE						
	NIS		L	0.25%	PRE						
5	simazine	90	WP	4.0	PRE	1.0	8.7	7.7	8.0	1.0	7.7
	glyphosate	4	L	1.0	PRE						
	NIS		L	0.25%	PRE						
6	diuron	80	DF	2	PRE	1.0	9.7	8.3	6.7	1.7	9.0
	terbacil	80	WP	0.3	PRE						
	glyphosate	4	L	1	PRE						
7	norflurazon	80	DF	2	PRE	1.0	9.3	9.0	8.7	1.0	8.7
	glyphosate	4	L	1	PRE						
8	glyphosate	4	L	1	PRE	1.0	8.3	7.7	8.7	1.0	8.3
	NIS		L	0.25%	PRE						
LSD (P=.05)						0.00	2.34	2.52	3.30	0.54	2.24
Standard Deviation						0.00	1.34	1.44	1.88	0.31	1.28
CV						0.00	14.92	17.71	22.60	27.43	15.67

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GIFT RATING 7-20-00	QUGR RATING 7-20-00	DAND RATING 7-20-00	RRPW RATING 7-20-00
1	azafenidin	80	DF	0.25	PRE	9.0	5.0	5.0	10.0
	glyphosate	4	L	1.0	PRE				
	NIS		L	0.25%	PRE				
2	azafenidin	80	DF	0.5	PRE	9.0	6.0	3.0	10.0
	glyphosate	4	L	1.0	PRE				
	NIS		L	0.25%	PRE				
3	azafenidin	80	DF	0.75	PRE	10.0	6.7	6.3	10.0
	glyphosate	4	L	1.0	PRE				
	NIS		L	0.25%	PRE				
4	azafenidin	80	DF	1.5	PRE	10.0	9.3	9.3	10.0
	glyphosate	4	L	1.0	PRE				
	NIS		L	0.25%	PRE				
5	simazine	90	WP	4.0	PRE	3.0	7.0	7.3	7.7
	glyphosate	4	L	1.0	PRE				
	NIS		L	0.25%	PRE				
6	diuron	80	DF	2	PRE	6.3	8.0	3.0	7.7
	terbacil	80	WP	0.3	PRE				
	glyphosate	4	L	1	PRE				
7	norflurazon	80	DF	2	PRE	8.0	8.7	4.0	10.0
	glyphosate	4	L	1	PRE				
8	glyphosate	4	L	1	PRE	2.0	8.0	4.7	8.7
	NIS		L	0.25%	PRE				
LSD (P=.05)						3.05	3.20	2.78	3.66
Standard Deviation						1.74	1.83	1.59	2.09
CV						24.34	24.90	29.79	22.61

Weed Control in Blueberry - SWMREC

Project Code: WC 127-00-01 **Location: Benton Harbor, MI**

Personnel: Eric Hanson, Tom Zabadal
Crop: Blueberry **Variety: Bluecrop** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 1990** **Harvest: N/A**
Spacing: 4 ft **Row Spacing: 10 ft** **Perennial Age: 10 years**
Tillage Type: None **Study Design: RCBD** **Replications: 4**
Plot Size: 32 ft long * 36" on each side of plot, 8 bushes/plot

Soil Type: Sandy Loam **OM: 2%** **pH: 5.2**
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
LPRE	4-14	am	45 F/	_____	< 5 mph	_____	____	clear	N
PO1	5-3	am	68 F/	_____	< 5 mph	_____	____	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-14-00	Bud Swell			
5-3-00	Bud Break			

Notes and Comments
1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 20 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**

