HORTICULTURAL REPORT

2003 WEED CONTROL RESEARCH ON FRUIT & VEGTABLE CROPS

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WEED CONTROL IN HORTICULTURAL CROPS - 2003
FORWARD

This report summarizes the results of weed control experiments on horticultural crops in Michigan in 2003. It is intended to inform industry and university research and extension colleagues of our current results.

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

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METHODS

Chemical Application and Incorporation

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

Visual Evaluations

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

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

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

Experimental Design and Statistical Analysis

Experiments were set up and analyzed in the program Agriculture Research Manager (ARM) version 7.0.4, from Gylling Data Management, Inc. (RR 4 405 Martin Boulevard, Brookings, SD 57006). Unless otherwise specified, the experiments were laid out as randomized complete blocks. The data were subjected to analysis of variance and the means were compared with the LSD test at the 5% level. Since data transformations were not used, the coefficient of variation for skewed ratings or weed densities may be misleading. In some instances, yields for weeded check plots may be low because of severe early weed competition. In these cases, it may be more desirable to compare new herbicides with standard treatments.

WEED LIST

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

Abbr.	Common Name	Botanical Name
ANBG	annual bluegrass	*Poa annua* L.
BFTF	birdsfoot trefoil	*Lotus corniculatus* L.
BHPL	buckhorn plantain	*Plantago lanceolata* L.
BLME	black medic	*Medicago lupulina* 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.
COMW	common milkweed	*Asclepias syriaca* 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.
FIBW	field bindweed	*Convolvulus arvensis* L.
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.
GOGR	goosegrass	*Eleusine indica* (L.) Gaertn.
GORO	goldenrod	*Solidago nemoralis* Ait.
GIFT	giant foxtail	*Setaria faberi* Hermm.
GRFT	green foxtail	*Setaria viridis* (L.) Beauv.
GFPW	greenflower pepperweed	*Lepidium densiflorum* Schmd.
HANS	hairy nightshade	*Solanum sarrachoides* Sendtner
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.

WEED LIST

Abbr.	Common Name	Botanical Name
MONO	monolepis	*Monolepis nuttaliane* Greene
MWCH	mayweed chamomile	*Anthemis cotula* L.
NLLQ	narrowleaf lambsquarters	*Chenopodium desiccatum* A. Nels
OEDA	oxeye daisy	*Chrysanthemum leucanthemum* L.
ORGR	orchardgrass	*Dactylis glomerata* L.
PAWE	pineappleweed	*Matricaria matricariodes* (Less)C.L.Porter
PESW	Pennsylvania smartweed	*Polygonum pennsylvanicum* L.
POIV	poison ivy	*Rhus radicans* L.
PRKW	prostrate knotweed	*Polygonum aviculare* L.
PRLE	prickly lettuce	*Lactuca serriola* L.
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
SWSW	swamp smartweed	*Polygonum coccineum* Muhl. ex Willd.
TAFE	tall fescue	*Festuca arundinacea* Schreb.
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	PCC 1133	2.5 L	UAP
2,4-D amine	Weedar 64	3.8 L	Nufarm Inc.
atrazine	Aatrex	4 L	Syngenta
atrazine	Aatrex	90 DF	Syngenta
bensulide	Prefar	4 EC	Gowan
bensulide	GWN-3031	4 EC	Gowan
bentazon	Basagran	4 L	Micro Flo
bromoxynil	Buctril	4 EC	Bayer CropScience
bromoxynil	Buctril	2 EC	Bayer CropScience
butafenacil	Inspire	0.8 L	Syngenta
carfentrazone	Aim	40 DF	FMC
carfentrazone	Aim	2.0 EC	FMC
carfentrazone	Aim	1.9 EW	FMC
chlorimuron-ethyl	Classic	25 WDG	DuPont
clethodim	Envoy	0.94 L	Valent
clethodim	Select	2 EC	Valent
clomazone	Command	3 ME	FMC
clopyralid	Lontrel	3 EC	Dow Agrosciences
clopyralid	Stinger	3 EC	Dow Agrosciences
clopyralid 0.42 lb ai + MCPA 2.35 lb ai	Curtail M	2.7L	Dow Agrosciences
cloransulam-methyl	Firstrate	84 WDG	Dow Agrosciences
DCPA	Dacthal	75 WP	Amvac Chemical
dicamba	Clarity	4 L	BASF
diflufenzopyr 21.4% + dicamba 55%	Distinct	76.4 WG	BASF
dimethenamid-p	Outlook	6 EC	BASF
diquat	Reglone	2 EC	Syngenta
diuron	Karmex	80 DF	Griffin
endothall	Desicate II	2 L	Cerexagri, Inc.
ethalfluralin	Curbit	3 EC	UAP
ethalfluralin 1.6 lb ai + clomazone 0.5 lb ai	Strategy	2.1 EC	UAP
ethofumesate	Nortron	4 SC	Aventis CropScience
ethometsulfuron	Muster	75 WG	DuPont
fluazifop-P	Fusilade DX	2 EC	Syngenta
flufenacet	Define	60 DF	Bayer CropScience
flufenacet 24% + metribuzin 36%	Domain	60 DF	Bayer CropScience
flufenacet 54.4% + metribuzin 13.6%	Axiom	68 DF	Bayer CropScience
flumetsulam	Python	80 WDG	Dow Agrosciences
flumioxazin	Chateau	51 WDG	Valent
flumioxazin	SureGuard	51 WG	Valent
flumioxazin	Valor	51 WG	Valent

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
fluroxypyr	Starane	1.5 L	Dow Agrosciences
fomesafen	Reflex	2 EC	Syngenta
foramsulfuron	Option	35 WG	Bayer CropScience
glufosinate	Rely	1 L	Bayer CropScience
glufosinate	Liberty	1.67 EC	Bayer CropScience
glyphosate	Roundup WeatherMax	5.5 L	Monsanto
glyphosate	Touchdown	4 L	Syngenta
glyphosate	Roundup Original	4 L	Monsanto
glyphosate	Roundup Ultra	4 L	Monsanto
glyphosate	Roundup Ultramax	5 L	Monsanto
halosulfuron	Manage	75 WG	Monsanto
halosulfuron	Permit	75 WG	Monsanto
halosulfuron	Sandea	75 WG	Gowan
hexazinone	Velpar ULV	75 SG	DuPont
imazamox	Raptor	1 AS	BASF
imazapic	Plateau	70 WG	BASF
imazethapyr	Pursuit	2 EC	BASF
isoxaben	Gallery	75 DF	Dow Agrosciences
linuron	Lorox	50 DF	Griffin
mesotrione	Callisto	4 SC	Syngenta
metribuzin	Sencor	75 DF	Bayer
napropamide	Devrinol	50 DF	United Phosphorus
naptalam	Alanap	2 EC	Uniroyal
norflurazon	Solicam	80 DF	Syngenta
oryzalin	Surflan	4 AS	Dow Agrosciences
oxyfluorfen	Goal XL	2 L	Dow Agrosciences
paraquat	Gramoxone Max	3 L	Syngenta
pendimethalin	Prowl	3.3 EC	BASF
pendimethalin	Prowl H_2O	3.8 EC	BASF
phenmedipham	Spin-Aid	1.3 L	Bayer CropScience
phenmedipham 0.6 lb ai+ desmedipham 0.6 lb ai + ethofumesate 0.6 lb ai	Progress	1.8 L	Bayer CropScience
prometryn	Caparol	4 L	Syngenta
pronamide	Kerb	50 WP	Dow Agrosciences
pyraflufen-ethyl	PCC 1195	0.2 EC	UAP
pyrazon	Pyramin	68 DF	Micro Flo
pyridate	Tough	3.75 EC	
rimsulfuron	Matrix	25 DF	DuPont
sethoxydim	Poast	1.53 EC	Micro Flo
sethoxydim	Vantage	1 L	TopPro
simazine	Princep	90 DF	Syngenta

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
s-metolachlor	Dual Magnum	7.62 EC	Syngenta
s-metolachlor 2.68 lb ai + mesotrione 0.268 lb ai + atrazine 1.0 lb ai	Lumax	3.948 L	Syngenta
s-metolachlor 3.34 lb ai + mesotrione 0.33 lb ai	Camix	3.67 L	Syngenta
s-metolachlor II	Dual II Magnum	7.64 EC	Syngenta
s-metolochor	Pennant Magnum	7.62 EC	Syngenta
sulfentrazone	Spartan	4 F	FMC
sulfentrazone	Spartan	75 DF	FMC
sulfosulfuron	Maverick	75 WG	Monsanto
terbacil	Sinbar	80 WP	DuPont
triclopyr	Garlon	3 SC	Dow Agrosciences
triclopyr 2.25 lb ai + clopyralid 0.75 lb ai	Redeem R + P	3 L	Dow Agrosciences
trifloxysulfuron	Envoke	75 WG	Syngenta
trifluralin	Treflan	4 EC	Dow Agrosciences

ADJUVANTS

TRADE NAME	ABBREVIATION	DESCRIPTION	MANUFACTURER
Activator 90	NIS	nonionic surfactant	Loveland
ammonium nitrate		100% salt	
ammonium sulfate	AMS	spray grade fertilizer	
copper sulfate		100% salt	
Freeway		organosilicone surfactant	Loveland
Herbimax	COC	80% paraffin base petroleum oil 20% surfactant	Loveland
MSO		Methylated Seed Oil	Loveland
28% Nitrogen	UAN	28% urea ammonia nitrate solution	
Silwet L-77		organosilicone surfactant	Loveland
Sylgard 309		Organosilicone surfactant	DowCorning

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
2003

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	69.5	39.3		**1**	64.1	49.1	1.51	**1**	65.2	37.6	
2	56.6	37.6		**2**	53.9	38.5		**2**	71.8	37.8	
3	39.6	32.3	0.91	**3**	61.6	34.1		**3**	66.1	52.5	
4	34.5	30.3	1.72	**4**	64.6	34.1		**4**	57.8	48.6	0.17
5	31.4	25.2		**5**	74.3	50.0	0.66	**5**	69.0	49.4	0.03
6	32.9	23.2	0.01	**6**	66.5	47.3		**6**	74.8	43.6	
7	30.2	24.2		**7**	55.1	43.8	0.06	**7**	76.1	55.9	
8	31.2	25.3	0.07	**8**	60.9	47.7	0.01	**8**	69.5	52.2	0.36
9	46.6	21.1		**9**	72.2	44.8	0.30	**9**	70.4	52.4	
10	59.8	23.1		**10**	75.0	56.3	0.02	**10**	71.3	49.0	0.01
11	68.2	28.3		**11**	67.3	44.8	0.34	**11**	72.4	59.3	
12	53.5	36.9		**12**	46.7	42.3	0.08	**12**	62.6	55.7	0.03
13	60.9	26.5		**13**	66.7	39.9		**13**	73.7	55.0	
14	78.2	40.2		**14**	70.3	35.7		**14**	80.2	52.2	
15	83.2	63.1		**15**	55.3	48.5	0.21	**15**	79.4	56.6	
16	67.7	34.2		**16**	66.8	50.0		**16**	79.4	48.7	
17	49.5	32.0	0.02	**17**	71.0	48.8		**17**	78.1	59.1	
18	50.7	36.8	0.09	**18**	70.5	47.4		**18**	83.7	59.2	0.09
19	72.2	44.2		**19**	72.8	55.4		**19**	69.4	49.2	
20	71.6	55.5	0.07	**20**	66.2	46.6	0.08	**20**	76.0	42.6	
21	55.7	38.2	0.04	**21**	59.0	38.5		**21**	81.0	45.3	
22	50.5	32.6		**22**	65.5	34.3		**22**	83.2	48.6	
23	57.1	27.8		**23**	61.3	38.4		**23**	86.9	51.5	
24	65.0	27.7		**24**	55.1	45.9	0.04	**24**	89.2	55.4	
25	64.0	34.2		**25**	65.8	43.7		**25**	90.3	62.7	
26	60.8	32.9		**26**	67.0	42.3		**26**	82.5	60.1	0.73
27	72.6	32.0		**27**	69.9	41.9	0.03	**27**	76.9	53.0	
28	76.7	55.1		**28**	76.5	43.8		**28**	77.2	59.7	0.05
29	65.1	37.1		**29**	73.1	51.7	0.12	**29**	79.6	60.0	
30	59.5	48.5	0.16	**30**	65.5	42.9	0.01	**30**	81.3	53.5	
				31	58.3	40.9	0.61				

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2003

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	85.8	54.5		**1**	84.4	58.4	0.12	**1**	63.6	55.6	0.24
2	85.4	54.8		**2**	80.0	55.4	0.01	**2**	77.2	55.9	
3	88.4	56.8		**3**	80.4	60.9	0.07	**3**	77.1	50.7	
4	87.2	69.5	0.06	**4**	81.2	55.3		**4**	65.7	53.1	
5	80.0	65.2	0.36	**5**	80.2	57.1		**5**	71.7	43.1	
6	84.9	59.8	0.31	**6**	83.0	59.0	0.31	**6**	79.0	42.0	
7	84.9	66.1	0.03	**7**	81.0	60.1		**7**	83.4	54.3	
8	80.6	65.5	0.09	**8**	79.3	64.3		**8**	82.3	58.3	
9	78.2	61.9	0.10	**9**	77.8	57.8		**9**	80.2	56.2	
10	78.0	65.5	0.22	**10**	81.3	59.7		**10**	81.6	49.0	
11	67.6	58.3	0.09	**11**	80.2	58.1		**11**	82.0	57.7	
12	76.0	56.1		**12**	77.8	63.8		**12**	79.2	56.3	
13	81.5	51.4		**13**	86.4	59.0		**13**	83.1	61.1	
14	83.6	55.1		**14**	89.2	62.5		**14**	78.7	60.8	0.27
15	80.5	64.4		**15**	86.1	69.1	0.26	**15**	70.6	51.6	0.02
16	80.1	56.3		**16**	85.9	61.7	0.32	**16**	78.0	47.6	
17	82.7	56.7		**17**	78.9	55.1		**17**	83.0	50.8	
18	76.7	54.3		**18**	82.2	49.0		**18**	77.7	53.2	
19	79.8	49.0		**19**	82.7	52.5		**19**	72.1	55.0	
20	77.8	56.4	0.05	**20**	86.3	57.3		**20**	70.6	44.8	
21	76.5	63.2	0.10	**21**	93.5	62.8	0.10	**21**	72.9	39.5	
22	75.9	59.2		**22**	81.6	62.4		**22**	66.2	54.3	1.32
23	77.2	56.2		**23**	78.9	53.0		**23**	63.6	47.0	
24	79.6	50.7		**24**	80.3	52.1		**24**	65.5	47.5	0.35
25	82.5	51.1		**25**	85.9	66.1	0.04	**25**	56.7	39.9	
26	77.7	64.1		**26**	87.2	65.0	0.41	**26**	65.2	36.2	0.16
27	86.3	66.9		**27**	80.9	59.0		**27**	62.0	45.6	0.20
28	78.2	57.3		**28**	83.8	51.7		**28**	56.7	45.8	0.01
29	82.1	48.8		**29**	79.0	61.4	0.14	**29**	53.8	37.1	
30	84.5	53.8		**30**	72.5	51.5		**30**	51.5	39.2	0.01
31	85.8	55.1		**31**	72.9	50.6	0.04				

