HORTICULTURAL REPORT

2001 WEED CONTROL RESEARCH ON HORTICULTURAL CROPS

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By

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WEED CONTROL IN HORTICULTURAL CROPS - 2001
FORWARD

This report summarizes the results of weed control experiments on horticultural crops in Michigan in 2001. 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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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 6.1.7, 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.
BRFB	British fleabane	*Inula britannica* 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.
CLGC	clammy groundcherry	*Physalis heterophylla* Nees.
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
DOBG	downy bromegrass	*Bromus tectorum* L.
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.
IRFB	Irish fleabane	*Inula salicina*
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

WEED LIST

Abbr.	Common Name	Botanical Name
PESW	Pennsylvania smartweed	*Polygonum pennsylvanicum* L.
POIV	poison ivy	*Rhus radicans* L.
PRKW	prostrate knotweed	*Polygonum aviculare* L.
PRLE	prickly lettuce	*Lactuca serriola* L.
PRSP	prostrate spurge	*Euphorbia maculata* L.
PRPW	prostrate pigweed	*Amaranthus blitoides* S. Wats.
PUSW	purslane speedwell	*Veronica serpyllifolia* L.
PUVI	puncturevine	*Tribulus terrestris* 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.
STGR	stinkgrass	*Eragrostis cilianensis* (All.) E. Mosher
TLSW	thymeleaf sandwort	*Arenaria serpyllifolia* L.
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.
YEFC	yellow fieldcress (kiek)	*Rorippa sylvestris* L.
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	Nufarm Inc.
acetochlor	Harness	7 EC	Monsanto
acetochlor	Surpass	6.4 EC	Syngenta
acifluorfen	Blazer	2 EC	BASF
alachlor	Lasso	4 EC	Monsanto
amendment G	amendment G	L	Summerdale, Inc.
atrazine	Aatrex	90 DF	Syngenta
atrazine 22% + dicamba 13%	Marksman	3.2 F	BASF
atrazine 18.2% + s-dimethenamid 35.3%	Guardsman Max	5 L	BASF
azafenidin	Milestone	80 DF	DuPont
bensulide	Prefar	4 EC	Gowan
bentazon	Basagran	4 L	BASF
bromoxynil	Buctril	2 EC	Bayer
carfentrazone	Aim	40 DF	FMC
chlorimuron	Classic	25 WG	DuPont
clethodim	Select	2 EC	Valent
clomazone	Command	3 ME	FMC
clopyralid	Stinger	3 EC	Dow Agrosciences
clopyralid 5% + MCPA 43%	Curtail M	2.7 L	Dow Agrosciences
cycloate	Ro-Neet	6 EC	Syngenta
desmedipham	Betanex	1.3 L	Aventis CropScience
dicamba	Banvel	4 EC	Microflo
dicamba	Clarity	4 L	BASF
dichlobenil	Casoron	50 WP	Uniroyal
diflufenzopyr 20% + dicamba 50%	Distinct	70 WG	BASF
dimethenamid	Frontier	6 EC	BASF
s-dimethenamid	Outlook	6 EC	BASF
diquat	Reglone	2 EC	Syngenta
diuron	Karmex	80 DF	Griffin
endothall	Des-I-Cate	0.52 EC	Cerexagri, Inc.
EPTC	Eptam	7 EC	Syngenta
ethalfluralin	Curbit	3 EC	Platte
ethalfluralin 18.2% + clomazone 5.6%	PCC 170 SE (Strategy)	2.1 EC	UAP
ethofumesate	Nortron	4L	Aventis CropScience
fluazifop-P	Fusilade DX	2 EC	Syngenta
flufenacet	BAYFOE 5043	60 DF	Bayer
flufenacet 54.4% + metribuzin 13.6%	Axiom	68 DF	Bayer
flufenacet 24% + metribuzin 36%	Domain	60 DF	Bayer
flumiclorac	Resource	0.86 EC	Valent
flumioxazin	Valor/SureGuard	50 WP	Valent
fluroxypyr	Starane	1.5 L	Dow Agrosciences
fluthiacet	Action	4.75 WP	Syngenta

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
fomesafen	Reflex	2 LC	Syngenta
glufosinate	Rely	1 L	Aventis CropScience
glufosinate	Liberty	1.67 EC	Aventis CropScience
glyphosate	Roundup, Touchdown	4 L	Monsanto, Syngenta
halosulfuron	Permit, Sandea	75 WG	Monsanto, Gowan
hexazinone	Velpar	2 L	DuPont
imazamox	Raptor	1 AS	BASF
imazaquin	Scepter	1.5 EC	BASF
imazethapyr	Pursuit	2 L	BASF
isoxaben	Gallery	75 DF	Dow Agrosciences
isoxaben 0.5% + trifluralin 2%	Snapshot	2.5 G	Dow Agrosciences
isoxaben 20% + oryzalin 60%	Snapshot	80 DF	Dow Agrosciences
isoxaflutole	Balance	75 WG	Aventis CropScience
linuron	Lorox	50 DF	Griffin
mesotrione	Callisto	4 L	Syngenta
s-metolachlor	Dual Magnum	7.6 EC	Syngenta
s-metolachlor II	Dual II Magnum	7.6 EC	Syngenta
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	Syngenta
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 Max	3 L	Syngenta
pelargonic acid	Scythe	100% Liquid	Dow Agrosciences
pendimethalin	Prowl	3.3 EC	BASF
phenmedipham	Spin-Aid	1.3 L	Aventis CropScience
phenmedipham 8% + desmedipham 8%	Betamix	1.3 L	Aventis CropScience
phenmedipham 7%+ desmedipham 7% + ethofumesate 7%	Progress	1.8 L	Aventis CropScience
primisulfuron	Beacon	75 WDG	Syngenta
primisulfuron 28.5% + prosulfuron 28.5%	Exceed	57 WG	Syngenta
prometryn	Caparol	4 L	Syngenta
pronamide	Kerb	50 WP	Rohm and Haas
prosulfuron	Peak	57 WG	Syngenta
pyrazon	Pyramin	4.2 FL, 68 DF	BASF
pyridate	Lentagran	45 WP	Syngenta
pyridate	Tough	3.75 EC, 5 EC	Syngenta
pyrithiobac	Staple	85 SP	DuPont
quizalofop	Assure II	0.88 L	DuPont
rimsulfuron	Matrix, Shadeout	25 DF	DuPont

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
S141	S141	L	Summerdale, Inc.
S143	S143	L	Summerdale, Inc.
sethoxydim	Poast	1.53 EC	BASF
simazine	Princep	90 DF	Syngenta
sulfentrazone	Authority	75 DF	FMC
terbacil	Sinbar	80 WP	DuPont
triclopyr	Grandstand	3 EC	Dow Agrosciences
triclopyr	Garlon	3 SC	Dow Agrosciences
triclopyr 33% + clopyralid 12%	Redeem R + P	3 L	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	
Bronc (AMS)		Liquid AMS 38%	Wilbur-Ellis
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
MKTBL = Marketable
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
PT PR = Pint Product
QT = Quart
QT PR = Quart Product
RCBD = Randomized Complete Block Design
RH = Relative Humidity
REPS = Replication
SNBE = Snapbean
SP = Soluble Powder
STBE = Strawberry
SURF = Surface
T = Temperature
TRT = Treatment
UNMKTBL = Unmarketable
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
2001

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	37.6	31.7	0.24	**1**	79.8	59.6		**1**	57.5	47.6	0.29
2	53.7	26.4		**2**	82.2	62.2		**2**	63.7	46.6	0.59
3	50.7	34.7	0.01	**3**	83.4	62.0		**3**	61.1	46.1	
4	56.3	26.3		**4**	76.5	53.4	0.02	**4**	65.3	49.0	
5	61.1	27.9		**5**	68.2	50.0		**5**	64.1	43.6	0.01
6	65.1	44.7	0.48	**6**	70.3	49.0		**6**	60.8	53.8	0.04
7	76.4	44.8	0.09	**7**	78.4	53.4	0.43	**7**	72.3	47.6	
8	71.4	52.4		**8**	76.3	51.5	0.06	**8**	77.0	45.5	
9	53.2	39.7	0.22	**9**	77.5	53.5		**9**	78.1	47.8	
10	52.2	39.4		**10**	78.5	58.6	0.18	**10**	79.3	54.8	0.16
11	67.3	46.6		**11**	66.8	48.5	0.19	**11**	82.8	62.5	0.04
12	70.8	47.4		**12**	60.5	41.1		**12**	82.6	64.1	0.15
13	60.2	39.9		**13**	66.3	34.2		**13**	90.9	61.3	
14	62.0	30.1		**14**	66.7	39.3	0.01	**14**	80.2	75.9	
15	50.5	35.9		**15**	60.3	52.1	2.13	**15**	89.0	64.0	0.83
16	42.6	29.0		**16**	68.5	53.4	1.30	**16**	79.7	57.2	0.01
17	46.6	26.6	0.02	**17**	82.6	60.7		**17**	80.3	58.3	
18	51.8	29.3		**18**	75.8	53.8		**18**	83.7	59.3	0.22
19	59.7	26.1		**19**	76.0	48.4		**19**	84.8	71.0	
20	54.8	46.2	0.41	**20**	76.0	50.2		**20**	76.9	58.5	
21	73.8	54.6	0.49	**21**	74.4	57.5	0.04	**21**	65.2	54.7	0.78
22	67.6	48.1	0.42	**22**	64.3	46.6		**22**	74.9	55.5	0.22
23	76.1	47.8	0.43	**23**	65.4	44.8		**23**	78.0	54.2	
24	54.9	37.0	0.01	**24**	59.5	45.9	0.08	**24**	80.8	52.5	
25	62.0	33.0		**25**	63.6	41.8	0.33	**25**	83.4	54.1	
26	68.6	41.7	0.01	**26**	62.6	45.1	0.17	**26**	83.6	56.3	
27	63.9	47.9	0.01	**27**	55.3	49.9	0.63	**27**	85.8	61.0	
28	62.5	33.3		**28**	69.8	49.2	0.13	**28**	87.5	65.2	
29	67.0	35.9		**29**	65.2	49.1		**29**	85.5	61.7	
30	81.2	42.5		**30**	65.0	37.7		**30**	85.6	64.0	
				31	67.6	36.9					

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2001

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	76.4	49.2		**1**	89.5	67.5		**1**	71.8	43.6	
2	70.6	39.1		**2**	84.2	71.8		**2**	77.4	44.3	
3	72.7	55.5	0.03	**3**	86.1	65.3		**3**	82.8	55.0	
4	82.5	58.5		**4**	87.4	58.3		**4**	73.4	51.5	
5	72.3	51.9		**5**	91.2	58.3		**5**	77.0	45.4	
6	76.5	42.3		**6**	91.0	60.2		**6**	82.0	47.7	
7	76.9	57.9	0.01	**7**	92.4	71.5		**7**	87.2	64.4	0.14
8	88.4	66.3		**8**	95.6	67.5		**8**	83.3	65.7	0.40
9	89.0	62.2		**9**	91.5	68.8	0.19	**9**	77.7	59.8	0.69
10	88.0	66.3	0.05	**10**	79.6	59.6	0.02	**10**	73.2	54.2	
11	76.9	56.6		**11**	82.7	54.2		**11**	75.0	48.9	
12	78.4	54.4		**12**	83.1	58.7		**12**	80.3	50.3	0.08
13	78.7	48.4		**13**	79.0	57.3		**13**	65.6	46.6	
14	83.8	48.4		**14**	78.6	48.1		**14**	63.9	40.7	
15	87.7	52.6		**15**	80.5	49.1		**15**	65.8	41.1	
16	87.1	57.7		**16**	71.5	61.4	0.64	**16**	71.7	40.7	
17	85.5	59.9	0.02	**17**	72.4	58.1		**17**	71.7	44.6	
18	86.3	61.2	0.01	**18**	77.2	57.7	0.13	**18**	74.4	51.0	
19	87.7	60.9		**19**	72.3	61.1	0.10	**19**	67.6	58.1	0.91
20	90.7	63.7		**20**	77.5	59.7		**20**	66.4	54.0	0.15
21	83.4	69.0	0.16	**21**	79.9	49.5		**21**	67.6	51.9	0.76
22	90.7	67.0		**22**	70.5	59.8	0.50	**22**	71.0	47.0	
23	83.2	72.0	0.04	**23**	80.0	64.5		**23**	71.6	50.1	0.55
24	89.3	69.9		**24**	79.6	63.9		**24**	58.4	42.5	0.02
25	74.1	62.3	0.28	**25**	78.5	64.3		**25**	43.8	38.4	0.24
26	77.3	56.3		**26**	80.2	62.7		**26**	50.8	40.7	0.08
27	78.4	48.1		**27**	82.7	55.5		**27**	58.0	44.9	
28	83.6	51.0		**28**	79.2	56.2	0.03	**28**	59.7	46.7	
29	87.1	62.6	0.34	**29**	81.0	50.3		**29**	67.6	39.0	
30	84.8	61.7		**30**	84.7	55.8		**30**	71.5	35.3	
31	89.4	66.1		**31**	77.8	55.2					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2001

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**	82	57		**1**	62	52	0.40
2				**2**	84	58		**2**	62	48	0.52
3				**3**	83	59		**3**	60	47	
4				**4**	74	53	0.06	**4**	62	49	
5				**5**	61	49		**5**	64	39	
6				**6**	71	50		**6**	63	56	0.12
7				**7**	80	56	0.52	**7**	70	44	
8				**8**	76	50	0.04	**8**	77	41	
9		41	0.20	**9**	82	49		**9**	78	44	
10	53	38		**10**	76	52	0.66	**10**	79	52	0.95
11	66	52		**11**	66	59	0.04	**11**	82	61	
12	67	51	0.08	**12**	62	42		**12**	83	63	0.19
13				**13**	67	31		**13**	89	59	0.02
14	64		0.01	**14**	74	34		**14**	90	68	
15	51	37		**15**	68	49	2.25	**15**	88	71	0.92
16	46	30		**16**	70	52		**16**	80	58	
17	46	26		**17**	72	54		**17**	79	58	
18	51	26		**18**	75	56		**18**	84	58	0.29
19	61	24		**19**	76	42		**19**	84	74	
20		47	0.22	**20**	76	46		**20**	77	61	
21	75	49	0.30	**21**	72	55	0.23	**21**	65	54	
22	68	42	0.15	**22**	73	55		**22**	73	56	1.63
23	78	61	0.30	**23**	63	42	0.02	**23**	77	52	
24	56	38		**24**	58	51	0.21	**24**	80	50	
25	67	28		**25**	62	39	0.26	**25**	83	51	
26	69	36		**26**	62	47	0.20	**26**	83	56	
27	66	48		**27**	61	46	0.21	**27**	86	61	
28	64	29		**28**	69	49	0.27	**28**	88	61	
29	66	32		**29**	64	45		**29**	87	58	
30	82	38		**30**	64	33		**30**	86	57	
				31	66	34					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2001

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	67			**1**	91	70		**1**	77	39	
2	72			**2**	84	72		**2**	78	40	
3	73	53	0.09	**3**	84	71		**3**	82	51	0.01
4	80	61		**4**	89	55		**4**	73	59	
5	81	51		**5**	92	57		**5**		40	
6	77	38		**6**	91	59		**6**		44	
7	80	55	0.02	**7**	92	72		**7**			
8	88	66		**8**	95	76		**8**			1.49
9	88	61		**9**	92	75	0.15	**9**			0.15
10	87	64	0.04	**10**	78	66		**10**	73	54	
11	76	50		**11**	82	50		**11**	74	43	
12	78	45		**12**	83	60		**12**	78	51	
13	78	42		**13**	81	57		**13**	61	49	
14	84	42		**14**	78	55		**14**	65	33	
15	86	51		**15**	82	44		**15**	68	38	0.08
16	87	59		**16**	70	62	0.73	**16**	71	36	
17	86	61		**17**		60	0.03	**17**	72	39	
18	86	59	0.02	**18**				**18**	73	48	
19	88	61		**19**	72	62	0.45	**19**	64	56	0.86
20	90	62		**20**	77	58		**20**	62	53	0.08
21	86	68	0.01	**21**	81	48		**21**	64	48	0.28
22	92	66		**22**	70	57	0.57	**22**	69	44	
23	85	71	0.02	**23**	80	63	0.01	**23**	69	47	0.25
24	89	71		**24**	80	64		**24**		45	
25	72	62	0.08	**25**	79	63		**25**			
26	76	58		**26**	78	67	0.04	**26**			
27	78	46		**27**	83	57	0.14	**27**			
28	84	48		**28**	82	62		**28**			
29	88	63	0.33	**29**	83	46		**29**			
30	84	58		**30**	84	57		**30**			
31	90	61	0.61	**31**	76	63					

Weed Control in Asparagus - Hart

Project Code: WC 120-01-01 **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" below**
Spacing: 12" **Row Spacing: 4.5 ft** **Perennial Age: 11 years**
Tillage Type: None **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	4-27	10:15am	59 F/ 50 F	moist	NW 1-3	-	30%	clear	N
PO1	6-14	11:15am	85 F/ 78 F	dry	SW 8-10	75F/85F	80%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-14-01	Asparagus	4-6"		good
	FISB	1-2"	2-4	mod-heavy
	COLQ	2-4"	4-8	many
	CLGC	4-6"	many	moderate
	RRPW	1-6"	many	many
	RUTH	1-4"	many	many

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. Harvest dates: 5-3-01 to 6-17-01.
4. Distinct = diflufenzopyr 20% + dicamba 50%.

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 6-14-01	FISB RATING 6-14-01	COLQ RATING 6-14-01	CLGC RATING 6-14-01	RRPW RATING 6-14-01	RUTH RATING 6-14-01
1	diuron	80	DF	1.2	PRE	1.3	5.7	8.3	10.0	2.0	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	2.0	8.7	10.0	10.0	7.7	8.3
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	1.0	8.0	5.3	10.0	1.0	3.0
4	norflurazon	80	DF	2	PRE	1.3	10.0	3.3	8.0	5.0	5.3
5	flumioxazin	50	WP	0.1	PRE	1.0	7.7	6.3	7.3	6.7	9.0
6	sulfentrazone	75	DF	0.25	PRE	2.0	2.3	10.0	10.0	10.0	10.0
7	halosulfuron	75	WG	0.047	PRE	1.0	2.7	6.7	5.3	10.0	10.0
8	diuron	80	DF	1.2	PRE	1.3	6.3	9.0	10.0	1.7	7.3
	halosulfuron	75	WG	0.047	PO1						
	NIS		L	0.5%	PO1						
9	terbacil	80	WP	1.2	PRE	1.7	10.0	9.0	6.7	4.3	7.3
10	azafenidin	80	WG	0.5	PRE	1.7	10.0	10.0	10.0	10.0	10.0
11	azafenidin	80	WG	1	PRE	2.7	10.0	10.0	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	2.7	10.0	10.0	10.0	10.0	10.0
13	untreated				PRE	1.3	7.7	1.0	8.3	2.3	7.7
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						1.10	3.52	3.49	2.78	2.36	4.65
Standard Deviation						0.65	2.09	2.07	1.65	1.40	2.76
CV						40.47	27.44	27.21	18.55	22.58	33.92

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 6-28-01	COLQ RATING 6-28-01	EBNS RATING 6-28-01	MATA RATING 6-28-01	RRPW RATING 6-28-01	RUTH RATING 6-28-01	VOAS RATING 6-28-01
1	diuron	80	DF	1.2	PRE	1.0	10.0	10.0	10.0	6.3	10.0	9.3
	Distinct	70	WG	0.175	PO1							
	28% UAN		L	1.25%	PO1							
	NIS		L	0.5%	PO1							
2	diuron	80	DF	1.2	PRE	2.0	9.7	9.3	10.0	2.3	10.0	5.7
	metribuzin	75	DF	0.6	PRE							
3	flumioxazin	50	WP	0.025	PRE	1.3	3.7	10.0	7.3	1.0	9.7	4.3
4	norflurazon	80	DF	2	PRE	2.0	1.0	10.0	6.7	1.7	6.3	7.7
5	flumioxazin	50	WP	0.1	PRE	1.3	6.3	10.0	5.7	5.3	8.7	7.3
6	sulfentrazone	75	DF	0.25	PRE	1.7	10.0	10.0	9.0	9.7	10.0	7.7
7	halosulfuron	75	WG	0.047	PRE	1.3	6.3	3.0	10.0	10.0	10.0	5.3
8	diuron	80	DF	1.2	PRE	2.3	9.0	10.0	10.0	8.0	10.0	5.3
	halosulfuron	75	WG	0.047	PO1							
	NIS		L	0.5%	PO1							
9	terbacil	80	WP	1.2	PRE	1.7	8.7	10.0	10.0	1.0	9.7	8.3
10	azafenidin	80	WG	0.5	PRE	1.0	10.0	10.0	8.7	10.0	10.0	8.7
11	azafenidin	80	WG	1	PRE	1.0	10.0	10.0	9.7	10.0	10.0	9.0
12	azafenidin	80	WG	2	PRE	2.0	10.0	10.0	10.0	10.0	10.0	9.7
13	untreated				PRE	1.0	10.0	10.0	10.0	8.0	10.0	9.7
	sethoxydim	1.53	EC	0.19	PO1							
	linuron	50	DF	1	PO1							
	clopyralid	3	EC	0.188	PO1							
	NIS		L	0.5%	PO1							
LSD (P=.05)						1.18	3.93	1.69	2.77	1.98	1.61	4.10
Standard Deviation						0.70	2.33	1.00	1.64	1.18	0.96	2.43
CV						46.34	28.98	10.63	18.27	18.37	10.01	32.28

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 7-12-01	LACG RATING 7-12-01	COLQ RATING 7-12-01	EBNS RATING 7-12-01	MATA RATING 7-12-01	RRPW RATING 7-12-01	RUTH RATING 7-12-01	VOAS RATING 7-12-01
1	diuron	80	DF	1.2	PRE	1.0	5.3	10.0	10.0	10.0	6.0	10.0	10.0
	Distinct	70	WG	0.175	PO1								
	28% UAN		L	1.25%	PO1								
	NIS		L	0.5%	PO1								
2	diuron	80	DF	1.2	PRE	1.3	8.3	8.7	10.0	10.0	1.0	9.7	7.0
	metribuzin	75	DF	0.6	PRE								
3	flumioxazin	50	WP	0.025	PRE	1.3	7.0	2.0	9.3	1.3	1.0	4.0	7.3
4	norflurazon	80	DF	2	PRE	1.3	10.0	1.0	8.7	3.7	1.0	7.0	9.3
5	flumioxazin	50	WP	0.1	PRE	1.3	6.7	5.3	10.0	3.0	1.3	7.0	7.7
6	sulfentrazone	75	DF	0.25	PRE	1.3	2.0	10.0	10.0	4.7	8.7	10.0	6.7
7	halosulfuron	75	WG	0.047	PRE	1.0	1.3	6.3	1.3	10.0	10.0	10.0	7.0
8	diuron	80	DF	1.2	PRE	2.0	8.7	7.0	10.0	10.0	6.3	10.0	4.0
	halosulfuron	75	WG	0.047	PO1								
	NIS		L	0.5%	PO1								
9	terbacil	80	WP	1.2	PRE	2.3	9.3	7.3	10.0	10.0	1.0	9.7	8.0
10	azafenidin	80	WG	0.5	PRE	1.7	10.0	10.0	10.0	4.3	10.0	10.0	9.0
11	azafenidin	80	WG	1	PRE	2.0	10.0	10.0	10.0	9.0	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	2.7	10.0	10.0	10.0	10.0	10.0	9.3	10.0
13	untreated				PRE	1.7	10.0	10.0	10.0	10.0	4.0	8.7	8.7
	sethoxydim	1.53	EC	0.19	PO1								
	linuron	50	DF	1	PO1								
	clopyralid	3	EC	0.188	PO1								
	NIS		L	0.5%	PO1								
LSD (P=.05)						1.04	3.48	4.72	1.18	3.92	2.34	4.16	4.76
Standard Deviation						0.61	2.07	2.80	0.70	2.33	1.39	2.47	2.82
CV						38.07	27.22	37.31	7.64	31.49	25.66	27.83	35.06

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 7-19-01	COLQ RATING 7-19-01	EBNS RATING 7-19-01	FISB RATING 7-19-01	RRPW RATING 7-19-01	RUTH RATING 7-19-01
1	diuron	80	DF	1.2	PRE	1.3	10.0	10.0	5.3	8.7	10.0
	Distinct	70	WG	0.175	PO1						
	28% UAN		L	1.25%	PO1						
	NIS		L	0.5%	PO1						
2	diuron	80	DF	1.2	PRE	2.0	10.0	10.0	6.0	2.0	10.0
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	2.0	4.0	10.0	6.0	1.7	10.0
4	norflurazon	80	DF	2	PRE	2.3	1.7	10.0	9.0	3.3	10.0
5	flumioxazin	50	WP	0.1	PRE	1.0	7.7	10.0	8.3	3.7	10.0
6	sulfentrazone	75	DF	0.25	PRE	1.3	10.0	10.0	1.0	7.7	10.0
7	halosulfuron	75	WG	0.047	PRE	1.3	6.3	3.0	1.3	7.0	10.0
8	diuron	80	DF	1.2	PRE	2.7	7.0	10.0	7.7	7.0	10.0
	halosulfuron	75	WG	0.047	PO1						
	NIS		L	0.5%	PO1						
9	terbacil	80	WP	1.2	PRE	1.3	4.0	10.0	9.3	1.0	10.0
10	azafenidin	80	WG	0.5	PRE	1.3	10.0	10.0	10.0	9.3	10.0
11	azafenidin	80	WG	1	PRE	2.0	10.0	10.0	10.0	10.0	10.0
12	azafenidin	80	WG	2	PRE	2.7	10.0	10.0	10.0	10.0	10.0
13	untreated				PRE	2.7	10.0	10.0	10.0	6.0	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.94	5.01	1.62	3.09	3.06	0.00
Standard Deviation						0.56	2.97	0.96	1.84	1.81	0.00
CV						30.36	38.36	10.15	25.39	30.50	0.00

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-03-01	ASPA YIELD KG/PLOT 5-06-01	ASPA YIELD KG/PLOT 5-08-01	ASPA YIELD KG/PLOT 5-10-01	ASPA YIELD KG/PLOT 5-12-01	ASPA YIELD KG/PLOT 5-15-01
1	diuron	80	DF	1.2	PRE	0.893	0.743	0.462	0.683	0.289	0.361
	Distinct	70	WG	0.175	PO1						
	28% UAN		L	1.25%	PO1						
	NIS		L	0.5%	PO1						
2	diuron	80	DF	1.2	PRE	0.482	0.315	0.242	0.406	0.222	0.261
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	0.676	0.603	0.282	0.441	0.179	0.311
4	norflurazon	80	DF	2	PRE	0.862	0.474	0.260	0.446	0.247	0.268
5	flumioxazin	50	WP	0.1	PRE	1.015	0.582	0.360	0.483	0.373	0.369
6	sulfentrazone	75	DF	0.25	PRE	0.994	0.751	0.424	0.499	0.262	0.323
7	halosulfuron	75	WG	0.047	PRE	0.845	0.661	0.403	0.516	0.262	0.372
8	diuron	80	DF	1.2	PRE	0.510	0.455	0.175	0.359	0.147	0.332
	halosulfuron	75	WG	0.047	PO1						
	NIS		L	0.5%	PO1						
9	terbacil	80	WP	1.2	PRE	0.831	0.558	0.376	0.404	0.239	0.333
10	azafenidin	80	WG	0.5	PRE	1.100	0.878	0.425	0.635	0.345	0.413
11	azafenidin	80	WG	1	PRE	0.836	0.848	0.532	0.475	0.350	0.225
12	azafenidin	80	WG	2	PRE	0.845	0.606	0.270	0.451	0.252	0.281
13	untreated				PRE	0.826	0.612	0.349	0.494	0.265	0.331
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.47	0.29	0.20	0.18	0.12	0.11
Standard Deviation						0.28	0.17	0.12	0.11	0.07	0.07
CV						34.18	27.99	35.49	23.05	27.14	21.91

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-17-01	ASPA YIELD KG/PLOT 5-18-01	ASPA YIELD KG/PLOT 5-20-01	ASPA YIELD KG/PLOT 5-21-01	ASPA YIELD KG/PLOT 5-25-01	ASPA YIELD KG/PLOT 5-29-01
1	diuron	80	DF	1.2	PRE	0.538	0.182	0.373	0.364	0.364	0.743
	Distinct	70	WG	0.175	PO1						
	28% UAN		L	1.25%	PO1						
	NIS		L	0.5%	PO1						
2	diuron	80	DF	1.2	PRE	0.292	0.128	0.275	0.178	0.176	0.473
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	0.336	0.151	0.350	0.219	0.289	0.487
4	norflurazon	80	DF	2	PRE	0.395	0.129	0.296	0.274	0.277	0.458
5	flumioxazin	50	WP	0.1	PRE	0.463	0.155	0.342	0.300	0.279	0.580
6	sulfentrazone	75	DF	0.25	PRE	0.465	0.217	0.416	0.341	0.401	0.731
7	halosulfuron	75	WG	0.047	PRE	0.514	0.193	0.360	0.299	0.310	0.691
8	diuron	80	DF	1.2	PRE	0.406	0.117	0.213	0.203	0.236	0.365
	halosulfuron	75	WG	0.047	PO1						
	NIS		L	0.5%	PO1						
9	terbacil	80	WP	1.2	PRE	0.392	0.209	0.421	0.248	0.241	0.442
10	azafenidin	80	WG	0.5	PRE	0.595	0.244	0.443	0.379	0.290	0.619
11	azafenidin	80	WG	1	PRE	0.453	0.211	0.360	0.331	0.397	0.633
12	azafenidin	80	WG	2	PRE	0.435	0.141	0.310	0.283	0.239	0.424
13	untreated				PRE	0.493	0.195	0.286	0.335	0.312	0.583
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.20	0.09	0.12	0.15	0.13	0.23
Standard Deviation						0.12	0.05	0.07	0.09	0.07	0.14
CV						27.74	33.70	21.46	32.59	26.82	25.19