Weed Control in Blueberry - SWMREC

Project Code: WC 127-00-01 **Location: Benton Harbor, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 6-28-00	COCW RATING 6-28-00	COGR RATING 6-28-00	CORW RATING 6-28-00	DAND RATING 6-28-00	HONE RATING 6-28-00	MATA RATING 6-28-00
1	simazine	90	DF	2	LPRE	6.7	8.3	7.3	10.0	4.7	8.3	8.0
	norflurazon	80	DF	2	LPRE							
2	diuron	80	DF	2	LPRE	8.7	6.0	10.0	10.0	5.3	7.3	10.0
	norflurazon	80	DF	2	LPRE							
3	diuron	80	DF	2	LPRE	2.7	3.3	1.7	7.3	2.3	7.7	5.3
4	diuron	80	DF	2	LPRE	8.0	7.7	10.0	10.0	7.7	7.3	8.0
	glyphosate	4	L	1	LPRE							
5	simazine	90	DF	2	LPRE	4.3	8.7	7.3	10.0	5.7	5.0	7.3
6	simazine	90	DF	2	PO1	8.3	10.0	8.0	10.0	8.0	4.0	10.0
	glyphosate	4	L	1	PO1							
7	norflurazon	80	DF	2	LPRE	3.0	2.3	7.7	10.0	2.0	8.3	3.7
8	norflurazon	80	DF	2	PO1	7.7	9.0	9.3	9.7	5.3	10.0	8.3
	glyphosate	4	L	1	PO1							
9	azafenidin	80	WG	1	LPRE	6.0	6.3	8.3	8.7	6.7	7.3	10.0
10	azafenidin	80	WG	1	PO1	9.0	8.3	9.3	10.0	8.3	7.3	9.3
	glyphosate	4	L	1	PO1							
11	oxyfluorfen	2	L	1	PO1	3.0	2.0	3.3	4.3	5.0	5.7	5.3
12	untreated Ctrl					1.3	2.7	2.0	7.3	4.3	10.0	6.0
LSD (P=.05)						3.20	4.03	3.82	3.91	5.50	6.07	4.86
Standard Deviation						1.90	2.39	2.27	2.32	3.27	3.60	2.89
CV						33.21	38.44	32.26	25.95	59.99	48.93	37.93

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 7-17-00	COCW RATING 7-17-00	COGR RATING 7-17-00	CORW RATING 7-17-00	DAND RATING 7-17-00	HONE RATING 7-17-00	MATA RATING 7-17-00
1	simazine	90	DF	2	LPRE	5.7	7.3	7.0	10.0	3.3	6.7	7.3
	norflurazon	80	DF	2	LPRE							
2	diuron	80	DF	2	LPRE	8.3	7.3	10.0	10.0	7.0	9.0	10.0
	norflurazon	80	DF	2	LPRE							
3	diuron	80	DF	2	LPRE	1.3	5.7	1.7	2.3	7.0	8.7	5.3
4	diuron	80	DF	2	LPRE	9.3	10.0	10.0	10.0	9.3	8.0	10.0
	glyphosate	4	L	1	LPRE							
5	simazine	90	DF	2	LPRE	4.7	7.3	5.0	10.0	5.7	6.0	7.3
6	simazine	90	DF	2	PO1	7.0	10.0	6.3	10.0	10.0	4.3	10.0
	glyphosate	4	L	1	PO1							
7	norflurazon	80	DF	2	LPRE	3.7	4.0	7.3	6.0	2.0	8.0	2.7
8	norflurazon	80	DF	2	PO1	7.3	5.3	9.7	10.0	4.7	7.0	7.7
	glyphosate	4	L	1	PO1							
9	azafenidin	80	WG	1	LPRE	4.7	5.0	6.3	7.3	5.3	10.0	1.7
10	azafenidin	80	WG	1	PO1	9.3	8.3	9.7	10.0	10.0	10.0	10.0
	glyphosate	4	L	1	PO1							
11	oxyfluorfen	2	L	1	PO1	1.0	3.0	0.7	0.7	2.3	10.0	1.3
12	untreated Ctrl					1.3	4.7	0.3	5.0	3.7	10.0	5.0
LSD (P=.05)						3.28	5.55	3.82	3.57	4.73	5.19	5.09
Standard Deviation						1.94	3.30	2.27	2.12	2.80	3.08	3.02
CV						36.63	50.70	36.76	27.87	47.84	37.87	46.24