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2003

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	65.6	39.2		**1**	58.7	48.9	1.43	**1**	64.8	30.9	
2	50.5	35.7		**2**	49.9	36.9		**2**	71.7	32.9	
3	37.3	31.7	0.45	**3**	60.9	28.1		**3**	65.1	50.6	
4	33.5	30.5	1.58	**4**	65.2	30.1		**4**	56.2	49.9	0.04
5	31.1	25.3		**5**	67.9	49.0	0.50	**5**	69.6	48.0	0.07
6	30.5	23.2		**6**	65.3	42.8		**6**	75.9	39.7	
7	29.9	24.2	0.01	**7**	54.1	38.6	0.06	**7**	77.6	52.4	
8	31.0	25.5		**8**	61.2	47.1	0.01	**8**	69.8	46.7	0.28
9	45.7	11.8	0.01	**9**	71.7	44.5	0.29	**9**	70.8	49.9	
10	59.5	22.9		**10**	75.3	55.1	0.02	**10**	73.4	44.3	0.02
11	68.9	26.7		**11**	67.6	45.6	0.40	**11**	70.6	58.7	
12	53.3	31.0		**12**	47.1	42.2	0.05	**12**	62.5	55.1	0.16
13	60.0	25.2		**13**	66.9	39.1		**13**	73.0	55.1	
14	77.2	39.2		**14**	70.6	30.3		**14**	80.7	49.4	
15	83.0	63.1		**15**	54.6	47.4	0.03	**15**	80.0	50.3	
16	69.7	33.4		**16**	66.0	50.1	0.01	**16**	81.2	39.1	
17	47.1	31.9	0.07	**17**	71.1	44.0		**17**	78.7	50.1	
18	48.4	36.1	0.19	**18**	71.3	44.9		**18**	85.5	52.9	0.15
19	72.7	42.7		**19**	74.7	50.7		**19**	69.7	43.7	0.01
20	71.2	56.2	0.22	**20**	67.7	46.2	0.03	**20**	77.2	35.5	
21	56.4	38.0	0.04	**21**	58.3	33.7		**21**	82.5	39.8	
22	50.1	32.7		**22**	64.9	28.1		**22**	84.9	43.6	
23	57.6	27.2		**23**	59.6	31.0		**23**	89.5	45.4	
24	65.3	26.9		**24**	57.7	42.9	0.08	**24**	89.5	50.9	
25	63.1	30.6		**25**	66.3	36.4		**25**	91.7	59.1	
26	60.6	27.2		**26**	66.5	39.9		**26**	82.3	60.9	0.80
27	72.9	28.1		**27**	69.7	37.3	0.10	**27**	77.3	54.2	
28	76.5	50.4		**28**	76.5	40.1		**28**	78.3	54.8	0.09
29	65.0	30.7		**29**	74.6	48.3	0.06	**29**	79.6	54.8	
30	59.1	47.8	0.24	**30**	67.0	40.1		**30**	83.3	48.5	
				31	57.9	36.8	0.50				

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2003

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	85.9	50.4		**1**	83.8	54.2	0.56	**1**	64.2	54.9	0.15
2	85.7	50.6		**2**	80.9	52.4		**2**	78.1	50.7	
3	89.8	52.6		**3**	79.3	61.5	0.11	**3**	77.1	45.1	
4	87.1	69.4	0.26	**4**	80.5	57.2	0.18	**4**	65.8	42.5	
5	79.8	63.0	0.37	**5**	78.0	56.2	0.02	**5**	75.5	36.1	
6	84.6	55.5	0.06	**6**	82.1	54.8	0.12	**6**	79.3	35.0	
7	85.9	65.2		**7**	81.4	54.8	0.01	**7**	85.5	48.9	
8	80.8	67.1	0.05	**8**	78.1	60.0	0.02	**8**	82.0	52.9	
9	78.5	61.9	0.01	**9**	78.5	51.8		**9**	79.4	49.1	
10	78.1	65.1	0.06	**10**	81.3	54.9		**10**	83.0	41.1	
11	68.5	59.1	0.11	**11**	79.3	52.4		**11**	82.3	49.4	
12	78.3	55.0		**12**	76.9	59.5		**12**	80.3	53.1	
13	81.7	45.9		**13**	87.1	55.6		**13**	83.7	59.6	
14	84.8	50.4		**14**	89.2	58.4		**14**	80.7	61.7	0.27
15	81.5	64.1		**15**	87.1	64.6		**15**	70.6	49.5	0.08
16	80.9	52.6		**16**	83.0	56.2		**16**	78.0	39.3	0.01
17	82.4	52.4	0.01	**17**	80.2	47.8		**17**	84.6	43.9	
18	77.5	50.8		**18**	84.7	40.2		**18**	78.2	46.0	
19	81.3	40.5		**19**	83.9	45.6		**19**	73.0	52.1	
20	78.1	53.4	0.02	**20**	86.1	49.7		**20**	71.6	38.8	
21	78.2	61.2	0.06	**21**	93.8	59.0		**21**	73.2	32.6	
22	76.5	58.2		**22**	82.6	52.7		**22**	64.8	56.6	0.98
23	78.4	46.3		**23**	79.1	43.0		**23**	64.9	38.5	
24	80.8	45.1		**24**	80.0	46.0		**24**	65.9	38.1	0.46
25	81.8	43.8		**25**	86.5	63.5		**25**	58.1	37.1	
26	77.9	58.2		**26**	87.9	64.8	0.29	**26**	64.7	31.7	0.08
27	87.2	60.9		**27**	81.2	50.7		**27**	62.4	38.2	0.02
28	78.3	51.7		**28**	85.4	43.2		**28**	57.2	38.6	
29	83.2	42.6		**29**	79.6	60.0	0.04	**29**	54.1	30.1	0.01
30	84.2	48.8		**30**	74.4	44.8		**30**	51.4	30.3	0.02
31	84.5	50.8		**31**	73.0	46.1	0.01				

Weed Control in Asparagus - Hart

Project Code: WC 120-03-01 **Location: Hart, MI Res. Station**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Asparagus **Variety: SYN 4-56**
Planting Method: Transplant **Planting Date: 5-1-90**
Spacing: 12 IN **Row Spacing: 4.5 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 50 ft long

Soil Type: Spinks Loamy Fine Sand **OM: 1.1%** **pH: 6.2**
Sand: 79% **Silt: 12%** **Clay: 9%** **CEC: 4.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-2	2:00 pm	59/55	°F	Adequate	N 7	39%	80% cloudy	N
PO1	6-5	3:00 pm	69/70	°F	Dry	N 5	30%	20% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-5	ASPA = Asparagus	4-6″		good stand
6-5	FISB	1-2″	1-3	many
6-5	RRPW	1-2″	1-3	moderate
6-5	RUTH	2-4″	3-6	moderate
6-5	COLQ	0.5-2″	2-4	moderate
6-5	EBNS	0.5-1″	1-2	many
6-5	CLGC			
6-5	COMW			
6-5	LACG			

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.

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Weed Control in Asparagus - Hart

Trial ID: WC 120-03-01 **Study Director:**
Location: Hart, MI Res. Station **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	FISB	COLQ	EBNS	RRPW	RUTH
Pest Code											
Crop Variety							ASPA				
Description											
Rating Date							6/5/03	6/5/03	6/5/03	6/5/03	6/5/03	6/5/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit											
1	diuron	80	DF	1.2	lb ai/a	PRE	1.3	4.0	7.0	5.3	5.3	7.3
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	1.3	9.3	9.3	9.3	9.3	9.7
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	1.7	4.0	10.0	10.0	9.3	9.0
4	norflurazon	80	DF	2	lb ai/a	PRE	2.0	9.7	4.7	8.0	7.7	7.0
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	1.0	8.3	10.0	10.0	10.0	9.7
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	2.3	4.7	10.0	10.0	10.0	9.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	2.3	10.0	10.0	1.3	10.0	10.0
8	diuron	80	DF	1.2	lb ai/a	PRE	1.3	7.3	10.0	8.3	9.3	6.3
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	1.3	10.0	10.0	9.3	9.7	10.0
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.3	10.0	10.0	9.7	9.0	9.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	1.0	10.0	10.0	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	1.3	10.0	10.0	10.0	10.0	10.0
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	1.7	4.3	2.0	1.7	3.3	3.7
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	1.0	3.3	1.7	6.3	4.0	4.0
15	AXIOM	68	DF	1	lb ai/a	PO1	1.0	4.7	7.3	9.7	6.7	4.0
LSD (P=.05)							0.99	4.62	3.60	3.30	3.20	4.29
Standard Deviation							0.59	2.76	2.16	1.97	1.92	2.56
CV							40.2	37.75	26.51	24.88	23.24	32.13

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Pest Code							FISB	LACG	CLGC	COLQ	COMW
Crop Variety						ASPA					
Description											
Rating Date						6/25/03	6/25/03	6/25/03	6/25/03	6/25/03	6/25/03
Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.2	lb ai/a	PRE	1.3	9.7	10.0	10.0	10.0	9.0
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	1.3	6.7	4.0	10.0	6.3	4.0
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	1.3	1.0	10.0	10.0	1.7	4.3
4	norflurazon	80	DF	2	lb ai/a	PRE	1.3	10.0	10.0	10.0	1.7	1.9
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	1.0	5.7	10.0	6.0	10.0	2.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	1.7	4.0	7.0	2.0	10.0	3.9
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.0	9.0	10.0	7.0	7.3	6.9
8	diuron	80	DF	1.2	lb ai/a	PRE	1.0	4.7	10.0	10.0	9.7	6.3
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	1.0	7.0	7.0	10.0	10.0	5.7
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.3	10.0	10.0	5.3	10.0	5.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	1.0	10.0	10.0	9.0	10.0	6.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	1.3	10.0	10.0	10.0	10.0	1.7
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	2.0	10.0	10.0	9.0	9.7	4.7
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	1.0	10.0	10.0	10.0	6.3	4.0
15	AXIOM	68	DF	1	lb ai/a	PO1	1.0	7.7	10.0	1.0	10.0	5.7
LSD (P=.05)							0.77	4.82	3.98	4.92	2.70	4.67
Standard Deviation							0.46	2.88	2.38	2.84	1.62	2.77
CV							37.06	37.47	25.85	35.73	19.77	57.91

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Pest Code							EBNS	RRPW	RUTH			
Crop Variety										ASPA	ASPA	ASPA
Description										TOT SPR	DMG SPR	TOT SPR
Rating Date							6/25/03	6/25/03	6/25/03	5/5/03	5/12/03	5/12/03
Rating Data Type							RATING	RATING	RATING	YIELD	YIELD	YIELD
Rating Unit										G/PLOT	G/PLOT	G/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	diuron	80	DF	1.2	lb ai/a	PRE	10.0	9.3	8.7	151.7	97.7	353.7
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	10.0	4.3	10.0	208.7	108.0	316.0
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	10.0	7.3	10.0	243.7	141.3	146.3
4	norflurazon	80	DF	2	lb ai/a	PRE	9.7	3.7	4.0	168.0	77.7	286.3
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	10.0	9.7	10.0	138.3	232.0	232.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	10.0	10.0	10.0	154.7	222.0	480.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.0	10.0	10.0	275.7	47.0	481.3
8	diuron	80	DF	1.2	lb ai/a	PRE	8.7	10.0	10.0	303.0	7.7	375.3
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	10.0	3.0	10.0	473.7	45.7	513.0
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	10.0	9.7	9.3	385.7	161.7	496.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	10.0	10.0	10.0	441.0	21.7	539.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	10.0	10.0	10.0	387.0	13.0	526.0
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	10.0	9.0	10.0	284.7	201.3	454.3
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	10.0	5.7	1.3	393.7	8.7	686.3
15	AXIOM	68	DF	1	lb ai/a	PO1	9.7	10.0	5.8	302.3	0.0	467.0
LSD (P=.05)							1.05	2.76	2.92	187.59	129.79	225.46
Standard Deviation							0.63	1.65	1.74	112.18	77.61	134.83
CV							6.78	20.32	20.18	39.03	84.04	31.83

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA TOT SPR 5/16/03 YIELD G/PLOT	ASPA TOT SPR 5/18/03 YIELD G/PLOT	ASPA DMG SPR 5/20/03 YIELD G/PLOT	ASPA TOT SPR 5/20/03 YIELD G/PLOT	ASPA TOT SPR 5/23/03 YIELD G/PLOT	ASPA TOT SPR 5/26/03 YIELD G/PLOT
	Pest Code											
	Crop Variety											
	Description											
	Rating Date											
	Rating Data Type											
	Rating Unit											
1	diuron	80	DF	1.2	lb ai/a	PRE	518.3	507.3	20.0	418.3	183.7	450.0
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	360.0	281.3	20.3	437.3	185.0	421.3
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	362.7	431.7	89.0	544.3	269.7	452.0
4	norflurazon	80	DF	2	lb ai/a	PRE	321.0	329.3	37.3	381.7	197.7	300.3
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	394.7	514.7	167.0	792.3	247.0	582.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	537.3	427.7	42.7	464.3	329.3	560.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	388.3	413.3	10.3	458.7	275.7	547.7
8	diuron	80	DF	1.2	lb ai/a	PRE	394.7	357.3	23.3	378.0	287.3	406.3
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	484.7	552.3	21.3	474.3	298.3	583.7
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	570.0	540.0	27.3	480.0	292.3	806.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	531.3	429.3	17.0	499.7	285.7	653.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	495.7	341.7	32.7	523.3	290.7	591.7
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	550.3	291.7	30.3	440.3	205.3	612.0
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	667.3	627.7	58.3	674.7	345.0	815.3
15	AXIOM	68	DF	1	lb ai/a	PO1	487.0	529.0	33.0	608.0	399.0	644.3
	LSD (P=.05)						185.61	226.85	75.64	241.04	124.11	181.26
	Standard Deviation						111.00	135.66	45.24	144.15	74.22	108.40
	CV						23.57	30.95	107.71	28.54	27.21	19.29

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA DMG SPR 5/28/03 YIELD G/PLOT	ASPA TOT SPR 5/28/03 YIELD G/PLOT	ASPA TOT SPR 5/30/03 YIELD G/PLOT	ASPA TOT SPR 6/2/03 YIELD G/PLOT	ASPA DMG SPR 6/6/03 YIELD G/PLOT	ASPA TOT SPR 6/6/03 YIELD G/PLOT
	Pest Code											
	Crop Variety											
	Description											
	Rating Date						5/28/03	5/28/03	5/30/03	6/2/03	6/6/03	6/6/03
	Rating Data Type						YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
	Rating Unit						G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT
1	diuron	80	DF	1.2	lb ai/a	PRE	6.3	304.3	200.7	209.3	15.0	266.3
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	5.7	265.0	163.3	186.3	19.0	243.3
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	51.3	328.3	245.7	245.7	4.7	214.0
4	norflurazon	80	DF	2	lb ai/a	PRE	17.0	189.7	127.3	215.0	0.0	209.7
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	51.0	388.7	208.3	309.3	32.0	394.7
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	0.0	294.7	253.7	245.0	13.7	220.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	6.0	271.3	184.3	179.0	25.7	247.7
8	diuron	80	DF	1.2	lb ai/a	PRE	21.3	298.7	198.7	145.7	11.7	274.0
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	30.3	342.7	194.3	281.7	12.7	308.7
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	22.0	327.3	228.3	305.0	26.0	270.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	9.0	353.7	229.7	352.7	4.3	335.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	10.0	435.7	221.0	296.3	8.3	253.0
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	12.3	303.7	183.7	183.3	19.0	271.0
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	13.7	462.7	281.3	108.7	9.7	332.0
15	AXIOM	68	DF	1	lb ai/a	PO1	15.0	410.0	255.0	250.3	27.0	304.7
	LSD (P=.05)						27.46	123.03	104.04	128.20	26.71	138.45
	Standard Deviation						16.42	73.57	62.22	76.66	15.97	82.80
	CV						90.88	22.18	29.39	32.73	104.78	29.97

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA TOT SPR 6/4/03 YIELD G/PLOT	ASPA TOT SPR 6/8/03 YIELD G/PLOT	ASPA DMG SPR 6/11/03 YIELD G/PLOT	ASPA TOT SPR 6/11/03 YIELD G/PLOT	ASPA TOT SPR 6/13/03 YIELD G/PLOT	ASPA TOT SPR 6/15/03 YIELD G/PLOT
	Pest Code											
	Crop Variety											
	Description											
	Rating Date											
	Rating Data Type											
	Rating Unit											
1	diuron	80	DF	1.2	lb ai/a	PRE	293.0	294.3	23.7	240.7	265.7	498.7
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	263.7	324.3	11.3	245.7	245.7	298.0
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	329.7	352.0	55.0	186.3	272.3	499.3
4	norflurazon	80	DF	2	lb ai/a	PRE	162.0	283.0	22.0	149.0	229.7	371.7
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	290.7	301.0	121.3	290.3	482.7	504.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	219.7	379.0	5.3	325.0	391.3	435.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	195.7	300.0	11.0	280.0	317.7	365.0
8	diuron	80	DF	1.2	lb ai/a	PRE	203.7	366.0	16.3	231.0	316.0	377.0
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	240.7	292.0	37.7	338.7	416.0	446.3
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	311.3	446.3	27.3	356.3	501.0	507.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	224.3	393.3	24.3	370.3	364.7	478.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	280.3	370.7	25.3	325.0	272.0	543.7
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	171.7	357.3	18.0	307.3	413.0	401.0
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	184.0	460.3	41.7	414.0	488.0	562.0
15	AXIOM	68	DF	1	lb ai/a	PO1	352.0	412.7	18.3	371.3	327.0	567.7
	LSD (P=.05)						120.72	125.22	50.25	127.40	179.04	153.67
	Standard Deviation						72.19	74.89	30.05	76.19	107.07	91.90
	CV						29.09	21.07	98.28	25.79	30.29	20.11