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-31-01	ASPA YIELD KG/PLOT 6-04-01	ASPA YIELD KG/PLOT 6-07-01	ASPA YIELD KG/PLOT 6-10-01	ASPA YIELD KG/PLOT 6-11-01	ASPA YIELD KG/PLOT 6-12-01
1	diuron	80	DF	1.2	PRE	0.335	0.308	0.515	0.537	0.180	0.245
	Distinct	70	WG	0.175	PO1						
	28% UAN		L	1.25%	PO1						
	NIS		L	0.5%	PO1						
2	diuron	80	DF	1.2	PRE	0.212	0.256	0.295	0.394	0.115	0.099
	metribuzin	75	DF	0.6	PRE						
3	flumioxazin	50	WP	0.025	PRE	0.260	0.185	0.332	0.478	0.177	0.124
4	norflurazon	80	DF	2	PRE	0.299	0.243	0.356	0.415	0.181	0.226
5	flumioxazin	50	WP	0.1	PRE	0.392	0.368	0.603	0.523	0.202	0.221
6	sulfentrazone	75	DF	0.25	PRE	0.330	0.287	0.518	0.555	0.199	0.228
7	halosulfuron	75	WG	0.047	PRE	0.323	0.408	0.488	0.512	0.230	0.252
8	diuron	80	DF	1.2	PRE	0.265	0.284	0.346	0.279	0.159	0.116
	halosulfuron	75	WG	0.047	PO1						
	NIS		L	0.5%	PO1						
9	terbacil	80	WP	1.2	PRE	0.277	0.286	0.458	0.447	0.134	0.225
10	azafenidin	80	WG	0.5	PRE	0.340	0.506	0.517	0.727	0.298	0.256
11	azafenidin	80	WG	1	PRE	0.320	0.380	0.518	0.528	0.207	0.223
12	azafenidin	80	WG	2	PRE	0.183	0.300	0.415	0.424	0.222	0.198
13	untreated				PRE	0.323	0.343	0.475	0.396	0.217	0.227
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.16	0.17	0.17	0.19	0.08	0.07
Standard Deviation						0.09	0.10	0.10	0.11	0.05	0.04
CV						33.51	32.59	23.75	24.67	25.82	21.88

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 6-14-01	ASPA YIELD KG/PLOT 6-15-01	ASPA YIELD KG/PLOT 6-17-01	ASPA TOTAL YIELD KG/PLOT
1	diuron	80	DF	1.2	PRE	0.605	0.231	0.411	9.36
	Distinct	70	WG	0.175	PO1				
	28% UAN		L	1.25%	PO1				
	NIS		L	0.5%	PO1				
2	diuron	80	DF	1.2	PRE	0.347	0.176	0.252	5.59
	metribuzin	75	DF	0.6	PRE				
3	flumioxazin	50	WP	0.025	PRE	0.466	0.224	0.273	6.84
4	norflurazon	80	DF	2	PRE	0.362	0.233	0.264	6.96
5	flumioxazin	50	WP	0.1	PRE	0.496	0.262	0.496	8.86
6	sulfentrazone	75	DF	0.25	PRE	0.548	0.285	0.394	9.17
7	halosulfuron	75	WG	0.047	PRE	0.464	0.167	0.370	8.63
8	diuron	80	DF	1.2	PRE	0.323	0.149	0.257	5.69
	halosulfuron	75	WG	0.047	PO1				
	NIS		L	0.5%	PO1				
9	terbacil	80	WP	1.2	PRE	0.449	0.168	0.324	7.46
10	azafenidin	80	WG	0.5	PRE	0.582	0.239	0.356	10.18
11	azafenidin	80	WG	1	PRE	0.613	0.204	0.400	9.04
12	azafenidin	80	WG	2	PRE	0.462	0.174	0.348	7.26
13	untreated				PRE	0.523	0.178	0.290	8.05
	sethoxydim	1.53	EC	0.19	PO1				
	linuron	50	DF	1	PO1				
	clopyralid	3	EC	0.188	PO1				
	NIS		L	0.5%	PO1				
LSD (P=.05)						0.20	0.09	0.17	2.42
Standard Deviation						0.11	0.05	0.10	1.43
CV						24.83	27.09	30.99	18.14

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA MKTBL SPEARS 5-17-01	ASPA UNMKTBL SPEARS 5-17-01	ASPA MKTBL SPEARS 5-18-01	ASPA UNMKTBL SPEARS 5-18-01	ASPA MKTBL SPEARS 5-20-01	ASPA UNMKTBL SPEARS 5-20-01
3	flumioxazin	50	WP	0.025	PRE	31.7	0.7	15.0	3.3	28.0	1.7
10	azafenidin	80	WG	0.5	PRE	44.0	7.3	24.0	8.7	36.3	2.3
11	azafenidin	80	WG	1	PRE	33.7	19.7	19.3	15.7	29.3	4.0
12	azafenidin	80	WG	2	PRE	35.7	32.0	14.0	14.0	30.0	10.3
13	untreated				PRE	36.7	3.0	19.0	6.0	27.0	2.3
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						16.58	7.74	11.07	6.28	9.02	3.16
Standard Deviation						8.81	4.11	5.88	3.34	4.79	1.68
CV						24.24	32.78	32.19	35.00	15.90	40.60

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA MKTBL SPEARS 5-21-01	ASPA UNMKTBL SPEARS 5-21-01	ASPA MKTBL SPEARS 5-28-01	ASPA UNMKTBL SPEARS 5-28-01	ASPA MKTBL SPEARS 5-29-01	ASPA UNMKTBL SPEARS 5-29-01
3	flumioxazin	50	WP	0.025	PRE	22.7	3.3	25.7	3.3	33.0	8.0
10	azafenidin	80	WG	0.5	PRE	27.3	5.0	26.3	3.0	46.3	9.0
11	azafenidin	80	WG	1	PRE	28.3	4.0	29.3	5.7	44.0	17.0
12	azafenidin	80	WG	2	PRE	22.3	6.3	24.7	8.7	36.0	19.3
13	untreated				PRE	28.0	2.3	27.3	1.7	48.7	14.0
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						13.74	4.38	10.09	4.64	9.57	9.34
Standard Deviation						7.29	2.32	5.36	2.46	5.08	4.96
CV						28.35	55.33	20.09	55.14	12.21	36.84

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA MKTBL SPEARS 5-31-01	ASPA UNMKTBL SPEARS 5-31-01	ASPA MKTBL SPEARS 6-04-01	ASPA UNMKTBL SPEARS 6-04-01
3	flumioxazin	50	WP	0.025	PRE	26.7	3.0	19.3	2.7
10	azafenidin	80	WG	0.5	PRE	33.3	2.7	43.0	5.3
11	azafenidin	80	WG	1	PRE	29.0	7.0	34.0	8.7
12	azafenidin	80	WG	2	PRE	17.0	7.7	27.7	7.7
13	untreated				PRE	31.0	2.7	33.7	5.0
	sethoxydim	1.53	EC	0.19	PO1				
	linuron	50	DF	1	PO1				
	clopyralid	3	EC	0.188	PO1				
	NIS		L	0.5%	PO1				
LSD (P=.05)						11.02	5.54	19.49	6.24
Standard Deviation						5.85	2.94	10.35	3.31
CV						21.36	63.94	32.83	56.45

Weed Control in Asparagus - Hart

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA MKTBL SPEARS 6-07-01	ASPA UNMKTBL SPEARS 6-07-01	ASPA MKTBL SPEARS 6-10-01	ASPA UNMKTBL SPEARS 6-10-01	ASPA MKTBL SPEARS 6-11-01	ASPA UNMKTBL SPEARS 6-11-01
3	flumioxazin	50	WP	0.025	PRE	31.3	5.3	36.7	3.0	18.3	1.0
10	azafenidin	80	WG	0.5	PRE	39.7	11.0	53.7	2.7	30.7	1.3
11	azafenidin	80	WG	1	PRE	45.3	11.3	44.0	5.3	23.3	1.7
12	azafenidin	80	WG	2	PRE	40.7	14.0	37.3	5.7	24.7	1.0
13	untreated				PRE	43.3	3.3	34.3	0.7	26.3	1.7
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						16.89	7.34	18.25	4.20	10.76	2.41
Standard Deviation						8.97	3.90	9.69	2.23	5.71	1.28
CV						22.39	43.32	23.52	64.29	23.16	95.85

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA MKTBL SPEARS 6-12-01	ASPA UNMKTBL SPEARS 6-12-01	ASPA MKTBL SPEARS 6-14-01	ASPA UNMKTBL SPEARS 6-14-01	ASPA MKTBL SPEARS 6-15-01	ASPA UNMKTBL SPEARS 6-15-01
3	flumioxazin	50	WP	0.025	PRE	15.0	2.7	37.7	1.0	22.0	0.7
10	azafenidin	80	WG	0.5	PRE	24.0	2.0	45.0	1.3	24.7	0.3
11	azafenidin	80	WG	1	PRE	25.0	2.7	41.7	1.7	22.0	1.0
12	azafenidin	80	WG	2	PRE	23.0	1.7	39.7	2.7	19.7	0.0
13	untreated				PRE	26.3	5.3	39.7	0.3	19.3	0.7
	sethoxydim	1.53	EC	0.19	PO1						
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						8.88	5.35	17.37	2.97	10.52	1.77
Standard Deviation						4.72	2.84	9.22	1.58	5.59	0.94
CV						20.82	99.08	22.64	112.56	25.95	176.22

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA TOTAL MKTBL SPEARS	ASPA TOTAL UNMKTBL SPEARS	ASPA PERCENT UNMKTBL SPEARS
3	flumioxazin	50	WP	0.025	PRE	363.0	39.7	10.7
10	azafenidin	80	WG	0.5	PRE	498.3	62.0	12.5
11	azafenidin	80	WG	1	PRE	448.3	105.3	23.5
12	azafenidin	80	WG	2	PRE	392.3	131.0	33.5
13	untreated				PRE	440.7	49.0	10.9
	sethoxydim	1.53	EC	0.19	PO1			
	linuron	50	DF	1	PO1			
	clopyralid	3	EC	0.188	PO1			
	NIS		L	0.5%	PO1			
LSD (P=.05)						106.40	28.92	5.57
Standard Deviation						56.51	15.36	2.96
CV						13.19	19.84	16.23

Weed Control in Asparagus - HTRC

Project Code: WC 120-01-02 **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" below**
Spacing: 1 ft **Row Spacing: 6 ft** **Perennial Age: 8 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	RH	Sky	Dew
PRE	4-25	10:40am	53 F/ 46 F	moist	SW 3-5	40%	5% cloud	Y
PO1	5-23	12:40pm	62 F/ 57 F	dry	SW 4-6	50%	50% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-25-01	ASPA	1-2"	-	very few
	QUGR	2-3"	many	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. Harvest dates: 5-1-01 to 6-21-01.
4. Distinct = diflufenzopyr 20% + dicamba 50%.

Weed Control in Asparagus - HTRC

Project Code: WC 120-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 5-14-01	QUGR RATING 5-14-01	DAND RATING 5-14-01	ASPA RATING 6-05-01	QUGR RATING 6-05-01	YENS RATING 6-05-01	DAND RATING 6-05-01
1	diuron	80	DF	1.2	PRE	1.7	3.7	8.7	1.3	5.7	3.3	8.3
	metribuzin	75	DF	0.5	PRE							
2	flumioxazin	50	WP	0.1	PRE	1.7	4.7	6.0	2.0	2.3	1.7	3.3
3	flumioxazin	50	WP	0.2	PRE	1.0	5.0	7.0	1.0	4.7	8.3	5.3
4	halosulfuron	75	WG	0.047	PRE	1.7	3.7	8.7	2.0	4.3	8.7	8.3
5	sulfentrazone	75	DF	0.25	PRE	2.7	7.7	6.0	2.7	7.0	8.0	7.0
6	norflurazon	80	DF	3	PRE	2.0	6.3	3.7	2.0	7.0	7.0	4.3
7	azafenidin	80	DF	0.5	PRE	1.7	7.3	8.0	1.0	8.3	5.3	5.0
8	azafenidin	80	DF	1	PRE	2.0	8.0	6.7	1.7	9.0	9.7	10.0
9	diuron	80	DF	1.5	PRE	1.7	1.0	8.0	2.3	7.0	8.0	9.0
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
10	diuron	80	DF	1.5	PRE	1.0	1.7	8.7	1.3	4.3	5.7	9.0
	halosulfuron	75	WG	0.032	PO1							
11	diuron	80	DF	1.5	PRE	1.3	4.7	8.3	1.3	8.0	6.0	9.0
	linuron	50	DF	1	PO1							
	clopyralid	3	EC	0.188	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
12	diuron	80	DF	1.5	PRE	1.7	4.0	8.0	2.0	8.3	6.3	9.7
	carfentrazone	40	DF	0.02	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
13	untreated				PRE	1.3	1.0	5.0	2.3	3.0	7.0	7.0
LSD (P=.05)						1.27	5.61	5.09	1.11	4.92	3.53	4.91
Standard Deviation						0.75	3.33	3.02	0.66	2.92	2.09	2.92
CV						45.94	73.78	42.41	37.13	48.04	32.04	39.75

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-01-01	ASPA YIELD KG/PLOT 5-03-01	ASPA YIELD KG/PLOT 5-04-01	ASPA YIELD KG/PLOT 5-07-01	ASPA YIELD KG/PLOT 5-09-01	ASPA YIELD KG/PLOT 5-11-01
1	diuron	80	DF	1.2	PRE	0.520	0.709	0.381	0.425	0.515	0.397
	metribuzin	75	DF	0.5	PRE						
2	flumioxazin	50	WP	0.1	PRE	0.260	0.395	0.242	0.330	0.300	0.304
3	flumioxazin	50	WP	0.2	PRE	0.480	0.622	0.526	0.569	0.388	0.325
4	halosulfuron	75	WG	0.047	PRE	0.227	0.376	0.261	0.446	0.419	0.449
5	sulfentrazone	75	DF	0.25	PRE	0.173	0.391	0.281	0.445	0.413	0.353
6	norflurazon	80	DF	3	PRE	0.413	0.640	0.409	0.445	0.579	0.487
7	azafenidin	80	DF	0.5	PRE	0.267	0.605	0.404	0.311	0.345	0.434
8	azafenidin	80	DF	1	PRE	0.333	0.706	0.362	0.519	0.471	0.501
9	diuron	80	DF	1.5	PRE	0.067	0.354	0.280	0.453	0.413	0.367
	Distinct	70	WG	0.175	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
10	diuron	80	DF	1.5	PRE	0.347	0.606	0.439	0.603	0.457	0.514
	halosulfuron	75	WG	0.032	PO1						
11	diuron	80	DF	1.5	PRE	0.260	0.487	0.353	0.594	0.440	0.379
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
12	diuron	80	DF	1.5	PRE	0.133	0.307	0.266	0.408	0.491	0.382
	carfentrazone	40	DF	0.02	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	untreated				PRE	0.247	0.612	0.450	0.514	0.468	0.474
LSD (P=.05)						0.38	0.47	0.32	0.29	0.20	0.20
Standard Deviation						0.22	0.28	0.19	0.17	0.12	0.12
CV						79.60	53.79	53.61	37.45	28.19	29.87

Weed Control in Asparagus - HTRC

Project Code: WC 120-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-14-01	ASPA YIELD KG/PLOT 5-16-01	ASPA YIELD KG/PLOT 5-18-01	ASPA YIELD KG/PLOT 5-21-01	ASPA YIELD KG/PLOT 5-23-01	ASPA YIELD KG/PLOT 5-25-01	ASPA YIELD KG/PLOT 5-29-01
1	diuron	80	DF	1.2	PRE	0.303	0.367	0.267	0.552	0.283	0.268	0.377
	metribuzin	75	DF	0.5	PRE							
2	flumioxazin	50	WP	0.1	PRE	0.264	0.129	0.353	0.452	0.189	0.202	0.363
3	flumioxazin	50	WP	0.2	PRE	0.366	0.145	0.377	0.584	0.251	0.190	0.478
4	halosulfuron	75	WG	0.047	PRE	0.298	0.296	0.424	0.634	0.279	0.162	0.466
5	sulfentrazone	75	DF	0.25	PRE	0.220	0.176	0.294	0.446	0.232	0.160	0.284
6	norflurazon	80	DF	3	PRE	0.351	0.161	0.335	0.638	0.218	0.283	0.447
7	azafenidin	80	DF	0.5	PRE	0.311	0.157	0.322	0.386	0.229	0.196	0.284
8	azafenidin	80	DF	1	PRE	0.319	0.251	0.407	0.684	0.291	0.211	0.474
9	diuron	80	DF	1.5	PRE	0.362	0.360	0.368	0.693	0.292	0.173	0.580
	Distinct	70	WG	0.175	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
10	diuron	80	DF	1.5	PRE	0.551	0.307	0.369	0.709	0.416	0.293	0.657
	halosulfuron	75	WG	0.032	PO1							
11	diuron	80	DF	1.5	PRE	0.407	0.263	0.355	0.592	0.261	0.251	0.376
	linuron	50	DF	1	PO1							
	clopyralid	3	EC	0.188	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
12	diuron	80	DF	1.5	PRE	0.362	0.269	0.294	0.525	0.312	0.122	0.082
	carfentrazone	40	DF	0.02	PO1							
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
13	untreated				PRE	0.435	0.267	0.357	0.657	0.295	0.280	0.477
LSD (P=.05)						0.25	0.17	0.24	0.31	0.23	0.11	0.24
Standard Deviation						0.15	0.10	0.14	0.18	0.13	0.07	0.14
CV						43.28	43.92	41.10	32.63	50.34	32.73	34.68

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 5-30-01	ASPA YIELD KG/PLOT 6-01-01	ASPA YIELD KG/PLOT 6-04-01	ASPA YIELD KG/PLOT 6-06-01	ASPA YIELD KG/PLOT 6-08-01	ASPA YIELD KG/PLOT 6-11-01
1	diuron	80	DF	1.2	PRE	0.235	0.274	0.294	0.235	0.297	0.441
	metribuzin	75	DF	0.5	PRE						
2	flumioxazin	50	WP	0.1	PRE	0.085	0.216	0.186	0.108	0.167	0.389
3	flumioxazin	50	WP	0.2	PRE	0.249	0.272	0.258	0.220	0.320	0.430
4	halosulfuron	75	WG	0.047	PRE	0.198	0.240	0.275	0.165	0.262	0.410
5	sulfentrazone	75	DF	0.25	PRE	0.110	0.186	0.167	0.167	0.229	0.301
6	norflurazon	80	DF	3	PRE	0.254	0.229	0.241	0.282	0.299	0.391
7	azafenidin	80	DF	0.5	PRE	0.195	0.204	0.236	0.197	0.218	0.323
8	azafenidin	80	DF	1	PRE	0.189	0.285	0.253	0.174	0.301	0.621
9	diuron	80	DF	1.5	PRE	0.204	0.381	0.265	0.304	0.335	0.499
	Distinct	70	WG	0.175	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
10	diuron	80	DF	1.5	PRE	0.209	0.385	0.367	0.319	0.376	0.577
	halosulfuron	75	WG	0.032	PO1						
11	diuron	80	DF	1.5	PRE	0.253	0.273	0.384	0.200	0.289	0.514
	linuron	50	DF	1	PO1						
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
12	diuron	80	DF	1.5	PRE	0.133	0.360	0.328	0.274	0.367	0.481
	carfentrazone	40	DF	0.02	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
13	untreated				PRE	0.256	0.397	0.226	0.306	0.389	0.552
LSD (P=.05)						0.13	0.17	0.15	0.12	0.19	0.22
Standard Deviation						0.08	0.10	0.09	0.07	0.11	0.13
CV						41.43	36.68	34.45	32.76	38.37	28.84

Weed Control in Asparagus - HTRC

Project Code: WC 120-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA YIELD KG/PLOT 6-13-01	ASPA YIELD KG/PLOT 6-15-01	ASPA YIELD KG/PLOT 6-18-01	ASPA YIELD KG/PLOT 6-21-01	ASPA TOTAL YIELD KG/PLOT
1	diuron	80	DF	1.2	PRE	0.290	0.356	0.171	0.241	8.200
	metribuzin	75	DF	0.5	PRE					
2	flumioxazin	50	WP	0.1	PRE	0.211	0.279	0.170	0.214	5.808
3	flumioxazin	50	WP	0.2	PRE	0.258	0.328	0.174	0.228	8.040
4	halosulfuron	75	WG	0.047	PRE	0.287	0.451	0.230	0.327	7.582
5	sulfentrazone	75	DF	0.25	PRE	0.244	0.295	0.118	0.173	5.858
6	norflurazon	80	DF	3	PRE	0.255	0.337	0.266	0.289	8.249
7	azafenidin	80	DF	0.5	PRE	0.197	0.325	0.129	0.276	6.551
8	azafenidin	80	DF	1	PRE	0.288	0.365	0.124	0.298	8.425
9	diuron	80	DF	1.5	PRE	0.377	0.500	0.302	0.283	8.212
	Distinct	70	WG	0.175	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
10	diuron	80	DF	1.5	PRE	0.384	0.431	0.267	0.424	10.008
	halosulfuron	75	WG	0.032	PO1					
11	diuron	80	DF	1.5	PRE	0.344	0.361	0.181	0.223	8.038
	linuron	50	DF	1	PO1					
	clopyralid	3	EC	0.188	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
12	diuron	80	DF	1.5	PRE	0.335	0.418	0.228	0.398	7.275
	carfentrazone	40	DF	0.02	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
13	untreated				PRE	0.312	0.386	0.174	0.155	8.685
LSD (P=.05)						0.19	0.22	0.20	0.20	3.33
Standard Deviation						0.11	0.13	0.11	0.12	1.98
CV						39.04	35.62	61.49	45.10	25.51

Weed Control in Asparagus - Hartford

Project Code: WC 120-01-03 **Location: Hartford, MI**
Cooperator: Dowd Orchards

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Asparagus **Variety: Jersey Giant** **Field or Block: N/A**
Planting Method: Crowns **Planting Date: 1996** **Harvest: N/A**
Spacing: 12 inches **Row Spacing: 4.5 ft** **Perennial Age: 5 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 4.5 ft wide * 40 ft long

Soil Type: Loamy Sand **OM: 1.4%** **pH: 6.3**
Sand: 87% **Silt: 6.7%** **Clay: 6.3%** **CEC: 3.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
Late PRE	4-26	11 am	60 F/ 52 F	dry	SW 7-8	34%	clear	N
Mature Fern	7-5	9:30 am	66 F/ 69 F	dry	NW 3-5	46%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-26-01	Asparagus	2-10"		good
7-5-01	Asparagus	4-6"	many	good
	FISB	1-6"	many	many
	PUVI	1-8"	many	few
	TUPW	1-4"	2-8	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. **4-26-01: Whole field sprayed with Karmex 0.8 lb, Sencor 0.5 lb, Roundup 0.75 lb.**

Weed Control in Asparagus - Hartford

Project Code: WC 120-01-03 **Location: Hartford, MI**
Cooperator: Dowd Orchards

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ASPA RATING 8-14-01	STGR RATING 8-14-01	FISB RATING 8-14-01
1	terbacil	80	WP	2	PRE	1.0	5.3	5.7
2	metribuzin	75	DF	2	PRE	1.0	4.7	7.7
3	norflurazon	80	DF	3	PRE	1.7	10.0	10.0
4	halosulfuron	75	WG	0.047	PRE	1.0	3.3	3.3
5	sulfentrazone	75	DF	0.38	PRE	1.0	6.3	5.0
6	flumioxazin	50	WP	0.38	PRE	1.0	10.0	9.7
7	azafenidin	80	DF	1	PRE	2.0	10.0	10.0
8	DISTINCT	70	WG	0.175	PO1	1.3	2.3	1.3
	28% UAN		L	1.25%	PO1			
	NIS		L	0.5%	PO1			
9	pyridate	5	EC	1	PO1	1.3	5.3	3.7
	NIS		L	0.5%	PO1			
10	fomesafen	2	EC	0.25	PO1	1.7	2.3	2.0
	NIS		L	0.5%	PO1			
11	halosulfuron	75	WG	0.047	PO1	1.7	1.0	1.0
	NIS		L	0.5%	PO1			
12	linuron	50	DF	1	PO1	1.3	3.3	1.7
	carfentrazone	40	DF	0.02	PO1			
	clopyralid	3	EC	0.188	PO1			
	NIS		L	0.5%	PO1			
LSD (P=.05)						0.66	4.93	3.94
Standard Deviation						0.39	2.91	2.33
CV						29.19	54.54	45.78

Weed Control in Snapbean - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni, William R. Chase
Crop: Snapbean **Variety: Strike (Asgrow)** **Field or Block: 70**
Planting Method: Seed **Planting Date: 5-31-01** **Harvest: 8-8-01**
Spacing: 3.1" in row **Row Spacing: 28",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 7 ft wide x 35 ft long

Soil Type: Capac Loam **OM: 3.1%** **pH: 5.6**
Sand: 56% **Silt: 21%** **Clay: 23%** **CEC: 11.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-31	3:40 pm	65 F/ 62 F	dry	SE 5-7	35%	90% cloud	N
PO1	6-25	10:45am	77 F/ 70 F	dry	NW 2-4	50%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-25-01	Snapbean	3-4"	2 trifoliate	fair
	BYGR	1-6"	2-8	moderate
	COLQ	1-8"	3-10	moderate
	COPU	1-2"	4-10	moderate
	CORW	1-7"	2-10	moderate
	LATH	1-6"	2-6	few
	RRPW	1-4"	2-8	many

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. **This experiment suffered extensive stand reduction as a result of cool wet conditions after planting.**

Weed Control in Snapbean - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SNBE RATING 6-25-01	BYGR RATING 6-25-01	COLQ RATING 6-25-01	COPU RATING 6-25-01	CORW RATING 6-25-01	LATH RATING 6-25-01	RRPW RATING 6-25-01
1	s-metolachlor	7.6	EC	1.3	PRE	2.0	10.0	7.0	10.0	6.0	9.0	10.0
2	s-dimethenamid	6	EC	1.5	PRE	4.7	10.0	9.7	10.0	9.7	10.0	10.0
3	flumioxazin	50	WP	0.03	PRE	6.0	3.0	5.7	10.0	8.3	9.0	10.0
4	halosulfuron	75	WG	0.032	PRE	3.0	1.7	9.3	10.0	10.0	10.0	10.0
5	sulfentrazone	75	DF	0.2	PRE	3.7	6.3	8.7	10.0	6.0	10.0	10.0
6	clomazone	3	ME	0.25	PRE	3.0	7.0	4.7	9.3	5.3	8.3	7.3
7	clomazone	3	ME	0.25	PRE	3.3	9.3	9.3	10.0	8.3	9.7	10.0
	sulfentrazone	75	DF	0.1	PRE							
8	s-metolachlor	7.6	EC	1.3	PRE	2.7	9.7	6.7	10.0	6.0	9.7	10.0
	fomesafen	2	EC	0.25	PO1							
9	s-metolachlor	7.6	EC	1.3	PRE	2.7	10.0	7.7	10.0	5.7	9.7	10.0
	imazamox	1	AS	0.016	PO1							
	COC		L	1%	PO1							
10	s-metolachlor	7.6	EC	1.3	PRE	2.7	10.0	6.7	10.0	7.7	8.3	10.0
	imazamox	1	AS	0.016	PO1							
	bentazon	4	L	0.5	PO1							
	COC		L	1%	PO1							
11	s-metolachlor	7.6	EC	1.3	PRE	2.7	9.7	7.3	10.0	6.7	9.7	10.0
	halosulfuron	75	WG	0.024	PO1							
12	untreated					1.7	1.0	1.0	1.7	1.0	1.0	1.0
13	s-dimethenamid	6	EC	0.75	PRE	2.3	9.7	9.0	10.0	10.0	10.0	10.0
LSD (P=.05)						1.86	2.08	2.46	0.58	2.65	1.23	1.08
Standard Deviation						1.11	1.24	1.46	0.35	1.57	0.73	0.64
CV						35.63	16.52	20.50	3.72	22.55	8.28	7.04

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SNBE RATING 7-02-01	BYGR RATING 7-02-01	COLQ RATING 7-02-01	CORW RATING 7-02-01	EBNS RATING 7-02-01	LATH RATING 7-02-01	RRPW RATING 7-02-01
1	s-metolachlor	7.6	EC	1.3	PRE	3.0	10.0	6.7	3.0	10.0	9.3	10.0
2	s-dimethenamid	6	EC	1.5	PRE	4.3	10.0	10.0	9.7	10.0	10.0	10.0
3	flumioxazin	50	WP	0.03	PRE	6.0	3.0	7.7	7.7	10.0	8.7	10.0
4	halosulfuron	75	WG	0.032	PRE	3.7	1.3	9.3	9.3	2.0	10.0	10.0
5	sulfentrazone	75	DF	0.2	PRE	4.0	5.3	9.3	3.7	10.0	10.0	10.0
6	clomazone	3	ME	0.25	PRE	2.7	6.3	5.3	3.0	2.3	6.7	4.0
7	clomazone	3	ME	0.25	PRE	3.7	8.3	8.0	5.0	10.0	9.3	10.0
	sulfentrazone	75	DF	0.1	PRE							
8	s-metolachlor	7.6	EC	1.3	PRE	2.3	10.0	7.0	9.3	10.0	9.7	10.0
	fomesafen	2	EC	0.25	PO1							
9	s-metolachlor	7.6	EC	1.3	PRE	2.3	9.7	8.3	6.7	10.0	10.0	10.0
	imazamox	1	AS	0.016	PO1							
	COC		L	1%	PO1							
10	s-metolachlor	7.6	EC	1.3	PRE	2.7	10.0	8.3	10.0	10.0	10.0	10.0
	imazamox	1	AS	0.016	PO1							
	bentazon	4	L	0.5	PO1							
	COC		L	1%	PO1							
11	s-metolachlor	7.6	EC	1.3	PRE	3.7	10.0	7.3	9.3	10.0	9.7	10.0
	halosulfuron	75	WG	0.024	PO1							
12	untreated					2.0	1.0	1.0	1.0	1.0	1.0	1.0
13	s-dimethenamid	6	EC	0.75	PRE	2.3	10.0	9.3	9.3	10.0	10.0	10.0
LSD (P=.05)						1.83	1.20	2.42	2.71	0.69	1.05	2.43
Standard Deviation						1.09	0.71	1.44	1.61	0.41	0.62	1.44
CV						33.15	9.72	19.14	24.01	5.04	7.09	16.29

Weed Control in Snapbean - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SNAPBEAN PLANT No./PLOT 8-08-01	SNAPBEAN PLANT WT KG/PLOT 8-08-01	SNAPBEAN FRUIT WT KG/PLOT 8-08-01
1	s-metolachlor	7.6	EC	1.3	PRE	96.0	12.93	10.99
2	s-dimethenamid	6	EC	1.5	PRE	93.3	13.07	11.25
3	flumioxazin	50	WP	0.03	PRE	58.0	6.89	5.83
4	halosulfuron	75	WG	0.032	PRE	77.3	8.12	6.89
5	sulfentrazone	75	DF	0.2	PRE	93.7	10.06	9.23
6	clomazone	3	ME	0.25	PRE	74.0	9.26	7.45
7	clomazone	3	ME	0.25	PRE	89.3	12.45	10.93
	sulfentrazone	75	DF	0.1	PRE			
8	s-metolachlor	7.6	EC	1.3	PRE	93.0	13.11	10.36
	fomesafen	2	EC	0.25	PO1			
9	s-metolachlor	7.6	EC	1.3	PRE	103.3	14.33	11.61
	imazamox	1	AS	0.016	PO1			
	COC		L	1%	PO1			
10	s-metolachlor	7.6	EC	1.3	PRE	103.7	14.42	11.37
	imazamox	1	AS	0.016	PO1			
	bentazon	4	L	0.5	PO1			
	COC		L	1%	PO1			
11	s-metolachlor	7.6	EC	1.3	PRE	100.3	12.28	10.57
	halosulfuron	75	WG	0.024	PO1			
12	untreated					71.3	7.11	5.42
13	s-dimethenamid	6	EC	0.75	PRE	92.7	14.46	12.69
LSD (P=.05)						23.29	4.34	5.19
Standard Deviation						13.82	2.57	3.08
CV						15.67	22.58	32.15

Weed Control in Red Beet, Sugar Beet, and Spinach - HTRC
IR-4: 6662.01MIP03

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: R & S Beet, Spinach **Variety: see Notes** **Field or Block: 132**
Planting Method: Seed **Planting Date: 5-12-01** **Harvest: see "Notes" below**
Spacing: 3.1 inches in row **Row Spacing: 14 inches**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 4**
Plot Size: 8 ft wide x 40 ft long

Soil Type: Sandy Clay Loam **OM: 2.2%** **pH: 5.6**
Sand: 58% **Silt: 22%** **Clay: 20%** **CEC: 8.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-14	11 am	66 F/ 64 F	dry	SW 1-3	39%	100%cloud	N
PO1	6-7	9:30 am	63 F/ 57 F	moist	NE 1-2	65%	60% cloud	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

Notes and Comments

1. Sprays applied with tractor-mounted CO_2 sprayer, 8 8002-nozzles, 30 psi, 20 gpa, 3.2 mph.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill or none present.
3. Planting pattern: 2 row red beet, 2 rows spinach, and 1 row sugar beet.
5. Phytotoxicity ratings at 1, 3, 6 weeks after application. Specify type of injury and at 6 WAA, whether phytotoxicity is commercially acceptable or not.
6. Harvest dates: Spinach - 6-25-01; Red Beet - 7-19-01; Sugar Beet – 10-19-01.
7. This plot suffered extensive stand reduction as a result of cool wet weather after seeding.
8. S-dimethenamid applied at 2 LS caused moderate injury to red beets. However, many common lambsquarters germinated along with the beets and they had to be removed by hand. S-dimethenamid is marginally safe on red beet when applied at 2 LS.