Weed Control in Blueberry - West Olive

Project Code: WC 127-00-02 **Location: West Olive, MI**
Cooperator: Brower Farms

Personnel: Eric Hanson, Tom Zabadal
Crop: Blueberry **Variety: Bluecrop** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 1990** **Harvest: N/A**
Spacing: 4 ft **Row Spacing: 10 ft** **Perennial Age: 10 years**
Tillage Type: None **Study Design: RCBD** **Replications: 4**
Plot Size: 32 ft long * 36" on each side of plot, 8 bushes/plot

Soil Type: Sandy Loam **OM: 6%** **pH: 5.0**
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
LPRE	4-20	am	42 F/	_____	W 15	_____	____	cloudy	N
PO1	5-8	am	70 F/	_____	< 5 mph	_____	____	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-20-00	Bud Swell	_____	_____	_____
5-8-00	Bud Break	_____	_____	_____

Notes and Comments
1. **Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**

Weed Control in Blueberry - West Olive

Project Code: WC 127-00-02 **Location: West Olive, MI**
Cooperator: Brower Farms

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 6-26-00	COCW RATING 6-26-00	COGR RATING 6-26-00	DAND RATING 6-26-00	MATA RATING 6-26-00	RESO RATING 6-26-00	RRPW RATING 6-26-00
1	simazine	90	DF	2	LPRE	6.3	4.7	2.3	7.7	3.0	6.7	4.7
	norflurazon	80	DF	2	LPRE							
2	diuron	80	DF	2	LPRE	7.3	9.3	5.3	8.0	4.3	7.7	4.3
	norflurazon	80	DF	2	LPRE							
3	diuron	80	DF	2	LPRE	8.0	8.7	2.0	5.7	7.3	10.0	3.0
4	diuron	80	DF	2	LPRE	4.7	4.0	1.7	4.3	4.7	5.7	2.0
	glyphosate	4	L	1	LPRE							
5	simazine	90	DF	2	LPRE	5.7	6.7	1.7	6.7	4.3	8.0	2.3
6	simazine	90	DF	2	PO1	4.7	6.3	1.0	7.3	5.7	4.7	2.0
	glyphosate	4	L	1	PO1							
7	norflurazon	80	DF	2	LPRE	4.7	3.0	2.0	5.3	4.0	6.0	6.0
8	norflurazon	80	DF	2	PO1	6.0	8.0	6.7	8.0	3.7	7.3	3.3
	glyphosate	4	L	1	PO1							
9	azafenidin	80	WG	1	LPRE	7.3	6.3	10.0	7.7	6.7	10.0	10.0
10	azafenidin	80	WG	1	PO1	8.7	6.0	10.0	9.7	8.3	10.0	10.0
	glyphosate	4	L	1	PO1							
11	oxyfluorfen	2	L	1	PO1	2.7	1.7	4.0	5.7	2.0	4.7	5.7
12	untreated Ctrl					2.7	1.3	3.0	1.0	2.3	6.7	3.7
LSD (P=.05)						2.14	4.81	3.06	5.46	3.64	6.16	3.23
Standard Deviation						1.27	2.85	1.82	3.24	2.16	3.66	1.91
CV						22.18	51.87	43.93	50.50	46.02	50.23	40.31