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA DMG SPR 6/16/03 YIELD G/PLOT	ASPA TOT SPR 6/16/03 YIELD G/PLOT	ASPA TOT SPR 6/17/03 YIELD G/PLOT	ASPA TOT SPR 6/18/03 YIELD G/PLOT	ASPA DMG SPR 6/19/03 YIELD G/PLOT	ASPA TOT SPR 6/19/03 YIELD G/PLOT
1	diuron	80	DF	1.2	lb ai/a	PRE	2.7	39.3	197.0	110.3	11.7	148.0
	dicamba	4	L	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
2	diuron	80	DF	1.2	lb ai/a	PRE	9.7	43.7	180.3	147.7	12.0	136.0
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	15.0	77.7	132.3	120.7	23.0	205.7
4	norflurazon	80	DF	2	lb ai/a	PRE	8.3	41.7	154.7	74.0	2.7	98.7
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	30.7	133.0	227.7	223.7	19.0	184.7
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	4.0	41.3	198.3	218.3	15.7	140.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	27.7	71.0	145.0	132.7	11.0	106.7
8	diuron	80	DF	1.2	lb ai/a	PRE	0.0	60.0	122.3	198.0	9.7	154.3
	halosulfuron	75	WG	0.047	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	terbacil	80	WP	1.2	lb ai/a	PRE	9.7	77.3	167.3	185.3	16.0	181.7
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	7.7	94.0	122.0	242.0	10.0	192.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
11	dicamba	4	L	0.25	lb ai/a	PO1	4.0	79.7	168.7	146.7	14.0	181.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
12	linuron	50	DF	0.5	lb ai/a	PO1	11.0	96.7	166.3	128.7	11.3	200.7
	clopyralid	3	EC	0.25	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	linuron	50	DF	1	lb ai/a	PO1	6.0	61.0	182.0	162.3	5.3	194.3
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	clomazone	3	ME	0.375	lb ai/a	PO1	17.0	86.7	169.3	211.3	27.0	196.7
15	AXIOM	68	DF	1	lb ai/a	PO1	9.3	120.7	205.7	159.3	3.0	205.0
LSD (P=.05)							26.89	42.89	99.94	90.15	21.46	93.05
Standard Deviation							16.08	25.65	59.76	53.91	12.84	55.64
CV							148.28	34.24	35.31	32.86	100.63	33.04

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Pest Code							
Crop Variety							ASPA
Description							
Rating Date							
Rating Data Type							TOT YLD
Rating Unit							KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	
1	diuron	80	DF	1.2	lb ai/a	PRE	5.83
	dicamba	4	L	0.5	lb ai/a	PO1	
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
2	diuron	80	DF	1.2	lb ai/a	PRE	5.14
	metribuzin	75	DF	0.6	lb ai/a	PRE	
3	flumioxazin	51	WG	0.2	lb ai/a	PRE	6.04
4	norflurazon	80	DF	2	lb ai/a	PRE	4.46
5	flumioxazin	51	WG	0.4	lb ai/a	PRE	7.49
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	6.62
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	5.78
8	diuron	80	DF	1.2	lb ai/a	PRE	5.54
	halosulfuron	75	WG	0.047	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
9	terbacil	80	WP	1.2	lb ai/a	PRE	7.03
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	7.76
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
11	dicamba	4	L	0.25	lb ai/a	PO1	7.15
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
12	linuron	50	DF	0.5	lb ai/a	PO1	6.86
	clopyralid	3	EC	0.25	lb ai/a	PO1	
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
13	linuron	50	DF	1	lb ai/a	PO1	6.32
	clopyralid	3	EC	0.188	lb ai/a	PO1	
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.5	% v/v	PO1	
14	clomazone	3	ME	0.375	lb ai/a	PO1	8.34
15	AXIOM	68	DF	1	lb ai/a	PO1	7.48
LSD (P=.05)							1.492
Standard Deviation							0.892
CV							13.68

Weed Control in Newly Planted Asparagus Crowns - Hart

Project Code: WC 120-03-03 **Location: Hart, MI Res. Station**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Asparagus **Variety: Jersey Giant & others**
Planting Method: Transplant **Planting Date: 5-10-03**
Spacing: 12 IN **Row Spacing: 4.5 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 2**
Plot Size: 4 ft wide x 25 ft long

Soil Type: Spinks Loamy Fine Sand **OM: 11%** **pH: 6.1**
Sand: 83% **Silt: 9%** **Clay: 8%** **CEC: 4.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	6-5	1:30 pm	65/66	°F	Dry	SW 1	44%	50% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-5	Asparagus	6″		
6-5	FISB	1.5″	1-2	many
6-5	COLQ	2″	2-6	many
6-5	RUTH	2.25″	2-4	moderate
6-5	RRPW			
6-5	LACG			
6-5	GRFT			

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.
3. All treatments include Poast at 0.19 lb ai/A on 6-5-03.

Weed Control in Newly Planted Asparagus Crowns - Hart

Dept. of Horticulture, MSU

Weed Control in Newly Planted Asparagus Crowns - Hart

Trial ID: WC 120-03-03 **Study Director:**
Location: Hart, MI Res. Station **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Pest Code	FISB	COLQ	RRPW	RUTH	
							Description	ASPA				ASPA
							Rating Date	6/25/03	6/25/03	6/25/03	6/25/03	6/25/03	7/23/03
							Rating Data Type	RATING	RATING	RATING	RATING	RATING	RATING
1	diuron	80	DF	1.5	lb ai/a	PRE		1.0	9.5	9.0	9.0	6.0	1.0
2	metribuzin	75	DF	0.25	lb ai/a	PRE		1.5	10.0	9.0	9.0	4.0	2.5
3	linuron	50	DF	0.5	lb ai/a	PRE		1.5	8.5	10.0	9.0	2.0	3.0
4	halosulfuron	75	WG	0.032	lb ai/a	PRE		1.5	6.5	4.0	10.0	9.0	3.0
5	clomazone	3	ME	0.25	lb ai/a	PRE		2.5	10.0	3.0	7.5	1.5	5.0
6	flumioxazin	51	WG	0.047	lb ai/a	PRE		4.5	7.5	8.5	10.0	7.5	3.0
7	sulfentrazone	4	F	0.25	lb ai/a	PRE		4.5	10.0	10.0	10.0	10.0	3.5
8	norflurazon	80	DF	2	lb ai/a	PRE		2.5	6.5	1.0	9.0	2.0	4.0
9	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE		2.0	10.0	1.0	5.5	1.5	2.0
10	DOMAIN	60	DF	0.6	lb ai/a	PRE		1.5	10.0	10.0	9.0	4.0	2.5
11	flufenacet	60	DF	0.6	lb ai/a	PRE		2.0	9.0	1.5	7.5	6.5	4.5
12	untreated							3.5	2.0	1.0	2.5	4.5	5.5
LSD (P=.05)								2.98	4.93	2.78	5.30	4.85	4.52
Standard Deviation								1.35	2.24	1.26	2.41	2.20	2.06
CV								56.95	27.0	22.26	29.5	45.22	62.43

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Pest Code	FISB	GRFT	LACG	COLQ	RRPW	RUTH
							Description						
							Rating Date	7/23/03	7/23/03	7/23/03	7/23/03	7/23/03	7/23/03
							Rating Data Type	RATING	RATING	RATING	RATING	RATING	RATING
1	diuron	80	DF	1.5	lb ai/a	PRE		10.0	10.0	10.0	9.5	6.0	4.5
2	metribuzin	75	DF	0.25	lb ai/a	PRE		10.0	10.0	10.0	8.5	8.5	2.5
3	linuron	50	DF	0.5	lb ai/a	PRE		5.5	6.5	5.5	7.5	8.0	1.5
4	halosulfuron	75	WG	0.032	lb ai/a	PRE		9.5	10.0	10.0	4.0	9.0	6.5
5	clomazone	3	ME	0.25	lb ai/a	PRE		10.0	10.0	10.0	1.0	10.0	4.5
6	flumioxazin	51	WG	0.047	lb ai/a	PRE		9.5	10.0	7.0	9.5	10.0	6.5
7	sulfentrazone	4	F	0.25	lb ai/a	PRE		10.0	10.0	2.5	10.0	10.0	10.0
8	norflurazon	80	DF	2	lb ai/a	PRE		10.0	10.0	7.0	1.0	9.0	5.5
9	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE		10.0	10.0	10.0	1.0	9.0	5.5
10	DOMAIN	60	DF	0.6	lb ai/a	PRE		10.0	10.0	10.0	7.5	8.5	3.5
11	flufenacet	60	DF	0.6	lb ai/a	PRE		10.0	10.0	10.0	1.0	8.0	8.5
12	untreated							10.0	10.0	10.0	1.0	8.5	7.0
LSD (P=.05)								4.17	3.14	5.75	2.93	2.85	4.44
Standard Deviation								1.89	1.43	2.61	1.33	1.30	2.02
CV								19.85	14.72	30.72	25.95	14.88	36.71

Weed Control in Snap Bean - HTRC

Project Code: WC 125-03-01 **Location: HTRC Block 138**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Snap Bean **Variety: Hercules**
Planting Method: Seeded **Planting Date: 5-28-03**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 7 ft wide x 35 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 2.2%** **pH: 6.4**
Sand: 51% **Silt: 33%** **Clay: 16%** **CEC: 5.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5-28	11:30 am	70/58	°F	Adequate	S 3	50%	30% cloudy	N
PRE	5-29	11:00 am	62/61	°F	Adequate	W 3	58%	20% cloudy	N
PO1	7-1	2:00 pm	85/82	°F	Dry	W 0	31%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-1	Snap Bean	6″	2-3 TRIFL	
7-1	COLQ	4.5″		many
7-1	RRPW	5″		many
7-1	GRFT	3″		moderate
7-1	EBNS	1″		few
7-1	LATH	3″		few
7-1	SHPU			

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.
3. Planted 3 rows of snap bean 14 inches apart.
4. Harvested all plants in plot.

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Dept. of Horticulture, MSU

Weed Control in Snap Bean - HTRC

Trial ID: WC 125-03-01 **Study Director:**
Location: HTRC Block 138 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	GRFT SNAPBEAN 6/26/03 RATING	COLQ 6/26/03 RATING	RRPW 6/26/03 RATING	SHPU 6/26/03 RATING
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.0	10.0	8.3	9.7	10.0
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	2.3	10.0	10.0	10.0	10.0
3	pendimethalin	3.3	EC	1	lb ai/a	PRE	1.7	10.0	10.0	10.0	10.0
4	sulfentrazone	4	F	0.2	lb ai/a	PRE	3.0	10.0	10.0	10.0	10.0
5	clomazone	3	ME	0.25	lb ai/a	PRE	1.7	10.0	10.0	10.0	10.0
6	halosulfuron	75	WG	0.047	lb ai/a	PRE	3.0	7.7	9.0	10.0	9.3
7	imazethapyr	2	EC	0.047	lb ai/a	PRE	2.0	10.0	10.0	10.0	10.0
8	flufenacet	60	DF	0.6	lb ai/a	PRE	1.3	10.0	9.7	10.0	10.0
9	trifluralin	4	EC	1	lb ai/a	PPI	3.0	10.0	5.0	8.7	4.3
10	trifluralin	4	EC	1	lb ai/a	PPI	3.0	9.0	7.7	10.0	6.0
	fomesafen	2	EC	0.25	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	3.0	10.0	7.0	10.0	7.3
	imazamox	1	AS	0.03	lb ai/a	PO1					
12	trifluralin	4	EC	1	lb ai/a	PPI	2.0	9.0	7.3	10.0	7.0
	sulfentrazone	4	F	0.1	lb ai/a	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	2.3	9.7	6.7	9.3	8.0
	bentazon	4	L	1	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	2.3	9.3	8.3	9.3	8.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	2.0	10.0	8.7	9.3	7.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
16	weeded control						1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.55	1.95	2.70	1.02	1.95
Standard Deviation							0.93	1.17	1.62	0.61	1.17
CV							42.93	12.81	20.12	6.66	14.55

Weed Control in Snap Bean - HTRC

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Pest Code								GRFT	COLQ	EBNS	LATH
Description							SNAPBEAN				
Rating Date							7/14/03	7/14/03	7/14/03	7/14/03	7/14/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING
Rating Unit											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.0	10.0	7.0	10.0	10.0
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	2.3	10.0	8.3	10.0	10.0
3	pendimethalin	3.3	EC	1	lb ai/a	PRE	1.7	8.3	9.7	10.0	9.7
4	sulfentrazone	4	F	0.2	lb ai/a	PRE	3.7	9.3	10.0	10.0	10.0
5	clomazone	3	ME	0.25	lb ai/a	PRE	1.3	10.0	10.0	9.3	9.7
6	halosulfuron	75	WG	0.047	lb ai/a	PRE	2.7	6.0	10.0	1.0	10.0
7	imazethapyr	2	EC	0.047	lb ai/a	PRE	2.3	9.3	10.0	10.0	10.0
8	flufenacet	60	DF	0.6	lb ai/a	PRE	1.3	10.0	8.0	10.0	10.0
9	trifluralin	4	EC	1	lb ai/a	PPI	2.7	10.0	4.0	8.3	10.0
10	trifluralin	4	EC	1	lb ai/a	PPI	2.0	8.7	6.3	10.0	10.0
	fomesafen	2	EC	0.25	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	3.3	10.0	4.3	10.0	10.0
	imazamox	1	AS	0.03	lb ai/a	PO1					
12	trifluralin	4	EC	1	lb ai/a	PPI	4.0	7.7	8.0	10.0	10.0
	sulfentrazone	4	F	0.1	lb ai/a	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	3.0	9.0	9.7	8.7	10.0
	bentazon	4	L	1	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	2.7	9.0	7.0	6.7	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	9.7	9.7	8.7	10.0	10.0
	mesotrione	4	SC	0.094	lb ai/a	PO1					
16	weeded control						2.0	10.0	9.7	10.0	10.0
LSD (P=.05)							1.50	2.73	3.10	1.78	0.33
Standard Deviation							0.90	1.64	1.86	1.07	0.20
CV							31.53	17.84	22.76	11.86	1.98

Weed Control in Snap Bean - HTRC

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW	SHPU	SNAPBEAN	SNAPBEAN
Pest Code										
Description									SNAPBEAN	SNAPBEAN
Rating Date							7/14/03	7/14/03	8/5/03	8/5/03
Rating Data Type							RATING	RATING	YIELD	PLT WT
Rating Unit									KG/PLOT	KG/PLOT
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	10.0	10.0	10.51	9.60
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	9.7	10.00	8.13
3	pendimethalin	3.3	EC	1	lb ai/a	PRE	9.0	8.0	10.27	8.39
4	sulfentrazone	4	F	0.2	lb ai/a	PRE	10.0	9.0	10.39	8.59
5	clomazone	3	ME	0.25	lb ai/a	PRE	9.7	10.0	11.44	9.47
6	halosulfuron	75	WG	0.047	lb ai/a	PRE	10.0	10.0	9.28	7.37
7	imazethapyr	2	EC	0.047	lb ai/a	PRE	10.0	10.0	10.15	8.71
8	flufenacet	60	DF	0.6	lb ai/a	PRE	8.7	10.0	9.62	7.93
9	trifluralin	4	EC	1	lb ai/a	PPI	9.0	1.0	6.57	5.78
10	trifluralin	4	EC	1	lb ai/a	PPI	10.0	10.0	9.58	8.19
	fomesafen	2	EC	0.25	lb ai/a	PO1				
11	trifluralin	4	EC	1	lb ai/a	PPI	10.0	8.7	7.22	6.57
	imazamox	1	AS	0.03	lb ai/a	PO1				
12	trifluralin	4	EC	1	lb ai/a	PPI	10.0	1.0	6.72	5.22
	sulfentrazone	4	F	0.1	lb ai/a	PO1				
13	trifluralin	4	EC	1	lb ai/a	PPI	9.7	9.7	9.17	7.48
	bentazon	4	L	1	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
14	trifluralin	4	EC	1	lb ai/a	PPI	9.7	9.3	8.90	7.27
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
15	trifluralin	4	EC	1	lb ai/a	PPI	10.0	10.0	0.00	0.53
	mesotrione	4	SC	0.094	lb ai/a	PO1				
16	weeded control						10.0	9.7	8.61	7.29
LSD (P=.05)							0.78	1.21	3.174	2.513
Standard Deviation							0.47	0.73	1.904	1.507
CV							4.83	8.55	22.0	20.69

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

Project Code: WC 109-03-01 **Location: HTRC Block 109**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5-14-03**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 35 ft long

Soil Type: Capac Loam **OM: 2.0%** **pH: 6.8**
Sand: 45% **Silt: 37%** **Clay: 18%** **CEC: 6.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-18	2:45 pm	73/69	°F	Dry	SE 5	61%	5% cloudy	N
PO1	6-16	4:30 pm	80/81	°F	Dry	E 6	42	20% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-16	Red Beet	4.5″	5-6	good
6-16	Sugar Beet	4.5″	6-8	good
6-16	Swiss Chard	4.5″	4-5	good
6-16	Spinach	4″	6-8	good
6-16	COLQ	2.5″	2-6	moderate
6-16	RRPW	3″	2-6	moderate
6-16	WIRA	4″	2-6	moderate
6-16	YEFT	4″	2-4	few

Notes and Comments
1. Sprays applied with 5-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.
3. Planted 1 row of red beet, sugar beet, and swiss chard per plot; planted 2 rows of spinach per plot.
4. Crops and varieties: Red beet – Detroit Dark Red, Sugar beet – E-17, Swiss Chard – Fordhook Giant, Spinach – Bloomsdale Long Stand.
5. Harvested all crop in 35 ft of plot.