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

IR-4: 6662.01MIP03

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SUGAR BEET RATING 6-15-01	SPINACH RATING 6-15-01	RED BEET RATING 6-15-01	GRFT RATING 6-15-01	COLQ RATING 6-15-01	SPINACH YIELD KG/PLOT 6-25-01
1	pyrazon	68	DF	4	PRE	2.5	8.5	5.3	10.0	9.5	0.18
2	ethofumesate	4	L	2	PRE	2.0	6.5	3.8	7.8	7.8	0.88
3	s-dimethenamid	6	EC	0.66	PRE	6.3	9.5	9.0	10.0	9.5	0.05
4	s-dimethenamid	6	EC	0.98	PRE	5.0	8.0	7.8	10.0	8.3	0.20
5	s-dimethenamid	6	EC	1.32	PRE	3.5	7.8	7.5	10.0	10.0	0.45
6	s-dimethenamid	6	EC	0.66	PO1	1.5	2.0	1.8	6.8	1.3	1.46
7	s-dimethenamid	6	EC	1.32	PO1	1.3	3.3	3.0	10.0	3.0	0.97
8	s-metolachlor II	7.6	EC	1.33	PRE	3.0	4.0	4.0	10.0	9.3	1.38
9	pyrazon	68	DF	3	PRE	2.8	8.5	4.5	10.0	10.0	0.03
	ethofumesate	4	L	1	PO1						
	clopyralid	3	EC	0.19	PO1						
	sethoxydim	1.53	EC	0.19	PO1						
	COC		L	1%	PO1						
10	untreated				PRE	2.0	2.8	3.3	3.3	3.3	1.51
LSD (P=.05)						2.05	2.76	2.01	3.15	3.28	0.93
Standard Deviation						1.41	1.90	1.39	2.17	2.26	0.64
CV						47.53	31.29	27.86	24.77	31.49	90.70

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SUGAR BEET RATING 6-29-01	RED BEET RATING 6-29-01	COLQ RATING 6-29-01	SUGAR BEET RATING 7-17-01	RED BEET RATING 7-17-01
1	pyrazon	68	DF	4	PRE	1.8	2.5	9.0	1.5	2.5
2	ethofumesate	4	L	2	PRE	2.3	2.0	7.3	2.5	2.5
3	s-dimethenamid	6	EC	0.66	PRE	4.0	7.3	9.5	3.5	6.8
4	s-dimethenamid	6	EC	0.98	PRE	3.5	6.0	7.8	3.0	4.5
5	s-dimethenamid	6	EC	1.32	PRE	2.8	5.0	9.3	2.5	4.0
6	s-dimethenamid	6	EC	0.66	PO1	2.5	2.8	1.5	2.8	3.5
7	s-dimethenamid	6	EC	1.32	PO1	3.0	3.0	3.0	2.3	2.8
8	s-metolachlor II	7.6	EC	1.33	PRE	3.3	4.0	7.5	2.8	3.0
9	pyrazon	68	DF	3	PRE	2.3	2.3	10.0	1.8	2.0
	ethofumesate	4	L	1	PO1					
	clopyralid	3	EC	0.19	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	COC		L	1%	PO1					
10	untreated				PRE	2.3	2.3	3.8	2.8	3.3
LSD (P=.05)						1.58	1.69	3.32	1.46	1.86
Standard Deviation						1.09	1.16	2.29	1.01	1.28
CV						39.59	31.47	33.37	39.95	36.98

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

IR-4: 6662.01MIP03

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	RED BEET LEAVES KG/PLOT 7-19-01	RED BEET ROOT KG/PLOT 7-19-01	RED BEET ROOT No./PLOT 7-19-01
1	pyrazon	68	DF	4	PRE	4.32	4.98	61.0
2	ethofumesate	4	L	2	PRE	3.96	4.59	63.3
3	s-dimethenamid	6	EC	0.66	PRE	1.09	0.88	11.0
4	s-dimethenamid	6	EC	0.98	PRE	2.07	1.99	27.8
5	s-dimethenamid	6	EC	1.32	PRE	2.38	2.22	34.3
6	s-dimethenamid	6	EC	0.66	PO1	3.02	3.48	70.3
7	s-dimethenamid	6	EC	1.32	PO1	3.00	3.80	59.8
8	s-metolachlor II	7.6	EC	1.33	PRE	3.46	4.03	44.0
9	pyrazon	68	DF	3	PRE	4.99	5.83	67.0
	ethofumesate	4	L	1	PO1			
	clopyralid	3	EC	0.19	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	COC		L	1%	PO1			
10	untreated				PRE	3.17	3.39	59.0
LSD (P=.05)						1.82	2.30	20.19
Standard Deviation						1.25	1.58	13.91
CV						39.96	45.15	27.98

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SUGAR BEET YIELD No./PLOT 10-19-01	SUGAR BEET YIELD KG/PLOT 10-19-01
1	pyrazon	68	DF	4	PRE	91.8	71.86
2	ethofumesate	4	L	2	PRE	124.0	86.29
3	s-dimethenamid	6	EC	0.66	PRE	60.8	63.06
4	s-dimethenamid	6	EC	0.98	PRE	75.8	74.72
5	s-dimethenamid	6	EC	1.32	PRE	87.3	92.87
6	s-dimethenamid	6	EC	0.66	PO1	134.5	86.30
7	s-dimethenamid	6	EC	1.32	PO1	132.0	84.70
8	s-metolachlor II	7.6	EC	1.33	PRE	119.3	97.71
9	pyrazon	68	DF	3	PRE	88.8	90.42
	ethofumesate	4	L	1	PO1		
	clopyralid	3	EC	0.19	PO1		
	sethoxydim	1.53	EC	0.19	PO1		
	COC		L	1%	PO1		
10	untreated				PRE	107.3	69.29
LSD (P=.05)						39.49	25.07
Standard Deviation						27.22	17.28
CV						26.65	21.14

Preemergence Weed Control in Broccoli and Cabbage - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni, William R. Chase
Crop: Broccoli, Cabbage **Variety: Packman, Market Prize** **Field or Block: 115**
Planting Method: Transplant **Planting Date: 5-21-01** **Harvest: see "Notes" below**
Spacing: 2 ft in row **Row Spacing: 36 inches**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Sandy Loam **OM: 2.7%** **pH: 6.5**
Sand: 63% **Silt: 22%** **Clay: 15%** **CEC: 8.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRT	5-21	12 pm	69 F/ 64 F	dry	SE 5-7	60%	100%cloud	N
POT	5-22	10:30am	56 F/ 58 F	dry	SW 3-5	70%	80% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

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. Harvest Dates: Broccoli - 7-9-01 to 8-10-01; Cabbage - 7-30-01 to 8-27-01.

Preemergence Weed Control in Broccoli and Cabbage - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI RATING 6-18-01	CABBAGE RATING 6-18-01	GRFT RATING 6-18-01	COLQ RATING 6-18-01	CORW RATING 6-18-01	RRPW RATING 6-18-01	WIRA RATING 6-18-01
1	napropamide	50	DF	2	POT	1.7	1.3	10.0	2.7	7.7	10.0	2.7
2	oxyfluorfen	2	EC	0.5	PRT	1.7	1.7	10.0	8.3	10.0	10.0	9.3
3	oxyfluorfen	2	EC	0.5	PRT	1.7	1.7	10.0	9.7	10.0	10.0	9.3
	napropamide	50	DF	2	POT							
4	clomazone	3	ME	0.5	PRT	1.7	2.3	7.7	4.7	10.0	10.0	5.3
5	s-metolachlor	7.6	EC	1.3	POT	2.3	2.0	10.0	5.7	8.0	10.0	4.0
6	s-metolachlor	7.6	EC	1.6	POT	2.3	2.3	10.0	3.7	10.0	10.0	2.7
7	s-metolachlor II	7.6	EC	1.6	POT	1.7	1.7	10.0	5.0	7.7	10.0	4.3
8	flufenacet	60	DF	0.6	POT	2.0	2.0	10.0	3.0	10.0	10.0	6.7
9	sulfentrazone	75	DF	0.2	POT	2.0	2.7	9.3	9.7	9.7	10.0	7.7
10	s-dimethenamid	6	EC	0.64	POT	2.3	2.7	10.0	5.3	10.0	10.0	4.7
11	s-dimethenamid	6	EC	0.98	POT	2.3	2.3	10.0	5.0	10.0	10.0	5.3
12	untreated					1.3	1.0	1.0	1.0	6.3	3.3	1.7
LSD (P=.05)						0.85	0.97	0.78	3.31	3.66	1.23	3.02
Standard Deviation						0.50	0.58	0.46	1.95	2.16	0.73	1.78
CV						26.09	29.16	5.12	36.82	23.74	7.69	33.61

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI RATING 7-09-01	CABBAGE RATING 7-09-01	WIRA RATING 7-09-01	BROCCOLI YIELD KG/PLOT 7-09-01	BROCCOLI YIELD KG/PLOT 7-12-01	BROCCOLI YIELD KG/PLOT 7-16-01
1	napropamide	50	DF	2	POT	2.3	2.3	4.7	0.13	0.32	0.47
2	oxyfluorfen	2	EC	0.5	PRT	2.0	2.3	5.3	0.00	0.35	0.47
3	oxyfluorfen	2	EC	0.5	PRT	2.0	1.7	5.3	0.48	0.15	0.49
	napropamide	50	DF	2	POT						
4	clomazone	3	ME	0.5	PRT	2.0	2.0	3.0	0.54	0.27	0.46
5	s-metolachlor	7.6	EC	1.3	POT	2.7	2.0	1.0	0.00	0.18	0.45
6	s-metolachlor	7.6	EC	1.6	POT	2.3	2.3	1.7	0.33	0.16	0.72
7	s-metolachlor II	7.6	EC	1.6	POT	2.0	2.0	3.3	0.52	0.38	0.70
8	flufenacet	60	DF	0.6	POT	2.3	2.3	3.7	0.38	0.34	0.21
9	sulfentrazone	75	DF	0.2	POT	2.3	2.0	2.3	0.04	0.23	0.51
10	s-dimethenamid	6	EC	0.64	POT	3.0	2.7	2.3	0.22	0.05	0.48
11	s-dimethenamid	6	EC	0.98	POT	3.0	2.7	2.3	0.13	0.29	0.26
12	untreated					3.0	2.7	1.3	0.31	0.14	0.19
LSD (P=.05)						1.06	1.13	2.86	0.58	0.42	0.57
Standard Deviation						0.63	0.67	1.69	0.34	0.25	0.33
CV						25.97	29.71	55.72	133.19	105.47	74.59

Preemergence Weed Control in Broccoli and Cabbage - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD KG/PLOT 7-19-01	BROCCOLI YIELD KG/PLOT 7-23-01	BROCCOLI YIELD KG/PLOT 7-25-01	BROCCOLI YIELD KG/PLOT 7-27-01	BROCCOLI YIELD KG/PLOT 7-30-01	BROCCOLI YIELD KG/PLOT 8-02-01
1	napropamide	50	DF	2	POT	0.08	0.58	0.16	0.11	0.31	0.16
2	oxyfluorfen	2	EC	0.5	PRT	0.62	0.96	0.32	0.15	0.13	0.13
3	oxyfluorfen	2	EC	0.5	PRT	0.51	0.86	0.19	0.14	0.07	0.03
	napropamide	50	DF	2	POT						
4	clomazone	3	ME	0.5	PRT	0.24	1.58	0.17	0.11	0.09	0.15
5	s-metolachlor	7.6	EC	1.3	POT	0.36	0.31	0.25	0.12	0.37	0.05
6	s-metolachlor	7.6	EC	1.6	POT	0.20	0.34	0.15	0.19	0.06	0.31
7	s-metolachlor II	7.6	EC	1.6	POT	0.15	0.31	0.00	0.00	0.27	0.31
8	flufenacet	60	DF	0.6	POT	0.34	0.29	0.05	0.21	0.29	0.18
9	sulfentrazone	75	DF	0.2	POT	0.39	0.92	0.58	0.00	0.43	0.00
10	s-dimethenamid	6	EC	0.64	POT	0.23	0.14	0.15	0.21	0.24	0.03
11	s-dimethenamid	6	EC	0.98	POT	0.24	0.67	0.17	0.11	0.13	0.12
12	untreated					0.66	0.33	0.02	0.24	0.03	0.04
LSD (P=.05)						0.48	0.87	0.31	0.26	0.45	0.31
Standard Deviation						0.28	0.51	0.18	0.15	0.26	0.18
CV						85.00	85.29	99.67	116.26	132.08	146.29

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD KG/PLOT 8-06-01	BROCCOLI YIELD KG/PLOT 8-10-01	BROCCOLI TOTAL YIELD KG/PLOT
1	napropamide	50	DF	2	POT	0.45	0.07	2.84
2	oxyfluorfen	2	EC	0.5	PRT	0.16	0.21	3.50
3	oxyfluorfen	2	EC	0.5	PRT	0.15	0.15	3.22
	napropamide	50	DF	2	POT			
4	clomazone	3	ME	0.5	PRT	0.00	0.00	3.60
5	s-metolachlor	7.6	EC	1.3	POT	0.00	0.15	2.24
6	s-metolachlor	7.6	EC	1.6	POT	0.00	0.03	2.50
7	s-metolachlor II	7.6	EC	1.6	POT	0.08	0.00	2.72
8	flufenacet	60	DF	0.6	POT	0.00	0.09	2.39
9	sulfentrazone	75	DF	0.2	POT	0.25	0.05	3.41
10	s-dimethenamid	6	EC	0.64	POT	0.17	0.04	1.96
11	s-dimethenamid	6	EC	0.98	POT	0.33	0.16	2.62
12	untreated					0.08	0.09	2.13
LSD (P=.05)						0.32	0.22	1.29
Standard Deviation						0.19	0.13	0.76
CV						136.98	149.46	27.76

Preemergence Weed Control in Broccoli and Cabbage - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 7-30-01	CABBAGE YIELD KG/PLOT 7-30-01	CABBAGE YIELD No./PLOT 8-06-01	CABBAGE YIELD KG/PLOT 8-06-01	CABBAGE YIELD No./PLOT 8-13-01	CABBAGE YIELD KG/PLOT 8-13-01
1	napropamide	50	DF	2	POT	3.3	4.35	4.3	4.21	3.7	3.77
2	oxyfluorfen	2	EC	0.5	PRT	6.7	8.49	2.3	2.05	3.0	2.95
3	oxyfluorfen	2	EC	0.5	PRT	7.0	8.53	3.0	3.33	4.3	3.85
	napropamide	50	DF	2	POT						
4	clomazone	3	ME	0.5	PRT	5.7	6.56	4.3	4.03	4.3	4.29
5	s-metolachlor	7.6	EC	1.3	POT	5.7	4.62	2.3	2.15	5.0	5.26
6	s-metolachlor	7.6	EC	1.6	POT	7.0	8.44	2.7	2.13	5.0	4.89
7	s-metolachlor II	7.6	EC	1.6	POT	5.7	6.39	2.7	2.74	3.0	3.11
8	flufenacet	60	DF	0.6	POT	5.3	6.05	3.7	3.48	4.3	4.13
9	sulfentrazone	75	DF	0.2	POT	2.3	3.31	4.7	4.91	4.3	4.41
10	s-dimethenamid	6	EC	0.64	POT	5.0	5.05	3.7	3.45	4.0	3.42
11	s-dimethenamid	6	EC	0.98	POT	6.3	6.30	2.3	2.22	2.3	2.44
12	untreated					2.7	1.74	2.3	2.09	4.0	3.44
LSD (P=.05)						3.92	5.39	2.97	3.24	3.94	3.67
Standard Deviation						2.31	3.18	1.75	1.91	2.33	2.16
CV						44.31	54.71	54.88	62.57	58.99	56.64

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 8-20-01	CABBAGE YIELD KG/PLOT 8-20-01	CABBAGE YIELD No./PLOT 8-27-01	CABBAGE YIELD KG/PLOT 8-27-01	CABBAGE TOTAL YIELD No./PLOT	CABBAGE TOTAL YIELD KG/PLOT
1	napropamide	50	DF	2	POT	2.3	2.55	4.0	3.35	17.7	18.23
2	oxyfluorfen	2	EC	0.5	PRT	1.7	1.95	3.0	4.13	16.7	19.57
3	oxyfluorfen	2	EC	0.5	PRT	2.7	3.27	1.7	1.07	18.7	20.05
	napropamide	50	DF	2	POT						
4	clomazone	3	ME	0.5	PRT	1.7	1.78	2.0	1.39	18.0	18.06
5	s-metolachlor	7.6	EC	1.3	POT	2.7	2.89	2.7	3.04	18.3	17.96
6	s-metolachlor	7.6	EC	1.6	POT	1.0	1.25	1.7	1.69	17.3	18.40
7	s-metolachlor II	7.6	EC	1.6	POT	2.0	2.16	2.0	2.08	15.3	16.47
8	flufenacet	60	DF	0.6	POT	2.0	2.35	2.3	2.29	17.7	18.31
9	sulfentrazone	75	DF	0.2	POT	2.3	2.51	2.7	2.62	16.3	17.75
10	s-dimethenamid	6	EC	0.64	POT	1.3	1.28	2.7	2.08	16.7	15.28
11	s-dimethenamid	6	EC	0.98	POT	3.0	2.95	3.0	3.68	17.0	17.59
12	untreated					1.7	1.41	4.3	4.37	15.0	13.05
LSD (P=.05)						3.13	3.51	2.85	3.65	3.55	3.84
Standard Deviation						1.85	2.07	1.69	2.15	2.09	2.27
CV						91.02	94.35	63.21	81.43	12.28	12.94

Postemergence Weed Control in Broccoli and Cabbage - HTRC

IR4 PR 3218,3449

Project Code: WC 114-01-02 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Maralyn Probst
Crop: Broccoli, Cabbage **Variety: Packman, Market Prize** **Field or Block: 115**
Planting Method: Transplant **Planting Date: 5-21-01** **Harvest: see "Notes" below**
Spacing: 2 ft in row **Row Spacing: 36 inches**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 4**
Plot Size: 8 ft wide x 25 ft long

Soil Type: Sandy Loam **OM: 2.7%** **pH: 6.5**
Sand: 63% **Silt: 22%** **Clay: 15%** **CEC: 8.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-20	9:15 am	67 F/ 68 F	moist	SW 1-3	64%	60% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20-01	Broccoli	6-8"	many	good
	Cabbage	4-6"	many	good
	LACG	0.5-1"	2-3	moderate
	COLQ	1-1.5"	6-8	moderate
	LATH	4-5"	many	few
	WIRA	3-4"	many	many

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. Incorporate 1 lb Treflan on entire field before transplanting.
4. Apply Poast + COC as needed for postemergence grass control.
5. Phytotoxicity ratings at 1, 3, 6 weeks after application.
6. At last ratings (6 WAA) note whether crop is stunted and indicate whether phytotoxicity is commercially acceptable or not.
7. Harvest Dates: Broccoli - 7-9-01 to 8-10-01; Cabbage - 7-30-01 to 8-27-01.
8. Pyridate caused slight yellowing and stunting of broccoli and cabbage. However, yields were not reduced. Pyridate appears to be safe for this use.

Postemergence Weed Control in Broccoli and Cabbage - HTRC

IR4 PR 3218,3449

Project Code: WC 114-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI RATING 6-25-01	CABBAGE RATING 6-25-01	COLQ RATING 6-25-01	WIRA RATING 6-25-01	BROCCOLI RATING 7-09-01	CABBAGE RATING 7-09-01	WIRA RATING 7-09-01
1	pyridate	5	EC	0.23	PO1	1.8	1.5	4.5	1.8	2.5	2.5	2.0
	NIS		L	0.5%	PO1							
2	pyridate	5	EC	0.47	PO1	1.8	1.8	8.3	4.0	2.5	2.0	4.8
	NIS		L	0.5%	PO1							
3	pyridate	5	EC	0.94	PO1	2.3	2.3	10.0	4.5	2.3	2.5	3.3
	NIS		L	0.5%	PO1							
4	pyridate	5	EC	1.88	PO1	2.3	2.8	9.5	6.0	2.5	3.0	4.5
	NIS		L	0.5%	PO1							
5	pyridate	5	EC	0.94	PO1	2.5	2.0	9.8	3.3	2.3	2.3	4.5
	clopyralid	3	EC	0.19	PO1							
	NIS		L	0.5%	PO1							
6	oxyfluorfen	2	EC	0.031	PO1	2.0	2.0	8.5	8.0	2.0	2.0	5.3
7	oxyfluorfen	4	F	0.031	PO1	2.5	2.8	9.0	5.3	2.5	2.8	4.3
8	carfentrazone	40	DF	0.01	PO1	2.0	2.0	7.5	5.0	2.5	2.3	2.0
9	sulfentrazone	75	DF	0.1	PO1	2.5	2.3	10.0	4.0	3.3	3.3	3.5
10	untreated					1.5	2.0	2.5	1.0	3.0	3.0	1.8
LSD (P=.05)						1.11	1.06	2.86	2.37	1.14	1.05	2.89
Standard Deviation						0.76	0.73	1.97	1.63	0.78	0.72	2.00
CV						36.43	34.22	24.76	38.19	31.03	28.34	55.81

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI RATING 8-01-01	CABBAGE RATING 8-01-01	WIRA RATING 8-01-01
1	pyridate	5	EC	0.23	PO1	2.0	2.3	2.8
	NIS		L	0.5%	PO1			
2	pyridate	5	EC	0.47	PO1	1.8	1.8	3.8
	NIS		L	0.5%	PO1			
3	pyridate	5	EC	0.94	PO1	1.3	2.3	3.5
	NIS		L	0.5%	PO1			
4	pyridate	5	EC	1.88	PO1	2.5	2.8	4.8
	NIS		L	0.5%	PO1			
5	pyridate	5	EC	0.94	PO1	1.3	1.5	3.8
	clopyralid	3	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
6	oxyfluorfen	2	EC	0.031	PO1	1.3	1.8	3.3
7	oxyfluorfen	4	F	0.031	PO1	1.5	2.3	3.8
8	carfentrazone	40	DF	0.01	PO1	1.3	1.8	2.5
9	sulfentrazone	75	DF	0.1	PO1	2.5	2.8	3.0
10	untreated					2.5	3.3	3.3
LSD (P=.05)						1.56	1.82	2.57
Standard Deviation						1.08	1.25	1.77
CV						60.63	56.24	51.67

Postemergence Weed Control in Broccoli and Cabbage - HTRC

IR4 PR 3218,3449

Project Code: WC 114-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD KG/PLOT 7-09-01	BROCCOLI YIELD KG/PLOT 7-12-01	BROCCOLI YIELD KG/PLOT 7-16-01	BROCCOLI YIELD KG/PLOT 7-19-01	BROCCOLI YIELD KG/PLOT 7-23-01	BROCCOLI YIELD KG/PLOT 7-25-01
1	pyridate	5	EC	0.23	PO1	0.04	0.17	0.59	0.45	0.50	0.05
	NIS		L	0.5%	PO1						
2	pyridate	5	EC	0.47	PO1	0.29	0.33	0.29	0.33	0.25	0.08
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	0.19	0.14	0.53	0.48	0.28	0.12
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	0.15	0.15	0.23	0.47	0.09	0.05
	NIS		L	0.5%	PO1						
5	pyridate	5	EC	0.94	PO1	0.07	0.19	0.48	0.50	0.42	0.14
	clopyralid	3	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
6	oxyfluorfen	2	EC	0.031	PO1	0.37	0.45	0.87	0.27	0.35	0.06
7	oxyfluorfen	4	F	0.031	PO1	0.30	0.24	0.40	0.04	0.47	0.19
8	carfentrazone	40	DF	0.01	PO1	0.53	0.19	0.32	0.29	0.23	0.14
9	sulfentrazone	75	DF	0.1	PO1	0.30	0.08	0.20	0.09	0.12	0.05
10	untreated					0.04	0.12	0.21	0.23	0.20	0.14
LSD (P=.05)						0.46	0.26	0.50	0.37	0.31	0.19
Standard Deviation						0.32	0.18	0.34	0.26	0.21	0.13
CV						140.36	86.35	84.11	82.56	75.36	129.14

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BROCCOLI YIELD KG/PLOT 7-27-01	BROCCOLI YIELD KG/PLOT 7-30-01	BROCCOLI YIELD KG/PLOT 8-02-01	BROCCOLI YIELD KG/PLOT 8-06-01	BROCCOLI YIELD KG/PLOT 8-10-01	BROCCOLI TOTAL YIELD KG/PLOT
1	pyridate	5	EC	0.23	PO1	0.11	0.16	0.03	0.00	0.12	2.22
	NIS		L	0.5%	PO1						
2	pyridate	5	EC	0.47	PO1	0.00	0.07	0.16	0.22	0.10	2.12
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	0.05	0.13	0.07	0.00	0.00	1.99
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	0.02	0.22	0.16	0.09	0.12	1.74
	NIS		L	0.5%	PO1						
5	pyridate	5	EC	0.94	PO1	0.04	0.06	0.03	0.31	0.08	2.31
	clopyralid	3	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
6	oxyfluorfen	2	EC	0.031	PO1	0.00	0.16	0.13	0.05	0.00	2.71
7	oxyfluorfen	4	F	0.031	PO1	0.00	0.11	0.23	0.03	0.18	2.19
8	carfentrazone	40	DF	0.01	PO1	0.03	0.10	0.03	0.07	0.25	2.18
9	sulfentrazone	75	DF	0.1	PO1	0.00	0.25	0.25	0.12	0.16	1.61
10	untreated					0.07	0.21	0.16	0.03	0.09	1.51
LSD (P=.05)						0.07	0.28	0.22	0.24	0.31	0.95
Standard Deviation						0.05	0.19	0.15	0.16	0.21	0.66
CV						169.12	132.40	128.41	181.40	195.45	32.11

Postemergence Weed Control in Broccoli and Cabbage - HTRC

IR4 PR 3218,3449

Project Code: WC 114-01-02 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 7-30-01	CABBAGE YIELD KG/PLOT 7-30-01	CABBAGE YIELD No./PLOT 8-06-01	CABBAGE YIELD KG/PLOT 8-06-01	CABBAGE YIELD No./PLOT 8-13-01	CABBAGE YIELD KG/PLOT 8-13-01
1	pyridate	5	EC	0.23	PO1	2.0	1.90	2.8	2.72	3.5	3.11
	NIS		L	0.5%	PO1						
2	pyridate	5	EC	0.47	PO1	4.8	4.28	1.8	2.04	2.8	2.89
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	2.0	1.65	3.0	2.79	2.3	2.37
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	1.0	0.84	2.3	1.97	2.5	2.64
	NIS		L	0.5%	PO1						
5	pyridate	5	EC	0.94	PO1	3.8	3.60	2.5	2.64	3.5	4.35
	clopyralid	3	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
6	oxyfluorfen	2	EC	0.031	PO1	4.5	4.69	4.5	4.73	1.3	1.24
7	oxyfluorfen	4	F	0.031	PO1	3.3	3.83	2.8	2.51	2.0	2.01
8	carfentrazone	40	DF	0.01	PO1	3.8	4.03	3.0	2.68	2.0	1.79
9	sulfentrazone	75	DF	0.1	PO1	2.3	2.57	1.3	1.30	1.3	1.71
10	untreated					1.5	1.22	0.8	0.63	1.0	1.07
LSD (P=.05)						4.45	4.92	2.21	2.45	3.30	3.45
Standard Deviation						3.06	3.39	1.52	1.68	2.28	2.38
CV						106.57	118.74	62.05	70.36	103.43	102.80

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 8-20-01	CABBAGE YIELD KG/PLOT 8-20-01	CABBAGE YIELD No./PLOT 8-27-01	CABBAGE YIELD KG/PLOT 8-27-01	CABBAGE TOTAL YIELD No./PLOT	CABBAGE TOTAL YIELD KG/PLOT
1	pyridate	5	EC	0.23	PO1	1.3	1.33	4.0	3.93	13.5	12.99
	NIS		L	0.5%	PO1						
2	pyridate	5	EC	0.47	PO1	2.3	2.51	2.5	1.98	14.0	13.69
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	2.8	3.41	3.5	3.68	13.5	13.90
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	2.5	2.91	7.0	6.96	15.3	15.32
	NIS		L	0.5%	PO1						
5	pyridate	5	EC	0.94	PO1	3.3	3.70	1.8	1.81	14.8	16.10
	clopyralid	3	EC	0.19	PO1						
	NIS		L	0.5%	PO1						
6	oxyfluorfen	2	EC	0.031	PO1	1.0	1.36	2.3	2.20	13.5	14.22
7	oxyfluorfen	4	F	0.031	PO1	1.5	1.70	3.5	3.41	13.0	13.44
8	carfentrazone	40	DF	0.01	PO1	2.5	2.52	3.8	4.09	15.0	15.11
9	sulfentrazone	75	DF	0.1	PO1	3.3	3.67	7.0	6.66	15.0	15.90
10	untreated					2.0	2.09	6.0	6.37	11.3	11.37
LSD (P=.05)						3.13	3.68	5.31	5.38	4.26	5.27
Standard Deviation						2.16	2.54	3.66	3.71	2.94	3.63
CV						96.96	100.93	88.64	90.36	21.17	25.58

Postemergence Weed Control in Cabbage and Cauliflower - HTRC

Project Code: WC 114-01-03 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cabbage, Cauliflower Variety: Market Prize, Amazing Field or Block: 116
Planting Method: Transplant Planting Date: 5-22-01 Harvest: see "Notes" below
Spacing: 19" in row Row Spacing: 36"
Tillage Type: Conventional Study Design: RCBD Replications: 4
Plot Size: 8 ft wide x 25 ft long

Soil Type: Sandy Loam OM: 2.7% pH: 6.5
Sand: 63% Silt: 22% Clay: 15% CEC: 8.0

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-20	9:15 am	67 F/ 68 F	moist	SW 1-3	64%	60% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20-01	Cabbage	4-5"	6-8	good
	Cauliflower	3-4"	many	good
	LACG	1-2"	3-4	few
	WIRA	3-4"	4-5	many

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. Phytotoxicity ratings at 1, 3, 6 weeks after application.
4. At last ratings (6 WAA) note whether crop is stunted and indicate whether phytotoxicity is acceptable commercially or not.
5. Harvest Dates: Cabbage - 8-20-01 and 8-27-01; Cauliflower - 9-6-01 to 10-18-01.
6. Pyridate was safe on cabbage and cauliflower. There was no adverse effect on yield. It appears to be safe for postemergence application to cabbage and cauliflower.