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 8-03-00	COCW RATING 8-03-00	COGR RATING 8-03-00	DAND RATING 8-03-00	MATA RATING 8-03-00	RESO RATING 8-03-00	RRPW RATING 8-03-00
1	simazine	90	DF	2	LPRE	4.7	5.7	10.0	8.0	1.7	1.7	2.0
	norflurazon	80	DF	2	LPRE							
2	diuron	80	DF	2	LPRE	4.7	5.0	10.0	7.7	4.3	7.3	0.7
	norflurazon	80	DF	2	LPRE							
3	diuron	80	DF	2	LPRE	4.3	3.3	10.0	3.0	3.0	7.3	1.7
4	diuron	80	DF	2	LPRE	3.0	2.3	10.0	3.0	3.3	7.3	1.3
	glyphosate	4	L	1	LPRE							
5	simazine	90	DF	2	LPRE	3.0	3.0	10.0	4.0	3.0	8.0	2.3
6	simazine	90	DF	2	PO1	2.7	3.0	10.0	6.3	1.0	8.3	3.0
	glyphosate	4	L	1	PO1							
7	norflurazon	80	DF	2	LPRE	3.7	1.7	10.0	4.7	1.7	4.7	6.3
8	norflurazon	80	DF	2	PO1	4.7	4.7	10.0	7.3	4.7	7.3	2.3
	glyphosate	4	L	1	PO1							
9	azafenidin	80	WG	1	LPRE	8.0	8.3	10.0	8.3	5.0	10.0	10.0
10	azafenidin	80	WG	1	PO1	9.0	7.0	10.0	9.3	7.7	9.7	10.0
	glyphosate	4	L	1	PO1							
11	oxyfluorfen	2	L	1	PO1	4.7	5.3	7.7	4.0	1.7	2.3	5.7
12	untreated Ctrl					1.0	1.3	10.0	0.3	1.7	5.3	3.7
LSD (P=.05)						1.56	4.78	1.97	4.14	3.39	5.98	3.03
Standard Deviation						0.93	2.84	1.17	2.46	2.01	3.55	1.80
CV						20.88	67.22	11.90	44.64	62.50	53.72	43.96

Weed Control in Cherries - HTRC

Trial ID: WC 128-00-01

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cherries **Variety: Montmorency** **Field or Block: 13-16**
Planting Method: Transplant **Planting Date: May 1988** **Harvest: N/A**
Spacing: 10 ft **Row Spacing: 15 ft** **Perennial Age: 12 years**
Tillage Type: N/A **Study Design: RCBD** **Replications: 3**
Plot Size: 2 trees/plot, 10 ft wide * 20 ft long

Soil Type: Marlette Fine Sandy Loam OM: 1.8% pH: 4.7
Sand: 72% Silt: 17% Clay: 11% CEC: 8.9

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PO1	5-5	8:20am	69 F/ 60 F	moist	SW 2-4	63F/69F	72%	hazy	N
PO2	7-20	2 pm	75 F/ 72 F	dry	SW 3-5	65F/75F	60%	20% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-5-00	Cherries	7-8 ft	full bloom	good
	LACG	3-4"	many	few
	ANBG	1-2"	many	heavy
	DAND	10-12"	bloom	moderate
	BHPL	3-4"	many	few
	WICA	1-2"	many	few
7-20-00	Cherries	7-10 ft	many	moderate
	ANBG	6-10"	many	moderate
	ORGR	12-24"	many	moderate
	QUGR	6-12"	many	moderate
	RECL	12-15"	many	moderate
	WICA	20-30"	12-15	many

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.