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

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

Trial ID: WC 109-03-01 **Study Director:**
Location: HTRC Block 109 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											**COCW**
Crop Variety							**RED BEET**	**SU BEET**	**SW CHARD**	**SPINACH**	
Description											
Rating Date							**6/10/03**	**6/10/03**	**6/10/03**	**6/10/03**	**6/10/03**
Rating Data Type							**RATING**	**RATING**	**RATING**	**RATING**	**RATING**
Rating Unit											
1	pyrazon	68	DF	3	lb ai/a	PRE	1.7	1.3	1.3	5.7	9.7
2	ethofumesate	4	SC	2	lb ai/a	PRE	1.7	2.0	1.0	7.0	9.7
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.7	2.0	1.3	3.0	8.7
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	1.8	2.0	2.0	4.3	10.0
5	flufenacet	60	DF	0.6	lb ai/a	PRE	6.7	7.3	6.3	5.7	10.0
6	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	2.5	1.7	1.3	2.0	7.3
	clopyralid	3	EC	0.188	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
7	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	1.0	1.0	1.0	1.3	5.7
	phenmedipham	1.3	L	1	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
8	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	1.6	1.3	1.3	2.0	5.0
	pyrazon	68	DF	3	lb ai/a	PO1					
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	1.3	1.3	1.3	1.3	6.3
	PROGRESS	1.8	L	0.33	lb ai/a	PO1					
10	untreated						1.0	1.0	1.0	1.7	1.0
LSD (P=.05)							1.31	0.80	0.92	1.01	3.16
Standard Deviation							0.75	0.47	0.54	0.59	1.84
CV							35.87	22.26	29.86	17.26	25.13

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code							**FIPC**	**WIRA**			
Crop Variety									**RED BEET**	**SU BEET**	**SW CHARD**
Description											
Rating Date							**6/10/03**	**6/10/03**	**6/24/03**	**6/24/03**	**6/24/03**
Rating Data Type							**RATING**	**RATING**	**RATING**	**RATING**	**RATING**
Rating Unit											
1	pyrazon	68	DF	3	lb ai/a	PRE	9.3	9.0	1.3	1.3	1.0
2	ethofumesate	4	SC	2	lb ai/a	PRE	9.0	9.3	1.7	1.0	1.0
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	4.3	7.0	1.7	2.0	1.3
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	8.3	8.0	1.4	1.0	1.7
5	flufenacet	60	DF	0.6	lb ai/a	PRE	10.0	10.0	4.3	5.0	3.0
6	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	6.0	5.3	1.6	1.7	1.7
	clopyralid	3	EC	0.188	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
7	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	6.0	5.0	1.0	1.0	1.7
	phenmedipham	1.3	L	1	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
8	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.7	4.3	1.0	1.0	2.0
	pyrazon	68	DF	3	lb ai/a	PO1					
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.3	6.3	1.0	1.0	2.3
	PROGRESS	1.8	L	0.33	lb ai/a	PO1					
10	untreated						1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							3.65	2.97	1.36	1.08	0.84
Standard Deviation							2.13	1.73	0.78	0.63	0.49
CV							32.74	26.46	48.78	39.35	29.21

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

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	GRFT	COLQ	FIPC	RRPW	WIRA
Crop Variety							SPINACH				
Description											
Rating Date							6/24/03	6/24/03	6/24/03	6/24/03	6/24/03
							6/24/03				
Rating Data Type							RATING	RATING	RATING	RATING	RATING
Rating Unit											
1	pyrazon	68	DF	3	lb ai/a	PRE	4.7	9.3	10.0	9.0	10.0	8.3
2	ethofumesate	4	SC	2	lb ai/a	PRE	7.3	5.0	10.0	3.3	10.0	5.0
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	2.0	10.0	7.7	3.3	9.0	1.7
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	3.0	10.0	4.7	6.3	9.7	4.0
5	flufenacet	60	DF	0.6	lb ai/a	PRE	3.3	10.0	8.0	6.3	9.3	4.3
6	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	2.3	8.7	7.3	3.7	9.3	2.7
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
7	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.0	10.0	10.0	9.7	9.3	9.0
	phenmedipham	1.3	L	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
8	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.0	9.0	7.3	6.3	9.7	6.3
	pyrazon	68	DF	3	lb ai/a	PO1						
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	6.0	10.0	10.0	10.0	10.0	8.0
	PROGRESS	1.8	L	0.33	lb ai/a	PO1						
10	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.48	2.91	3.15	3.39	1.37	3.14
Standard Deviation							0.86	1.70	1.84	1.98	0.80	1.83
CV							21.75	20.46	24.2	33.54	9.14	36.41

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SPINACH	RED BEET ROOT<1"	RED BEET ROOT>1"	RED BEET TOPS	SW CHARD
Crop Variety							SPINACH	RED BEET	RED BEET	RED BEET	SW CHARD
Description								ROOT<1"	ROOT>1"	TOPS	
Rating Date							6/26/03	7/17/03	7/17/03	7/17/03	7/17/03
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
1	pyrazon	68	DF	3	lb ai/a	PRE	2.23	1.15	9.23	9.36	26.35
2	ethofumesate	4	SC	2	lb ai/a	PRE	0.66	0.87	7.62	7.81	27.70
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	4.66	1.27	6.05	6.99	20.17
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	3.81	1.80	7.28	8.19	25.77
5	flufenacet	60	DF	0.6	lb ai/a	PRE	4.29	0.85	5.01	6.37	18.77
6	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.40	0.80	5.78	5.89	26.69
	clopyralid	3	EC	0.188	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
7	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.16	1.33	8.25	8.98	26.27
	phenmedipham	1.3	L	1	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
8	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	3.64	1.07	9.04	9.49	27.15
	pyrazon	68	DF	3	lb ai/a	PO1					
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	5.01	1.25	9.31	10.11	31.17
	PROGRESS	1.8	L	0.33	lb ai/a	PO1					
10	untreated						6.25	1.55	4.11	6.00	17.41
LSD (P=.05)							1.001	0.462	2.412	1.834	6.947
Standard Deviation							0.584	0.266	1.386	1.054	4.049
CV							14.19	22.23	19.34	13.31	16.36

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

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Pest Code									
Crop Variety							SW CHARD	SU BEET	SU BEET
Description									
Rating Date							8/14/03	10/8/03	10/8/03
Rating Data Type							YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	NUMBER	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	pyrazon	68	DF	3	lb ai/a	PRE	12.82	79.3	54.72
2	ethofumesate	4	SC	2	lb ai/a	PRE	14.55	83.3	50.41
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	13.18	82.7	55.08
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	12.54	79.3	56.37
5	flufenacet	60	DF	0.6	lb ai/a	PRE	12.19	86.0	48.22
6	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	15.45	70.0	50.27
	clopyralid	3	EC	0.188	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
7	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	11.44	76.7	51.49
	phenmedipham	1.3	L	1	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
8	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	13.06	93.0	62.45
	pyrazon	68	DF	3	lb ai/a	PO1			
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	11.86	86.0	57.29
	PROGRESS	1.8	L	0.33	lb ai/a	PO1			
10	untreated						7.69	86.3	57.33
LSD (P=.05)							2.848	18.74	18.173
Standard Deviation							1.660	10.88	10.549
CV							13.3	13.22	19.4

Weed Control in Cabbage and Chinese Cabbage - HTRC

Project Code: WC 114-03-01 **Location: HTRC Block 67**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Transplant **Planting Date: 6-2-03**
Spacing: 18 IN **Row Spacing: 36 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 35 ft long

Soil Type: Marlette Sandy Loam **OM: 2.7%** **pH: 7.2**
Sand: 47% **Silt: 31%** **Clay: 22%** **CEC: 12.5**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5-29	1:30 pm	75/66	°F	Adequate	W 2.6	49%	15% cloudy	N
PRT	5-30	9:30 pm	62/56	°F	Adequate	SW 2.3	67%	30% cloudy	N
POT	6-2	2:00 pm	75/67	°F	Adequate	S 2	32%	5% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-2	Cabbage	3″	3-4	
6-2	Chinese Cabbage	3″	3-4	
6-2	GRFT			
6-2	LACG			
6-2	COLQ			
6-2	EBNS			
6-2	LATH			
6-2	RRPW			
6-2	VELE			

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.
3. Crops and varieties: Head Cabbage – Blue Lagoon, Chinese Cabbage – Chiko.
4. One row planted for each crop/plot.
5. All Chinese cabbage harvested in single pass.
6. Head cabbage harvested 3 times, all mature heads each harvest.

Weed Control in Cabbage and Chinese Cabbage - HTRC

Dept. of Horticulture, MSU

Weed Control in Cabbage and Chinese Cabbage - HTRC

Trial ID: WC 114-03-01 **Study Director:**
Location: HTRC Block 67 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Pest Code		GRFT	COLQ	EBNS
							Description	CABBAGE CHIN CAB			
							Rating Date	6/30/03 6/30/03	6/30/03	6/30/03	6/30/03
							Rating Data Type	RATING RATING	RATING	RATING	RATING
							Rating Unit				
1	trifluralin	4	EC	1	lb ai/a	PPI		1.3 1.0	5.7	3.0	2.0
2	napropramide	50	DF	2	lb ai/a	POT		1.3 1.0	9.3	5.0	4.7
3	napropramide	50	DF	2	lb ai/a	PRT		1.3 2.7	10.0	10.0	10.0
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
4	trifluralin	4	EC	1	lb ai/a	PPI		1.3 3.3	10.0	10.0	10.0
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
5	oxyfluorfen	2	L	0.5	lb ai/a	PRT		1.7 3.0	10.0	10.0	10.0
6	clomazone	3	ME	0.375	lb ai/a	PRT		1.0 1.3	10.0	9.7	10.0
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT		1.7 1.3	10.0	8.3	9.7
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT		1.3 1.0	10.0	6.0	9.7
9	flufenacet	60	DF	0.6	lb ai/a	POT		1.7 2.3	10.0	8.7	10.0
10	sulfentrazone	4	F	0.2	lb ai/a	POT		1.7 1.0	10.0	10.0	9.7
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT		2.0 2.0	10.0	9.0	10.0
12	weeded control							1.0 1.0	1.0	1.0	1.0
LSD (P=.05)								0.72 1.07	1.90	2.29	2.32
Standard Deviation								0.42 0.63	1.12	1.35	1.37
CV								29.31 36.21	12.73	17.91	17.0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Pest Code	LATH	RRPW			
							Description			CABBAGE	CABBAGE	CABBAGE
							Rating Date	6/30/03	6/30/03	8/7/03	8/7/03	8/18/03
							Rating Data Type	RATING	RATING	YIELD	YIELD	YIELD
							Rating Unit			HEAD/PLT	KG/PLOT	HEAD/PLT
1	trifluralin	4	EC	1	lb ai/a	PPI		2.0	8.0	1.3	2.06	3.3
2	napropramide	50	DF	2	lb ai/a	POT		4.3	6.7	2.0	2.94	6.7
3	napropramide	50	DF	2	lb ai/a	PRT		10.0	10.0	3.7	5.43	10.3
	oxyfluorfen	2	L	0.5	lb ai/a	PRT						
4	trifluralin	4	EC	1	lb ai/a	PPI		10.0	10.0	2.3	3.46	8.0
	oxyfluorfen	2	L	0.5	lb ai/a	PRT						
5	oxyfluorfen	2	L	0.5	lb ai/a	PRT		10.0	10.0	2.7	3.62	6.0
6	clomazone	3	ME	0.375	lb ai/a	PRT		10.0	9.7	3.0	4.28	5.3
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT		9.0	10.0	3.0	4.21	4.7
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT		9.0	10.0	2.3	3.39	5.7
9	flufenacet	60	DF	0.6	lb ai/a	POT		10.0	10.0	3.7	5.19	6.0
10	sulfentrazone	4	F	0.2	lb ai/a	POT		9.7	10.0	3.3	5.68	8.7
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT		10.0	10.0	2.3	3.40	3.7
12	weeded control							1.0	1.0	0.0	0.00	0.3
LSD (P=.05)								2.22	1.74	2.44	3.947	4.58
Standard Deviation								1.31	1.03	1.44	2.331	2.71
CV								16.56	11.72	58.24	64.05	47.32

Weed Control in Cabbage and Chinese Cabbage - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CABBAGE YIELD KG/PLOT 8/18/03	CABBAGE YIELD HEAD/PLT 8/21/03	CABBAGE YIELD KG/PLOT 8/21/03	CABBAGE TOT YIELD HEAD/PLT	CABBAGE TOT YIELD KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	4.95	14.7	20.29	19.3	27.31
2	napropramide	50	DF	2	lb ai/a	POT	10.32	11.7	20.02	20.3	33.28
3	napropramide	50	DF	2	lb ai/a	PRT	17.53	8.3	15.29	22.3	38.25
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
4	trifluralin	4	EC	1	lb ai/a	PPI	12.49	12.7	24.02	23.0	39.97
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
5	oxyfluorfen	2	L	0.5	lb ai/a	PRT	9.29	12.3	22.27	21.0	35.18
6	clomazone	3	ME	0.375	lb ai/a	PRT	8.44	14.3	24.64	22.7	37.36
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	7.44	14.0	24.46	21.7	36.10
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.57	14.7	23.66	22.7	36.62
9	flufenacet	60	DF	0.6	lb ai/a	POT	9.76	13.0	19.66	22.7	34.62
10	sulfentrazone	4	F	0.2	lb ai/a	POT	15.57	11.7	18.99	23.7	40.24
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	5.61	16.0	25.12	22.0	34.13
12	weeded control						0.48	19.3	19.13	19.7	19.61
LSD (P=.05)							8.176	6.14	10.554	2.74	7.722
Standard Deviation							4.828	3.62	6.232	1.62	4.560
CV							51.98	26.73	29.04	7.43	13.26

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CHIN CAB TOT YIELD HEAD/PLT 8/18/03	CHIN CAB TOT YIELD KG/PLOT 8/18/03
1	trifluralin	4	EC	1	lb ai/a	PPI	15.7	25.66
2	napropramide	50	DF	2	lb ai/a	POT	17.3	25.43
3	napropramide	50	DF	2	lb ai/a	PRT	16.7	21.35
	oxyfluorfen	2	L	0.5	lb ai/a	PRT		
4	trifluralin	4	EC	1	lb ai/a	PPI	16.0	19.12
	oxyfluorfen	2	L	0.5	lb ai/a	PRT		
5	oxyfluorfen	2	L	0.5	lb ai/a	PRT	16.3	20.06
6	clomazone	3	ME	0.375	lb ai/a	PRT	14.7	19.43
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	14.3	20.00
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	16.7	19.69
9	flufenacet	60	DF	0.6	lb ai/a	POT	14.7	18.37
10	sulfentrazone	4	F	0.2	lb ai/a	POT	15.7	15.01
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	17.3	18.21
12	weeded control						17.3	21.03
LSD (P=.05)							4.98	7.389
Standard Deviation							2.94	4.364
CV							18.32	21.52