Postemergence Weed Control in Cabbage and Cauliflower - HTRC

Project Code: WC 114-01-03 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE RATING 6-25-01	CAULIFLOWER RATING 6-25-01	CORW RATING 6-25-01	WIRA RATING 6-25-01	CABBAGE RATING 7-09-01	CAULIFLOWER RATING 7-09-01
1	untreated					2.3	2.5	4.8	2.5	1.8	3.0
2	pyridate	5	EC	0.47	PO1	3.0	3.3	8.3	3.8	2.5	3.0
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	2.8	3.5	9.3	5.5	1.8	2.3
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	3.0	3.5	10.0	6.8	2.0	2.3
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.92	1.01	3.83	2.46	1.19	0.88
Standard Deviation						0.58	0.63	2.39	1.54	0.75	0.55
CV						20.99	19.74	29.69	33.22	37.27	21.06

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CABBAGE YIELD No./PLOT 8-20-01	CABBAGE YIELD KG/PLOT 8-20-01	CABBAGE YIELD No./PLOT 8-27-01	CABBAGE YIELD KG/PLOT 8-27-01	CABBAGE TOTAL YIELD No./PLOT	CABBAGE TOTAL YIELD KG/PLOT
1	untreated					7.3	9.69	5.8	5.73	13.0	15.42
2	pyridate	5	EC	0.47	PO1	6.3	8.55	6.0	5.64	12.3	14.19
	NIS		L	0.5%	PO1						
3	pyridate	5	EC	0.94	PO1	8.3	11.34	4.8	5.31	13.0	16.65
	NIS		L	0.5%	PO1						
4	pyridate	5	EC	1.88	PO1	7.8	11.52	5.8	7.26	13.5	18.78
	NIS		L	0.5%	PO1						
LSD (P=.05)						2.05	3.32	3.40	4.12	2.03	2.84
Standard Deviation						1.28	2.07	2.12	2.58	1.27	1.78
CV						17.36	20.22	38.17	43.13	9.83	10.95

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CAULIFLOWER YIELD No./PLOT 9-06-01	CAULIFLOWER YIELD KG/PLOT 9-06-01	CAULIFLOWER YIELD No./PLOT 9-13-01	CAULIFLOWER YIELD KG/PLOT 9-13-01
1	untreated					0.8	0.32	0.3	0.17
2	pyridate	5	EC	0.47	PO1	0.5	0.54	1.3	0.58
	NIS		L	0.5%	PO1				
3	pyridate	5	EC	0.94	PO1	0.3	0.37	1.8	1.36
	NIS		L	0.5%	PO1				
4	pyridate	5	EC	1.88	PO1	0.5	0.41	0.8	0.40
	NIS		L	0.5%	PO1				
LSD (P=.05)						1.19	1.07	1.46	1.35
Standard Deviation						0.75	0.67	0.91	0.84
CV						149.07	164.19	91.29	135.09

Postemergence Weed Control in Cabbage and Cauliflower - HTRC

Project Code: WC 114-01-03 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CAULIFLOWER YIELD No./PLOT 9-18-01	CAULIFLOWER YIELD KG/PLOT 9-18-01	CAULIFLOWER YIELD No./PLOT 9-24-01	CAULIFLOWER YIELD KG/PLOT 9-24-01
1	untreated					3.3	0.89	1.0	0.44
2	pyridate	5	EC	0.47	PO1	2.8	0.71	1.3	0.60
	NIS		L	0.5%	PO1				
3	pyridate	5	EC	0.94	PO1	4.3	1.24	1.8	0.77
	NIS		L	0.5%	PO1				
4	pyridate	5	EC	1.88	PO1	3.3	1.00	2.5	1.02
	NIS		L	0.5%	PO1				
LSD (P=.05)						3.14	0.95	1.53	0.57
Standard Deviation						1.96	0.59	0.96	0.36
CV						58.22	62.31	58.92	50.74

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CAULIFLOWER YIELD No./PLOT 10-01-01	CAULIFLOWER YIELD KG/PLOT 10-01-01	CAULIFLOWER YIELD No./PLOT 10-04-01	CAULIFLOWER YIELD KG/PLOT 10-04-01
1	untreated					1.3	0.29	1.5	0.35
2	pyridate	5	EC	0.47	PO1	0.5	0.17	1.5	0.61
	NIS		L	0.5%	PO1				
3	pyridate	5	EC	0.94	PO1	0.5	0.12	2.3	0.84
	NIS		L	0.5%	PO1				
4	pyridate	5	EC	1.88	PO1	1.8	0.69	2.0	0.67
	NIS		L	0.5%	PO1				
LSD (P=.05)						2.26	0.79	2.72	1.05
Standard Deviation						1.41	0.49	1.70	0.66
CV						141.42	157.81	93.89	106.60

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CAULIFLOWER YIELD No./PLOT 10-11-01	CAULIFLOWER YIELD KG/PLOT 10-11-01	CAULIFLOWER YIELD No./PLOT 10-18-01	CAULIFLOWER YIELD KG/PLOT 10-18-01
1	untreated					2.0	0.47	2.0	0.30
2	pyridate	5	EC	0.47	PO1	1.0	0.21	2.0	0.38
	NIS		L	0.5%	PO1				
3	pyridate	5	EC	0.94	PO1	1.3	0.32	0.8	0.16
	NIS		L	0.5%	PO1				
4	pyridate	5	EC	1.88	PO1	0.5	0.22	1.5	0.22
	NIS		L	0.5%	PO1				
LSD (P=.05)						1.56	0.51	3.13	0.52
Standard Deviation						0.98	0.32	1.96	0.32
CV						82.14	104.71	125.42	124.71

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CAULIFLOWER TOTAL YIELD No./PLOT	CAULIFLOWER TOTAL YIELD KG/PLOT
1	untreated					12.0	3.23
2	pyridate	5	EC	0.47	PO1	10.8	3.80
	NIS		L	0.5%	PO1		
3	pyridate	5	EC	0.94	PO1	12.8	5.18
	NIS		L	0.5%	PO1		
4	pyridate	5	EC	1.88	PO1	12.8	4.63
	NIS		L	0.5%	PO1		
LSD (P=.05)						3.73	2.15
Standard Deviation						2.33	1.34
CV						19.36	31.85

Preemergence Weed Control in Processing Carrot - Hart

Project Code: WC 107-01-01 **Location: Hart, MI**
Cooperator: Ralph Oomen

Personnel: Jose Cisneros, Bernard H. Zandstra, Joseph G. Masabni, Norm Myers
Crop: Carrot **Variety: Goliath** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 5-01-01** **Harvest: 9-11-01**
Spacing: 15 seeds / ft **Row Spacing: 18",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 66" wide x 35 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	5-9	11 am	68 F/ 55 F	dry	SW 6-8	60F/68F	63%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

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. **6-28-01: plants / 1 meter = average of 3 rows.**
4. **9-11-01: Harvest = kg / 5 ft of 3 rows.**
5. **Domain = flufenacet 24% + metribuzin 36%.**

Preemergence Weed Control in Processing Carrot - Hart

Project Code: WC 107-01-01 **Location: Hart, MI**
Cooperator: Ralph Oomen

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 6-14-01	COLQ RATING 6-14-01	EBNS RATING 6-14-01	RRPW RATING 6-14-01	SHPU RATING 6-14-01
1	linuron	50	DF	0.25	PRE	1.0	7.0	8.0	8.0	7.7
2	linuron	50	DF	0.5	PRE	1.0	9.7	9.3	7.7	9.7
3	flumioxazin	50	WP	0.001	PRE	1.7	6.7	8.3	6.7	3.0
4	flumioxazin	50	WP	0.005	PRE	3.0	9.3	10.0	9.3	7.3
5	flumioxazin	50	WP	0.01	PRE	3.0	9.3	10.0	9.3	9.0
6	s-metolachlor II	7.6	EC	0.5	PRE	1.7	8.7	10.0	9.0	6.3
7	pendimethalin	3.3	EC	0.75	PRE	2.0	9.7	10.0	9.7	4.3
8	sulfentrazone	75	DF	0.1	PRE	4.0	10.0	10.0	9.7	9.3
9	flufenacet	60	DF	0.3	PRE	2.3	7.3	9.3	9.7	10.0
10	Domain	60	DF	0.3	PRE	1.7	9.3	8.7	9.3	10.0
11	untreated					1.7	7.0	9.3	5.7	3.7
LSD (P=.05)						1.15	3.30	2.35	2.40	2.80
Standard Deviation						0.68	1.94	1.37	1.41	1.65
CV						32.35	22.68	14.68	16.47	22.55

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT PLANT No./1 M 6-20-01	CARROT RATING 7-12-01	CARROT YIELD KG/5 FT 9-11-01
1	linuron	50	DF	0.25	PRE	26.7	1.0	14.55
2	linuron	50	DF	0.5	PRE	22.0	1.0	14.24
3	flumioxazin	50	WP	0.001	PRE	22.7	1.7	13.89
4	flumioxazin	50	WP	0.005	PRE	16.7	2.7	11.78
5	flumioxazin	50	WP	0.01	PRE	15.0	2.7	10.36
6	s-metolachlor II	7.6	EC	0.5	PRE	24.3	1.0	11.79
7	pendimethalin	3.3	EC	0.75	PRE	23.7	1.3	12.25
8	sulfentrazone	75	DF	0.1	PRE	17.0	3.3	11.92
9	flufenacet	60	DF	0.3	PRE	24.0	1.0	12.68
10	Domain	60	DF	0.3	PRE	23.0	1.0	11.80
11	untreated					24.3	1.3	9.99
LSD (P=.05)						4.08	0.90	2.73
Standard Deviation						2.40	0.53	1.60
CV						11.02	32.44	13.05

Postemergence Weed Control in Processing Carrot - Hart

Project Code: WC 107-01-02 **Location: Hart, MI**
Cooperator: Ralph Oomen

Personnel: Jose Cisneros, Bernard H. Zandstra, Joseph G. Masabni, Norm Myers
Crop: Carrot **Variety: Goliath** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 5-01-01** **Harvest: 9-11-01**
Spacing: 15 seeds / ft **Row Spacing: 18",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 66" wide x 35 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
PO1	6-20	10 am	65 F/ 67 f	dry	SE 3-5	54F/65F	62%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

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. **Lorox 0.375 lb/a applied to plots PRE.**
4. **6-28-01: plants / 1 meter = average of 3 rows.**
5. **Domain = flufenacet 24% + metribuzin 36%.**

Postemergence Weed Control in Processing Carrot - Hart

Project Code: WC 107-01-02 **Location: Hart, MI** **Cooperator: Ralph Oomen**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 6-28-01	RRPW RATING 6-28-01	CARROT PLANT No./1 M 6-28-01
1	linuron	50	DF	0.25	PO1	1.3	7.7	25.9
	clethodim	2	EC	0.1	PO1			
	NIS		L	0.25%	PO1			
2	linuron	50	DF	0.5	PO1	1.3	9.0	24.3
	clethodim	2	EC	0.1	PO1			
	NIS		L	0.25%	PO1			
3	flumioxazin	50	WP	0.031	PO1	3.7	9.7	24.8
	clethodim	2	EC	0.1	PO1			
	NIS		L	0.25%	PO1			
4	flumioxazin	50	WP	0.047	PO1	3.7	10.0	21.5
	clethodim	2	EC	0.1	PO1			
	NIS		L	0.25%	PO1			
5	flumioxazin	50	WP	0.031	PO1	2.3	10.0	22.0
6	flumioxazin	50	WP	0.047	PO1	1.7	9.7	24.7
7	flumioxazin	50	WP	0.063	PO1	2.7	10.0	22.6
8	oxyfluorfen	2	EC	0.031	PO1	2.0	9.3	23.2
9	Domain	60	DF	0.6	PO1	1.0	9.3	23.1
10	mesotrione	4	EC	0.01	PO1	1.7	8.3	20.7
11	pelargonic acid		L	10%	PO1	3.0	9.0	25.1
12	untreated					1.0	1.0	24.5
LSD (P=.05)						0.78	1.39	3.33
Standard Deviation						0.46	0.82	1.97
CV						21.69	9.57	8.36

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-12-01	LACG RATING 7-12-01	COLQ RATING 7-12-01	LATH RATING 7-12-01	RRPW RATING 7-12-01	SHPU RATING 7-12-01
1	linuron	50	DF	0.25	PO1	1.0	10.0	10.0	9.0	5.7	10.0
	clethodim	2	EC	0.1	PO1						
	NIS		L	0.25%	PO1						
2	linuron	50	DF	0.5	PO1	1.3	10.0	10.0	10.0	7.3	10.0
	clethodim	2	EC	0.1	PO1						
	NIS		L	0.25%	PO1						
3	flumioxazin	50	WP	0.031	PO1	3.0	10.0	9.7	10.0	9.3	9.7
	clethodim	2	EC	0.1	PO1						
	NIS		L	0.25%	PO1						
4	flumioxazin	50	WP	0.047	PO1	2.7	10.0	9.7	8.7	9.3	9.0
	clethodim	2	EC	0.1	PO1						
	NIS		L	0.25%	PO1						
5	flumioxazin	50	WP	0.031	PO1	1.7	8.3	9.0	8.3	9.3	8.3
6	flumioxazin	50	WP	0.047	PO1	1.3	9.3	9.0	8.3	9.0	8.3
7	flumioxazin	50	WP	0.063	PO1	1.7	9.0	9.3	8.3	10.0	8.0
8	oxyfluorfen	2	EC	0.031	PO1	1.0	9.7	9.0	9.3	6.3	6.3
9	Domain	60	DF	0.6	PO1	1.0	10.0	9.7	10.0	7.3	10.0
10	mesotrione	4	EC	0.01	PO1	1.0	10.0	8.0	8.3	4.0	10.0
11	pelargonic acid		L	10%	PO1	2.0	9.7	9.3	7.0	5.0	5.0
12	untreated					1.0	10.0	4.3	4.3	1.0	1.0
LSD (P=.05)						0.80	0.99	2.26	3.58	2.71	3.16
Standard Deviation						0.47	0.58	1.34	2.11	1.60	1.86
CV						30.48	6.04	15.00	24.95	22.94	23.38

Postemergence Weed Control in Processing Carrot - Hart

Project Code: WC 107-01-02 **Location: Hart, MI** **Cooperator: Ralph Oomen**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-19-01	RRPW RATING 7-19-01	CARROT YIELD No./1 M 9-11-01	CARROT YIELD KG/5 FT 9-11-01
1	linuron	50	DF	0.25	PO1	1.0	6.7	25.4	11.59
	clethodim	2	EC	0.1	PO1				
	NIS		L	0.25%	PO1				
2	linuron	50	DF	0.5	PO1	1.0	8.3	24.7	11.85
	clethodim	2	EC	0.1	PO1				
	NIS		L	0.25%	PO1				
3	flumioxazin	50	WP	0.031	PO1	1.7	9.3	24.0	9.56
	clethodim	2	EC	0.1	PO1				
	NIS		L	0.25%	PO1				
4	flumioxazin	50	WP	0.047	PO1	2.0	9.7	22.6	10.14
	clethodim	2	EC	0.1	PO1				
	NIS		L	0.25%	PO1				
5	flumioxazin	50	WP	0.031	PO1	1.3	9.7	21.4	10.98
6	flumioxazin	50	WP	0.047	PO1	1.3	9.7	24.0	10.85
7	flumioxazin	50	WP	0.063	PO1	1.7	10.0	22.9	11.56
8	oxyfluorfen	2	EC	0.031	PO1	1.7	7.7	24.7	11.97
9	Domain	60	DF	0.6	PO1	1.7	9.3	24.1	11.02
10	mesotrione	4	EC	0.01	PO1	1.3	6.7	22.5	11.20
11	pelargonic acid		L	10%	PO1	1.7	6.7	26.1	9.72
12	untreated					1.0	1.0	22.9	10.73
LSD (P=.05)						0.83	2.23	4.31	2.31
Standard Deviation						0.49	1.32	2.55	1.36
CV						33.91	16.72	10.71	12.48

Postemergence Weed Control in Carrot - Fremont

Project Code: WC 107-01-03 **Location: Vogel Farm, Fremont**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Processing Carrot **Variety: Prime Cut** **Field or Block: N/A**
Planting Method: Seed **Planting Date: 5-30-01** **Harvest: 9-27-01**
Spacing: 15 seeds / ft **Row Spacing: 18",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 66 inches wide x 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
PO1	6-20	5:25pm	75 F/ 85 F	moist	SW 3-4	72F/51F	46%	50% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20-01	Carrot	2-3"	1-2	good

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.**

Postemergence Weed Control in Carrot - Fremont

Project Code: WC 107-01-03 **Location: Vogel Farm, Fremont**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 6-28-01	LACG RATING 6-28-01	COCW RATING 6-28-01	COLQ RATING 6-28-01	EBNS RATING 6-28-01	LATH RATING 6-28-01	RRPW RATING 6-28-01
1	linuron	50	DF	0.25	PO1	1.0	10.0	10.0	10.0	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.25%	PO1							
2	linuron	50	DF	0.5	PO1	1.7	10.0	10.0	10.0	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.25%	PO1							
3	flumioxazin	50	WP	0.031	PO1	7.0	6.3	10.0	6.3	10.0	10.0	10.0
4	flumioxazin	50	WP	0.031	PO1	9.0	10.0	10.0	10.0	10.0	7.0	10.0
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.25%	PO1							
5	flumioxazin	50	WP	0.047	PO1	7.7	7.7	10.0	8.0	10.0	10.0	10.0
6	flumioxazin	50	WP	0.047	PO1	9.0	10.0	10.0	10.0	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1							
	NIS		L	0.25%	PO1							
7	oxyfluorfen	2	EC	0.031	PO1	5.3	8.7	9.3	9.0	10.0	10.0	10.0
8	fluthiacet	0.91	EC	.0034	PO1	3.3	3.3	3.7	6.7	3.0	10.0	5.3
9	flumiclorac	0.86	EC	0.04	PO1	6.7	6.0	3.7	9.3	10.0	10.0	9.3
10	carfentrazone	40	DF	0.01	PO1	6.7	3.7	1.7	7.0	10.0	9.7	5.0
11	untreated					1.0	1.7	4.0	1.3	1.0	4.0	1.0
LSD (P=.05)						1.18	3.19	3.70	2.75	0.89	3.69	2.25
Standard Deviation						0.69	1.87	2.17	1.61	0.52	2.17	1.32
CV						13.05	26.60	29.00	20.24	6.11	23.67	16.03

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT RATING 7-12-01	LACG RATING 7-12-01	COLQ RATING 7-12-01	COPU RATING 7-12-01	LATH RATING 7-12-01	RRPW RATING 7-12-01
1	linuron	50	DF	0.25	PO1	1.0	9.0	10.0	8.0	7.7	8.7
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.25%	PO1						
2	linuron	50	DF	0.5	PO1	1.0	8.3	10.0	9.0	8.7	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.25%	PO1						
3	flumioxazin	50	WP	0.031	PO1	3.0	1.3	2.3	9.7	10.0	9.3
4	flumioxazin	50	WP	0.031	PO1	6.0	8.7	9.3	9.7	10.0	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.25%	PO1						
5	flumioxazin	50	WP	0.047	PO1	2.7	1.7	3.3	9.7	10.0	10.0
6	flumioxazin	50	WP	0.047	PO1	6.0	8.0	9.7	9.7	9.7	10.0
	sethoxydim	1.53	EC	0.19	PO1						
	NIS		L	0.25%	PO1						
7	oxyfluorfen	2	EC	0.031	PO1	2.0	2.3	4.0	7.7	10.0	3.3
8	fluthiacet	0.91	EC	.0034	PO1	2.7	3.7	1.0	1.7	10.0	1.0
9	flumiclorac	0.86	EC	0.04	PO1	3.0	2.3	6.3	5.7	9.7	5.7
10	carfentrazone	40	DF	0.01	PO1	3.0	1.3	3.3	1.0	9.3	3.3
11	untreated					2.0	4.0	2.0	1.0	8.3	1.0
LSD (P=.05)						0.43	2.83	3.21	3.21	1.82	1.91
Standard Deviation						0.25	1.66	1.89	1.88	1.07	1.12
CV						8.58	36.03	33.84	28.52	11.38	17.09

Postemergence Weed Control in Carrot - Fremont

Project Code: WC 107-01-03 **Location: Vogel Farm, Fremont**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CARROT PLANT No./1 M 6-28-01	CARROT YIELD No./5 FT 9-27-01	CARROT YIELD KG/5 FT 9-27-01
1	linuron	50	DF	0.25	PO1	79.7	271.7	11.94
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.25%	PO1			
2	linuron	50	DF	0.5	PO1	75.4	282.7	10.62
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.25%	PO1			
3	flumioxazin	50	WP	0.031	PO1	55.4	253.7	8.65
4	flumioxazin	50	WP	0.031	PO1	48.3	168.7	6.71
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.25%	PO1			
5	flumioxazin	50	WP	0.047	PO1	56.2	270.0	8.94
6	flumioxazin	50	WP	0.047	PO1	41.1	155.3	5.61
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.25%	PO1			
7	oxyfluorfen	2	EC	0.031	PO1	63.7	331.3	10.39
8	fluthiacet	0.91	EC	.0034	PO1	66.0	282.7	6.27
9	flumiclorac	0.86	EC	0.04	PO1	81.9	332.3	8.20
10	carfentrazone	40	DF	0.01	PO1	57.2	335.3	7.52
11	untreated					79.7	266.3	6.25
LSD (P=.05)						31.23	66.87	2.19
Standard Deviation						18.34	39.26	1.29
CV						28.62	14.64	15.58

Yellow Nutsedge Control in Carrot - Muck Farm

Project Code: WC 107-01-03 **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**
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, CO_2 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 have emerged before the preemergence application.**
4. **9-19-00: Harvest plot size = 10 ft of 3 rows/plot.**
5. **5-14-01: Carrots planted. Carrot harvested on 9-6-01.**
6. **9-06-01: Harvest plot size = 2 x 5 ft of 3 rows/plot.**

Yellow Nutsedge Control in Carrot - Muck Farm

Project Code: WC 107-01-03 **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	PO1,2						
	sethoxydim	1.53	EC	0.19	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
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	PO1,2						
	linuron	50	DF	1	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
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	PO1,2						
	linuron	50	DF	1	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
4	halosulfuron	75	WG	0.032	PRE	10.0	18.3	10.0	10.0	1.7	5.0
	halosulfuron	75	WG	0.032	PO1,2						
5	linuron	50	DF	1	PRE	2.0	4.0	5.0	6.0	10.0	10.0
	linuron	50	DF	0.5	PO1,2						
	oxyfluorfen	2	L	0.032	PO1,2						
	sethoxydim	1.53	EC	0.19	PO1,2						
6	flumioxazin	50	WP	0.063	PRE	6.7	4.0	10.0	8.7	4.3	9.0
	flumioxazin	50	WP	0.025	PO1,2						
	halosulfuron	75	WG	0.032	PO1,2						
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	PO1,2						
	ethofumesate	4	L	1	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
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	PO1,2						
	ethofumesate	4	L	2	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
9	s-metolachlor	7.6	EC	2	PRE	2.3	4.0	7.0	9.3	10.0	10.0
	linuron	50	DF	1	PO1,2						
	sethoxydim	1.53	EC	0.19	PO1,2						
	ethofumesate	4	L	2	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
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	PO1,2						
	linuron	50	DF	1	PO1,2						
	Sylgard 309		L	0.5%	PO1,2						
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 107-01-03 **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	CARROT YIELD KG/10FT 9-06-01
1	linuron	50	DF	1	PRE	7.0	5.3	8.7	6.0	8.0	5.48	14.09
	linuron	50	DF	1	PO1,2							
	sethoxydim	1.53	EC	0.19	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
2	s-metolachlor	7.6	EC	2	PRE	7.3	8.0	9.3	8.3	8.7	7.11	18.72
	s-metolachlor	7.6	EC	2	PO1,2							
	linuron	50	DF	1	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
3	s-dimethenamid	6	EC	0.65	PRE	7.3	7.0	9.7	6.7	9.3	6.02	19.53
	s-dimethenamid	6	EC	0.65	PO1,2							
	linuron	50	DF	1	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
4	halosulfuron	75	WG	0.032	PRE	9.7	1.0	10.0	10.0	9.7	1.04	17.31
	halosulfuron	75	WG	0.032	PO1,2							
5	linuron	50	DF	1	PRE	4.7	6.7	10.0	8.7	7.0	3.03	12.29
	linuron	50	DF	0.5	PO1,2							
	oxyfluorfen	2	L	0.032	PO1,2							
	sethoxydim	1.53	EC	0.19	PO1,2							
6	flumioxazin	50	WP	0.063	PRE	10.0	1.0	9.3	9.3	9.7	1.94	16.07
	flumioxazin	50	WP	0.025	PO1,2							
	halosulfuron	75	WG	0.032	PO1,2							
7	pendimethalin	3.3	EC	2	PRE	1.7	9.7	10.0	9.7	9.3	2.38	15.80
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	1	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
8	pendimethalin	3.3	EC	2	PRE	2.0	9.7	10.0	9.7	9.7	2.56	15.15
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	2	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
9	s-metolachlor	7.6	EC	2	PRE	8.7	9.0	9.7	5.0	7.7	6.24	19.01
	linuron	50	DF	1	PO1,2							
	sethoxydim	1.53	EC	0.19	PO1,2							
	ethofumesate	4	L	2	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
10	ethofumesate	4	L	2	PRE	8.7	8.0	10.0	4.0	7.3	3.62	22.09
	linuron	50	DF	1	PRE							
	ethofumesate	4	L	2	PO1,2							
	linuron	50	DF	1	PO1,2							
	Sylgard 309		L	0.5%	PO1,2							
LSD (P=.05)						2.00	1.61	1.58	3.61	1.23	4.40	3.47
Standard Deviation						1.17	0.94	0.92	2.11	0.72	2.50	2.02
CV						17.40	14.34	9.53	27.25	8.31	65.74	11.92

Weed Control in Sweet Corn - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni, William R. Chase
Crop: Sweet Corn **Variety: GSS 0966, GSS 3486** **Field or Block: 117**
Planting Method: Seed **Planting Date: 5-22-01** **Harvest: see "Notes" below**
Spacing: 11.6 inches **Row Spacing: 42 inches**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 50 ft long

Soil Type: Capac Loam **OM: 1.7%** **pH: 7.1**
Sand: 63% **Silt: 20%** **Clay: 17%** **CEC: 5.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-23	10 am	54 F/ 55 F	dry	SW 3-5	57%	80% cloud	N
PO1	6-20	10:45pm	71 F/ 73 F	moist	SW 3-5	55%	80% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20-01	GSS 3486	4-5"	4-5	good
	GSS 0966	3-4"	4-5	good
	LACG	1-2"	3-5	moderate
	COLQ	2-3"	many	few
	WIRA	4-5"	4-6	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. **GSS 3486 (70 days) on east side and GSS 0966 (80 days) on west side of plots.**
4. **6-20-01: Plots 304-308 have poor sweet corn stand due to standing water earlier.**
5. **Harvest dates: GSS 3486 - 8-10-01 & 8-13-01; GSS 0966 - 8-20-01 & 8-24-01.**
6. **Axiom – flufenacet 24% + metribuzin 36%; Guardsman Max – atrazine 18.2% + s-dimethenamid 35.3%; Distinct – diflufenzopyr 20% + dicamba 50%; Marksman – atrazine 22% + dicamba 13%.**

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS3486 RATING 6-18-01	GSS0966 RATING 6-18-01	GRFT RATING 6-18-01	COLQ RATING 6-18-01	WIRA RATING 6-18-01
1	flufenacet	60	DF	0.6	PRE	3.0	2.3	10.0	7.7	8.7
2	Axiom	68	DF	0.77	PRE	3.3	2.7	10.0	9.3	9.7
3	s-dimethenamid	6	EC	0.75	PRE	2.7	2.3	10.0	9.3	8.3
4	Guardsman Max	5	L	3.6 pt pr	PRE	2.7	2.0	10.0	10.0	10.0
5	Guardsman Max	5	L	4.6 pt pr	PRE	2.3	1.7	10.0	10.0	10.0
6	pendimethalin	3.3	EC	1	PO1	1.7	1.3	1.0	1.0	1.0
	atrazine	4	L	1	PO1					
7	pendimethalin	3.3	EC	0.83	PO1	2.7	1.7	1.0	1.0	1.0
	Guardsman Max		L	3 pt pr	PO1					
8	s-dimethenamid	6	EC	0.75	PRE	2.7	2.3	10.0	7.3	4.7
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
9	s-dimethenamid	6	EC	0.75	PRE	2.3	1.3	10.0	7.3	1.3
	Distinct	70	WG	0.175	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
10	s-dimethenamid	6	EC	0.56	PRE	1.7	1.3	10.0	8.3	3.7
	pendimethalin	3.3	EC	0.83	PRE					
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
11	s-dimethenamid	6	EC	0.75	PRE	3.3	2.3	10.0	10.0	9.3
	Marksman	3.2	F	3.5 pt pr	PRE					
	28% UAN		L	2 qt pr	PRE					
12	Guardsman Max	5	L	3pt pr	PRE	2.0	1.7	9.0	10.0	9.3
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
13	s-metolachlor II	7.6	EC	1.2	PRE	4.0	2.7	10.0	10.0	9.7
	atrazine	4	L	1	PRE					
14	s-metolachlor II	7.6	EC	1.2	PRE	1.3	1.0	10.0	10.0	9.7
	atrazine	4	L	1	PRE					
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
15	s-dimethenamid	6	EC	0.75	PRE	3.0	2.3	10.0	10.0	5.3
	carfentrazone	40	DF	0.008	PO1					
	atrazine	4	F	0.5	PO1					
	NIS		L	0.25%	PO1					
16	s-dimethenamid	6	EC	0.75	PRE	2.0	1.3	10.0	8.7	1.7
	carfentrazone	40	DF	0.008	PO1					
	bentazon	4	L	0.75	PO1					
	NIS		L	0.25%	PO1					
17	s-dimethenamid	6	EC	0.75	PRE	4.0	2.3	10.0	8.7	6.0
	carfentrazone	40	DF	0.008	PO1					
	halosulfuron	75	WG	0.032	PO1					
	NIS		L	0.25%	PO1					
18	s-dimethenamid	6	EC	0.75	PRE	3.0	2.3	10.0	9.7	4.7
	glufosinate	1.67	EC	0.26	PO1					
19	s-dimethenamid	6	EC	0.75	PRE	2.7	2.0	10.0	7.7	6.0
	mesotrione	4	SC	0.094	PO1					
	COC		L	1%	PO1					
20	untreated					3.0	2.7	1.0	1.7	3.3
LSD (P=.05)						2.39	1.64	0.64	1.86	3.69
Standard Deviation						1.45	1.00	0.39	1.13	2.24
CV						54.23	50.22	4.50	14.33	36.26