Weed Control in Cherries - HTRC

Trial ID: WC 128-00-01

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CHERRY RATING 6-23-00	ORGR RATING 6-23-00	QUGR RATING 6-23-00	RECL RATING 6-23-00	WICA RATING 6-23-00	CHERRY RATING 7-20-00	ORGR RATING 7-20-00
1	azafenidin	80	DF	0.25	PO1	1.0	8.3	8.7	9.0	6.3	1.0	8.3
	glyphosate	4	L	1	PO1							
2	azafenidin	80	DF	0.5	PO1	1.7	8.7	8.7	9.3	7.7	1.0	8.0
	glyphosate	4	L	1	PO1							
3	azafenidin	80	DF	0.75	PO1	1.0	9.7	9.7	9.0	6.3	1.0	9.3
	glyphosate	4	L	1	PO1							
4	azafenidin	80	DF	1.5	PO1	1.3	9.7	9.3	9.7	8.7	1.0	9.0
	glyphosate	4	L	1	PO1							
5	azafenidin	80	DF	0.25	PO1	1.3	8.0	8.0	8.7	8.0	1.0	6.0
	glyphosate	4	L	1	PO1							
	azafenidin	80	DF	0.25	PO2							
	paraquat	2.5	L	1	PO2							
	NIS		L	0.5%	PO2							
6	flumioxazin	50	WP	0.36	PO1	1.0	6.0	6.0	1.0	3.0	1.0	6.3
	paraquat	2.5	L	1	PO2							
	NIS		L	0.5%	PO2							
7	carfentrazone	40	DF	0.02	PO1	1.0	1.0	1.0	1.0	1.0	1.0	3.7
	COC		L	1%	PO1							
	paraquat	2.5	L	1	PO2							
	NIS		L	0.5%	PO2							
8	carfentrazone	40	DF	0.02	PO1	1.0	7.3	8.0	7.0	4.0	1.0	7.3
	glyphosate	4	L	0.5	PO1							
	AMS	100	SP	2.5	PO1							
	paraquat	2.5	L	1	PO2							
	NIS		L	0.5%	PO2							
LSD (P=.05)						0.65	2.69	3.39	1.38	3.39	0.00	3.92
Standard Deviation						0.37	1.54	1.94	0.79	1.93	0.00	2.24
CV						31.71	20.94	26.13	11.51	34.40	0.00	30.86

Weed Control in Cherries - HTRC

Trial ID: WC 128-00-01

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	QUGR RATING 7-20-00	RECL RATING 7-20-00	WICA RATING 7-20-00	CHERRY RATING 8-16-00	ANBG RATING 8-16-00	ORGR RATING 8-16-00
1	azafenidin	80	DF	0.25	PO1	8.7	7.7	5.0	1.0	9.3	8.3
	glyphosate	4	L	1	PO1						
2	azafenidin	80	DF	0.5	PO1	8.0	8.7	6.0	1.0	9.7	8.3
	glyphosate	4	L	1	PO1						
3	azafenidin	80	DF	0.75	PO1	8.7	8.7	3.7	1.0	9.3	7.7
	glyphosate	4	L	1	PO1						
4	azafenidin	80	DF	1.5	PO1	9.0	9.3	7.3	1.0	9.7	8.7
	glyphosate	4	L	1	PO1						
5	azafenidin	80	DF	0.25	PO1	7.0	8.7	6.3	1.0	9.3	10.0
	glyphosate	4	L	1	PO1						
	azafenidin	80	DF	0.25	PO2						
	paraquat	2.5	L	1	PO2						
	NIS		L	0.5%	PO2						
6	flumioxazin	50	WP	0.36	PO1	8.0	4.3	4.3	1.0	8.3	10.0
	paraquat	2.5	L	1	PO2						
	NIS		L	0.5%	PO2						
7	carfentrazone	40	DF	0.02	PO1	4.7	1.7	2.3	1.0	4.7	9.0
	COC		L	1%	PO1						
	paraquat	2.5	L	1	PO2						
	NIS		L	0.5%	PO2						
8	carfentrazone	40	DF	0.02	PO1	7.3	5.7	4.3	1.0	9.3	9.7
	glyphosate	4	L	0.5	PO1						
	AMS	100	SP	2.5	PO1						
	paraquat	2.5	L	1	PO2						
	NIS		L	0.5%	PO2						
LSD (P=.05)						3.76	3.08	2.79	0.00	2.29	1.60
Standard Deviation						2.15	1.76	1.59	0.00	1.31	0.92
CV						28.01	25.72	32.35	0.00	15.04	10.23