Preemergence Weed Control in Carrot - Hart

Project Code: WC 107-03-01 **Location: Oomen Farm, Wash. & 104th, Hart**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Recolleta**
Planting Method: Seeded **Planting Date:4/25/2003**
Spacing: 3 IN **Row Spacing: 18 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 10 ft wide x 30 ft long

Soil Type: Freesoil loamy very fine sand **OM: 1.2%** **pH: 5.9**
Sand: 61% **Silt: 22%** **Clay: 17%** **CEC: 4.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-7	11:00 am	55/50	°F	Adequate	NW 6.3	74%	100% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-7	Carrot			
5-7	RRPW			
5-7	MWCH			
5-7	COLQ			
5-7	ANBG			

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.
3. June 13th, Plant counts of 4 ft. of bed (3 rows)

Preemergence Weed Control in Carrot - Hart

Dept. of Horticulture, MSU

Preemergence Weed Control in Carrot - Hart

Trial ID: WC107-03-01 **Study Director:**
Location: Oomen Farm Wash. & 104 **Investigator: Dr. Bernard Zandstra**

Pest Code											ANBG
Description							CARROT	BARLEY	CARROT	CARROT	
Rating Date							5/29/03	5/29/03	6/13/03	6/13/03	6/13/03
Rating Data Type							RATING	RATING	PLANTS/4FT	RATING	RATING
Rating Unit											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	linuron	50	DF	0.5	lb ai/a	PRE	3.3	7.0	41.7	1.7	10.0
2	clomazone	3	ME	0.25	lb ai/a	PRE	2.7	3.3	35.3	1.7	10.0
3	clomazone	3	ME	0.5	lb ai/a	PRE	3.0	5.3	36.0	2.7	10.0
4	clomazone	3	ME	1	lb ai/a	PRE	4.3	8.0	33.3	4.7	10.0
5	mesotrione	4	SC	0.1	lb ai/a	PRE	10.0	6.7	1.0	9.0	5.3
6	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	9.7	0.0	9.0	7.0
7	mesotrione	4	SC	0.4	lb ai/a	PRE	10.0	10.0	0.0	10.0	10.0
8	DOMAIN	60	DF	0.4	lb ai/a	PRE	5.3	9.7	30.3	4.0	10.0
9	DOMAIN	60	DF	0.6	lb ai/a	PRE	5.7	10.0	30.0	6.0	10.0
10	metribuzin	75	DF	0.375	lb ai/a	PRE	4.0	10.0	38.3	4.0	10.0
11	flufenacet	60	DF	0.6	lb ai/a	PRE	4.0	3.3	30.7	3.7	10.0
12	weeded control						1.0	1.0	42.0	1.0	1.0
LSD (P=.05)							1.59	1.29	10.05	1.63	2.84
Standard Deviation							0.94	0.76	5.94	0.96	1.68
CV							17.74	10.91	22.35	20.18	19.49

Pest Code							COLQ	MWCH	RRPW		ANBG	MWCH
Description										CARROT		
Rating Date							6/13/03	6/13/03	6/13/03	6/25/03	6/25/03	6/25/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	linuron	50	DF	0.5	lb ai/a	PRE	10.0	10.0	8.3	1.0	10.0	10.0
2	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	8.0	9.0	1.3	10.0	8.7
3	clomazone	3	ME	0.5	lb ai/a	PRE	10.0	9.0	9.7	1.3	10.0	8.7
4	clomazone	3	ME	1	lb ai/a	PRE	10.0	10.0	10.0	3.7	10.0	9.7
5	mesotrione	4	SC	0.1	lb ai/a	PRE	10.0	10.0	10.0	9.0	7.0	10.0
6	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	10.0	10.0	9.7	7.3	10.0
7	mesotrione	4	SC	0.4	lb ai/a	PRE	10.0	10.0	10.0	10.0	9.7	10.0
8	DOMAIN	60	DF	0.4	lb ai/a	PRE	9.7	10.0	10.0	3.0	10.0	10.0
9	DOMAIN	60	DF	0.6	lb ai/a	PRE	10.0	10.0	10.0	4.7	10.0	10.0
10	metribuzin	75	DF	0.375	lb ai/a	PRE	10.0	10.0	9.3	3.0	10.0	10.0
11	flufenacet	60	DF	0.6	lb ai/a	PRE	9.7	9.7	7.3	2.3	10.0	8.7
12	weeded control						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.41	0.76	1.68	0.98	2.57	1.46
Standard Deviation							0.24	0.45	0.99	0.58	1.52	0.86
CV							2.62	5.01	11.36	13.86	17.37	9.68

Preemergence Weed Control in Carrot - Hart

Dept. of Horticulture, MSU

Pest Code							RRPW	
Description								CARROT
Rating Date							6/25/03	9/26/03
Rating Data Type							RATING	YIELD
Rating Unit								KG/5 FT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	linuron	50	DF	0.5	lb ai/a	PRE	6.7	16.51
2	clomazone	3	ME	0.25	lb ai/a	PRE	8.7	14.07
3	clomazone	3	ME	0.5	lb ai/a	PRE	9.7	14.22
4	clomazone	3	ME	1	lb ai/a	PRE	9.7	12.39
5	mesotrione	4	SC	0.1	lb ai/a	PRE	9.3	5.02
6	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	0.99
7	mesotrione	4	SC	0.4	lb ai/a	PRE	10.0	0.00
8	DOMAIN	60	DF	0.4	lb ai/a	PRE	9.0	14.10
9	DOMAIN	60	DF	0.6	lb ai/a	PRE	9.3	12.79
10	metribuzin	75	DF	0.375	lb ai/a	PRE	9.0	14.85
11	flufenacet	60	DF	0.6	lb ai/a	PRE	6.3	13.76
12	weeded control						1.0	15.13
LSD (P=.05)							1.06	3.963
Standard Deviation							0.63	2.340
CV							7.61	20.98

Postemergence Weed Control in Carrot - Hart

Project Code: WC 107-03-02 **Location: Oomen Farm, Wash. & 104th, Hart**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Recolleta**
Planting Method: Seeded **Planting Date:4/25/2003**
Spacing: 3 IN **Row Spacing: 18 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 10 ft wide x 30 ft long

Soil Type: Freesoil loamy very fine sand **OM: 1.2%** **pH: 5.9**
Sand: 61% **Silt: 22%** **Clay: 17%** **CEC: 4.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-13	4:50 pm	75/82	°F	Adequate	W 5.2	51%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-13	Carrot	1-2″	2-5	
6-13	RRPW	1-2″	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.**
3. **Whole field sprayed with Lorox @ .25 lb/ai PRE**
4. **June 13th counted carrots in 4 ft. of bed (3 rows)**

Postemergence Weed Control in Carrot - Hart

Dept. of Horticulture, MSU

Postemergence Weed Control in Carrot - Hart

Trial ID: WC107-03-02 **Study Director:**
Location: Oomen Farm, Wash & 104 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Pest Code	RRPW	
	Description						CARROT		CARROT
	Rating Date						6/26/03	6/26/03	9/26/03
	Rating Data Type						RATING	RATING	YIELD
	Rating Unit								KG/5 FT
1	linuron	50	DF	0.5	lb ai/a	PO1	1.7	8.3	14.18
	COC		L	1	% v/v	PO1			
2	linuron	50	DF	1	lb ai/a	PO1	2.3	9.3	14.75
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1	3.0	9.0	15.52
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1	2.3	9.0	15.65
5	oxyfluorfen	2	L	0.125	lb ai/a	PO1	3.7	9.7	16.85
6	flumioxazin	51	WG	0.032	lb ai/a	PO1	3.7	9.0	16.61
7	flumioxazin	51	WG	0.063	lb ai/a	PO1	4.0	10.0	17.22
8	mesotrione	4	SC	0.045	lb ai/a	PO1	5.0	9.3	12.14
9	mesotrione	4	SC	0.094	lb ai/a	PO1	6.3	9.3	10.53
10	mesotrione	4	SC	0.045	lb ai/a	PO1	5.7	8.7	11.03
	COC		L	1	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
11	mesotrione	4	SC	0.094	lb ai/a	PO1	6.7	10.0	10.46
	COC		L	1	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
12	weeded control						1.0	1.0	13.86
LSD (P=.05)							0.97	1.02	3.668
Standard Deviation							0.58	0.60	2.166
CV							15.22	7.02	15.4

Preemergence Weed Control in Carrot - Fremont

Project Code: WC 107-03-03 **Location: Vogel Farm, Luce & 90th, Fremont**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax**
Planting Method: Seeded **Planting Date:4/29/2003**
Spacing: 0.32 IN **Row Spacing: 18 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications:3**
Plot Size: 10 ft wide x 30 ft long

Soil Type: Thetford loamy fine sand **OM: 1.5%** **pH: 6.5**
Sand: 83% **Silt: 8%** **Clay: 9%** **CEC: 5.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-7	2:00 pm	53/53	°F	Adequate	NW 7	79%	100% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-7	Carrot			
5-7	HANS			
5-7	RRPW			
5-7	COCW			
5-7	COLQ			
5-7	COPU			
5-7	EBNS			

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.
3. June 13th, 2003, Plants counted in 4 ft. of bed (3 rows)

Preemergence Weed Control in Carrot - Fremont

Dept. of Horticulture, MSU

Preemergence Weed Control in Carrot - Fremont

Trial ID: WC107-03-03 **Study Director:**
Location: Vogel Farm, Luce & 80 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT	CARROT	CARROT	BARLEY	COCW	COLQ
	Pest Code										COCW	COLQ
	Description						CARROT	CARROT	CARROT	BARLEY		
	Rating Date						6/13/03	5/29/03	6/13/03	6/13/03	6/13/03	6/13/03
	Rating Data Type						PLANTS/4FT	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	linuron	50	DF	0.25	lb ai/a	PRE	257.0	1.3	1.0	4.7	8.3	8.7
2	linuron	50	DF	0.5	lb ai/a	PRE	258.0	1.3	1.0	2.0	10.0	8.0
3	clomazone	3	ME	0.25	lb ai/a	PRE	222.7	3.3	1.7	2.3	10.0	8.7
4	clomazone	3	ME	0.5	lb ai/a	PRE	250.0	3.0	3.0	3.3	10.0	9.7
5	mesotrione	4	SC	0.1	lb ai/a	PRE	0.0	10.0	10.0	7.7	10.0	10.0
6	mesotrione	4	SC	0.2	lb ai/a	PRE	0.0	10.0	10.0	9.7	10.0	10.0
7	DOMAIN	60	DF	0.4	lb ai/a	PRE	109.0	6.0	6.3	6.3	10.0	10.0
8	DOMAIN	60	DF	0.6	lb ai/a	PRE	73.0	7.3	7.7	9.7	10.0	10.0
9	metribuzin	75	DF	0.375	lb ai/a	PRE	66.3	7.7	7.3	8.0	10.0	10.0
10	flufenacet	60	DF	0.6	lb ai/a	PRE	148.3	3.3	3.7	2.7	7.7	7.3
11	control						207.3	2.3	1.0	1.0	1.0	1.0
LSD (P=.05)							94.29	2.25	1.29	3.11	0.86	1.46
Standard Deviation							55.36	1.32	0.76	1.83	0.51	0.85
CV							38.26	26.06	15.81	35.04	5.76	10.07

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COPU	HANS	RRPW	CARROT	COLQ	EBNS
	Pest Code						COPU	HANS	RRPW		COLQ	EBNS
	Description									CARROT		
	Rating Date						6/13/03	6/13/03	6/13/03	6/25/03	6/25/03	6/25/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	linuron	50	DF	0.25	lb ai/a	PRE	10.0	10.0	7.7	1.3	7.7	8.3
2	linuron	50	DF	0.5	lb ai/a	PRE	10.0	9.7	8.3	2.0	8.7	9.7
3	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	10.0	8.3	2.0	9.3	10.0
4	clomazone	3	ME	0.5	lb ai/a	PRE	10.0	10.0	8.7	2.3	9.7	10.0
5	mesotrione	4	SC	0.1	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	10.0
6	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	10.0
7	DOMAIN	60	DF	0.4	lb ai/a	PRE	10.0	10.0	10.0	5.0	9.7	10.0
8	DOMAIN	60	DF	0.6	lb ai/a	PRE	10.0	9.3	10.0	6.0	10.0	10.0
9	metribuzin	75	DF	0.375	lb ai/a	PRE	10.0	10.0	10.0	5.7	10.0	10.0
10	flufenacet	60	DF	0.6	lb ai/a	PRE	10.0	8.0	8.0	2.0	6.3	8.7
11	control						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.00	0.77	0.93	1.80	2.36	1.37
Standard Deviation							0.00	0.45	0.54	1.06	1.39	0.80
CV							0.0	5.06	6.52	24.54	16.53	9.03

Preemergence Weed Control in Carrot - Fremont

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	HANS	RRPW	CARROT
Pest Code							HANS	RRPW	
Description									CARROT
Rating Date							6/25/03	6/25/03	9/12/03
Rating Data Type							RATING	RATING	YIELD
Rating Unit									KG/5 FT
1	linuron	50	DF	0.25	lb ai/a	PRE	10.0	6.7	19.11
2	linuron	50	DF	0.5	lb ai/a	PRE	10.0	8.3	18.48
3	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	8.7	18.26
4	clomazone	3	ME	0.5	lb ai/a	PRE	10.0	8.7	20.76
5	mesotrione	4	SC	0.1	lb ai/a	PRE	10.0	10.0	0.00
6	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	10.0	0.00
7	DOMAIN	60	DF	0.4	lb ai/a	PRE	9.7	9.7	14.58
8	DOMAIN	60	DF	0.6	lb ai/a	PRE	9.3	9.7	15.14
9	metribuzin	75	DF	0.375	lb ai/a	PRE	10.0	10.0	14.97
10	flufenacet	60	DF	0.6	lb ai/a	PRE	5.7	6.7	17.43
11	control						1.0	1.0	19.05
LSD (P=.05)							1.78	1.20	4.762
Standard Deviation							1.04	0.70	2.796
CV							11.99	8.65	19.49

Postemergence Weed Control in Carrot - Fremont

Project Code: WC 107-03-04 **Location: Vogel Farm, Fremont**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax**
Planting Method: Seeded **Planting Date:4/29/2003**
Spacing: 0.32 IN **Row Spacing: 18 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 10 ft wide x 30 ft long

Soil Type: Thetford loamy fine sand **OM: 1.5%** **pH: 6.5**
Sand: 83% **Silt: 8%** **Clay: 9%** **CEC: 5.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-13	11:30 am	73/67	°F	Adequate	W 1	62%	80% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-13	Carrot	2.5″	3-5	
6-13	COLQ	2-5″		many
6-13	RRPW	3-5″		many
6-13	COCW	4-6″		many
6-13	COPU	3-4″		few
6-13	HANS	4-6″		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.
3. Harvested all carrots in 5ft. of each bed.