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS3486 RATING 6-26-01	GSS0966 RATING 6-26-01	GRFT RATING 6-26-01	WIRA RATING 6-26-01	GSS3486 RATING 7-12-01	GSS0966 RATING 7-12-01
1	flufenacet	60	DF	0.6	PRE	4.3	3.7	10.0	6.3	4.3	3.3
2	Axiom	68	DF	0.77	PRE	3.0	3.0	10.0	9.7	4.0	3.7
3	s-dimethenamid	6	EC	0.75	PRE	4.0	4.0	10.0	7.3	5.0	4.3
4	Guardsman Max	5	L	3.6 pt pr	PRE	2.0	1.3	9.3	10.0	2.3	1.0
5	Guardsman Max	5	L	4.6 pt pr	PRE	2.0	2.0	9.7	9.7	2.0	1.0
6	pendimethalin	3.3	EC	1	PO1	2.7	2.3	6.3	7.3	2.7	1.7
	atrazine	4	L	1	PO1						
7	pendimethalin	3.3	EC	0.83	PO1	4.7	4.3	8.7	8.3	3.7	3.3
	Guardsman Max		L	3 pt pr	PO1						
8	s-dimethenamid	6	EC	0.75	PRE	3.0	2.7	10.0	6.3	3.7	3.0
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
9	s-dimethenamid	6	EC	0.75	PRE	3.0	2.7	10.0	6.3	2.3	1.7
	Distinct	70	WG	0.175	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
10	s-dimethenamid	6	EC	0.56	PRE	2.3	2.7	10.0	7.3	2.7	2.0
	pendimethalin	3.3	EC	0.83	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
11	s-dimethenamid	6	EC	0.75	PRE	2.3	2.0	9.0	9.3	3.0	2.0
	Marksman	3.2	F	3.5 pt pr	PRE						
	28% UAN		L	2 qt pr	PRE						
12	Guardsman Max	5	L	3 pt pr	PRE	2.3	1.7	9.3	9.3	2.0	1.7
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
13	s-metolachlor II	7.6	EC	1.2	PRE	3.3	3.0	9.7	9.7	4.3	3.7
	atrazine	4	L	1	PRE						
14	s-metolachlor II	7.6	EC	1.2	PRE	1.3	1.0	10.0	9.7	2.0	1.0
	atrazine	4	L	1	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
15	s-dimethenamid	6	EC	0.75	PRE	3.0	3.0	10.0	8.0	2.7	2.3
	carfentrazone	40	DF	0.008	PO1						
	atrazine	4	F	0.5	PO1						
	NIS		L	0.25%	PO1						
16	s-dimethenamid	6	EC	0.75	PRE	2.3	1.7	9.7	8.0	2.0	1.0
	carfentrazone	40	DF	0.008	PO1						
	bentazon	4	L	0.75	PO1						
	NIS		L	0.25%	PO1						
17	s-dimethenamid	6	EC	0.75	PRE	4.3	4.0	9.3	7.7	4.7	4.0
	carfentrazone	40	DF	0.008	PO1						
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.25%	PO1						
18	s-dimethenamid	6	EC	0.75	PRE	7.0	4.0	10.0	8.0	9.0	3.3
	glufosinate	1.67	EC	0.26	PO1						
19	s-dimethenamid	6	EC	0.75	PRE	3.3	2.7	10.0	8.3	3.3	2.7
	mesotrione	4	SC	0.094	PO1						
	COC		L	1%	PO1						
20	untreated					5.0	4.7	1.0	3.0	6.0	5.7
LSD (P=.05)						2.69	2.43	0.82	2.52	2.77	2.72
Standard Deviation						1.63	1.48	0.50	1.53	1.68	1.65
CV						49.86	52.38	5.48	19.17	46.76	62.94

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GRFT RATING 7-12-01	COLQ RATING 7-12-01	WIRA RATING 7-12-01	GSS3486 RATING 7-31-01	GSS0966 RATING 7-31-01
1	flufenacet	60	DF	0.6	PRE	10.0	6.3	4.7	4.3	3.3
2	Axiom	68	DF	0.77	PRE	9.3	7.0	9.3	4.3	2.3
3	s-dimethenamid	6	EC	0.75	PRE	10.0	8.7	5.7	4.3	3.3
4	Guardsman Max	5	L	3.6 pt pr	PRE	9.3	10.0	9.7	2.0	1.0
5	Guardsman Max	5	L	4.6 pt pr	PRE	10.0	10.0	9.7	1.7	1.0
6	pendimethalin	3.3	EC	1	PO1	5.0	7.7	6.3	2.7	1.3
	atrazine	4	L	1	PO1					
7	pendimethalin	3.3	EC	0.83	PO1	9.0	10.0	9.3	4.0	2.7
	Guardsman Max		L	3 pt pr	PO1					
8	s-dimethenamid	6	EC	0.75	PRE	9.3	10.0	9.0	3.3	2.7
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
9	s-dimethenamid	6	EC	0.75	PRE	9.7	10.0	9.7	1.7	1.3
	Distinct	70	WG	0.175	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
10	s-dimethenamid	6	EC	0.56	PRE	8.7	10.0	9.3	2.0	1.7
	pendimethalin	3.3	EC	0.83	PRE					
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
11	s-dimethenamid	6	EC	0.75	PRE	10.0	10.0	8.7	2.3	1.7
	Marksman	3.2	F	3.5 pt pr	PRE					
	28% UAN		L	2 qt pr	PRE					
12	Guardsman Max	5	L	3 pt pr	PRE	10.0	10.0	10.0	1.7	1.3
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
13	s-metolachlor II	7.6	EC	1.2	PRE	10.0	10.0	10.0	4.0	2.7
	atrazine	4	L	1	PRE					
14	s-metolachlor II	7.6	EC	1.2	PRE	10.0	10.0	10.0	2.3	1.7
	atrazine	4	L	1	PRE					
	Distinct	70	WG	0.088	PO1					
	NIS		L	0.25%	PO1					
	28% UAN		L	1.25%	PO1					
15	s-dimethenamid	6	EC	0.75	PRE	10.0	10.0	7.0	3.0	2.3
	carfentrazone	40	DF	0.008	PO1					
	atrazine	4	F	0.5	PO1					
	NIS		L	0.25%	PO1					
16	s-dimethenamid	6	EC	0.75	PRE	9.3	6.3	7.7	1.0	1.0
	carfentrazone	40	DF	0.008	PO1					
	bentazon	4	L	0.75	PO1					
	NIS		L	0.25%	PO1					
17	s-dimethenamid	6	EC	0.75	PRE	8.0	8.0	10.0	4.3	3.0
	carfentrazone	40	DF	0.008	PO1					
	halosulfuron	75	WG	0.032	PO1					
	NIS		L	0.25%	PO1					
18	s-dimethenamid	6	EC	0.75	PRE	10.0	10.0	3.3	8.0	2.3
	glufosinate	1.67	EC	0.26	PO1					
19	s-dimethenamid	6	EC	0.75	PRE	10.0	10.0	10.0	2.7	2.0
	mesotrione	4	SC	0.094	PO1					
	COC		L	1%	PO1					
20	untreated					1.0	2.3	3.0	5.7	4.7
LSD (P=.05)						2.46	2.77	3.17	2.98	2.33
Standard Deviation						1.49	1.68	1.92	1.80	1.41
CV						16.68	19.01	23.67	55.24	65.17

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BYGR RATING 7-31-01	GRFT RATING 7-31-01	LACG RATING 7-31-01	COLQ RATING 7-31-01	CORW RATING 7-31-01	WIRA RATING 7-31-01
1	flufenacet	60	DF	0.6	PRE	9.0	8.7	9.0	5.0	7.3	5.3
2	Axiom	68	DF	0.77	PRE	8.0	8.3	8.7	7.7	9.7	8.3
3	s-dimethenamid	6	EC	0.75	PRE	8.7	8.3	9.0	5.7	7.0	6.0
4	Guardsman Max	5	L	3.6 pt	PRE	7.7	7.7	7.3	9.7	10.0	9.0
5	Guardsman Max	5	L	4.6 pt	PRE	9.0	8.3	8.7	10.0	10.0	9.7
6	pendimethalin	3.3	EC	1	PO1	5.7	5.7	4.3	10.0	10.0	7.0
	atrazine	4	L	1	PO1						
7	pendimethalin	3.3	EC	0.83	PO1	8.0	9.0	7.7	10.0	10.0	8.7
	Guardsman Max		L	3 pt	PO1						
8	s-dimethenamid	6	EC	0.75	PRE	6.0	7.3	6.0	9.3	10.0	7.3
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
9	s-dimethenamid	6	EC	0.75	PRE	7.7	9.0	9.3	9.3	10.0	9.0
	Distinct	70	WG	0.175	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
10	s-dimethenamid	6	EC	0.56	PRE	7.7	8.7	9.0	9.7	10.0	7.7
	pendimethalin	3.3	EC	0.83	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
11	s-dimethenamid	6	EC	0.75	PRE	9.0	7.7	8.3	10.0	10.0	8.3
	Marksman	3.2	F	3.5 pt	PRE						
	28% UAN		L	2 qt	PRE						
12	Guardsman Max	5	L	3 pt	PRE	9.0	9.7	9.3	10.0	10.0	9.3
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
13	s-metolachlor II	7.6	EC	1.2	PRE	9.7	10.0	10.0	10.0	10.0	9.3
	atrazine	4	L	1	PRE						
14	s-metolachlor II	7.6	EC	1.2	PRE	9.3	9.3	9.3	9.7	10.0	9.3
	atrazine	4	L	1	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
15	s-dimethenamid	6	EC	0.75	PRE	9.7	9.3	9.7	9.7	10.0	7.7
	carfentrazone	40	DF	0.008	PO1						
	atrazine	4	F	0.5	PO1						
	NIS		L	0.25%	PO1						
16	s-dimethenamid	6	EC	0.75	PRE	8.0	7.0	8.0	5.3	10.0	7.0
	carfentrazone	40	DF	0.008	PO1						
	bentazon	4	L	0.75	PO1						
	NIS		L	0.25%	PO1						
17	s-dimethenamid	6	EC	0.75	PRE	8.7	8.7	8.3	7.3	10.0	9.3
	carfentrazone	40	DF	0.008	PO1						
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.25%	PO1						
18	s-dimethenamid	6	EC	0.75	PRE	8.7	9.0	9.3	8.7	10.0	1.7
	glufosinate	1.67	EC	0.26	PO1						
19	s-dimethenamid	6	EC	0.75	PRE	8.3	9.0	9.3	10.0	10.0	9.0
	mesotrione	4	SC	0.094	PO1						
	COC		L	1%	PO1						
20	untreated					1.0	3.7	1.7	1.7	5.7	2.7
LSD (P=.05)						2.52	2.16	2.23	2.67	2.17	2.01
Standard Deviation						1.52	1.31	1.35	1.62	1.31	1.22
CV						19.21	15.95	16.61	19.19	13.84	16.05

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS3486 YIELD No./PLOT 8-10-01	GSS3486 YIELD KG/PLOT 8-10-01	GSS3486 YIELD No./PLOT 8-13-01	GSS3486 YIELD KG/PLOT 8-13-01	GSS3486 TOTAL YIELD No./PLOT	GSS3486 TOTAL YIELD KG/PLOT
1	flufenacet	60	DF	0.6	PRE	5.3	1.11	5.0	0.73	10.3	1.84
2	Axiom	68	DF	0.77	PRE	8.3	2.33	1.7	0.34	10.0	2.67
3	s-dimethenamid	6	EC	0.75	PRE	6.7	1.59	8.3	1.35	15.0	2.94
4	Guardsman Max	5	L	3.6 pt	PRE	21.0	6.13	11.0	2.14	32.0	8.27
5	Guardsman Max	5	L	4.6 pt	PRE	26.7	7.29	10.3	2.01	37.0	9.29
6	pendimethalin	3.3	EC	1	PO1	18.0	4.76	10.3	1.81	28.3	6.57
	atrazine	4	L	1	PO1						
7	pendimethalin	3.3	EC	0.83	PO1	17.7	4.57	11.7	1.87	29.3	6.43
	Guardsman Max		L	3 pt	PO1						
8	s-dimethenamid	6	EC	0.75	PRE	17.7	4.53	3.7	0.77	21.3	5.30
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
9	s-dimethenamid	6	EC	0.75	PRE	23.0	5.99	11.0	2.05	34.0	8.04
	Distinct	70	WG	0.175	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
10	s-dimethenamid	6	EC	0.56	PRE	24.3	6.92	8.7	1.73	33.0	8.65
	pendimethalin	3.3	EC	0.83	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
11	s-dimethenamid	6	EC	0.75	PRE	23.3	6.64	8.7	1.80	32.0	8.44
	Marksman	3.2	F	3.5 pt	PRE						
	28% UAN		L	2 qt	PRE						
12	Guardsman Max	5	L	3 pt	PRE	32.0	8.81	10.0	1.94	42.0	10.75
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
13	s-metolachlor II	7.6	EC	1.2	PRE	15.0	4.59	7.7	1.80	22.7	6.39
	atrazine	4	L	1	PRE						
14	s-metolachlor II	7.6	EC	1.2	PRE	29.7	7.88	11.3	1.99	41.0	9.87
	atrazine	4	L	1	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
15	s-dimethenamid	6	EC	0.75	PRE	21.3	5.23	6.7	1.15	28.0	6.37
	carfentrazone	40	DF	0.008	PO1						
	atrazine	4	F	0.5	PO1						
	NIS		L	0.25%	PO1						
16	s-dimethenamid	6	EC	0.75	PRE	22.7	6.81	5.3	1.22	28.0	8.03
	carfentrazone	40	DF	0.008	PO1						
	bentazon	4	L	0.75	PO1						
	NIS		L	0.25%	PO1						
17	s-dimethenamid	6	EC	0.75	PRE	7.7	1.97	6.7	1.21	14.3	3.17
	carfentrazone	40	DF	0.008	PO1						
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.25%	PO1						
18	s-dimethenamid	6	EC	0.75	PRE	1.0	0.14	1.3	0.25	2.3	0.39
	glufosinate	1.67	EC	0.26	PO1						
19	s-dimethenamid	6	EC	0.75	PRE	10.3	2.82	13.7	2.48	24.0	5.30
	mesotrione	4	SC	0.094	PO1						
	COC		L	1%	PO1						
20	untreated					2.7	0.47	2.0	0.33	4.7	0.80
LSD (P=.05)						15.17	4.39	7.75	1.42	17.55	4.76
Standard Deviation						9.19	2.66	4.70	0.86	10.63	2.88
CV						54.99	58.76	60.62	59.50	43.46	48.27

Weed Control in Sweet Corn - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GSS0966 YIELD No./PLOT 8-20-01	GSS0966 YIELD KG/PLOT 8-20-01	GSS0966 YIELD No./PLOT 8-24-01	GSS0966 YIELD KG/PLOT 8-24-01	GSS0966 TOTAL YIELD No./PLOT	GSS0966 TOTAL YIELD KG/PLOT
1	flufenacet	60	DF	0.6	PRE	24.7	5.79	12.3	2.41	37.0	8.20
2	Axiom	68	DF	0.77	PRE	43.0	10.19	7.7	1.76	50.7	11.95
3	s-dimethenamid	6	EC	0.75	PRE	33.3	8.40	6.3	1.13	39.7	9.53
4	Guardsman Max	5	L	3.6pt	PRE	56.7	15.05	17.3	3.81	74.0	18.87
5	Guardsman Max	5	L	4.6pt	PRE	68.3	18.04	5.7	1.07	74.0	19.11
6	pendimethalin	3.3	EC	1	PO1	49.0	12.76	16.7	3.68	65.7	16.44
	atrazine	4	L	1	PO1						
7	pendimethalin	3.3	EC	0.83	PO1	38.0	9.51	13.7	2.83	51.7	12.33
	Guardsman Max		L	3 pt	PO1						
8	s-dimethenamid	6	EC	0.75	PRE	42.0	10.24	14.3	3.07	56.3	13.31
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
9	s-dimethenamid	6	EC	0.75	PRE	73.0	18.13	11.0	2.53	84.0	20.66
	Distinct	70	WG	0.175	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
10	s-dimethenamid	6	EC	0.56	PRE	69.7	17.79	8.3	2.07	78.0	19.87
	pendimethalin	3.3	EC	0.83	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
11	s-dimethenamid	6	EC	0.75	PRE	60.3	16.19	8.0	2.00	68.3	18.19
	Marksman	3.2	F	3.5 pt	PRE						
	28% UAN		L	2qt pr	PRE						
12	Guardsman Max	5	L	3pt pr	PRE	65.7	18.13	13.3	3.11	79.0	21.24
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
13	s-metolachlor II	7.6	EC	1.2	PRE	34.7	9.72	15.7	3.67	50.3	13.39
	atrazine	4	L	1	PRE						
14	s-metolachlor II	7.6	EC	1.2	PRE	68.7	18.67	9.0	1.97	77.7	20.63
	atrazine	4	L	1	PRE						
	Distinct	70	WG	0.088	PO1						
	NIS		L	0.25%	PO1						
	28% UAN		L	1.25%	PO1						
15	s-dimethenamid	6	EC	0.75	PRE	38.7	10.56	19.3	4.15	58.0	14.71
	carfentrazone	40	DF	0.008	PO1						
	atrazine	4	F	0.5	PO1						
	NIS		L	0.25%	PO1						
16	s-dimethenamid	6	EC	0.75	PRE	61.3	17.61	13.0	3.11	74.3	20.73
	carfentrazone	40	DF	0.008	PO1						
	bentazon	4	L	0.75	PO1						
	NIS		L	0.25%	PO1						
17	s-dimethenamid	6	EC	0.75	PRE	31.7	7.23	8.7	1.67	40.3	8.91
	carfentrazone	40	DF	0.008	PO1						
	halosulfuron	75	WG	0.032	PO1						
	NIS		L	0.25%	PO1						
18	s-dimethenamid	6	EC	0.75	PRE	43.0	10.97	14.7	2.99	57.7	13.96
	glufosinate	1.67	EC	0.26	PO1						
19	s-dimethenamid	6	EC	0.75	PRE	42.3	10.60	18.7	3.97	61.0	14.57
	mesotrione	4	SC	0.094	PO1						
	COC		L	1%	PO1						
20	untreated					14.3	2.73	6.3	1.11	20.7	3.84
LSD (P=.05)						29.21	7.95	9.42	2.10	26.71	7.42
Standard Deviation						17.70	4.81	5.71	1.27	16.18	4.50
CV						36.94	38.81	47.56	48.94	27.01	29.95

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cucumber, Pumpkin, Squash **Variety: see Notes** **Field or Block: 109-111**
Planting Method: Seed **Planting Date: 6-11-01** **Harvest: see "Notes" below**
Spacing: see Notes **Row Spacing: see Notes**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 30 ft wide * 40 ft long

Soil Type: Capac Loam **OM: 1.4%** **pH: 6.5**
Sand: 75% **Silt: 17%** **Clay: 8%** **CEC: 4.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE-1	6-14	10:40am	84 F/ 72 F	dry	S 2-4	60%	hazy	N
PRE-2	6-15	2 pm	93 F/ 79 F	dry	SW 9-10	48%	50% cloud	N
PO1	6-25	1:50 pm	81 F/ 75 F	dry	W 2-4	43%	30% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-25-01	Cucumber	1-2"	2-3	good
	Pumpkin	1-2"	3-4	good
	Squash	2-3"	3-4	good
	BYGR	1-3"	2-3	many
	COLQ	1-2"	2-4	few
	CORW	1-2"	2-4	few
	RRPW	1-1.5"	2-4	many
	WIRA	1-2"	1-4	many

Notes and Comments

1. Sprays applied with tractor mounted CO_2 sprayer 12-8002 nozzles, 30 psi, 20 gpa, 3.2 mph, a 16 ft band was 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. Spacing: Cucumber - 3 rows * 14 inches * 3 inches in row; Pumpkin and Squash in 1 row each on either side of cucumber * 6 inches in row.
4. Cultivars: Pumpkin: Howden; Cucumber: Vlaspic M.; Squash: Waltham Butternut.
5. PRE-1: for treatments 1-4; PRE-2 for treatments 5-15.
6. Harvest Dates: Cucumber – 7-31-01; Pumpkin and Squash – 10-5-01.

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH RATING 6-29-01	CUCUMBER RATING 6-29-01	PUMPKIN RATING 6-29-01	GRFT RATING 6-29-01	COPU RATING 6-29-01
1	ethalfluralin	3	EC	0.75	PRE	2.0	2.3	1.7	2.7	5.3
2	ethalfluralin	3	EC	1.13	PRE	2.0	2.0	1.7	5.0	5.7
3	ethalfluralin	3	EC	0.75	PRE	4.0	2.7	4.0	5.7	10.0
	halosulfuron	75	WG	0.023	PRE					
4	ethalfluralin	3	EC	0.75	PRE	2.3	2.3	2.3	7.0	9.7
	halosulfuron	75	WG	0.023	PO1					
	NIS		L	0.25%	PO1					
5	ethalfluralin	3	EC	0.75	PRE	3.0	3.0	3.0	8.0	9.7
	halosulfuron	75	WG	0.031	PO1					
	NIS		L	0.25%	PO1					
6	ethalfluralin	3	EC	0.75	PRE	3.0	2.3	2.0	9.0	10.0
	clomazone	3	ME	0.25	PRE					
7	PCC 170 SE	2.1	EC	2pt pr	PRE	2.0	1.7	2.0	6.7	10.0
8	PCC 170 SE	2.1	EC	3pt pr	PRE	1.7	1.3	1.7	9.7	10.0
9	PCC 170 SE	2.1	EC	4pt pr	PRE	4.0	2.3	2.0	9.7	10.0
10	PCC 170 SE	2.1	EC	5pt pr	PRE	1.0	2.0	1.3	10.0	10.0
11	ethalfluralin	3	EC	0.75	PRE	4.7	5.3	2.7	10.0	9.7
	clomazone	3	ME	0.25	PRE					
	sulfentrazone	75	DF	0.1	PRE					
12	ethalfluralin	3	EC	0.75	PRE	6.3	4.0	3.7	10.0	10.0
	clomazone	3	ME	0.25	PRE					
	halosulfuron	75	WG	0.023	PRE					
13	ethalfluralin	3	EC	0.75	PRE	3.3	3.7	3.7	10.0	10.0
	clomazone	3	ME	0.25	PRE					
	halosulfuron	75	WG	0.023	PO1					
	NIS		L	0.5%	PO1					
14	flufenacet	60	DF	0.6	PRE	3.3	4.0	3.7	10.0	9.7
15	untreated					1.3	1.0	1.7	1.3	3.0
LSD (P=.05)						3.63	1.54	1.17	3.37	2.74
Standard Deviation						2.17	0.92	0.70	2.02	1.64
CV						73.94	34.43	28.39	26.37	18.54

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	RRPW RATING 6-29-01	WIRA RATING 6-29-01	SQUASH RATING 7-23-01	CUCUMBER RATING 7-23-01	PUMPKIN RATING 7-23-01
1	ethalfluralin	3	EC	0.75	PRE	5.3	1.7	2.7	3.3	1.7
2	ethalfluralin	3	EC	1.13	PRE	5.7	3.7	2.0	2.0	1.0
3	ethalfluralin	3	EC	0.75	PRE	10.0	9.7	3.0	2.7	2.7
	halosulfuron	75	WG	0.023	PRE					
4	ethalfluralin	3	EC	0.75	PRE	10.0	9.0	2.3	3.0	2.7
	halosulfuron	75	WG	0.023	PO1					
	NIS		L	0.25%	PO1					
5	ethalfluralin	3	EC	0.75	PRE	9.7	9.3	2.0	2.3	1.7
	halosulfuron	75	WG	0.031	PO1					
	NIS		L	0.25%	PO1					
6	ethalfluralin	3	EC	0.75	PRE	9.3	7.0	1.3	3.3	1.3
	clomazone	3	ME	0.25	PRE					
7	PCC 170 SE	2.1	EC	2pt pr	PRE	9.0	6.3	1.7	2.3	1.3
8	PCC 170 SE	2.1	EC	3pt pr	PRE	10.0	6.7	1.3	1.3	1.0
9	PCC 170 SE	2.1	EC	4pt pr	PRE	10.0	7.0	1.5	3.7	1.7
10	PCC 170 SE	2.1	EC	5pt pr	PRE	10.0	4.0	2.0	2.0	1.0
11	ethalfluralin	3	EC	0.75	PRE	10.0	7.3	2.0	6.3	1.3
	clomazone	3	ME	0.25	PRE					
	sulfentrazone	75	DF	0.1	PRE					
12	ethalfluralin	3	EC	0.75	PRE	10.0	10.0	3.0	3.0	2.3
	clomazone	3	ME	0.25	PRE					
	halosulfuron	75	WG	0.023	PRE					
13	ethalfluralin	3	EC	0.75	PRE	10.0	9.7	1.7	3.0	2.0
	clomazone	3	ME	0.25	PRE					
	halosulfuron	75	WG	0.023	PO1					
	NIS		L	0.5%	PO1					
14	flufenacet	60	DF	0.6	PRE	10.0	9.0	2.0	2.0	1.7
15	untreated					3.3	3.3	2.7	2.7	2.0
LSD (P=.05)						2.96	3.10	1.61	1.91	1.36
Standard Deviation						1.77	1.86	0.96	1.14	0.81
CV						20.07	26.86	46.09	39.77	48.11

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GRFT RATING 7-23-01	WIRA RATING 7-23-01	CUCUMBER PLANT WT KG/PLOT 7-31-01	CUCUMBER FRUIT WT KG/PLOT 7-31-01
1	ethalfluralin	3	EC	0.75	PRE	6.0	1.3	16.69	26.88
2	ethalfluralin	3	EC	1.13	PRE	3.7	3.0	22.11	31.19
3	ethalfluralin	3	EC	0.75	PRE	2.3	8.0	24.37	39.46
	halosulfuron	75	WG	0.023	PRE				
4	ethalfluralin	3	EC	0.75	PRE	2.7	10.0	24.26	34.97
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.25%	PO1				
5	ethalfluralin	3	EC	0.75	PRE	3.0	10.0	22.45	31.19
	halosulfuron	75	WG	0.031	PO1				
	NIS		L	0.25%	PO1				
6	ethalfluralin	3	EC	0.75	PRE	7.7	4.7	17.17	32.53
	clomazone	3	ME	0.25	PRE				
7	PCC 170 SE	2.1	EC	2pt pr	PRE	5.0	3.7	27.75	35.83
8	PCC 170 SE	2.1	EC	3pt pr	PRE	8.0	3.0	23.96	34.15
9	PCC 170 SE	2.1	EC	4pt pr	PRE	8.7	5.7	14.73	24.04
10	PCC 170 SE	2.1	EC	5pt pr	PRE	8.3	1.7	20.27	26.69
11	ethalfluralin	3	EC	0.75	PRE	5.3	3.3	7.23	10.64
	clomazone	3	ME	0.25	PRE				
	sulfentrazone	75	DF	0.1	PRE				
12	ethalfluralin	3	EC	0.75	PRE	7.7	10.0	20.77	32.45
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PRE				
13	ethalfluralin	3	EC	0.75	PRE	8.3	10.0	24.18	27.77
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.5%	PO1				
14	flufenacet	60	DF	0.6	PRE	7.7	3.3	17.55	22.55
15	untreated					1.0	2.3	17.00	22.74
LSD (P=.05)						3.22	3.55	12.97	13.31
Standard Deviation						1.93	2.12	7.75	7.95
CV						33.85	39.80	38.72	27.57

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CUCUMBER SIZE 1 KG/PLOT 7-31-01	CUCUMBER SIZE 2 KG/PLOT 7-31-01	CUCUMBER SIZE 3 KG/PLOT 7-31-01	CUCUMBER SIZE 4 KG/PLOT 7-31-01
1	ethalfluralin	3	EC	0.75	PRE	1.04	3.69	17.78	4.19
2	ethalfluralin	3	EC	1.13	PRE	1.21	4.85	18.81	5.57
3	ethalfluralin	3	EC	0.75	PRE	1.07	6.64	18.39	6.45
	halosulfuron	75	WG	0.023	PRE				
4	ethalfluralin	3	EC	0.75	PRE	1.25	5.59	21.58	5.69
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.25%	PO1				
5	ethalfluralin	3	EC	0.75	PRE	1.45	6.15	19.55	3.47
	halosulfuron	75	WG	0.031	PO1				
	NIS		L	0.25%	PO1				
6	ethalfluralin	3	EC	0.75	PRE	0.79	2.57	18.46	10.34
	clomazone	3	ME	0.25	PRE				
7	PCC 170 SE	2.1	EC	2pt pr	PRE	0.83	3.90	21.76	9.50
8	PCC 170 SE	2.1	EC	3pt pr	PRE	1.12	3.79	20.21	8.61
9	PCC 170 SE	2.1	EC	4pt pr	PRE	0.64	2.33	13.35	7.09
10	PCC 170 SE	2.1	EC	5pt pr	PRE	0.64	3.45	15.28	8.83
11	ethalfluralin	3	EC	0.75	PRE	0.53	1.82	5.78	2.32
	clomazone	3	ME	0.25	PRE				
	sulfentrazone	75	DF	0.1	PRE				
12	ethalfluralin	3	EC	0.75	PRE	0.86	3.55	14.20	13.26
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PRE				
13	ethalfluralin	3	EC	0.75	PRE	1.37	5.66	16.12	4.22
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.5%	PO1				
14	flufenacet	60	DF	0.6	PRE	1.01	3.89	13.91	3.14
15	untreated					1.06	3.73	13.33	6.91
LSD (P=.05)						0.46	2.37	8.62	6.48
Standard Deviation						0.27	1.42	5.15	3.87
CV						28.00	34.61	31.12	58.42