Weed Control in Cherries - HTRC

Trial ID: WC 128-00-01

Trt No.	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	QUGR RATING 8-16-00	RECL RATING 8-16-00	WICA RATING 8-16-00
1	azafenidin	80	DF	0.25	PO1	9.7	3.3	3.7
	glyphosate	4	L	1	PO1			
2	azafenidin	80	DF	0.5	PO1	6.7	5.7	2.7
	glyphosate	4	L	1	PO1			
3	azafenidin	80	DF	0.75	PO1	9.0	6.3	1.7
	glyphosate	4	L	1	PO1			
4	azafenidin	80	DF	1.5	PO1	9.3	9.0	3.3
	glyphosate	4	L	1	PO1			
5	azafenidin	80	DF	0.25	PO1	9.7	8.7	10.0
	glyphosate	4	L	1	PO1			
	azafenidin	80	DF	0.25	PO2			
	paraquat	2.5	L	1	PO2			
	NIS		L	0.5%	PO2			
6	flumioxazin	50	WP	0.36	PO1	10.0	9.0	10.0
	paraquat	2.5	L	1	PO2			
	NIS		L	0.5%	PO2			
7	carfentrazone	40	DF	0.02	PO1	9.7	7.0	10.0
	COC		L	1%	PO1			
	paraquat	2.5	L	1	PO2			
	NIS		L	0.5%	PO2			
8	carfentrazone	40	DF	0.02	PO1	9.3	9.7	9.7
	glyphosate	4	L	0.5	PO1			
	AMS	100	SP	2.5	PO1			
	paraquat	2.5	L	1	PO2			
	NIS		L	0.5%	PO2			
LSD (P=.05)						2.06	2.28	2.04
Standard Deviation						1.18	1.30	1.17
CV						12.85	17.76	18.31

Grape Herbicide Trial - 2000

Cooperator: Dave Kroupa Location: Traverse City, MI

Personnel: Jerome Hull, Gary Thornton
Crop: Grape Variety: _____ Field or Block: N/A
Planting Method: Vines Planting Date: 1999 Harvest: N/A
Spacing: 5 ft in row Row Spacing: 10 ft Perennial Age: 1 year
Tillage Type: None Study Design: RCBD Replications: 3
Plot Size: 3 ft wide * 10 ft long, 2 vines/plot.

Soil Type: Sandy Loam OM: _____ pH: ____
Sand: ____ Silt: ____ Clay: ____ CEC: _____

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
_____	5-3	_____	73 F	_____	W 6-10	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___
_____	_____	_____	_____	_____	_____	_____	____	_____	___

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Notes and Comments

1. **Sprays applied with 2-nozzle boom FF8004, 20 gpa, 30 psi, 3.2 mph, CO2 backpack.**
2. **Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.**
3. **Glyphosate (1 lb/a) was included with all treatments.**
4. **Vegetation present at application: dandelion, quackgrass, clover, white campion.**

_____
_____
_____
_____
_____
_____
_____
_____
_____

Grape Herbicide Trial - 2000

Cooperator: Dave Kroupa Location: Traverse City, MI

TRT No	PESTICIDE COMMON NAME	FORMULATION	lb ai/A	Overall Rating 6-22-00	Overall Rating 8-22-00
1	azafenidin	80 DF	0.5	8.3	7.3
2	azafenidin	80 DF	0.25	9.0	6.0
3	azafenidin*	80 DF	0.25	9.3	7.3
4	diuron	80 DF	2.0	3.7	4.0
5	simazine	90 DF	2.5	6.3	5.0
6	simazine	90 DF	2.0	5.3	4.3
	oryzalin	4 AS	2.0		
7	diuron	80 DF	2.0	6.7	5.3
	oryzalin	4 AS	2.0		
LSD (P=.05)				2.48	2.23
Standard Deviation				1.41	1.27
CV				20.34	22.64

***: On 6-22-00, treatment 3 was applied again. No glyphosate was included this time.**