Postemergence Weed Control in Carrot - Fremont

Dept. of Horticulture, MSU

Postemergence Weed Control in Carrot - Fremont

Trial ID: WC107-03-04 **Study Director:**
Location: Vogel Farm, Luce & 80 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT RATING 6/25/03	RRPW RATING 6/25/03	COLQ RATING 6/25/03	HANS RATING 6/25/03	CARROT YIELD 9/12/03 KG/5 FT
1	linuron	50	DF	0.25	lb ai/a	PO1	1.3	7.3	8.0	10.0	14.86
	COC		L	1	% v/v	PO1					
2	linuron	50	DF	0.5	lb ai/a	PO1	2.3	10.0	10.0	10.0	15.11
	COC		L	1	% v/v	PO1					
3	linuron	50	DF	1	lb ai/a	PO1	3.3	10.0	10.0	10.0	16.49
4	oxyfluorfen	2	L	0.031	lb ai/a	PO1	3.3	5.3	3.7	8.0	8.51
5	oxyfluorfen	2	L	0.063	lb ai/a	PO1	3.7	3.7	3.7	8.3	7.92
6	oxyfluorfen	2	L	0.125	lb ai/a	PO1	4.3	6.7	8.0	8.3	12.05
7	flumioxazin	51	WG	0.032	lb ai/a	PO1	5.0	6.0	7.7	8.3	15.57
8	flumioxazin	51	WG	0.063	lb ai/a	PO1	5.0	7.3	8.3	10.0	12.97
9	mesotrione	4	SC	0.045	lb ai/a	PO1	7.3	8.3	10.0	10.0	5.61
10	mesotrione	4	SC	0.094	lb ai/a	PO1	7.0	10.0	10.0	10.0	7.19
11	weeded control						1.0	1.0	1.0	1.0	15.53
LSD (P=.05)							0.99	2.40	2.05	3.12	3.686
Standard Deviation							0.58	1.41	1.20	1.83	2.164
CV							14.68	20.5	16.48	21.46	18.06

Preemergence Weed Control in Carrot – Muck Farm

Project Code: WC 107-03-05 **Location: Muck Farm C-9**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Apache**
Planting Method: Seeded **Planting Date: 5-23-03**
Spacing: 0.5 IN **Row Spacing: 18 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.3 ft wide x 25 ft long

Soil Type: Houghton Muck **OM: 80%** **pH: 6.6**
Sand:38% **Silt:54%** **Clay:8%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	6-5	10:00 am	68/57	°F	Adequate	N 3	46%	95% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-5	Carrot	0.25″		
6-5	YENS		2-4	moderate
6-5	LATH	1″	2	few
6-5	RRPW			few
6-5	COPU			
6-5	COCW			
6-5	PRPW			

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.
3. Spring application of 400 lbs/a 0-0-62 and 500 lbs/a of 8-21-29+ 0.5% Zn + 1% Mn.
4. Plots were not harvested due to heavy yellow nutsedge pressure.

Preemergence Weed Control in Carrot – Muck Farm

Dept. of Horticulture, MSU

Preemergence Weed Control in Carrot - Muck Farm

Trial ID: WC107-03-05 **Study Director:**
Location: Muck Farm Block C9 **Investigator: Dr. Bernard Zandstra**

Pest Code								YENS	COCW	COPU	LATH	RRPW
Description								CARROT				
Rating Date								6/11/03	6/11/03	6/11/03	6/11/03	6/11/03	6/11/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	linuron	50	DF	1	lb ai/a	PRE		2.7	7.3	10.0	10.0	10.0	10.0
2	s-metolachlor	7.62	EC	1.7	lb ai/a	PRE		1.7	4.0	3.7	9.3	5.0	4.3
3	pendimethalin	3.3	EC	2	lb ai/a	PRE		3.0	5.7	7.0	9.7	8.3	7.0
4	clomazone	3	ME	0.25	lb ai/a	PRE		1.0	7.7	9.7	9.7	8.0	7.7
5	clomazone	3	ME	0.5	lb ai/a	PRE		3.0	6.7	10.0	10.0	8.7	8.3
6	mesotrione	4	SC	0.1	lb ai/a	PRE		8.3	9.0	10.0	10.0	9.7	9.3
7	mesotrione	4	SC	0.2	lb ai/a	PRE		8.7	8.7	8.7	10.0	9.0	8.7
8	mesotrione	4	SC	0.4	lb ai/a	PRE		9.0	8.7	9.7	9.7	9.7	10.0
9	DOMAIN	60	DF	0.6	lb ai/a	PRE		7.0	4.0	10.0	10.0	10.0	10.0
10	metribuzin	75	DF	0.5	lb ai/a	PRE		7.7	5.7	10.0	10.0	10.0	10.0
11	flufenacet	60	DF	0.6	lb ai/a	PRE		2.7	4.0	9.0	10.0	7.7	8.7
12	weeded control							2.0	1.7	3.3	3.3	4.0	3.0
LSD (P=.05)								1.78	2.25	3.28	2.16	3.14	2.73
Standard Deviation								1.05	1.33	1.94	1.28	1.86	1.61
CV								22.25	21.84	23.03	13.74	22.28	19.97

Pest Code								YENS	COPU	LATH	PRPW	RRPW
Description								CARROT				
Rating Date								6/19/03	6/19/03	6/19/03	6/19/03	6/19/03	6/19/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	linuron	50	DF	1	lb ai/a	PRE		2.7	6.0	8.3	9.3	10.0	8.3
2	s-metolachlor	7.62	EC	1.7	lb ai/a	PRE		2.0	3.0	7.7	5.3	9.3	7.3
3	pendimethalin	3.3	EC	2	lb ai/a	PRE		2.0	4.0	10.0	8.7	8.7	9.3
4	clomazone	3	ME	0.25	lb ai/a	PRE		1.7	4.7	7.3	10.0	6.3	5.3
5	clomazone	3	ME	0.5	lb ai/a	PRE		1.7	4.3	10.0	10.0	6.3	5.3
6	mesotrione	4	SC	0.1	lb ai/a	PRE		9.0	7.7	4.0	9.0	9.3	8.7
7	mesotrione	4	SC	0.2	lb ai/a	PRE		9.7	7.3	4.7	9.0	9.7	9.7
8	mesotrione	4	SC	0.4	lb ai/a	PRE		10.0	8.0	6.3	10.0	10.0	10.0
9	DOMAIN	60	DF	0.6	lb ai/a	PRE		6.7	2.3	10.0	9.3	10.0	10.0
10	metribuzin	75	DF	0.5	lb ai/a	PRE		6.0	2.7	9.7	9.0	10.0	9.7
11	flufenacet	60	DF	0.6	lb ai/a	PRE		3.3	3.7	9.0	8.7	9.7	9.3
12	weeded control							2.0	1.0	1.0	3.3	1.0	1.0
LSD (P=.05)								1.95	1.60	2.80	2.76	2.11	1.90
Standard Deviation								1.15	0.94	1.65	1.63	1.25	1.12
CV								24.43	20.73	22.52	19.27	14.93	14.36

Postemergence Weed Control in Carrot – Muck Farm

Project Code: WC 107-03-06 **Location: Muck Farm C-9**

Personnel: Juan J. Cisneros, Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Apache**
Planting Method: Seeded **Planting Date: 5-23-03**
Spacing: 0.5 IN **Row Spacing: 18 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 10 ft wide x 30 ft long

Soil Type: Houghton Muck **OM: 80%** **pH: 6.6**
Sand: 38% **Silt: 54%** **Clay: 8%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-20	12:00 pm	71/62	°F	Dry	NW 6	41%	5% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-20	Carrot	2″		
6-20	LATH	2″	3-8	many
6-20	RRPW	2″	2-8	many
6-20	YENS	2″	2-6	many
6-20	COLQ	1.5″	4-8	few
6-20	COPU	1″	2-12	many
6-20	PRPW	1.5″		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.
3. Spring application of 400 lbs/a 0-0-62 and 500 lbs/a of 8-21-29+ 0.5% Zn + 1% Mn.
4. Plots were not harvested due to heavy yellow nutsedge pressure.

Postemergence Weed Control in Carrot – Muck Farm

Dept. of Horticulture, MSU

Postemergence Weed Control in Carrot - Muck Farm

Trial ID: WC107-03-06 **Study Director:**
Location: Muck Farm, Block C9 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	YENS CARROT 7/1/03 RATING	COLQ 7/1/03 RATING	COPU 7/1/03 RATING	LATH 7/1/03 RATING	RRPW 7/1/03 RATING
1	linuron	50	DF	1	lb ai/a	PO1	1.3	8.0	10.0	10.0	10.0	10.0
	COC		L	1	% v/v	PO1						
2	trifloxysulfuron	75	WG	0.0067	lb ai/a	PO1	7.7	7.3	7.0	2.7	8.7	8.0
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1	1.0	1.3	7.3	7.7	8.7	5.3
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1	1.0	2.3	9.0	9.7	7.3	8.7
5	oxyfluorfen	2	L	0.125	lb ai/a	PO1	2.0	3.7	8.3	10.0	8.3	9.3
6	flumioxazin	51	WG	0.032	lb ai/a	PO1	2.0	2.7	3.7	4.3	2.3	4.7
7	flumioxazin	51	WG	0.063	lb ai/a	PO1	2.7	3.0	6.3	8.0	3.7	8.7
8	mesotrione	4	SC	0.045	lb ai/a	PO1	7.7	9.0	10.0	1.0	10.0	10.0
9	mesotrione	4	SC	0.094	lb ai/a	PO1	9.0	9.0	10.0	1.3	10.0	10.0
10	mesotrione	4	SC	0.045	lb ai/a	PO1	9.0	9.0	10.0	4.7	10.0	10.0
	COC		L	1	% v/v	PO1						
	UAN		L	2.5	% v/v	PO1						
11	mesotrione	4	SC	0.094	lb ai/a	PO1	9.7	9.3	10.0	6.7	10.0	10.0
	COC		L	1	% v/v	PO1						
	UAN		L	2.5	% v/v	PO1						
12	weeded control					PO1	1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.82	1.04	2.09	1.38	1.39	1.49
Standard Deviation							0.48	0.61	1.24	0.82	0.82	0.88
CV							10.77	11.21	16.01	14.62	10.95	11.01

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TUPW CARROT 7/1/03 RATING	YENS 7/29/03 RATING	YENS 7/29/03 RATING
1	linuron	50	DF	1	lb ai/a	PO1	10.0	1.0	8.7
	COC		L	1	% v/v	PO1			
2	trifloxysulfuron	75	WG	0.0067	lb ai/a	PO1	8.0	8.3	8.3
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1	4.7	1.0	2.0
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1	9.0	1.3	3.0
5	oxyfluorfen	2	L	0.125	lb ai/a	PO1	9.7	2.0	5.0
6	flumioxazin	51	WG	0.032	lb ai/a	PO1	4.7	1.7	2.7
7	flumioxazin	51	WG	0.063	lb ai/a	PO1	9.7	1.0	3.0
8	mesotrione	4	SC	0.045	lb ai/a	PO1	10.0	6.7	4.7
9	mesotrione	4	SC	0.094	lb ai/a	PO1	10.0	8.3	7.0
10	mesotrione	4	SC	0.045	lb ai/a	PO1	10.0	9.3	5.0
	COC		L	1	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
11	mesotrione	4	SC	0.094	lb ai/a	PO1	10.0	9.3	6.0
	COC		L	1	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
12	weeded control					PO1	1.0	1.0	1.0
LSD (P=.05)							0.87	1.15	2.04
Standard Deviation							0.51	0.68	1.20
CV							6.36	16.0	25.6

Weed Control in Celery – Muck Farm

Project Code: WC 113-03-01 **Location: Muck Farm C11**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Celery **Variety: Duchess**
Planting Method: Transplant **Planting Date: 6-3-03**
Spacing: 6 IN **Row Spacing: 36 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 16.67 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.9**
Sand: 38% **Silt: 52%** **Clay: 10%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	6-10	10:30 am	71/58	°F	Adequate	S 2.4	62%	95% cloudy	N
PO1	7-17	12:00 pm	79/71	°F	Dry	NW 3	53%	45% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-10	Celery	3″		
6-10	LATH	1″	2	few
6-10	YENS	1.5″		few
6-10	EBNS	o.5″		few
7-17	Celery	11″		
7-17	LATH	7″		few
7-17	YENS	10″		few
7-17	EBNS			
7-17	RRPW	12″		moderate
7-17	COLQ	11″		moderate
7-17	COPU	12″		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.
3. Spring application of 400 lbs/a 0-0-62 and 500 lbs/a of 8-21-29+ 0.5% Zn + 1% Mn.
4. Harvested 5 ft (10 plants) of 2 rows; 20 total plants

Weed Control in Celery – Muck Farm

Dept. of Horticulture, MSU

Weed Control in Celery - Muck Farm

Trial ID: WC 113-03-01 **Study Director:**
Location: Muck Farm Block C11 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LACG	YENS	COLQ	COPU	LATH
	Description						CELERY				
	Rating Date						7/1/03	7/1/03	7/1/03	7/1/03	7/1/03	7/1/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	prometryn	4	L	1	lb ai/a	POT	1.0	10.0	4.7	10.0	9.7	9.3
	prometryn	4	L	1	lb ai/a	PO1						
2	prometryn	4	L	2	lb ai/a	POT	1.3	10.0	1.3	10.0	10.0	10.0
	prometryn	4	L	2	lb ai/a	PO1						
3	s-metolachlor	7.62	EC	0.95	lb ai/a	POT	1.0	10.0	2.0	2.0	8.0	5.3
	prometryn	4	L	1	lb ai/a	PO1						
4	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.7	10.0	2.7	2.7	9.0	7.3
	prometryn	4	L	1	lb ai/a	PO1						
5	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.0	10.0	2.7	2.3	9.7	4.3
	prometryn	4	L	2	lb ai/a	PO1						
6	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	2.0	10.0	2.0	2.3	9.0	6.3
	prometryn	4	L	2	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
7	prometryn	4	L	1	lb ai/a	POT	1.3	10.0	1.7	10.0	9.7	9.3
	linuron	50	DF	1	lb ai/a	PO1						
8	prometryn	4	L	1	lb ai/a	POT	1.0	9.3	1.3	10.0	9.3	8.7
	linuron	50	DF	1	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	flumioxazin	51	WG	0.096	lb ai/a	POT	3.0	8.0	1.3	10.0	7.3	8.0
	prometryn	4	L	1	lb ai/a	PO1						
10	prometryn	4	L	1	lb ai/a	POT	1.0	9.3	1.7	10.0	9.0	9.3
	flumioxazin	51	WG	0.032	lb ai/a	PO1						
11	prometryn	4	L	1	lb ai/a	POT	1.0	9.3	1.7	9.7	10.0	9.3
	flumioxazin	51	WG	0.064	lb ai/a	PO1						
12	prometryn	4	L	1	lb ai/a	POT	1.0	10.0	1.0	10.0	9.3	10.0
	flumioxazin	51	WG	0.096	lb ai/a	PO1						
13	sulfentrazone	4	F	0.2	lb ai/a	POT	3.0	9.3	3.0	9.7	8.0	8.3
	prometryn	4	L	1	lb ai/a	PO1						
14	prometryn	4	L	1	lb ai/a	POT	1.3	10.0	3.3	10.0	10.0	9.3
	sulfentrazone	4	F	0.1	lb ai/a	PO1						
15	prometryn	4	L	1	lb ai/a	POT	1.7	10.0	1.7	10.0	10.0	9.3
	sulfentrazone	4	F	0.2	lb ai/a	PO1						
16	flufenacet	60	DF	1	lb ai/a	POT	1.0	10.0	1.7	8.0	8.7	9.7
	prometryn	4	L	1	lb ai/a	PO1						
17	dimethenamid-p	6	EC	0.98	lb ai/a	POT	1.3	10.0	1.7	4.7	9.7	6.0
	prometryn	4	L	1	lb ai/a	PO1						
18	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.0	10.0	2.3	2.0	9.7	6.3
	prometryn	4	L	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
19	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.3	10.0	3.0	8.3	9.7	5.7
	linuron	50	DF	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
20	weeded control						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.65	1.12	2.28	1.72	1.08	1.99
Standard Deviation							0.40	0.68	1.38	1.04	0.65	1.20
CV							28.3	7.31	66.26	14.64	7.38	15.74