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PUMPKIN GREEN No./PLOT 10-04-01	PUMPKIN GREEN KG/PLOT 10-04-01	PUMPKIN MATURE No./PLOT 10-04-01	PUMPKIN MATURE KG/PLOT 10-04-01
1	ethalfluralin	3	EC	0.75	PRE	8.7	54.45	16.3	89.25
2	ethalfluralin	3	EC	1.13	PRE	4.3	15.16	19.3	95.80
3	ethalfluralin	3	EC	0.75	PRE	6.3	33.59	10.7	79.53
	halosulfuron	75	WG	0.023	PRE				
4	ethalfluralin	3	EC	0.75	PRE	6.3	27.67	12.7	80.71
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.25%	PO1				
5	ethalfluralin	3	EC	0.75	PRE	4.7	26.81	12.7	66.33
	halosulfuron	75	WG	0.031	PO1				
	NIS		L	0.25%	PO1				
6	ethalfluralin	3	EC	0.75	PRE	8.3	32.04	20.0	108.61
	clomazone	3	ME	0.25	PRE				
7	PCC 170 SE	2.1	EC	2pt pr	PRE	6.3	38.50	18.0	110.30
8	PCC 170 SE	2.1	EC	3pt pr	PRE	11.7	49.99	18.3	86.29
9	PCC 170 SE	2.1	EC	4pt pr	PRE	5.3	27.63	17.7	104.33
10	PCC 170 SE	2.1	EC	5pt pr	PRE	6.3	22.34	21.7	119.61
11	ethalfluralin	3	EC	0.75	PRE	4.7	18.15	21.3	109.95
	clomazone	3	ME	0.25	PRE				
	sulfentrazone	75	DF	0.1	PRE				
12	ethalfluralin	3	EC	0.75	PRE	6.7	21.09	13.7	67.65
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PRE				
13	ethalfluralin	3	EC	0.75	PRE	11.7	43.05	20.3	100.27
	clomazone	3	ME	0.25	PRE				
	halosulfuron	75	WG	0.023	PO1				
	NIS		L	0.5%	PO1				
14	flufenacet	60	DF	0.6	PRE	6.7	28.75	15.0	66.55
15	untreated					7.3	33.33	14.3	76.37
LSD (P=.05)						5.72	23.81	8.69	61.41
Standard Deviation						3.42	14.24	5.20	36.73
CV						48.73	45.20	30.93	40.46

Weed Control in Cucumber, Pumpkin, and Squash - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	SQUASH YIELD No./PLOT 10-04-01	SQUASH YIELD KG/PLOT 10-04-01
1	ethalfluralin	3	EC	0.75	PRE	37.7	40.68
2	ethalfluralin	3	EC	1.13	PRE	46.0	49.46
3	ethalfluralin	3	EC	0.75	PRE	33.3	37.83
	halosulfuron	75	WG	0.023	PRE		
4	ethalfluralin	3	EC	0.75	PRE	48.0	52.87
	halosulfuron	75	WG	0.023	PO1		
	NIS		L	0.25%	PO1		
5	ethalfluralin	3	EC	0.75	PRE	46.0	42.36
	halosulfuron	75	WG	0.031	PO1		
	NIS		L	0.25%	PO1		
6	ethalfluralin	3	EC	0.75	PRE	63.7	72.46
	clomazone	3	ME	0.25	PRE		
7	PCC 170 SE	2.1	EC	2pt pr	PRE	40.0	52.37
8	PCC 170 SE	2.1	EC	3pt pr	PRE	65.3	78.49
9	PCC 170 SE	2.1	EC	4pt pr	PRE	43.0	48.36
10	PCC 170 SE	2.1	EC	5pt pr	PRE	59.7	69.41
11	ethalfluralin	3	EC	0.75	PRE	39.3	45.56
	clomazone	3	ME	0.25	PRE		
	sulfentrazone	75	DF	0.1	PRE		
12	ethalfluralin	3	EC	0.75	PRE	27.7	26.78
	clomazone	3	ME	0.25	PRE		
	halosulfuron	75	WG	0.023	PRE		
13	ethalfluralin	3	EC	0.75	PRE	60.0	64.88
	clomazone	3	ME	0.25	PRE		
	halosulfuron	75	WG	0.023	PO1		
	NIS		L	0.5%	PO1		
14	flufenacet	60	DF	0.6	PRE	38.0	41.10
15	untreated					40.0	32.33
LSD (P=.05)						34.55	38.33
Standard Deviation						20.66	22.92
CV						45.08	45.55

Preemergence Weed Control in Onion - Muck Farm

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion **Variety: Hustler** **Field or Block: A-19**
Planting Method: Seed **Planting Date: 5-4-01** **Harvest: 9-5-01**
Spacing: 16 seeds / ft **Row Spacing: 16",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 16.7 ft long

Soil Type: Houghton Muck **OM: 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	RH	Sky	Dew
PRE	5-9	11:20am	70 F/ 64 F	dry	SW 2-4	53%	5% cloud	N
PO1	6-8	9:00 am	70 F/ 65 F	damp	calm	60%	clear	Y
PO2	7-2	10:00am	56 F/ 63 F	dry	NE 2-4	47%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-8-01	Onion	3-4"	1-2	fair
	ANBG	0.5-1"	2-3	moderate
	COCW	0.5-2"	2-6	many
	LATH	0.5-2"	2-4	moderate
	MAYC	1-6"	2-6	many
	YENS	1-3"	4-6	moderate
7-2-01	Onion		4-5	fair
	LACG		many	few
	YENS		many	few
	MAYC		many	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. 6-8-01: Goal 0.031 lb + Select 0.125 lb applied to all non-flumioxazin plots.
4. The experiment was damaged by heavy rains in May and early June.

Preemergence Weed Control in Onion - Muck Farm

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 5-31-01	ONION RATING 6-06-01	YENS RATING 6-06-01	COCW RATING 6-06-01	LATH RATING 6-06-01	MAYC RATING 6-06-01
1	dimethenamid	6	EC	1.5	PRE	3.7	3.0	9.5	9.0	9.3	7.0
	dimethenamid	6	EC	1.5	PO1,2						
2	pendimethalin	3.3	EC	2	PRE	2.0	1.7	2.3	6.3	8.3	3.0
	dimethenamid	6	EC	1.5	PO1						
	s-metolachlor	7.6	EC	1.67	PO2						
3	s-dimethenamid	6	EC	0.98	PRE	3.3	3.3	9.0	9.0	9.3	6.3
	s-dimethenamid	6	EC	0.98	PO1,2						
4	pendimethalin	3.3	EC	2	PRE	2.3	1.7	1.0	6.7	7.0	3.3
	pendimethalin	3.3	EC	2	PO1,2						
	s-dimethenamid	6	EC	0.98	PO1						
	s-metolachlor	7.6	EC	1.67	PO2						
5	pendimethalin	3.3	EC	2	PRE	2.3	1.7	1.0	6.3	7.7	3.0
	pendimethalin	3.3	EC	2	PO1,2						
	s-metolachlor	7.6	EC	1.67	PO1						
	s-dimethenamid	6	EC	0.98	PO2						
6	flumioxazin	50	WP	0.05	PRE	9.0	9.0	3.7	9.0	10.0	3.7
	flumioxazin	50	WP	0.05	PO1,2						
7	flumioxazin	50	WP	0.1	PRE	9.7	9.7	4.5	10.0	10.0	8.0
	flumioxazin	50	WP	0.1	PO1,2						
8	flumioxazin	50	WP	0.05	PRE	8.3	8.3	3.3	9.7	10.0	5.3
	pendimethalin	3.3	EC	2	PRE						
	flumioxazin	50	WP	0.05	PO1,2						
	pendimethalin	3.3	EC	2	PO1,2						
9	flumioxazin	50	WP	0.05	PRE	8.0	8.3	2.0	8.7	10.0	4.0
	flumioxazin	50	WP	0.05	PO1,2						
	s-dimethenamid	6	EC	0.64	PO1						
10	flumioxazin	50	WP	0.05	PRE	9.3	9.3	4.0	9.3	10.0	6.7
	s-dimethenamid	6	EC	0.64	PO1,2						
11	flumioxazin	50	WP	0.05	PRE	9.0	9.0	4.0	9.7	10.0	7.0
	flumioxazin	50	WP	0.05	PO1,2						
	s-metolachlor	7.6	EC	1.67	PO1						
12	flumioxazin	50	WP	0.05	PRE	9.0	9.0	3.0	9.7	10.0	8.0
	s-metolachlor	7.6	EC	1.67	PO1,2						
13	pendimethalin	3.3	EC	2	PRE	2.0	2.7	3.0	5.7	7.7	7.7
	flumioxazin	50	WP	0.05	PO1,2						
14	pendimethalin	3.3	EC	2	PRE	2.3	2.3	2.0	6.7	8.0	4.7
	pendimethalin	3.3	EC	2	PO1,2						
	flumioxazin	50	WP	0.05	PO1,2						
15	untreated					2.3	2.7	5.0	1.3	1.3	4.3
LSD (P=.05)						1.96	1.62	4.22	1.17	0.74	4.47
Standard Deviation						1.17	0.97	2.41	0.70	0.44	2.67
CV						21.24	17.82	63.07	8.94	5.13	48.91

Preemergence Weed Control in Onion - Muck Farm

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 7-10-01	ANBG RATING 7-10-01	YENS RATING 7-10-01	LATH RATING 7-10-01	MAYC RATING 7-10-01
1	dimethenamid	6	EC	1.5	PRE	3.7	10.0	10.0	9.0	8.0
	dimethenamid	6	EC	1.5	PO1,2					
2	pendimethalin	3.3	EC	2	PRE	1.3	8.3	7.7	10.0	3.7
	dimethenamid	6	EC	1.5	PO1					
	s-metolachlor	7.6	EC	1.67	PO2					
3	s-dimethenamid	6	EC	0.98	PRE	2.7	10.0	9.3	9.0	3.7
	s-dimethenamid	6	EC	0.98	PO1,2					
4	pendimethalin	3.3	EC	2	PRE	1.3	7.7	6.3	8.7	8.0
	pendimethalin	3.3	EC	2	PO1,2					
	s-dimethenamid	6	EC	0.98	PO1					
	s-metolachlor	7.6	EC	1.67	PO2					
5	pendimethalin	3.3	EC	2	PRE	1.3	9.3	7.3	10.0	8.7
	pendimethalin	3.3	EC	2	PO1,2					
	s-metolachlor	7.6	EC	1.67	PO1					
	s-dimethenamid	6	EC	0.98	PO2					
6	flumioxazin	50	WP	0.05	PRE	7.7	1.0	7.0	10.0	9.3
	flumioxazin	50	WP	0.05	PO1,2					
7	flumioxazin	50	WP	0.1	PRE	9.0	1.0	7.0	10.0	9.7
	flumioxazin	50	WP	0.1	PO1,2					
8	flumioxazin	50	WP	0.05	PRE	8.0	10.0	4.0	10.0	10.0
	pendimethalin	3.3	EC	2	PRE					
	flumioxazin	50	WP	0.05	PO1,2					
	pendimethalin	3.3	EC	2	PO1,2					
9	flumioxazin	50	WP	0.05	PRE	8.3	10.0	7.3	10.0	9.0
	flumioxazin	50	WP	0.05	PO1,2					
	s-dimethenamid	6	EC	0.64	PO1					
10	flumioxazin	50	WP	0.05	PRE	8.0	9.0	7.7	9.3	7.3
	s-dimethenamid	6	EC	0.64	PO1,2					
11	flumioxazin	50	WP	0.05	PRE	9.0	9.7	9.3	10.0	9.3
	flumioxazin	50	WP	0.05	PO1,2					
	s-metolachlor	7.6	EC	1.67	PO1					
12	flumioxazin	50	WP	0.05	PRE	8.0	10.0	9.3	9.7	9.0
	s-metolachlor	7.6	EC	1.67	PO1,2					
13	pendimethalin	3.3	EC	2	PRE	1.7	1.7	8.3	9.0	8.3
	flumioxazin	50	WP	0.05	PO1,2					
14	pendimethalin	3.3	EC	2	PRE	6.0	10.0	7.3	10.0	10.0
	pendimethalin	3.3	EC	2	PO1,2					
	flumioxazin	50	WP	0.05	PO1,2					
15	untreated					4.3	1.7	3.0	3.3	1.0
LSD (P=.05)						1.83	2.22	5.21	2.33	2.20
Standard Deviation						1.09	1.33	3.12	1.39	1.32
CV						20.44	18.20	42.13	15.11	17.17

Preemergence Weed Control in Onion - Muck Farm

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 8-20-01	LACG RATING 8-20-01	YENS RATING 8-20-01	COLQ RATING 8-20-01	COPU RATING 8-20-01	MAYC RATING 8-20-01	RRPW RATING 8-20-01	ONION YIELD KG/PLOT 9-05-01
1	dimethenamid	6	EC	1.5	PRE	3.0	10.0	9.3	4.7	7.3	6.7	10.0	17.64
	dimethenamid	6	EC	1.5	PO1,2								
2	pendimethalin	3.3	EC	2	PRE	1.7	9.0	8.0	8.0	5.3	7.3	7.0	25.74
	dimethenamid	6	EC	1.5	PO1								
	s-metolachlor	7.6	EC	1.67	PO2								
3	s-dimethenamid	6	EC	0.98	PRE	2.7	10.0	9.0	5.7	7.0	7.0	10.0	20.79
	s-dimethenamid	6	EC	0.98	PO1,2								
4	pendimethalin	3.3	EC	2	PRE	2.0	9.0	5.7	8.0	7.0	6.7	7.7	27.98
	pendimethalin	3.3	EC	2	PO1,2								
	s-dimethenamid	6	EC	0.98	PO1								
	s-metolachlor	7.6	EC	1.67	PO2								
5	pendimethalin	3.3	EC	2	PRE	1.7	10.0	6.7	7.7	7.7	7.7	9.0	29.23
	pendimethalin	3.3	EC	2	PO1,2								
	s-metolachlor	7.6	EC	1.67	PO1								
	s-dimethenamid	6	EC	0.98	PO2								
6	flumioxazin	50	WP	0.05	PRE	8.0	6.7	5.7	6.0	2.0	6.7	7.7	5.07
	flumioxazin	50	WP	0.05	PO1,2								
7	flumioxazin	50	WP	0.1	PRE	9.0	7.7	3.7	6.7	4.3	8.3	9.0	1.66
	flumioxazin	50	WP	0.1	PO1,2								
8	flumioxazin	50	WP	0.05	PRE	8.0	8.7	2.3	6.0	5.3	8.0	7.7	3.36
	pendimethalin	3.3	EC	2	PRE								
	flumioxazin	50	WP	0.05	PO1,2								
	pendimethalin	3.3	EC	2	PO1,2								
9	flumioxazin	50	WP	0.05	PRE	7.0	4.3	9.3	7.3	3.7	7.7	7.3	4.91
	flumioxazin	50	WP	0.05	PO1,2								
	s-dimethenamid	6	EC	0.64	PO1								
10	flumioxazin	50	WP	0.05	PRE	8.0	6.7	8.0	2.0	2.3	6.0	8.3	4.62
	s-dimethenamid	6	EC	0.64	PO1,2								
11	flumioxazin	50	WP	0.05	PRE	8.7	8.3	6.7	7.7	3.7	7.7	7.7	2.31
	flumioxazin	50	WP	0.05	PO1,2								
	s-metolachlor	7.6	EC	1.67	PO1								
12	flumioxazin	50	WP	0.05	PRE	6.0	4.3	7.7	3.3	1.7	6.0	6.3	4.44
	s-metolachlor	7.6	EC	1.67	PO1,2								
13	pendimethalin	3.3	EC	2	PRE	2.3	1.3	6.3	7.3	5.7	7.7	7.3	23.29
	flumioxazin	50	WP	0.05	PO1,2								
14	pendimethalin	3.3	EC	2	PRE	4.0	5.3	5.7	8.3	3.3	7.3	7.3	10.14
	pendimethalin	3.3	EC	2	PO1,2								
	flumioxazin	50	WP	0.05	PO1,2								
15	untreated					7.3	3.7	5.3	5.0	1.3	3.3	3.0	7.83
LSD (P=.05)						2.25	4.36	3.96	4.52	3.11	1.92	2.66	5.98
Standard Deviation						1.34	2.61	2.37	2.70	1.86	1.15	1.59	3.57
CV						25.39	37.23	35.79	43.31	16.53	20.67	41.26	28.40

Postemergence Weed Control in Onion - Muck Farm

Project Code: WC 112-01-02 **Location: Laingsburg, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Onion **Variety: Hustler** **Field or Block: A-18**
Planting Method: Seed **Planting Date: 5-03-01** **Harvest: 9-5-01**
Spacing: 16 seeds / ft **Row Spacing: 16",3 rows/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 16.7 ft long

Soil Type: Houghton Muck **OM: 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	RH	Sky	Dew
PO1	6-8	10:00am	73 F/ 65 F	damp	calm	60%	clear	Y
PO2	7-2	10:55am	61 F/ 63 F	dry	NE 4-6	50%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-8-01	Onion	3-5"	1-2	good
	ANBG	1-3"	2-4	few
	YENS	1-3"	3-6	moderate
	COCW	1-2"	3-6	many
	LATH	1-2"	2-4	moderate
	MAYC	1-6"	2-10	many
7-2-01	Onion	10-12"	3-4	good
	ANBG	4-5"	many	few
	LACG	3-4"	many	few
	YENS	3-4"	many	few
	COPU	2-3"	many	few
	MAYC	3-4"	4-5	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.

Postemergence Weed Control in Onion - Muck Farm

Project Code: WC 112-01-02 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 6-19-01	ANBG RATING 6-19-01	LACG RATING 6-19-01	YENS RATING 6-19-01	COCW RATING 6-19-01	LATH RATING 6-19-01	MAYC RATING 6-19-01
1	oxyfluorfen	2	L	0.063	PO1,2	2.3	10.0	10.0	4.0	5.3	8.7	7.7
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
2	oxyfluorfen	2	L	0.125	PO1,2	1.7	10.0	10.0	8.3	2.7	6.7	5.7
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
3	oxyfluorfen	2	L	0.25	PO1,2	3.3	10.0	10.0	5.0	7.3	9.7	6.7
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
4	oxyfluorfen	4	F	0.063	PO1,2	2.0	10.0	10.0	3.3	3.7	8.3	7.3
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
5	oxyfluorfen	4	F	0.125	PO1,2	2.0	9.0	7.3	4.3	4.7	5.0	4.0
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
6	flumioxazin	50	WP	0.047	PO1	5.0	4.3	9.7	7.7	10.0	10.0	9.7
	NIS		L	0.5%	PO1							
7	flumioxazin	50	WP	0.063	PO1,2	5.0	10.0	10.0	10.0	10.0	10.0	10.0
	NIS		L	0.5%	PO1,2							
	oxyfluorfen	2	L	0.063	PO1,2							
	clethodim	2	EC	0.125	PO1,2							
8	flumioxazin	50	WP	0.063	PO1,2	5.0	4.0	9.0	8.0	10.0	10.0	9.3
	NIS		L	0.5%	PO1,2							
9	flumioxazin	50	WP	0.094	PO1	4.3	4.7	9.3	7.7	10.0	10.0	9.3
	NIS		L	0.5%	PO1							
	oxyfluorfen	2	L	0.063	PO2							
	clethodim	2	EC	0.125	PO2							
	NIS		L	0.5%	PO2							
10	oxyfluorfen	2	L	0.063	PO1	2.3	10.0	10.0	7.0	3.7	7.3	5.7
	clethodim	2	EC	0.125	PO1							
	NIS		L	0.5%	PO1							
	flumioxazin	50	WP	0.094	PO2							
	NIS		L	0.5%	PO2							
11	oxyfluorfen	2	L	0.063	PO1	2.7	10.0	10.0	6.0	5.0	8.0	8.0
	clethodim	2	EC	0.125	PO1,2							
	flumioxazin	50	WP	0.125	PO2							
	COC		L	1%	PO1,2							
12	fluroxypyr	1.5	L	0.094	PO1,2	2.3	1.7	6.3	3.7	9.0	6.0	1.3
13	fluroxypyr	1.5	L	0.094	PO1	1.7	3.3	7.0	6.3	9.0	4.3	1.0
	fluroxypyr	1.5	L	0.125	PO2							
14	fluroxypyr	1.5	L	0.125	PO1,2	2.0	6.3	6.3	5.3	7.3	8.3	5.3
15	oxyfluorfen	2	L	0.063	PO1,2	2.0	6.3	8.3	3.3	9.0	7.3	6.0
	fluroxypyr	1.5	L	0.094	PO1,2							
16	oxyfluorfen	2	L	0.063	PO1,2	2.0	2.0	6.7	3.7	8.0	7.7	5.0
	fluroxypyr	1.5	L	0.094	PO1							
	fluroxypyr	1.5	L	0.125	PO2							
17	oxyfluorfen	2	L	0.063	PO1,2	3.0	3.3	7.0	4.3	9.3	8.0	7.3
	fluroxypyr	1.5	L	0.125	PO1							
	fluroxypyr	1.5	L	0.094	PO2							
18	oxyfluorfen	2	L	0.063	PO1,2	4.0	2.0	7.0	3.7	9.3	8.0	7.7
	fluroxypyr	1.5	L	0.125	PO1,2							
19	oxyfluorfen	2	L	0.063	PO1,2	2.0	9.7	10.0	4.7	8.3	9.0	6.7
	fluroxypyr	1.5	L	0.094	PO1,2							
	clethodim	2	EC	0.125	PO1,2							
	NIS		L	0.5%	PO1,2							
20	untreated					1.3	1.0	6.3	3.3	6.0	3.3	1.0
LSD (P=.05)						1.47	3.27	5.11	4.25	3.63	2.98	2.80
Standard Deviation						0.89	1.98	3.10	2.58	2.20	1.81	1.69
CV						31.79	31.04	36.38	47.01	29.81	23.23	27.17

Postemergence Weed Control in Onion - Muck Farm

Project Code: WC 112-01-02 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION RATING 7-10-01	ANBG RATING 7-10-01	MAYC RATING 7-10-01	ONION RATING 8-20-01	LACG RATING 8-20-01
1	oxyfluorfen	2	L	0.063	PO1,2	2.7	10.0	7.3	1.7	7.3
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
2	oxyfluorfen	2	L	0.125	PO1,2	1.3	10.0	8.0	2.0	9.0
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
3	oxyfluorfen	2	L	0.25	PO1,2	2.7	10.0	8.3	1.7	9.3
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
4	oxyfluorfen	4	F	0.063	PO1,2	1.3	10.0	8.3	1.3	10.0
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
5	oxyfluorfen	4	F	0.125	PO1,2	2.7	10.0	7.7	2.0	10.0
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
6	flumioxazin	50	WP	0.047	PO1	3.3	1.0	9.3	2.3	6.0
	NIS		L	0.5%	PO1					
7	flumioxazin	50	WP	0.063	PO1,2	4.3	10.0	10.0	3.0	9.0
	NIS		L	0.5%	PO1,2					
	oxyfluorfen	2	L	0.063	PO1,2					
	clethodim	2	EC	0.125	PO1,2					
8	flumioxazin	50	WP	0.063	PO1,2	5.0	4.3	10.0	2.3	4.0
	NIS		L	0.5%	PO1,2					
9	flumioxazin	50	WP	0.094	PO1	3.0	3.7	10.0	2.3	9.3
	NIS		L	0.5%	PO1					
	oxyfluorfen	2	L	0.063	PO2					
	clethodim	2	EC	0.125	PO2					
	NIS		L	0.5%	PO2					
10	oxyfluorfen	2	L	0.063	PO1	4.3	9.7	9.7	1.3	9.3
	clethodim	2	EC	0.125	PO1					
	NIS		L	0.5%	PO1					
	flumioxazin	50	WP	0.094	PO2					
	NIS		L	0.5%	PO2					
11	oxyfluorfen	2	L	0.063	PO1	3.0	10.0	10.0	2.0	9.7
	clethodim	2	EC	0.125	PO1,2					
	flumioxazin	50	WP	0.125	PO2					
	COC		L	1%	PO1,2					
12	fluroxypyr	1.5	L	0.094	PO1,2	3.0	7.7	6.7	2.3	5.7
13	fluroxypyr	1.5	L	0.094	PO1	1.7	1.0	6.0	2.0	8.3
	fluroxypyr	1.5	L	0.125	PO2					
14	fluroxypyr	1.5	L	0.125	PO1,2	2.0	4.3	7.3	1.7	9.0
15	oxyfluorfen	2	L	0.063	PO1,2	2.3	2.3	7.0	1.7	7.7
	fluroxypyr	1.5	L	0.094	PO1,2					
16	oxyfluorfen	2	L	0.063	PO1,2	1.7	1.7	7.0	2.0	6.3
	fluroxypyr	1.5	L	0.094	PO1					
	fluroxypyr	1.5	L	0.125	PO2					
17	oxyfluorfen	2	L	0.063	PO1,2	2.7	1.0	7.7	2.3	8.7
	fluroxypyr	1.5	L	0.125	PO1					
	fluroxypyr	1.5	L	0.094	PO2					
18	oxyfluorfen	2	L	0.063	PO1,2	3.3	1.0	8.3	2.7	9.0
	fluroxypyr	1.5	L	0.125	PO1,2					
19	oxyfluorfen	2	L	0.063	PO1,2	3.0	7.7	7.7	2.7	9.3
	fluroxypyr	1.5	L	0.094	PO1,2					
	clethodim	2	EC	0.125	PO1,2					
	NIS		L	0.5%	PO1,2					
20	untreated					3.0	1.0	2.3	3.7	4.0
LSD (P=.05)						1.30	3.50	1.51	1.30	4.00
Standard Deviation						0.79	2.12	0.91	0.79	2.43
CV						28.00	36.45	11.52	36.68	30.14

Postemergence Weed Control in Onion - Muck Farm

Project Code: WC 112-01-02 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	COLQ RATING 8-20-01	MAYC RATING 8-20-01	RRPW RATING 8-20-01	ONION YIELD KG/PLOT 9-05-01
1	oxyfluorfen	2	L	0.063	PO1,2	4.0	6.0	3.7	18.58
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
2	oxyfluorfen	2	L	0.125	PO1,2	6.7	5.7	3.7	26.00
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
3	oxyfluorfen	2	L	0.25	PO1,2	4.0	7.0	4.0	20.42
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
4	oxyfluorfen	4	F	0.063	PO1,2	4.7	8.3	3.0	26.89
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
5	oxyfluorfen	4	F	0.125	PO1,2	3.0	7.0	2.7	17.62
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
6	flumioxazin	50	WP	0.047	PO1	2.0	6.0	4.0	9.70
	NIS		L	0.5%	PO1				
7	flumioxazin	50	WP	0.063	PO1,2	2.3	7.0	3.0	10.66
	NIS		L	0.5%	PO1,2				
	oxyfluorfen	2	L	0.063	PO1,2				
	clethodim	2	EC	0.125	PO1,2				
8	flumioxazin	50	WP	0.063	PO1,2	7.0	7.7	5.7	10.95
	NIS		L	0.5%	PO1,2				
9	flumioxazin	50	WP	0.094	PO1	3.0	7.3	3.0	14.26
	NIS		L	0.5%	PO1				
	oxyfluorfen	2	L	0.063	PO2				
	clethodim	2	EC	0.125	PO2				
	NIS		L	0.5%	PO2				
10	oxyfluorfen	2	L	0.063	PO1	7.3	8.0	7.3	19.93
	clethodim	2	EC	0.125	PO1				
	NIS		L	0.5%	PO1				
	flumioxazin	50	WP	0.094	PO2				
	NIS		L	0.5%	PO2				
11	oxyfluorfen	2	L	0.063	PO1	8.7	8.7	8.0	20.98
	clethodim	2	EC	0.125	PO1,2				
	flumioxazin	50	WP	0.125	PO2				
	COC		L	1%	PO1,2				
12	fluroxypyr	1.5	L	0.094	PO1,2	3.7	7.3	3.7	15.47
13	fluroxypyr	1.5	L	0.094	PO1	4.0	8.3	3.7	18.88
	fluroxypyr	1.5	L	0.125	PO2				
14	fluroxypyr	1.5	L	0.125	PO1,2	5.3	7.3	5.0	20.28
15	oxyfluorfen	2	L	0.063	PO1,2	4.7	8.3	4.3	20.55
	fluroxypyr	1.5	L	0.094	PO1,2				
16	oxyfluorfen	2	L	0.063	PO1,2	4.3	8.0	4.0	19.35
	fluroxypyr	1.5	L	0.094	PO1				
	fluroxypyr	1.5	L	0.125	PO2				
17	oxyfluorfen	2	L	0.063	PO1,2	2.0	7.0	3.3	14.25
	fluroxypyr	1.5	L	0.125	PO1				
	fluroxypyr	1.5	L	0.094	PO2				
18	oxyfluorfen	2	L	0.063	PO1,2	3.0	7.7	3.7	12.40
	fluroxypyr	1.5	L	0.125	PO1,2				
19	oxyfluorfen	2	L	0.063	PO1,2	4.7	8.0	2.7	16.94
	fluroxypyr	1.5	L	0.094	PO1,2				
	clethodim	2	EC	0.125	PO1,2				
	NIS		L	0.5%	PO1,2				
20	untreated					4.3	5.7	4.0	13.15
LSD (P=.05)						4.58	1.85	2.70	7.22
Standard Deviation						2.77	1.12	1.64	4.37
CV						62.56	15.31	39.72	25.21

Preharvest Desiccation of Onion - MSU Muck Farm

Project Code: WC 112-01-03 **Location: Laingsburg, MI**

Personnel: Jorge Arboleya, Bernard Zandstra, Joseph Masabni
Crop: Onion **Variety: Hustler** **Field or Block: A18,19**
Planting Method: Seed **Planting Date: 5-3-01** **Harvest: 10-01-01**
Spacing: 16 seeds / ft **Row Spacing: 16",3 row/plot**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide x 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	RH	Sky	Dew
PREH	9-4	11 am	69 F/ 69 F	dry	NE 4-6	61%	5% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
9-4-04	Onion	50-70% down		good
	RRPW	2-3 ft		many
	COLQ	0.5-2.5 ft		many
	COPU	1-2 ft		many
	LATH	12-14"		few
	MAYC	12"		moderate
	YENS	12-14"		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. 10-01-01: Onion harvested for storage. No yield data was collected.