Weed Control in Celery – Muck Farm

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Pest Code							RRPW		LACG	YENS	COPU	LATH
Description								CELERY				
Rating Date							7/1/03	7/29/03	7/29/03	7/29/03	7/29/03	7/29/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	prometryn	4	L	1	lb ai/a	POT	9.3	1.7	10.0	3.0	10.0	10.0
	prometryn	4	L	1	lb ai/a	PO1						
2	prometryn	4	L	2	lb ai/a	POT	10.0	2.0	10.0	6.0	10.0	10.0
	prometryn	4	L	2	lb ai/a	PO1						
3	s-metolachlor	7.62	EC	0.95	lb ai/a	POT	6.0	2.0	9.3	5.3	9.0	4.3
	prometryn	4	L	1	lb ai/a	PO1						
4	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	7.0	2.0	8.3	5.7	9.7	7.0
	prometryn	4	L	1	lb ai/a	PO1						
5	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	9.0	1.0	10.0	7.3	9.7	4.3
	prometryn	4	L	2	lb ai/a	PO1						
6	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	7.7	1.7	9.0	8.0	10.0	8.0
	prometryn	4	L	2	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
7	prometryn	4	L	1	lb ai/a	POT	9.3	1.7	10.0	8.0	10.0	9.7
	linuron	50	DF	1	lb ai/a	PO1						
8	prometryn	4	L	1	lb ai/a	POT	8.7	1.7	10.0	8.0	10.0	9.7
	linuron	50	DF	1	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	flumioxazin	51	WG	0.096	lb ai/a	POT	8.7	3.0	6.3	2.3	9.3	8.7
	prometryn	4	L	1	lb ai/a	PO1						
10	prometryn	4	L	1	lb ai/a	POT	9.0	2.7	7.3	2.0	9.3	10.0
	flumioxazin	51	WG	0.032	lb ai/a	PO1						
11	prometryn	4	L	1	lb ai/a	POT	9.7	2.7	2.7	2.7	10.0	10.0
	flumioxazin	51	WG	0.064	lb ai/a	PO1						
12	prometryn	4	L	1	lb ai/a	POT	9.7	2.7	9.0	2.0	10.0	9.3
	flumioxazin	51	WG	0.096	lb ai/a	PO1						
13	sulfentrazone	4	F	0.2	lb ai/a	POT	8.7	3.7	7.7	4.7	8.0	7.7
	prometryn	4	L	1	lb ai/a	PO1						
14	prometryn	4	L	1	lb ai/a	POT	9.7	3.3	4.3	8.0	7.0	9.0
	sulfentrazone	4	F	0.1	lb ai/a	PO1						
15	prometryn	4	L	1	lb ai/a	POT	9.7	4.0	6.3	7.7	10.0	9.7
	sulfentrazone	4	F	0.2	lb ai/a	PO1						
16	flufenacet	60	DF	1	lb ai/a	POT	9.7	1.3	10.0	4.0	8.3	8.3
	prometryn	4	L	1	lb ai/a	PO1						
17	dimethenamid-p	6	EC	0.98	lb ai/a	POT	9.7	1.3	10.0	5.0	10.0	6.3
	prometryn	4	L	1	lb ai/a	PO1						
18	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	10.0	1.3	10.0	8.3	10.0	5.3
	prometryn	4	L	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
19	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	9.7	1.7	10.0	9.0	10.0	7.3
	linuron	50	DF	0.5	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
20	weeded control						1.0	2.3	1.7	2.3	1.0	1.7
LSD (P=.05)							1.85	1.28	3.21	1.93	1.97	2.19
Standard Deviation							1.12	0.77	1.95	1.17	1.20	1.32
CV							13.04	35.48	24.02	21.39	13.18	16.94

Weed Control in Celery – Muck Farm

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 7/29/03 RATING	CELERY 9/4/03 YIELD KG/20PLT
1	prometryn	4	L	1	lb ai/a	POT	10.0	23.96
	prometryn	4	L	1	lb ai/a	PO1		
2	prometryn	4	L	2	lb ai/a	POT	10.0	24.84
	prometryn	4	L	2	lb ai/a	PO1		
3	s-metolachlor	7.62	EC	0.95	lb ai/a	POT	7.3	23.23
	prometryn	4	L	1	lb ai/a	PO1		
4	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	8.0	19.50
	prometryn	4	L	1	lb ai/a	PO1		
5	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	9.3	25.98
	prometryn	4	L	2	lb ai/a	PO1		
6	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	8.7	24.96
	prometryn	4	L	2	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
7	prometryn	4	L	1	lb ai/a	POT	9.3	22.69
	linuron	50	DF	1	lb ai/a	PO1		
8	prometryn	4	L	1	lb ai/a	POT	9.7	22.20
	linuron	50	DF	1	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
9	flumioxazin	51	WG	0.096	lb ai/a	POT	8.3	15.60
	prometryn	4	L	1	lb ai/a	PO1		
10	prometryn	4	L	1	lb ai/a	POT	8.3	16.09
	flumioxazin	51	WG	0.032	lb ai/a	PO1		
11	prometryn	4	L	1	lb ai/a	POT	9.7	17.98
	flumioxazin	51	WG	0.064	lb ai/a	PO1		
12	prometryn	4	L	1	lb ai/a	POT	9.7	13.48
	flumioxazin	51	WG	0.096	lb ai/a	PO1		
13	sulfentrazone	4	F	0.2	lb ai/a	POT	8.7	16.82
	prometryn	4	L	1	lb ai/a	PO1		
14	prometryn	4	L	1	lb ai/a	POT	10.0	25.24
	sulfentrazone	4	F	0.1	lb ai/a	PO1		
15	prometryn	4	L	1	lb ai/a	POT	10.0	19.74
	sulfentrazone	4	F	0.2	lb ai/a	PO1		
16	flufenacet	60	DF	1	lb ai/a	POT	9.7	22.38
	prometryn	4	L	1	lb ai/a	PO1		
17	dimethenamid-p	6	EC	0.98	lb ai/a	POT	9.0	21.71
	prometryn	4	L	1	lb ai/a	PO1		
18	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	9.7	25.08
	prometryn	4	L	1	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
19	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	10.0	22.85
	linuron	50	DF	0.5	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
20	weeded control						2.7	12.90
LSD (P=.05)							1.76	6.984
Standard Deviation							1.07	4.232
CV							12.0	20.29

Weed Control in Celery – Byron Center

Project Code: WC 113-03-02 **Location: Van Solkema Farm, Byron Center**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Celery **Variety: Duchess**
Planting Method: Transplant **Planting Date: 5-10-03**
Spacing: 6 IN **Row Spacing: 34 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5 ft wide x 30 ft long

Soil Type: Houghton Muck **OM: 9.6%** **pH: 7.0**
Sand: 65% **Silt: 17%** **Clay: 18%** **CEC: 22.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	5-28	11:30 am	73/65	°F	Adequate	SW 1	44%	20% cloudy	N
PO1	7-9	3:00 pm	76/78	°F	Moist	E 5	50	25% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-9	Celery	14″		
6-9	ANBG	7″		moderate
6-9	COPU	4″		moderate
6-9	COCW	4″		moderate
6-9	PAWE	″		
6-9	GOGR	″		

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.
3. Plots were 2 rows wide.
4. Harvested 10 plants in each row.

Dept. of Horticulture, MSU

Weed Control in Celery - Byron Center

Trial ID: WC 113-03-02 Study Director:
Location: Bruce Van Salkema Investigator: Dr. Bernard Zandstra

Pest Code								ANBG	QUGR	COCW	COPU	LATH	PAWE
Crop Variety								CELERY					
Rating Date								7/9/03	7/9/03	7/9/03	7/9/03	7/9/03	7/9/03	7/9/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage								
1	prometryn	4	L	1	lb ai/a	POT		1.0	8.0	9.0	8.7	7.0	10.0	8.7
	prometryn	4	L	1	lb ai/a	PO1								
2	s-metolachlor	7.62	EC	1.9	lb ai/a	POT		1.0	7.7	8.3	9.3	9.0	9.3	8.3
	prometryn	4	L	2	lb ai/a	PO1								
3	dimethenamid-p	6	EC	0.98	lb ai/a	POT		1.7	8.0	7.0	8.7	9.7	10.0	8.7
	prometryn	4	L	1	lb ai/a	PO1								
4	pendimethalin	3.3	EC	2	lb ai/a	POT		1.0	5.7	7.3	9.3	8.7	10.0	7.3
	prometryn	4	L	1	lb ai/a	PO1								
5	flufenacet	60	DF	1	lb ai/a	POT		1.0	8.0	7.7	5.3	8.0	10.0	6.3
	prometryn	4	L	1	lb ai/a	PO1								
6	sulfentrazone	4	F	0.1	lb ai/a	POT		1.0	6.7	6.7	7.0	9.0	10.0	9.0
	prometryn	4	L	1	lb ai/a	PO1								
7	sulfentrazone	4	F	0.2	lb ai/a	POT		3.0	5.3	9.0	7.7	10.0	10.0	9.3
	prometryn	4	L	1	lb ai/a	PO1								
8	prometryn	4	L	1	lb ai/a	POT		1.0	7.7	7.7	10.0	4.0	10.0	10.0
	sulfentrazone	4	F	0.2	lb ai/a	PO1								
LSD (P=.05)								0.36	1.82	1.89	1.77	1.24	0.72	1.95
Standard Deviation								0.20	1.04	1.08	1.01	0.71	0.41	1.12
CV								15.31	14.57	13.75	12.23	8.66	4.12	13.19

Pest Code								ANBG	GOGR	PAWE	COPU	
Crop Variety								CELERY				CELERY
Rating Date								7/30/03	7/30/03	7/30/03	7/30/03	7/30/03	8/6/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING	YIELD
Rating Unit													KG/20PLT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage							
1	prometryn	4	L	1	lb ai/a	POT		1.3	5.0	10.0	7.0	7.7	17.11
	prometryn	4	L	1	lb ai/a	PO1							
2	s-metolachlor	7.62	EC	1.9	lb ai/a	POT		1.0	9.0	10.0	9.0	10.0	16.25
	prometryn	4	L	2	lb ai/a	PO1							
3	dimethenamid-p	6	EC	0.98	lb ai/a	POT		1.3	8.0	10.0	7.0	10.0	15.80
	prometryn	4	L	1	lb ai/a	PO1							
4	pendimethalin	3.3	EC	2	lb ai/a	POT		1.7	2.3	10.0	4.0	10.0	17.30
	prometryn	4	L	1	lb ai/a	PO1							
5	flufenacet	60	DF	1	lb ai/a	POT		1.3	8.7	7.7	6.0	10.0	17.05
	prometryn	4	L	1	lb ai/a	PO1							
6	sulfentrazone	4	F	0.1	lb ai/a	POT		1.3	2.7	7.0	9.0	10.0	13.63
	prometryn	4	L	1	lb ai/a	PO1							
7	sulfentrazone	4	F	0.2	lb ai/a	POT		3.3	1.7	7.7	10.0	10.0	12.75
	prometryn	4	L	1	lb ai/a	PO1							
8	prometryn	4	L	1	lb ai/a	POT		1.0	1.7	5.0	8.3	1.7	17.35
	sulfentrazone	4	F	0.2	lb ai/a	PO1							
LSD (P=.05)								1.14	2.20	5.15	3.43	1.50	4.594
Standard Deviation								0.65	1.26	2.94	1.96	0.86	2.623
CV								42.17	25.76	34.93	25.94	9.87	16.49

Common Groundsel Control in Celery - Hudsonville

Project Code: WC 113-03-03 **Location: Schreur Farm, Hudsonville**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Celery **Variety: Duchess**
Planting Method: Transplant **Planting Date: 5-28-03**
Spacing: 6 IN **Row Spacing: 24 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 4 ft wide x 30 ft long

Soil Type: Carlisle Muck **OM: 66%** **pH: 6.4**
Sand: 23% **Silt: 68%** **Clay: 9%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	6-17	12:15 pm	80/69	°F	Adequate	NE 7	36%	65% cloudy	N
PO1	7-23	2:20 pm	84/70	°F	Adequate	NE 6	36%	25% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-17	Celery	4″		
6-17	COGR	0.5″	2-4	few
6-17	COPU	0.5″		few
7-23	Celery	15″		
7-23	COGR	7″		moderate
7-23	COPU	7″		moderate

Notes and Comments
1. Sprays applied with 2 nozzle shielded boom FF11002, 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.
3. Plots were 2 rows wide.
4. Harvested 10 plants from each row.

Common Groundsel Control in Celery - Hudsonville

Dept. of Horticulture, MSU

Common Groundsel Control in Celery - Hudsonville

Trial ID: WC 113-03-03 Study Director:
Location: Schreur Farm 48th Ave. Investigator: Dr. Bernard Zandstra

Pest Code								COGR	COPU	CORW		COGR
Crop Variety							CELERY				CELERY	
Rating Date							7/23/03	7/23/03	7/23/03	7/23/03	7/30/03	7/30/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	prometryn	4	L	1	lb ai/a	POT	1.0	9.0	7.7	9.7	1.0	7.7
	prometryn	4	L	1	lb ai/a	PO1						
2	prometryn	4	L	2	lb ai/a	POT	1.0	8.7	7.0	10.0	1.0	7.3
	prometryn	4	L	2	lb ai/a	PO1						
3	linuron	50	DF	1	lb ai/a	POT	1.3	8.7	7.7	10.0	1.0	8.7
	linuron	50	DF	1	lb ai/a	PO1						
4	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.0	6.0	8.0	9.7	1.0	2.3
	prometryn	4	L	2	lb ai/a	PO1						
5	dimethenamid-p	6	EC	0.98	lb ai/a	POT	1.3	5.7	8.7	9.0	1.3	1.7
	prometryn	4	L	2	lb ai/a	PO1						
6	prometryn	4	L	1	lb ai/a	POT	1.3	9.0	7.3	10.0	3.0	5.7
	flumioxazin	51	WG	0.096	lb ai/a	PO1						
7	prometryn	4	L	1	lb ai/a	POT	1.3	9.0	7.7	10.0	3.3	9.3
	sulfentrazone	4	F	0.2	lb ai/a	PO1						
8	flufenacet	60	DF	1	lb ai/a	POT	1.0	7.3	7.3	10.0	1.0	5.3
	prometryn	4	L	1	lb ai/a	PO1						
9	prometryn	4	L	1	lb ai/a	POT	1.0	8.0	7.3	9.7	4.0	8.3
	oxyfluorfen	2	L	0.063	lb ai/a	PO1						
10	weeded control						1.0	10.0	10.0	10.0	1.0	9.7
LSD (P=.05)							0.65	1.72	1.99	0.96	0.42	3.51
Standard Deviation							0.38	1.01	1.16	0.56	0.24	2.05
CV							33.53	12.36	14.74	5.69	13.78	31.02

Pest Code							COPU	
Crop Variety								CELERY
Rating Date							7/30/03	8/20/03
Rating Data Type							RATING	YIELD
Rating Unit								KG/20PLT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	prometryn	4	L	1	lb ai/a	POT	8.3	30.92
	prometryn	4	L	1	lb ai/a	PO1		
2	prometryn	4	L	2	lb ai/a	POT	6.3	30.63
	prometryn	4	L	2	lb ai/a	PO1		
3	linuron	50	DF	1	lb ai/a	POT	7.7	29.54
	linuron	50	DF	1	lb ai/a	PO1		
4	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	8.3	31.09
	prometryn	4	L	2	lb ai/a	PO1		
5	dimethenamid-p	6	EC	0.98	lb ai/a	POT	9.3	28.85
	prometryn	4	L	2	lb ai/a	PO1		
6	prometryn	4	L	1	lb ai/a	POT	4.3	31.97
	flumioxazin	51	WG	0.096	lb ai/a	PO1		
7	prometryn	4	L	1	lb ai/a	POT	8.7	32.40
	sulfentrazone	4	F	0.2	lb ai/a	PO1		
8	flufenacet	60	DF	1	lb ai/a	POT	5.7	33.59
	prometryn	4	L	1	lb ai/a	PO1		
9	prometryn	4	L	1	lb ai/a	POT	9.3	34.37
	oxyfluorfen	2	L	0.063	lb ai/a	PO1		
10	weeded control						9.0	34.13
LSD (P=.05)							3.51	3.793
Standard Deviation							2.05	2.211
CV							26.58	6.96

Weed Control in Sweet Corn - HTRC

Project Code: WC 106-03-01 **Location: HTRC Block 140**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Sweet Corn **Variety: GSS 0966 & GSS 0975**
Planting Method: Seeded **Planting Date: 5-28-03**
Spacing: 8 IN **Row Spacing: 28 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 4**
Plot Size: 8 ft wide x 40 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 2.2%** **pH: 6.4**
Sand: 51% **Silt: 33%** **Clay: 16%** **CEC: 6.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-29	3:15 pm	78/70	°F	Adequate	W 3	38%	30% cloudy	N
PO1	6-25	9:30 am	80/73	°F	Dry	SW 4	60%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-25	Sweet Corn	6″	3-5	
6-25	COLQ	2″	2-12	many
6-25	CORW	2″	4	few
6-25	RRPW	3″	4-8	moderate
6-25	VELE	2″	5	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.
3. 20ft alley between rep 2 & 3 and 5 ft alley between rep 1 & 2 and 3 & 4.
4. One row of each cultivar per plot.
5. All mature ears were harvested in a single pass; 20 ears from each plot were evaluated for quality

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Weed Control in Sweet Corn - HTRC