Preharvest Desiccation of Onion - MSU Muck Farm

Project Code: WC 112-01-03 **Location: Laingsburg, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	ONION DESICCATION RATING 9-18-01	ONION DESICCATION RATING 10-01-01	WEED DESICCATION RATING 10-01-01
1	paraquat	2.5	L	0.5	PREH	7.3	9.3	7.3
	Silwet L-77		L	0.5%	PREH			
2	endothal	0.52	EC	1	PREH	7.0	8.7	3.3
	BRONC (AMS)		L	2.5%	PREH			
	Silwet L-77		L	0.5%	PREH			
3	diquat	2	L	0.5	PREH	6.0	9.7	8.0
	Silwet L-77		L	0.5%	PREH			
4	carfentrazone	40	DF	0.2	PREH	7.7	10.0	7.7
	Silwet L-77		L	0.5%	PREH			
5	carfentrazone	40	DF	0.2	PREH	8.7	10.0	8.3
	pelargonic acid		L	5%	PREH			
6	S141		L	8%	PREH	6.7	8.0	3.7
7	S143		L	8%	PREH	7.0	7.7	1.7
8	S143		L	8%	PREH	5.7	8.0	4.0
	amendment G		L	2%	PREH			
9	glufosinate	1.67	EC	0.44	PREH	6.7	9.0	6.3
	BRONC (AMS)		L	2.5%	PREH			
	Silwet L-77		L	0.5%	PREH			
10	untreated					4.3	7.7	1.7
LSD (P=.05)						1.80	1.14	2.41
Standard Deviation						1.05	0.66	1.41
CV						15.68	7.54	27.02

Weed Control in Pepper and Tomato - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni, William R. Chase
Crop: Pepper, Tomato **Variety: Karma, Jackpot** **Field or Block: 117**
Planting Method: Transplant **Planting Date: 5-31-01** **Harvest: see "Notes" below**
Spacing: 24 inches in row **Row Spacing: 36 inches**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long; 1 row pepper and 1 row tomato/plot

Soil Type: Capac Loam **OM: 1.5%** **pH: 7.5**
Sand: 51% **Silt: 24%** **Clay: 25%** **CEC: 8.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PPI	5-31	9:36am	58 F/ 54 F	dry	SE 3-5	47%	hazy	N
PRT	5-31	10:20am	61 F/ 55 F	dry	SE 2-4	43%	hazy	N
POT	5-31	11:40am	62 F/ 58 F	dry	SE 2-4	46%	90% cloud	N
PO1	7-13	10 am	63 F/ 65 F	damp	NE 4-6	65%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-31-01	Pepper	4-6"	6-8	good
	Tomato	2-4"	4-6	good
7-13-01	Pepper	4-8"	6-12	poor
	Tomato	8-14"	8-12	poor

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. Tomato and pepper stand is poor irrespective of treatment.
4. Harvest Dates: Tomato - 8-30-01 to 10-4-01 ; Pepper - 9-7-01 to 9-27-01.
5. This experiment suffered from very wet conditions in early June and very hot dry conditions in July and August. Plant development was very slow and yield very low.
6. Domain = flufenacet 24% + metribuzin 36%.

Weed Control in Pepper and Tomato - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER RATING 7-09-01	TOMATO RATING 7-09-01	GRFT RATING 7-09-01	COLQ RATING 7-09-01	WIRA RATING 7-09-01
1	trifluralin	4	EC	1	PPI	3.3	2.3	8.7	10.0	10.0
	metribuzin	75	DF	0.5	PPI					
2	s-metolachlor	7.6	EC	1.6	POT	2.7	2.0	10.0	10.0	9.7
3	s-metolachlor II	7.6	EC	1.6	POT	2.7	2.3	7.7	9.3	8.7
4	trifluralin	4	EC	1	PPI	2.7	3.0	10.0	10.0	9.7
	s-metolachlor	7.6	EC	1.6	POT					
5	flufenacet	60	DF	0.6	POT	4.0	3.7	10.0	10.0	10.0
6	flumioxazin	50	WP	0.05	PRT	3.0	4.3	7.7	10.0	10.0
7	clomazone	3	ME	0.5	PRT	4.3	2.0	8.7	10.0	10.0
8	Domain	60	DF	0.6	PRT	3.3	3.0	10.0	10.0	10.0
9	trifluralin	4	EC	1	PPI	3.0	3.3	5.7	9.7	9.7
	rimsulfuron	25	DF	0.031	PO1					
	NIS		L	0.5%	PO1					
10	trifluralin	4	EC	1	PPI	2.3	3.7	9.7	10.0	9.3
	halosulfuron	75	WG	0.024	PO1					
	NIS		L	0.5%	PO1					
11	trifluralin	4	EC	1	PPI	5.0	2.7	9.0	10.0	9.7
	pyridate	5	EC	0.94	PO1					
	NIS		L	0.5%	PO1					
12	trifluralin	4	EC	1	PPI	2.7	3.0	9.0	10.0	10.0
	Domain	60	DF	0.6	PO1					
13	trifluralin	4	EC	1	PPI	3.0	3.7	8.7	10.0	9.7
	metribuzin	75	DF	0.25	PO1					
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
14	napropamide	50	DF	2	POT	2.7	1.7	7.3	9.0	8.3
	sethoxydim	1.53	EC	0.19	PO1					
	NIS		L	0.5%	PO1					
15	untreated					5.0	2.7	6.7	7.0	7.0
LSD (P=.05)						2.56	1.85	4.33	2.35	2.36
Standard Deviation						1.53	1.11	2.59	1.40	1.41
CV						46.31	38.34	30.19	14.52	14.93

Weed Control in Pepper and Tomato - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	TOMATO YIELD KG/PLOT 8-30-01	TOMATO YIELD KG/PLOT 9-07-01	TOMATO YIELD KG/PLOT 9-13-01	TOMATO YIELD KG/PLOT 9-20-01
1	trifluralin	4	EC	1	PPI	0.53	0.68	0.69	2.27
	metribuzin	75	DF	0.5	PPI				
2	s-metolachlor	7.6	EC	1.6	POT	0.77	2.59	3.33	2.14
3	s-metolachlor II	7.6	EC	1.6	POT	0.06	1.35	1.63	1.07
4	trifluralin	4	EC	1	PPI	0.15	0.88	1.55	0.99
	s-metolachlor	7.6	EC	1.6	POT				
5	flufenacet	60	DF	0.6	POT	0.00	1.37	1.85	1.35
6	flumioxazin	50	WP	0.05	PRT	0.00	1.40	1.88	1.09
7	clomazone	3	ME	0.5	PRT	0.36	1.70	1.22	1.42
8	Domain	60	DF	0.6	PRT	0.59	1.38	1.33	2.09
9	trifluralin	4	EC	1	PPI	0.12	0.76	1.11	1.31
	rimsulfuron	25	DF	0.031	PO1				
	NIS		L	0.5%	PO1				
10	trifluralin	4	EC	1	PPI	0.36	1.41	1.52	1.50
	halosulfuron	75	WG	0.024	PO1				
	NIS		L	0.5%	PO1				
11	trifluralin	4	EC	1	PPI	0.31	0.89	1.62	1.91
	pyridate	5	EC	0.94	PO1				
	NIS		L	0.5%	PO1				
12	trifluralin	4	EC	1	PPI	0.36	1.67	1.47	2.15
	Domain	60	DF	0.6	PO1				
13	trifluralin	4	EC	1	PPI	0.51	1.23	2.20	1.95
	metribuzin	75	DF	0.25	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
14	napropamide	50	DF	2	POT	0.55	1.83	2.55	4.37
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
15	untreated					0.16	1.43	0.92	1.07
LSD (P=.05)						0.64	2.04	2.14	1.61
Standard Deviation						0.38	1.22	1.28	0.96
CV						118.66	88.99	77.18	54.36

Weed Control in Pepper and Tomato - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	TOMATO YIELD KG/PLOT 9-27-01	TOMATO YIELD KG/PLOT 10-04-01	TOMATO TOTAL YIELD KG/PLOT
1	trifluralin	4	EC	1	PPI	0.88	1.06	6.11
	metribuzin	75	DF	0.5	PPI			
2	s-metolachlor	7.6	EC	1.6	POT	1.47	0.99	11.29
3	s-metolachlor II	7.6	EC	1.6	POT	1.49	0.36	5.96
4	trifluralin	4	EC	1	PPI	0.79	1.73	6.08
	s-metolachlor	7.6	EC	1.6	POT			
5	flufenacet	60	DF	0.6	POT	0.05	0.79	5.41
6	flumioxazin	50	WP	0.05	PRT	1.03	0.52	5.92
7	clomazone	3	ME	0.5	PRT	0.98	1.05	6.73
8	Domain	60	DF	0.6	PRT	0.43	0.97	6.77
9	trifluralin	4	EC	1	PPI	1.03	1.97	6.31
	rimsulfuron	25	DF	0.031	PO1			
	NIS		L	0.5%	PO1			
10	trifluralin	4	EC	1	PPI	0.71	1.03	6.54
	halosulfuron	75	WG	0.024	PO1			
	NIS		L	0.5%	PO1			
11	trifluralin	4	EC	1	PPI	0.80	0.73	6.25
	pyridate	5	EC	0.94	PO1			
	NIS		L	0.5%	PO1			
12	trifluralin	4	EC	1	PPI	1.76	2.28	9.70
	Domain	60	DF	0.6	PO1			
13	trifluralin	4	EC	1	PPI	1.20	1.51	8.60
	metribuzin	75	DF	0.25	PO1			
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
14	napropamide	50	DF	2	POT	1.88	1.09	12.27
	sethoxydim	1.53	EC	0.19	PO1			
	NIS		L	0.5%	PO1			
15	untreated					0.75	0.97	5.30
LSD (P=.05)						1.75	1.29	6.77
Standard Deviation						1.05	0.77	4.04
CV						103.45	68.07	55.60

Weed Control in Pepper and Tomato - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER YIELD No./PLOT 9-07-01	PEPPER YIELD KG/PLOT 9-07-01	PEPPER YIELD No./PLOT 9-13-01	PEPPER YIELD KG/PLOT 9-13-01
1	trifluralin	4	EC	1	PPI	6.7	0.82	5.3	0.63
	metribuzin	75	DF	0.5	PPI				
2	s-metolachlor	7.6	EC	1.6	POT	5.3	0.71	4.7	0.57
3	s-metolachlor II	7.6	EC	1.6	POT	14.7	1.75	7.0	0.81
4	trifluralin	4	EC	1	PPI	11.7	1.65	9.0	1.16
	s-metolachlor	7.6	EC	1.6	POT				
5	flufenacet	60	DF	0.6	POT	5.3	0.75	9.0	1.08
6	flumioxazin	50	WP	0.05	PRT	11.3	1.50	5.0	0.66
7	clomazone	3	ME	0.5	PRT	1.7	0.20	2.3	0.28
8	Domain	60	DF	0.6	PRT	7.0	0.94	4.0	0.41
9	trifluralin	4	EC	1	PPI	2.3	0.33	9.7	1.13
	rimsulfuron	25	DF	0.031	PO1				
	NIS		L	0.5%	PO1				
10	trifluralin	4	EC	1	PPI	6.0	0.86	6.7	0.75
	halosulfuron	75	WG	0.024	PO1				
	NIS		L	0.5%	PO1				
11	trifluralin	4	EC	1	PPI	9.7	1.15	4.7	0.59
	pyridate	5	EC	0.94	PO1				
	NIS		L	0.5%	PO1				
12	trifluralin	4	EC	1	PPI	2.3	0.27	6.0	0.72
	Domain	60	DF	0.6	PO1				
13	trifluralin	4	EC	1	PPI	6.7	0.89	8.0	0.93
	metribuzin	75	DF	0.25	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
14	napropamide	50	DF	2	POT	9.7	1.67	6.0	0.79
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
15	untreated					4.0	0.51	2.3	0.27
LSD (P=.05)						9.77	1.35	7.42	0.90
Standard Deviation						5.84	0.81	4.44	0.54
CV						84.03	87.10	74.26	75.09

Weed Control in Pepper and Tomato - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	PEPPER YIELD No./PLOT 9-27-01	PEPPER YIELD KG/PLOT 9-27-01	PEPPER TOTAL YIELD No./PLOT	PEPPER TOTAL YIELD KG/PLOT
1	trifluralin	4	EC	1	PPI	5.3	0.61	17.3	2.07
	metribuzin	75	DF	0.5	PPI				
2	s-metolachlor	7.6	EC	1.6	POT	12.3	1.67	22.3	2.96
3	s-metolachlor II	7.6	EC	1.6	POT	6.0	0.73	27.7	3.29
4	trifluralin	4	EC	1	PPI	5.3	0.73	26.0	3.53
	s-metolachlor	7.6	EC	1.6	POT				
5	flufenacet	60	DF	0.6	POT	3.0	0.33	17.3	2.16
6	flumioxazin	50	WP	0.05	PRT	4.0	0.49	20.3	2.65
7	clomazone	3	ME	0.5	PRT	3.3	0.35	7.3	0.83
8	Domain	60	DF	0.6	PRT	6.3	0.73	17.3	2.09
9	trifluralin	4	EC	1	PPI	4.0	0.49	16.0	1.94
	rimsulfuron	25	DF	0.031	PO1				
	NIS		L	0.5%	PO1				
10	trifluralin	4	EC	1	PPI	5.0	0.61	17.7	2.21
	halosulfuron	75	WG	0.024	PO1				
	NIS		L	0.5%	PO1				
11	trifluralin	4	EC	1	PPI	8.3	1.01	22.7	2.75
	pyridate	5	EC	0.94	PO1				
	NIS		L	0.5%	PO1				
12	trifluralin	4	EC	1	PPI	10.0	1.19	18.3	2.17
	Domain	60	DF	0.6	PO1				
13	trifluralin	4	EC	1	PPI	4.3	0.48	19.0	2.30
	metribuzin	75	DF	0.25	PO1				
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
14	napropamide	50	DF	2	POT	8.7	1.17	24.3	3.63
	sethoxydim	1.53	EC	0.19	PO1				
	NIS		L	0.5%	PO1				
15	untreated					1.3	0.15	7.7	0.94
LSD (P=.05)						9.05	1.16	18.01	2.39
Standard Deviation						5.41	0.69	10.77	1.43
CV						92.92	97.00	57.43	60.44

Weed Control in Established Strawberry - HTRC

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

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Strawberry **Variety: Jewell** **Field or Block: 25**
Planting Method: Transplant **Planting Date: 4-21-98** **Harvest: see "Notes" below**
Spacing: Matted Row **Row Spacing: 6 ft** **Perennial Age: 3 years**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 64" wide x 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	RH	Sky	Dew
PRE	4-10	9 am	37 F/ 46 F	moist	NE 4-5	81%	100%cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-10-01	STBE	1-2"	1-3	fair
	QUGR	1-2"	many	few

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. Harvest Dates: 6-12-01 to 6-28-01.

Weed Control in Established Strawberry - HTRC

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

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE RATING 5-14-01	DOBG RATING 5-14-01	QUGR RATING 5-14-01	TLSW RATING 5-14-01	MWCH RATING 5-14-01
1	terbacil	80	WP	0.3	PRE	3.3	8.7	9.3	8.7	9.0
2	s-dimethenamid	6	EC	0.98	PRE	2.7	7.3	7.7	8.7	6.0
3	sulfentrazone	75	DF	.375	PRE	4.0	8.3	9.3	9.0	7.7
4	flumioxazin	50	WP	0.1	PRE	3.7	3.7	7.0	8.0	7.3
5	flumioxazin	50	WP	0.2	PRE	3.7	3.3	7.7	7.3	8.0
6	flumioxazin	50	WP	0.4	PRE	3.0	8.3	7.7	9.0	8.3
7	halosulfuron	75	WG	0.032	PRE	4.0	5.3	8.3	9.0	10.0
8	oxyfluorfen	2	EC	0.4	PRE	4.7	4.3	6.7	8.7	7.7
9	fomesafen	2	EC	0.4	PRE	2.3	4.0	5.3	9.3	9.7
10	carfentrazone	40	DF	0.008	PRE	3.3	4.3	8.7	8.7	8.3
	napropamide	50	DF	3	PRE					
11	untreated					2.7	2.7	4.0	5.3	3.7
LSD (P=.05)						1.88	5.42	3.15	2.44	3.54
Standard Deviation						1.10	3.18	1.85	1.43	2.08
CV						32.52	58.06	24.89	17.21	26.66

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE YIELD KG/PLOT 6-12-01	STBE YIELD KG/PLOT 6-18-01	STBE YIELD KG/PLOT 6-21-01	STBE YIELD KG/PLOT 6-25-01	STBE YIELD KG/PLOT 6-28-01	STBE TOTAL YIELD KG/PLOT
1	terbacil	80	WP	0.3	PRE	0.256	0.311	0.254	0.076	0.058	0.955
2	s-dimethenamid	6	EC	0.98	PRE	0.264	0.496	0.557	0.269	0.101	1.687
3	sulfentrazone	75	DF	.375	PRE	0.199	0.559	0.182	0.098	0.060	1.098
4	flumioxazin	50	WP	0.1	PRE	0.215	0.655	0.279	0.085	0.046	1.281
5	flumioxazin	50	WP	0.2	PRE	0.183	0.445	0.287	0.170	0.060	1.145
6	flumioxazin	50	WP	0.4	PRE	0.270	0.720	0.273	0.136	0.159	1.558
7	halosulfuron	75	WG	0.032	PRE	0.084	0.274	0.313	0.057	0.045	0.774
8	oxyfluorfen	2	EC	0.4	PRE	0.108	0.373	0.164	0.079	0.030	0.753
9	fomesafen	2	EC	0.4	PRE	0.195	0.655	0.593	0.158	0.038	1.638
10	carfentrazone	40	DF	0.008	PRE	0.358	0.628	0.345	0.113	0.078	1.522
	napropamide	50	DF	3	PRE						
11	untreated					0.243	0.702	0.134	0.160	0.048	1.287
LSD (P=.05)						0.24	0.40	0.26	0.14	0.07	0.71
Standard Deviation						0.14	0.23	0.15	0.08	0.04	0.41
CV						67.51	44.50	51.33	64.62	60.06	33.62

Weed Control in Established Strawberry - Onondaga

Project Code: WC 124-01-02 **Location: Onondaga, MI** **Cooperator: Don Gibbs**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Strawberry **Variety: Honeyoye** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 4-21-98** **Harvest: see "Notes"**
Spacing: Matted row **Row Spacing: 42"** **Perennial Age: 3 years**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 42" wide x 20 ft long

Soil Type: Sandy Loam **OM: 2.1%** **pH: 5.6**
Sand: 64% **Silt: 21%** **Clay: 15%** **CEC: 6.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
Late PRE	4-13	2:30pm	61 F/ 53 F	dry	NW 2-4	42%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-13-01	STBE	3-4"	many	good

Notes and Comments

1. Sprays applied with 2-nozzle shielded boom, 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. 4-13-01: Straw on soil; STBE has been covered with perforated plastic. Rows are solid mat already.
4. Harvest Dates: 6-7-01 to 6-18-01.

Weed Control in Established Strawberry - Onondaga

Project Code: WC 124-01-02 Location: Onondaga, MI Cooperator: Don Gibbs

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE RATING 5-14-01	STBE YIELD KG/PLOT 6-07-01	STBE YIELD KG/PLOT 6-11-01	STBE YIELD KG/PLOT 6-15-01	STBE YIELD KG/PLOT 6-18-01	STBE TOTAL YIELD KG/PLOT
1	terbacil	80	WP	0.3	PRE	1.7	2.99	3.68	4.69	1.14	12.50
2	s-dimethenamid	6	EC	0.98	PRE	1.7	2.28	4.25	5.98	2.04	14.55
3	sulfentrazone	75	DF	.375	PRE	2.3	3.24	3.79	3.97	1.23	12.23
4	flumioxazin	50	WP	0.1	PRE	2.0	1.93	4.19	5.15	1.52	12.79
5	flumioxazin	50	WP	0.2	PRE	1.3	3.55	3.89	4.45	1.54	13.43
6	flumioxazin	50	WP	0.4	PRE	1.0	4.24	4.51	4.27	0.91	13.94
7	halosulfuron	75	WG	0.032	PRE	7.3	0.08	0.18	0.41	0.32	0.99
8	oxyfluorfen	2	EC	0.4	PRE	2.7	3.60	3.34	3.71	0.75	11.40
9	fomesafen	2	EC	0.4	PRE	2.7	2.24	3.21	4.26	0.94	10.65
10	carfentrazone	40	DF	0.008	PRE	1.7	2.79	4.17	5.41	0.96	13.33
	napropamide	50	DF	3	PRE						
11	untreated					1.0	2.76	4.65	5.14	1.38	13.93
LSD (P=.05)						1.06	1.38	1.71	1.62	0.83	2.80
Standard Deviation						0.63	0.81	1.00	0.95	0.48	1.64
CV						27.15	30.08	27.73	22.17	42.19	13.94

Weed Control in New Strawberry Planting - HTRC

Project Code: WC 124-01-03 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Strawberry **Variety: Mira** **Field or Block: 25**
Planting Method: Transplant **Planting Date: 4-30-01** **Harvest: N/A**
Spacing: 2 ft **Row Spacing: 6 ft**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide x 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	RH	Sky	Dew
PRE	5-2	7:45 am	64 F/ 57 F	moist	SW 4-6	50%	hazy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

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.

Weed Control in New Strawberry Planting - HTRC

Project Code: WC 124-01-03 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	STBE RATING 5-14-01	STBE RATING 6-19-01	STBE No. LIVE PLANTS 6-19-01	MWCH RATING 6-19-01
1	terbacil	80	WP	0.3	PRE	2.7	1.3	15.3	8.7
2	s-dimethenamid	6	EC	0.8	PRE	2.7	4.0	15.7	7.7
3	pendimethalin	3.3	EC	1	PRE	2.3	2.3	14.0	7.0
4	napropamide	50	DF	3	PRE	2.3	2.3	13.3	7.0
5	flumioxazin	50	WP	0.2	PRE	2.3	4.0	12.0	7.7
6	flumioxazin	50	WP	0.4	PRE	4.7	10.0	1.0	10.0
7	flufenacet	60	DF	0.5	PRE	3.0	2.7	15.7	7.7
8	flufenacet	60	DF	1	PRE	2.7	2.7	16.3	7.0
9	sulfentrazone	75	DF	0.25	PRE	3.3	4.0	12.0	8.7
10	untreated					2.3	1.0	17.0	7.7
LSD (P=.05)						1.59	1.42	3.21	2.84
Standard Deviation						0.93	0.83	1.87	1.66
CV						32.79	24.04	14.12	20.97

Apple Herbicide Trial – CHES - 1

Location: Clarksville, MI

Personnel: Jerome Hull
Crop: Apple **Variety: Delicious, McIntosh, Empire**
Planting Method: N/A **Planting Date: 1981** **Harvest: N/A**
Spacing: 15 ft in row **Row Spacing: 20 ft** **Perennial Age: 20 years**
Tillage Type: None **Study Design: RCBD** **Replications: 6**
Plot Size: 6 ft wide * 15 ft long, 2 trees per plot.

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

Herbicide Application Information

Date	Air/Soil T	Wind	Sky
5-10	61 F	WSW10-12	100%cloud
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 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. **Treatments 1 and 19 were applied a second time on 6-28-01; treatment 2 was treated with 1 lb/A Roundup Ultra on 6-28-01.**
4. **5-10-01: Roundup Ultra 1 lb and Stinger 0.25 lb were included with all treatments.**
5. **Vegetation present at time of application: dandelion, quackgrass, Canada thistle, chickweed, groundsel.**
6. **Apple stage at time of application : petal fall.**

_____
_____
_____
_____

Apple Herbicide Trial – CHES - 1

Location: Clarksville, MI

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	OVERALL RATING 8-07-01
1	glyphosate	4	L	1	7.8
2	untreated				1.0
3	flufenacet	60	DF	0.68	7.2
	azafenidin	80	DF	0.75	
4	flufenacet	60	DF	0.68	7.2
	simazine	90	DF	3	
5	BAYFOE 5665	60	DF	0.22	9.0
6	BAYFOE 5665	60	DF	0.22	8.3
	flufenacet	80	DF	0.68	
7	terbacil	80	WP	0.75	8.5
	napropamide	50	DF	2	
8	simazine	90	DF	2	7.7
	napropamide	50	DF	2	
9	azafenidin	80	DF	0.5	8.5
	napropamide	50	DF	2	
10	simazine	90	DF	3	7.3
11	diuron	80	DF	2	8.7
12	diuron	80	DF	2	9.2
	norflurazon	80	DF	2	
13	simazine	90	DF	2.5	9.3
	norflurazon	80	DF	2	
14	azafenidin	80	DF	0.5	8.0
	norflurazon	80	DF	2	
15	azafenidin	80	DF	0.5	8.3
	oryzalin	4	AS	2	
16	azafenidin	80	DF	0.5	8.7
	simazine	90	DF	2	
17	terbacil	80	WP	1	9.7
	diuron	80	DF	2	
18	azafenidin	80	DF	0.5	9.0
	diuron	80	DF	2	
19	azafenidin	80	DF	0.5	8.8
20	azafenidin	80	DF	0.75	8.8
21	azafenidin	80	DF	1	8.0
LSD (P=.05)					0.96
Standard Deviation					0.84
CV					10.48

Apple Herbicide Trial – CHES - 2

Location: Clarksville, MI

Personnel: Jerome Hull
Crop: Apple **Variety: Delicious, McIntosh, Empire**
Planting Method: N/A **Planting Date: 1981** **Harvest: N/A**
Spacing: 15 ft in row **Row Spacing: 20 ft** **Perennial Age: 20 years**
Tillage Type: None **Study Design: RCBD** **Replications: 6**
Plot Size: 6 ft wide * 15 ft long, 2 trees per plot.

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

Herbicide Application Information

Date	Air/Soil T	Wind	Sky
5-10	61 F	WSW10-12	100%cloud
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 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. **Treatments 1 and 19 were applied on 6-28-01; treatment 2 was treated with Roundup Ultra at 1 lb/A on 6-28-01.**
4. **Roundup Ultra 1 lb and Stinger 0.25 lb were included with all treatments.**
5. **Vegetation present at time of application: dandelion, quackgrass, Canada thistle, chickweed, groundsel.**
6. **Apple stage at time of application : petal fall.**

_____
_____
_____
_____
_____

Apple Herbicide Trial – CHES - 2

Location: Clarksville, MI

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	OVERALL RATING 8-07-01
1	glyphosate	4	L	1	7.0
2	untreated				6.3
3	flufenacet	60	DF	0.68	6.5
	azafenidin	80	DF	0.75	
4	flufenacet	60	DF	0.68	5.8
	simazine	90	DF	3	
5	BAYFOE 5665	60	DF	0.22	7.7
6	BAYFOE 5665	60	DF	0.22	7.3
	flufenacet	80	DF	0.68	
7	terbacil	80	WP	0.75	8.0
	napropamide	50	DF	2	
8	simazine	90	DF	2	6.8
	napropamide	50	DF	2	
9	azafenidin	80	DF	0.5	8.5
	napropamide	50	DF	2	
10	simazine	90	DF	3	6.7
11	diuron	80	DF	2	8.2
12	diuron	80	DF	2	8.7
	norflurazon	80	DF	2	
13	simazine	90	DF	2.5	8.8
	norflurazon	80	DF	2	
14	azafenidin	80	DF	0.5	7.5
	norflurazon	80	DF	2	
15	azafenidin	80	DF	0.5	7.5
	oryzalin	4	AS	2	
16	azafenidin	80	DF	0.5	8.3
	simazine	90	DF	2	
17	terbacil	80	WP	1	9.3
	diuron	80	DF	2	
18	azafenidin	80	DF	0.5	8.3
	diuron	80	DF	2	
19	azafenidin	80	DF	0.5	8.7
20	azafenidin	80	DF	0.75	8.7
21	azafenidin	80	DF	1	8.3
LSD (P=.05)					1.29
Standard Deviation					1.13
CV					14.55

Apple Herbicide Demonstration - 1

Location: Hartland, MI Cooperator: Alan Spicer

Personnel: Jerome Hull, Robert Tritten
Crop: Apple Variety: Jonagold, Honeycrisp
Planting Method: N/A Planting Date: 1995 Harvest: N/A
Spacing: _____ Row Spacing: _____ Perennial Age: 6 years
Tillage Type: None Study Design: RCBD Replications: 3
Plot Size: 6 ft wide * 14 ft long

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

Herbicide Application Information

Date	Air/Soil T	Wind	Sky
5-12	62 F	WNW 7-10	clear

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 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. Glyphosate 1 lb + Stinger 0.25 lb were included with all treatments.
4. 6-22-01: Treatment 3 was repeated without adding Roundup or Stinger.
5. Vegetation present at application: dandelion, quackgrass, sorrel, clover, Virginia creeper, bindweed, milkweed, redroot pigweed.

Apple Herbicide Demonstration - 1

Location: Hartland, MI **Cooperator: Alan Spicer**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	OVERALL RATING 8-28-01
1	azafenidin	80	DF	1	9.0
2	azafenidin	80	DF	0.75	8.7
3	azafenidin	80	DF	0.5	9.0
4	azafenidin	80	DF	0.5	8.0
	diuron	80	DF	2	
5	terbacil	80	WP	1	7.7
	diuron	80	DF	2	
6	simazine	90	DF	2.5	7.3
	oryzalin	4	AS	2	
7	simazine	90	DF	2.5	4.7
	norflurazon	80	DF	2	
8	simazine	90	DF	2.5	7.3
	napropamide	50	DF	2	
9	azafenidin	80	WG	0.5	8.0
	napropamide	50	DF	2	
10	azafenidin	80	DF	0.5	8.3
	oryzalin	4	AS	2	
LSD (P=.05)					1.43
Standard Deviation					0.84
CV					10.73

Apple Herbicide Demonstration - 2

Location: Hartland, MI **Cooperator: Alan Spicer**

Personnel: Jerome Hull, Robert Tritten
Crop: Apple **Variety: Jonagold, Honeycrisp**
Planting Method: N/A **Planting Date: 1996** **Harvest: N/A**
Spacing: 20 ft **Row Spacing: 14 ft** **Perennial Age: 6 years**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide * 14 ft long

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

Herbicide Application Information

Date	Air/Soil T	Wind	Sky
10-27	59 F	W 3-5	clear

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 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. **Glyphosate 1 lb was included with all treatments.**
4. **Vegetation present at application: dandelion, quackgrass, sorrel, clover, mallow, plantain, cockle, cranesbill, lambsquarters, and crabgrass.**

Apple Herbicide Demonstration - 2

Location: Hartland, MI **Cooperator: Alan Spicer**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	OVERALL RATING 8-28-01
1	azafenidin	80	DF	0.75	8.3
2	azafenidin	80	DF	1	8.3
3	azafenidin	80	DF	0.5	7.7
4	azafenidin	80	DF	0.5	6.0
	diuron	80	DF	2	
5	terbacil	80	WP	1	5.3
	diuron	80	DF	2	
6	simazine	90	DF	0.5	8.3
	azafenidin	80	DF	0.5	
7	simazine	90	DF	2.5	7.7
	norflurazon	80	DF	2	
8	simazine	90	DF	2.5	5.3
	napropamide	50	DF	2	
9	simazine	90	DF	2.5	7.3
	oryzalin	4	AS	2	
10	terbacil	80	WP	1	6.0
	oryzalin	4	AS	2	
11	clopyralid	3	EC	1	5.3
12	azafenidin	80	DF	0.5	7.7
	norflurazon	80	DF	2	
13	azafenidin	80	DF	0.5	9.0
	oryzalin	4	AS	2	
14	azafenidin	80	DF	0.5	8.3
	napropamide	50	DF	2	
LSD (P=.05)					1.39
Standard Deviation					0.83
CV					11.56

Weed Control in Mature Blueberry

Project Code: WC 127-01-02 **Location: Covert, MI**
Cooperator: Jim Riccioni

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Dave Trinka
Crop: Blueberry **Variety: Rubel** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 1965** **Harvest: N/A**
Spacing: 5 ft **Row Spacing: 19 ft** **Perennial Age: 35 years**
Tillage Type: Roto-tilled **Study Design: RCBD** **Replications: 3**
Plot Size: 10 ft wide x 33 ft long

Soil Type: Loamy Sand **OM: 3.2%** **pH: 4.7**
Sand: 86% **Silt: 8%** **Clay: 6%** **CEC: 13.9**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-7	11:45am	75 F/ 63 F	dry	S 2-4	58%	hazy	N
PO1	8-14	12:15pm	73 F/ 66 F	dry	SE 2-4	40%	5% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-7-01	BLBE	6-8'	many	25% bloom
	mustard	4-6"	10	moderate
	henbit	6-8"	10-20	moderate
	COCW	3-5"	many	moderate
	FIPA	4-6"	8-10	moderate
8-14-01	BLBE			

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. **5-7-01: soil between rows had been roto-tilled recently.**
4. **PRE on/about May 1; PO1 after harvest.**
5. **Ratings 30, 60, 90 days after application.**

Weed Control in Mature Blueberry

Project Code: WC 127-01-02 **Location: Covert, MI**
Cooperator: Jim Riccioni

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	BLBE RATING 6-12-01	QUGR RATING 6-12-01	YENS RATING 6-12-01	LATH RATING 6-12-01	BLBE RATING 8-13-01	BYGR RATING 8-13-01
1	flumioxazin	50	WP	0.375	PRE	1.0	6.0	8.3	10.0	1.0	10.0
	glyphosate	4	L	1	PRE						
	flumioxazin	50	WP	0.375	PO1						
	glyphosate	4	L	1	PO1						
2	flumioxazin	50	WP	0.75	PRE	1.0	4.7	6.3	10.0	1.0	10.0
	glyphosate	4	L	1	PRE						
	flumioxazin	50	WP	0.75	PO1						
	glyphosate	4	L	1	PO1						
3	diuron	80	DF	2	PRE	1.0	8.3	8.3	10.0	1.0	10.0
	terbacil	80	WP	1.6	PRE						
	glyphosate	4	L	1	PRE						
	diuron	80	DF	2	PO1						
	terbacil	80	WP	1.6	PO1						
	glyphosate	4	L	1	PO1						
4	simazine	90	DF	4	PRE	1.0	8.7	8.3	10.0	1.0	10.0
	glyphosate	4	L	1	PRE						
	simazine	90	DF	4	PO1						
	glyphosate	4	L	1	PO1						
5	diuron	80	DF	3	PRE	1.0	6.7	6.0	8.0	1.0	10.0
	oryzalin	4	AS	2	PRE						
	glyphosate	4	L	1	PRE						
	diuron	80	DF	3	PO1						
	oryzalin	4	AS	2	PO1						
	glyphosate	4	L	1	PO1						
6	norflurazon	80	DF	2	PRE	1.0	6.3	5.0	7.0	1.0	10.0
	glyphosate	4	L	1	PRE						
	norflurazon	80	DF	2	PO1						
	glyphosate	4	L	1	PO1						
7	azafenidin	80	DF	0.75	PRE	1.0	7.0	7.0	9.3	1.0	10.0
	glyphosate	4	L	1	PRE						
	azafenidin	80	DF	0.75	PO1						
	glyphosate	4	L	1	PO1						
8	azafenidin	80	DF	1.5	PRE	1.0	9.3	6.7	10.0	1.3	10.0
	glyphosate	4	L	1	PRE						
	azafenidin	80	DF	1.5	PO1						
	glyphosate	4	L	1	PO1						
9	oxyfluorfen	2	EC	1	PRE	1.0	9.7	5.7	10.0	1.0	10.0
	oxyfluorfen	2	EC	1	PO1						
10	hexazinone	2	L	1	PRE	1.0	9.3	6.3	10.0	1.0	10.0
	hexazinone	2	L	1	PO1						
11	diuron	80	DF	3	PRE	1.0	9.3	8.7	8.3	1.3	9.3
	clopyralid	3	EC	0.188	PO1						
	sethoxydim	1.53	EC	0.38	PO1						
	Silwet L-77		L	0.5%	PO1						
12	diuron	80	DF	3	PRE	1.0	9.7	8.7	4.0	1.0	7.0
	glyphosate	4	L	1	PRE						
	glyphosate	4	L	2	PO1						
13	untreated				PRE	1.0	8.7	5.7	1.0	1.0	5.5
	glufosinate	1	L	1	PO1						
LSD (P=.05)						0.00	3.59	4.16	3.10	0.37	3.64
Standard Deviation						0.00	2.13	2.47	1.84	0.22	2.06
CV						0.00	26.68	35.24	22.20	20.62	22.13

Weed Control in Mature Blueberry

Project Code: WC 127-01-02 **Location: Covert, MI**
Cooperator: Jim Riccioni

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	GIFT RATING 8-13-01	LACG RATING 8-13-01	YENS RATING 8-13-01	FIPA RATING 8-13-01	LATH RATING 8-13-01	MATA RATING 8-13-01	RRPW RATING 8-13-01
1	flumioxazin	50	WP	0.375	PRE	10.0	8.3	3.7	8.3	9.3	7.7	9.7
	glyphosate	4	L	1	PRE							
	flumioxazin	50	WP	0.375	PO1							
	glyphosate	4	L	1	PO1							
2	flumioxazin	50	WP	0.75	PRE	10.0	6.7	5.7	9.3	10.0	7.3	10.0
	glyphosate	4	L	1	PRE							
	flumioxazin	50	WP	0.75	PO1							
	glyphosate	4	L	1	PO1							
3	diuron	80	DF	2	PRE	10.0	9.0	8.7	10.0	10.0	8.0	8.7
	terbacil	80	WP	1.6	PRE							
	glyphosate	4	L	1	PRE							
	diuron	80	DF	2	PO1							
	terbacil	80	WP	1.6	PO1							
	glyphosate	4	L	1	PO1							
4	simazine	90	DF	4	PRE	8.0	6.0	2.0	10.0	7.7	6.7	5.0
	glyphosate	4	L	1	PRE							
	simazine	90	DF	4	PO1							
	glyphosate	4	L	1	PO1							
5	diuron	80	DF	3	PRE	10.0	4.3	5.0	10.0	4.0	9.0	7.7
	oryzalin	4	AS	2	PRE							
	glyphosate	4	L	1	PRE							
	diuron	80	DF	3	PO1							
	oryzalin	4	AS	2	PO1							
	glyphosate	4	L	1	PO1							
6	norflurazon	80	DF	2	PRE	10.0	8.0	4.3	9.7	5.3	8.0	5.7
	glyphosate	4	L	1	PRE							
	norflurazon	80	DF	2	PO1							
	glyphosate	4	L	1	PO1							
7	azafenidin	80	DF	0.75	PRE	10.0	10.0	8.3	10.0	9.0	7.7	10.0
	glyphosate	4	L	1	PRE							
	azafenidin	80	DF	0.75	PO1							
	glyphosate	4	L	1	PO1							
8	azafenidin	80	DF	1.5	PRE	10.0	9.3	9.3	9.3	9.7	8.7	10.0
	glyphosate	4	L	1	PRE							
	azafenidin	80	DF	1.5	PO1							
	glyphosate	4	L	1	PO1							
9	oxyfluorfen	2	EC	1	PRE	5.6	3.3	1.7	6.3	6.3	4.3	1.7
	oxyfluorfen	2	EC	1	PO1							
10	hexazinone	2	L	1	PRE	8.6	6.0	7.0	8.0	8.7	7.7	4.3
	hexazinone	2	L	1	PO1							
11	diuron	80	DF	3	PRE	10.0	7.3	5.0	8.3	4.3	7.3	5.3
	clopyralid	3	EC	0.188	PO1							
	sethoxydim	1.53	EC	0.38	PO1							
	Silwet L-77		L	0.5%	PO1							
12	diuron	80	DF	3	PRE	9.3	5.0	5.3	7.7	2.7	8.0	3.3
	glyphosate	4	L	1	PRE							
	glyphosate	4	L	2	PO1							
13	untreated				PRE	5.7	1.7	3.0	6.0	2.3	5.3	1.0
	glufosinate	1	L	1	PO1							
LSD (P=.05)						3.35	3.98	3.11	3.20	4.26	3.80	3.55
Standard Deviation						1.97	2.36	1.85	1.90	2.53	2.26	2.11
CV						21.92	36.12	34.78	21.82	36.78	30.65	33.26

Preemergence Weed Control in Blueberry - SWMREC

Project Code: WC 127-01-01

Personnel: Eric Hanson, Bernard H. Zandstra, Joseph G. Masabni
Crop: Blueberry **Variety: Bluecrop**
Planting Method: Transplant **Planting Date: 1992** **Harvest: N/A**
Spacing: 10 ft **Row Spacing: 4 ft** **Perennial Age: 10 years**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 4**
Plot Size: 4 ft wide x 60 ft long

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

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	4-25	7:00 pm	60 F/	moist	Light	30%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 20 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.

Preemergence Weed Control in Blueberry - SWMREC

Project Code: WC 127-01-01

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 6-18-01	LACG RATING 6-18-01	COCW RATING 6-18-01	MATE RATING 6-18-01
1	simazine	90	DF	2	PRE	6.5	5.0	7.0	4.5
2	norflurazon	80	DF	2	PRE	4.3	8.8	4.8	2.8
3	simazine	90	DF	2	PRE	9.3	10.0	9.5	10.0
	terbacil	80	WP	1	PRE				
4	diuron	80	DF	2	PRE	9.8	10.0	10.0	10.0
	terbacil	80	WP	1	PRE				
5	norflurazon	80	DF	2	PRE	7.5	7.5	6.8	8.5
	terbacil	80	WP	1	PRE				
6	simazine	90	DF	2	PRE	5.5	10.0	6.3	7.8
	oryzalin	4	AS	2	PRE				
7	norflurazon	80	DF	2	PRE	4.5	10.0	4.8	5.8
	oryzalin	4	AS	2	PRE				
8	azafenidin	80	DF	0.75	PRE	5.5	10.0	5.0	4.3
9	azafenidin	80	DF	1.5	PRE	8.0	10.0	8.5	5.0
10	Untreated					2.3	3.5	3.8	3.3
LSD (P=.05)						2.05	2.12	2.75	2.10
Standard Deviation						1.41	1.46	1.89	1.45
CV						22.41	17.22	28.59	23.46

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	OVERALL RATING 7-16-01	LACG RATING 7-16-01	COCW RATING 7-16-01	CORW RATING 7-16-01	DAND RATING 7-16-01	MATE RATING 7-16-01	RRPW RATING 7-16-01
1	simazine	90	DF	2	PRE	5.5	5.3	8.8	9.5	6.5	5.0	6.5
2	norflurazon	80	DF	2	PRE	4.3	8.5	7.0	9.3	5.5	4.8	9.5
3	simazine	90	DF	2	PRE	7.0	8.5	9.8	10.0	7.0	10.0	8.0
	terbacil	80	WP	1	PRE							
4	diuron	80	DF	2	PRE	8.5	8.8	10.0	10.0	9.5	10.0	9.3
	terbacil	80	WP	1	PRE							
5	norflurazon	80	DF	2	PRE	6.5	6.3	7.8	10.0	8.3	9.8	6.0
	terbacil	80	WP	1	PRE							
6	simazine	90	DF	2	PRE	5.5	9.3	10.0	9.8	5.3	6.0	9.5
	oryzalin	4	AS	2	PRE							
7	norflurazon	80	DF	2	PRE	5.5	7.0	8.0	8.5	6.0	6.3	10.0
	oryzalin	4	AS	2	PRE							
8	azafenidin	80	DF	0.75	PRE	5.8	9.8	4.8	9.8	5.8	3.8	9.8
9	azafenidin	80	DF	1.5	PRE	6.8	10.0	7.3	10.0	6.5	5.8	10.0
10	Untreated					2.3	4.5	7.5	5.8	5.0	4.5	10.0
LSD (P=.05)						2.39	2.60	2.15	2.16	3.05	2.47	2.34
Standard Deviation						1.65	1.79	1.48	1.49	2.10	1.70	1.61
CV						28.69	23.02	18.35	16.10	32.23	25.93	18.25

Weed Control in Cherry - HTRC

Project Code: WC 128-01-01 **Location: East Lansing, MI**

Personnel: Bernard H. Zandstra, Joseph G. Masabni
Crop: Cherry **Variety: Montmorency** **Field or Block: 15-16**
Planting Method: Transplant **Planting Date: May 1998** **Harvest: N/A**
Spacing: 10 ft **Row Spacing: 15 ft** **Perennial Age: 13 years**
Tillage Type: None **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	RH	Sky	Dew
PRE	5-2	9 am	67 F/ 57 F	moist	SW 6-8	58%	clear	N
PO1	5-23	1:15pm	62 F/ 57 F	dry	SW 6-8	50%	60% cloud	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-2-01	Cherry	Full Bloom		Good
	DAND	bloom	many	few
	LACG	3-5"	many	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.

Weed Control in Cherry - HTRC

Project Code: WC 128-01-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CHERRY RATING 5-17-01	QUGR RATING 5-17-01	WIGR RATING 5-17-01	CLOVER RATING 5-17-01	DAND RATING 5-17-01	WICA RATING 5-17-01
1	azafenidin	80	DF	0.75	PRE	1.0	9.7	10.0	9.7	10.0	9.0
	glyphosate	4	L	1	PRE						
2	azafenidin	80	DF	1.5	PRE	1.3	10.0	10.0	10.0	10.0	9.3
	glyphosate	4	L	1	PRE						
3	simazine	90	DF	4	PRE	1.0	9.0	6.3	4.0	8.7	4.3
	glyphosate	4	L	1	PRE						
4	flumioxazin	50	WP	0.4	PRE	2.0	9.0	7.0	7.0	10.0	6.7
	NIS		L	0.5%	PRE						
5	simazine	90	DF	2	PRE	1.7	8.0	5.7	7.0	9.0	7.0
	carfentrazone	40	DF	0.02	PRE						
	COC		L	1%	PRE						
	carfentrazone	40	DF	0.02	PO1						
	COC		L	1%	PO1						
6	simazine	90	DF	2	PRE	1.0	6.3	5.0	6.0	5.3	6.0
	carfentrazone	40	DF	0.02	PO1						
	glyphosate	4	L	0.5	PO1						
	AMS	100	SP	2.5	PO1						
7	simazine	90	DF	2	PRE	1.0	8.0	3.7	3.3	5.7	1.7
	carfentrazone	40	DF	0.02	PO1						
	glyphosate	4	L	1	PO1						
	AMS	100	SP	2.5	PO1						
8	untreated				PRE	1.0	6.0	6.0	5.7	6.3	4.3
	paraquat	2.5	L	1	PO1						
	NIS		L	0.5%	PO1						
LSD (P=.05)						0.75	3.72	4.92	5.89	4.13	5.13
Standard Deviation						0.43	2.12	2.81	3.36	2.36	2.93
CV						34.36	25.73	41.86	51.10	28.99	48.46

Weed Control in Cherry - HTRC

Project Code: WC 128-01-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CHERRY RATING 6-08-01	QUGR RATING 6-08-01	DAND RATING 6-08-01	WICA RATING 6-08-01
1	azafenidin	80	DF	0.75	PRE	1.0	10.0	10.0	9.0
	glyphosate	4	L	1	PRE				
2	azafenidin	80	DF	1.5	PRE	1.0	10.0	10.0	9.3
	glyphosate	4	L	1	PRE				
3	simazine	90	DF	4	PRE	1.0	7.3	9.3	4.3
	glyphosate	4	L	1	PRE				
4	flumioxazin	50	WP	0.4	PRE	1.0	8.3	8.3	3.0
	NIS		L	0.5%	PRE				
5	simazine	90	DF	2	PRE	1.3	9.3	9.7	9.3
	carfentrazone	40	DF	0.02	PRE				
	COC		L	1%	PRE				
	carfentrazone	40	DF	0.02	PO1				
	COC		L	1%	PO1				
6	simazine	90	DF	2	PRE	1.0	8.7	9.7	10.0
	carfentrazone	40	DF	0.02	PO1				
	glyphosate	4	L	0.5	PO1				
	AMS	100	SP	2.5	PO1				
7	simazine	90	DF	2	PRE	1.0	9.3	10.0	9.0
	carfentrazone	40	DF	0.02	PO1				
	glyphosate	4	L	1	PO1				
	AMS	100	SP	2.5	PO1				
8	untreated				PRE	1.0	9.7	10.0	10.0
	paraquat	2.5	L	1	PO1				
	NIS		L	0.5%	PO1				
LSD (P=.05)						0.36	2.55	1.23	2.69
Standard Deviation						0.20	1.46	0.70	1.54
CV						19.60	16.03	7.30	19.19

Weed Control in Cherry - HTRC

Project Code: WC 128-01-01 **Location: East Lansing, MI**

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	CHERRY RATING 7-12-01	QUGR RATING 7-12-01	CLOVER RATING 7-12-01	WICA RATING 7-12-01
1	azafenidin	80	DF	0.75	PRE	1.0	10.0	9.0	5.7
	glyphosate	4	L	1	PRE				
2	azafenidin	80	DF	1.5	PRE	1.0	10.0	9.0	6.7
	glyphosate	4	L	1	PRE				
3	simazine	90	DF	4	PRE	1.0	9.0	7.3	4.7
	glyphosate	4	L	1	PRE				
4	flumioxazin	50	WP	0.4	PRE	1.0	9.3	6.7	2.0
	NIS		L	0.5%	PRE				
5	simazine	90	DF	2	PRE	1.0	9.7	8.7	8.0
	carfentrazone	40	DF	0.02	PRE				
	COC		L	1%	PRE				
	carfentrazone	40	DF	0.02	PO1				
	COC		L	1%	PO1				
6	simazine	90	DF	2	PRE	1.0	9.0	9.3	9.7
	carfentrazone	40	DF	0.02	PO1				
	glyphosate	4	L	0.5	PO1				
	AMS	100	SP	2.5	PO1				
7	simazine	90	DF	2	PRE	1.0	9.0	9.7	9.7
	carfentrazone	40	DF	0.02	PO1				
	glyphosate	4	L	1	PO1				
	AMS	100	SP	2.5	PO1				
8	untreated				PRE	1.0	9.3	7.3	9.0
	paraquat	2.5	L	1	PO1				
	NIS		L	0.5%	PO1				
LSD (P=.05)						0.00	1.71	3.83	2.16
Standard Deviation						0.00	0.98	2.19	1.23
CV						0.00	10.40	26.12	17.81

Weed Control in Christmas Trees - Hart

Project Code: WC 129-01-01 **Location: Hart, MI**
Cooperator: Slocum Bros.

Personnel: Bernard Zandstra, Joseph Masabni, Jill O'Donnell, Norm Myers
Crop: Fraser Fir **Variety: N/A** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 2000** **Harvest: N/A**
Spacing: 5 ft **Row Spacing: 5 ft** **Perennial Age: 1 year**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 5.3 ft wide * 40 ft long

Soil Type: Spinks-Benona Sand **OM: 0.8%** **pH: 6.4**
Sand: 92% **Silt: 3%** **Clay: 5%** **CEC: 2.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PRE	4-27	12:30pm	63 F/ 55 F	dry	NE 2-4	30%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
4-27-01	Fraser Fir	1.5-2 ft	many	good

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. **This trial was very dry during July and August, so no further weed ratings were taken. Several fir trees died from heat/moisture stress**

Weed Control in Christmas Trees - Hart

Project Code: WC 129-01-01 **Location: Hart, MI**
Cooperator: Slocum Bros.

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	FIR RATING 6-14-01	WEED CONTROL RATING 6-14-01
1	simazine	90	DF	1	PRE	1.3	4.7
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
2	simazine	90	DF	2	PRE	2.0	6.0
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
3	simazine	90	DF	3	PRE	1.3	7.3
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
4	azafenidin	80	DF	0.5	PRE	2.0	6.3
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
5	azafenidin	80	DF	1	PRE	2.0	5.7
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
6	flumioxazin	50	WP	0.4	PRE	2.0	5.3
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
7	flumioxazin	50	WP	0.6	PRE	2.3	4.3
	quizalofop	0.88	L	0.08	PRE		
	COC		L	1%	PRE		
8	untreated					2.7	5.0
LSD (P=.05)						1.33	2.27
Standard Deviation						0.76	1.29
CV						38.80	23.16

Postemergence Inula Control in Hosta

Project Code: WC 130-01-01 **Location: Walters Gardens, Zeeland, MI**
Cooperator: Jeff Westendorp

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Tom Dudek
Crop: Hosta **Variety: N/A** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: 1999** **Harvest: N/A**
Spacing: 6" **Row Spacing: 28"**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: irregular

Soil Type: Tedrow Fine Sand **OM: 0.9%** **pH: 6.1**
Sand: 86% **Silt: 7%** **Clay: 7%** **CEC: 2.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	Wet/Dry	RH	Sky	Dew
PO1	7-24	2 pm	87 F/ 87 F	damp	SW 1-3	-	70%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-24-01	Hosta	12"	many	good
	Inula britannica	4-8"	many	random
	Inula salicina	18-24"	many	random

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. **Herbicide trade and common names:**
   Redeem R+P = triclopyr 33% + clopyralid 12%; Curtail M - clopyralid 5% + MCPA 43.4%; Distinct - diflufenzopyr 20% + dicamba 50%.
4. **Location: Lloyd Hoffman Farm, Block 1, 137th Ave, between 43rd and 47th St, Hamilton, MI.**

Postemergence Inula Control in Hosta

Project Code: WC 130-01-01 **Location: Walters Gardens, Zeeland, MI**
Cooperator: Jeff Westendorp

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	HOSTA RATING 8-16-01	INULA BRITANNICA RATING 8-16-01	INULA SALICINA RATING 8-16-01	INULA BRITANNICA RATING 9-06-01	INULA SALICINA RATING 9-06-01
1	triclopyr	3	SC	2	PO1	1.0	10.0	8.0	10.0	10.0
	Silwet L-77		L	0.5%	PO1					
2	dicamba	4	L	2	PO1	8.0	9.0	8.0	10.0	10.0
	Silwet L-77		L	0.5%	PO1					
3	clopyralid	3	EC	0.5	PO1	2.0	10.0	9.0	10.0	10.0
	Silwet L-77		L	0.5%	PO1					
4	fluroxypyr	1.5	L	0.25	PO1	8.0	8.0	3.0	7.0	6.0
	Silwet L-77		L	0.5%	PO1					
5	Redeem R+P	3	L	1.5	PO1	5.0	10.0	2.0	10.0	8.0
	Silwet L-77		L	0.5%	PO1					
6	Curtail M	2.7	L	1.35	PO1	6.0	10.0	4.0	10.0	9.0
	Silwet L-77		L	0.5%	PO1					
7	Distinct	70	DF	0.175	PO1	2.0	9.0	4.0	10.0	3.0
	Silwet L-77		L	0.5%	PO1					
	28% UAN		L	1.25%	PO1					
8	glyphosate	4	L	4	PO1	2.0	7.0	6.0	8.0	5.0
	28% UAN		L	1.25%	PO1					
9	2,4-D	3.8	L	3	PO1	5.0	7.0	3.0	10.0	6.0
	Silwet L-77		L	0.5%	PO1					
10	untreated					1.0	1.0	1.0	1.0	2.0
LSD (P=.05)						.	.	.	.	.
Standard Deviation						.	.	.	.	.
CV						.	.	.	.	.

Postemergence Yellow fieldcress (kiek) Control in Hosta

Project Code: WC 130-01-02 **Location: Walters Gardens, Zeeland, MI**
Cooperator: Jeff Westendorp

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Tom Dudek
Crop: Hosta **Variety: N/A** **Field or Block: N/A**
Planting Method: transplant **Planting Date: 1999** **Harvest: N/A**
Spacing: 6" **Row Spacing: 28"**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 32" wide x 10 ft long

Soil Type: Chelsea Loamy Fine Sand **OM: 1.4%** **pH: 6.7**
Sand: 80% **Silt: 13%** **Clay: 7%** **CEC: 4.6**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PO1	7-24	3:30 pm	88 F/ 91 F	damp	SW 3-4	46%	clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-24-01	Hosta	8-10"	many	good
	Kiek	2-4"	many	many

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. **Herbicide trade and common names:**
   Redeem R+P = triclopyr 33% + clopyralid 12%; Curtail M - clopyralid 5% + MCPA 43.4%; Distinct - diflufenzopyr 20% + dicamba 50%.
4. **Location: Smoes Farm, 140 Ave, Bentheim, MI.**

Postemergence Yellow fieldcress (kiek) Control in Hosta

Project Code: WC 130-01-02 **Location: Walters Gardens, Zeeland, MI**
Cooperator: Jeff Westendorp

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	HOSTA RATING 8-16-01	YEFC RATING 8-16-01	HOSTA RATING 9-06-01	YEFC RATING 9-06-01
1	triclopyr	3	SC	2	PO1	10.0	10.0	9.0	10.0
	Silwet L-77		L	0.5%	PO1				
2	dicamba	4	L	2	PO1	6.0	10.0	6.0	10.0
	Silwet L-77		L	0.5%	PO1				
3	clopyralid	3	EC	0.5	PO1	3.0	8.0	3.0	2.0
	Silwet L-77		L	0.5%	PO1				
4	fluroxypyr	1.5	L	0.25	PO1	4.0	9.0	3.0	2.0
	Silwet L-77		L	0.5%	PO1				
5	Redeem R+P	3	L	1.5	PO1	9.0	10.0	9.0	10.0
	Silwet L-77		L	0.5%	PO1				
6	Curtail M	2.7	L	1.35	PO1	4.0	10.0	3.0	9.0
	Silwet L-77		L	0.5%	PO1				
7	Distinct	70	DF	0.175	PO1	4.0	9.0	2.0	1.0
	Silwet L-77		L	0.5%	PO1				
	28% UAN		L	1.25%	PO1				
8	glyphosate	4	L	4	PO1	5.0	8.0	5.0	2.0
	28% UAN		L	1.25%	PO1				
9	2,4-D	3.8	L	3	PO1	8.0	10.0	4.0	1.0
	Silwet L-77		L	0.5%	PO1				
10	untreated					1.0	1.0	1.0	1.0
LSD (P=.05)						.	.	.	.
Standard Deviation						.	.	.	.
CV						.	.	.	.

Postemergence *Inula britannica* Control in Hosta

Project Code: WC 130-01-03 **Location: Zelenka Nursery 96th+ M45**
Cooperator: Todd Herrick

Personnel: Bernard H. Zandstra, Joseph G. Masabni, Tom Dudek
Crop: Hosta mediovariegata **Variety: 205384** **Field or Block: N/A**
Planting Method: Transplant **Planting Date: Fall 2000** **Harvest: N/A**
Spacing: 9" **Row Spacing: 10";6rows/plot**
Tillage Type: None **Study Design: RCBD** **Replications: 3**
Plot Size: 5 ft wide x 20 ft long

Soil Type: Rubicon Sand **OM: 2.8%** **pH: 6.1**
Sand: 90% **Silt: 7%** **Clay: 3%** **CEC: 7.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil T	Soil Surf	Wind	RH	Sky	Dew
PO1	9-13	10 am	62 F/ 63 F	moist	SW 2-4	64%	90%	N
PO1-2	9-18	9:15 am	62 F/ 60 F	moist	calm	76%	clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
9-13-01	Hosta	6-8"	many	good
	Inula	4-6"	many	many

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. **Used North 3 rows of this variety. 2 more rows on south end are still available. The southern most row is shorter than rest.**
4. **Herbicide trade vs. common names:**
   Redeem R+P = triclopyr 33% + clopyralid 12%; Curtail M - clopyralid 5% + MCPA 43.4%; Distinct - diflufenzopyr 20% + dicamba 50%.
5. **9-18-01: PO1-2 is applicable for treatment 11 only.**

Postemergence *Inula britannica* Control in Hosta

Project Code: WC 130-01-03 **Location: Zelenka Nursery 96th+ M45**
Cooperator: Todd Herrick

Trt No	Treatment Name	Form Amt	Fm Ds	Rate lb ai/A	Grow Stg	HOSTA RATING 9-18-01	INULA RATING 9-18-01	HOSTA RATING 10-15-01	INULA RATING 10-15-01
1	diquat	2	L	1.34	PO1	9.0	9.0	9.7	5.7
	Silwet L-77		L	0.5%	PO1				
2	dicamba	4	L	2	PO1	2.7	3.0	4.7	10.0
	Silwet L-77		L	0.5%	PO1				
3	clopyralid	3	EC	0.25	PO1	2.0	1.7	2.7	10.0
	Silwet L-77		L	0.5%	PO1				
4	clopyralid	3	EC	0.5	PO1	2.0	1.7	3.0	10.0
	Silwet L-77		L	0.5%	PO1				
5	Redeem R+P	3	L	1.5	PO1	3.0	2.7	2.7	10.0
	Silwet L-77		L	0.5%	PO1				
6	Curtail M	2.7	L	1.35	PO1	2.0	1.3	3.0	10.0
	Silwet L-77		L	0.5%	PO1				
7	Distinct	70	DF	0.175	PO1	2.0	1.3	3.3	9.0
	Silwet L-77		L	0.5%	PO1				
	28% UAN		L	1.25%	PO1				
8	glyphosate	4	L	4	PO1	2.0	1.0	4.7	5.3
	28% UAN		L	1.25%	PO1				
9	2,4-D	3.8	L	3	PO1	3.0	3.0	4.3	9.7
	Silwet L-77		L	0.5%	PO1				
10	untreated					1.0	1.0	1.0	1.0
11	triclopyr	3	SC	2	PO1	1.0	1.0	1.3	9.0
	Silwet L-77		L	0.5%	PO1				
LSD (P=.05)						0.30	0.61	2.06	0.87
Standard Deviation						0.17	0.36	1.21	0.51
CV						6.45	14.72	32.99	6.26