Trial ID: WC 106-03-01 **Study Director:**
Location: HTRC Block 140 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	GSS 0966 6/26/03 RATING	GSS 0975 6/26/03 RATING	COLQ 6/26/03 RATING	GSS 0966 7/14/03 RATING	GSS 0975 7/14/03 RATING
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.8	1.8	7.8	1.6	1.9
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.5	1.3	8.0	1.5	1.3
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	2.0	1.8	9.0	1.7	1.8
4	flufenacet	60	DF	0.6	lb ai/a	PRE	2.0	2.0	8.5	1.3	2.5
5	flufenacet	60	DF	0.53	lb ai/a	PRE	2.3	1.8	10.0	1.5	1.5
	atrazine	4	L	0.5	lb ai/a	PRE					
6	AXIOM	68	DF	0.77	lb ai/a	PRE	2.0	2.0	10.0	1.5	1.8
7	mesotrione	4	SC	0.2	lb ai/a	PRE	1.8	1.8	10.0	1.3	1.5
8	pendimethalin	3.3	EC	1	lb ai/a	PRE	1.3	1.3	10.0	1.5	2.0
9	acetochlor	6.4	EC	1.6	lb ai/a	PRE	1.8	2.0	10.0	1.5	2.5
10	foramsulfuron	35	WG	0.066	lb ai/a	PO1	1.8	1.8	1.0	1.8	2.5
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
11	atrazine	4	L	0.5	lb ai/a	PO1	1.3	1.8	1.0	2.0	2.3
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1					
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
12	AXIOM	68	DF	0.64	lb ai/a	PRE	1.8	1.8	10.0	2.0	2.3
	foramsulfuron	35	WG	0.066	lb ai/a	PO1					
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1					
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
13	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.3	1.5	9.5	1.3	1.5
	carfentrazone	2	EC	0.008	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.8	1.5	8.0	1.0	1.5
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.3	2.3	8.0	1.5	2.5
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
16	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.3	1.3	9.3	1.8	2.0
	pendimethalin	3.3	EC	1.5	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
17	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.3	1.3	7.5	1.3	2.3
	clopyralid	3	EC	0.188	lb ai/a	PO1					
18	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.8	1.5	8.3	1.5	2.0
	nicosulfuron	75	WDG	0.031	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
19	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	1.5	1.3	8.0	1.8	2.0
	glufosinate	1.67	EC	0.26	lb ai/a	PO1					
20	weeded control						1.3	1.3	1.0	2.3	2.8
LSD (P=.05)							0.97	0.87	1.21	1.01	0.92
Standard Deviation							0.68	0.62	0.85	0.71	0.65
CV							42.37	37.93	11.03	45.51	32.32

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COLQ 7/14/03 RATING	RRPW 7/14/03 RATING	GSS 0966 8/27/03 YIELD EAR/PLOT	GSS 0966 8/27/03 YIELD KG/PLOT	GSS 0966 8/27/03 GOOD EARS %
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	4.5	10.0	25.8	6.25	26.9
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	3.3	10.0	27.8	6.82	25.0
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	6.3	10.0	27.8	7.22	43.8
4	flufenacet	60	DF	0.6	lb ai/a	PRE	5.3	9.5	44.8	12.35	23.8
5	flufenacet	60	DF	0.53	lb ai/a	PRE	9.8	10.0	52.3	15.37	42.5
	atrazine	4	L	0.5	lb ai/a	PRE					
6	AXIOM	68	DF	0.77	lb ai/a	PRE	9.5	9.8	53.5	15.16	38.8
7	mesotrione	4	SC	0.2	lb ai/a	PRE	10.0	10.0	54.0	16.29	40.0
8	pendimethalin	3.3	EC	1	lb ai/a	PRE	9.8	9.8	49.3	14.77	28.8
9	acetochlor	6.4	EC	1.6	lb ai/a	PRE	9.3	10.0	50.8	14.91	42.5
10	foramsulfuron	35	WG	0.066	lb ai/a	PO1	8.3	10.0	48.3	13.01	43.8
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
11	atrazine	4	L	0.5	lb ai/a	PO1	10.0	10.0	60.5	16.33	45.0
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1					
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
12	AXIOM	68	DF	0.64	lb ai/a	PRE	10.0	10.0	51.5	14.14	47.5
	foramsulfuron	35	WG	0.066	lb ai/a	PO1					
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1					
	MSO		L	0.94	% v/v	PO1					
	UAN		L	2.5	% v/v	PO1					
13	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	9.0	10.0	54.8	15.79	35.0
	carfentrazone	2	EC	0.008	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	4.8	10.0	39.3	10.30	36.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	10.0	10.0	54.8	15.76	46.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
16	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	10.0	10.0	60.0	18.18	38.8
	pendimethalin	3.3	EC	1.5	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
17	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	5.5	9.3	44.3	12.48	37.5
	clopyralid	3	EC	0.188	lb ai/a	PO1					
18	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	6.5	10.0	44.0	10.91	30.0
	nicosulfuron	75	WDG	0.031	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
19	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	5.0	10.0	38.0	9.02	31.3
	glufosinate	1.67	EC	0.26	lb ai/a	PO1					
20	weeded control						6.8	9.5	33.0	7.75	36.3
LSD (P=.05)							2.57	0.53	17.08	5.254	25.06
Standard Deviation							1.82	0.38	12.08	3.715	17.72
CV							23.74	3.82	26.43	29.39	47.93

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Pest Code										
Description							GSS 0966	GSS 0966	GSS 0975	GSS 0975
Rating Date							8/27/03	8/27/03	8/27/03	8/27/03
Rating Data Type							MED EARS	BAD EARS	YIELD	YIELD
Rating Unit							%	%	EAR/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	35.1	38.0	31.0	7.79
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	45.7	29.3	33.5	7.95
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	41.3	15.0	24.3	5.22
4	flufenacet	60	DF	0.6	lb ai/a	PRE	63.8	12.5	23.8	6.31
5	flufenacet	60	DF	0.53	lb ai/a	PRE	51.3	6.3	48.3	14.68
	atrazine	4	L	0.5	lb ai/a	PRE				
6	AXIOM	68	DF	0.77	lb ai/a	PRE	52.5	8.8	38.3	11.34
7	mesotrione	4	SC	0.2	lb ai/a	PRE	56.3	3.8	44.8	12.48
8	pendimethalin	3.3	EC	1	lb ai/a	PRE	63.8	7.5	43.8	12.83
9	acetochlor	6.4	EC	1.6	lb ai/a	PRE	52.5	5.0	37.8	10.25
10	foramsulfuron	35	WG	0.066	lb ai/a	PO1	43.8	12.5	42.5	10.85
	MSO		L	0.94	% v/v	PO1				
	UAN		L	2.5	% v/v	PO1				
11	atrazine	4	L	0.5	lb ai/a	PO1	45.0	10.0	44.8	11.57
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1				
	MSO		L	0.94	% v/v	PO1				
	UAN		L	2.5	% v/v	PO1				
12	AXIOM	68	DF	0.64	lb ai/a	PRE	45.0	7.5	41.5	11.09
	foramsulfuron	35	WG	0.066	lb ai/a	PO1				
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1				
	MSO		L	0.94	% v/v	PO1				
	UAN		L	2.5	% v/v	PO1				
13	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	57.5	7.5	45.5	12.17
	carfentrazone	2	EC	0.008	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
14	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	45.0	18.8	41.3	10.51
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
15	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	45.0	8.8	43.8	11.69
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
16	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	61.3	0.0	36.8	9.97
	pendimethalin	3.3	EC	1.5	lb ai/a	PO1				
	atrazine	4	L	0.5	lb ai/a	PO1				
17	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	55.0	7.5	35.5	9.50
	clopyralid	3	EC	0.188	lb ai/a	PO1				
18	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	55.0	15.0	40.5	10.77
	nicosulfuron	75	WDG	0.031	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
19	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	37.5	31.3	26.3	5.79
	glufosinate	1.67	EC	0.26	lb ai/a	PO1				
20	weeded control						23.8	40.0	32.0	7.25
LSD (P=.05)							21.49	21.02	15.01	4.520
Standard Deviation							15.19	14.86	10.61	3.196
CV							31.14	104.37	28.09	31.96

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	GSS 0975 8/27/03 GOOD EARS %	GSS 0975 8/27/03 MED EARS %	GSS 0975 8/27/03 BAD EARS %
	Pest Code								
	Description						GSS 0975	GSS 0975	GSS 0975
	Rating Date						8/27/03	8/27/03	8/27/03
	Rating Data Type						GOOD EARS	MED EARS	BAD EARS
	Rating Unit						%	%	%
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	23.8	38.4	37.9
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	12.5	56.4	31.1
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	17.5	29.6	52.9
4	flufenacet	60	DF	0.6	lb ai/a	PRE	22.0	48.5	29.5
5	flufenacet	60	DF	0.53	lb ai/a	PRE	45.0	36.3	18.8
	atrazine	4	L	0.5	lb ai/a	PRE			
6	AXIOM	68	DF	0.77	lb ai/a	PRE	40.6	37.5	21.9
7	mesotrione	4	SC	0.2	lb ai/a	PRE	35.0	50.0	15.0
8	pendimethalin	3.3	EC	1	lb ai/a	PRE	33.8	50.0	16.3
9	acetochlor	6.4	EC	1.6	lb ai/a	PRE	30.0	52.5	17.5
10	foramsulfuron	35	WG	0.066	lb ai/a	PO1	42.5	43.8	13.8
	MSO		L	0.94	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
11	atrazine	4	L	0.5	lb ai/a	PO1	31.3	46.3	22.5
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1			
	MSO		L	0.94	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
12	AXIOM	68	DF	0.64	lb ai/a	PRE	28.8	58.8	12.5
	foramsulfuron	35	WG	0.066	lb ai/a	PO1			
	DISTINCT	76.4	WG	0.0875	lb ai/a	PO1			
	MSO		L	0.94	% v/v	PO1			
	UAN		L	2.5	% v/v	PO1			
13	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	32.5	48.8	18.8
	carfentrazone	2	EC	0.008	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
14	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	21.3	55.7	23.1
	halosulfuron	75	WG	0.023	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
15	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	43.8	47.5	8.8
	mesotrione	4	SC	0.094	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
16	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	28.8	52.5	18.8
	pendimethalin	3.3	EC	1.5	lb ai/a	PO1			
	atrazine	4	L	0.5	lb ai/a	PO1			
17	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	28.8	46.3	25.0
	clopyralid	3	EC	0.188	lb ai/a	PO1			
18	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	38.8	45.0	16.3
	nicosulfuron	75	WDG	0.031	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
19	s-metolachlor II	7.64	EC	1.0	lb ai/a	PRE	16.3	45.0	38.8
	glufosinate	1.67	EC	0.26	lb ai/a	PO1			
20	weeded control						20.0	33.8	46.3
	LSD (P=.05)						20.51	22.76	24.79
	Standard Deviation						14.50	16.10	17.53
	CV						48.94	34.9	72.27

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Project Code: WC 106-03-02 **Location: HTRC Block 139**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Sweet Corn **Variety: See notes**
Planting Method: Seeded **Planting Date: 5-28-03**
Spacing: 8 IN **Row Spacing: 28 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 4**
Plot Size: 16 ft wide x 40 ft long

Soil Type: Marlette fine sandy loam **OM: 2.2%** **pH: 6.4**
Sand: 51% **Silt: 33%** **Clay: 16%** **CEC: 6.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-30	10:00 am	71/58	°F	Adequate	S 2	59%	30% cloudy	N
PO1	6-26	10:30 am	88/78	°F	Dry	W 4	52%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-26	Sweet Corn(Candy Corner)	5″	3-5	
6-26	Sweet Corn(GSS 0966)	5″	4-5	
6-26	Sweet Corn(Ice Queen)	7″	4-5	
6-26	Sweet Corn(SS Jubilee Plus)	5″	3-5	
6-26	Sweet Corn(Polaris)	5″	5-6	
6-26	Sweet Corn(Zenith)	4″	4-5	
6-26	COLQ	2″	4-6	many
6-26	LATH	2″	3-4	few
6-26	EBNS	1″	2-3	few
6-26	RRPW	1.5″	4-6	moderate
6-26	CORW	1.5″	4	few
6-26	VELE	2″	4	few

Notes and Comments

1. Sprays applied with 16 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 tractor.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Sweet corn varieties: Candy Corner – sh2 bicolor, GSS 0966 – sh2 yellow, Ice Queen – sh2 white, SS Jubilee Plus – sh2 yellow, Polaris - sh2 bicolor, Zenith – sh2 yellow.
3. Plant one row of each cultivar in each plot.
4. 20 ft alley between rep 3 & 4, 5 ft alley between rep 1 & 2 and 3 & 4.
5. Spray PO1 when sweet corn is 5-8 inches tall.
6. Harvested all mature ears in a single pass; ears we re graded in shed: Syngenta Fancy = ears at least 6.5 in long with less than 1 cm of blank tip, U.S. Fancy = ears at least 6 in long, Unmarketable = ears that were less than 6 in long.

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Trial ID: WC 106-03-02 **Study Director:**
Location: HTRC Block 139 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CANDY CORNER	GSS 0966	ICE QUEEN	SS JUB PLS	POLARIS
	Pest Code										
	Crop Variety										
	Description										
	Rating Date						6/26/03	6/26/03	6/26/03	6/26/03	6/26/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING
	Rating Unit										
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.0	1.3	1.3	1.8	1.3
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	1.8	2.0	1.3	1.8	1.3
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	1.5	1.5	1.0	2.5	1.0
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.0	1.3	1.0	1.5	1.0
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.5	1.0	1.3	2.0	1.8
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.3	1.5	1.3	1.8	1.5
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.8	2.0	1.3	2.0	1.3
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						1.0	1.5	1.0	1.3	1.0
LSD (P=.05)							0.73	0.80	0.59	1.13	0.60
Standard Deviation							0.50	0.55	0.40	0.77	0.41
CV							36.88	36.37	34.83	42.35	32.66

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code								COLQ			
Crop Variety									CANDY	GSS	ICE
Description							ZENITH		CORNER	0966	QUEEN
Rating Date							6/26/03	6/26/03	7/14/03	7/14/03	7/14/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING
Rating Unit											
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.5	10.0	1.3	1.3	1.0
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	1.3	10.0	1.3	1.8	1.0
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	1.3	10.0	1.3	1.5	1.0
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.0	10.0	1.3	1.5	1.0
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.8	10.0	1.3	1.5	1.3
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.5	10.0	1.3	1.3	1.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.5	9.3	1.3	1.8	1.0
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						1.8	2.5	1.0	1.3	1.3
LSD (P=.05)							1.01	1.60	0.73	0.80	0.47
Standard Deviation							0.69	1.09	0.50	0.54	0.32
CV							47.7	12.14	40.66	36.86	29.3

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code										COLQ	
Crop Variety							SS				CANDY
Description							JUB PLS	POLARIS	ZENITH		CORNER
Rating Date							7/14/03	7/14/03	7/14/03	7/14/03	8/22/03
Rating Data Type							RATING	RATING	RATING	RATING	YIELD
Rating Unit											KG/PLOT
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	2.5	1.8	1.8	9.5	34.23
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	2.0	1.8	1.8	10.0	33.81
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	2.0	1.3	1.3	10.0	35.94
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.8	1.3	1.5	10.0	36.75
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	2.3	1.8	1.3	10.0	32.66
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	2.0	1.5	1.3	10.0	29.44
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	2.0	1.3	1.5	10.0	30.46
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						1.5	1.5	1.8	6.5	32.30
LSD (P=.05)							1.06	0.70	0.91	1.31	9.141
Standard Deviation							0.72	0.48	0.62	0.89	6.215
CV							36.19	31.71	41.15	9.34	18.72

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Pest Code											
Crop Variety							CANDY	CANDY	CANDY	CANDY	CANDY
Description							CORNER	CORNER	CORNER	CORNER	CORNER
Rating Date							8/22/03	8/22/03	8/22/03	8/22/03	8/22/03
Rating Data Type							YIELD	S.FANCY	S.FANCY	US FANCY	US FANCY
Rating Unit							EAR/PLOT	EAR/PLOT	KG/PLOT	EAR/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	52.8	28.3	6.46	14.5	2.70
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	54.0	29.3	6.74	13.5	2.26
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	55.5	34.5	8.13	12.3	2.12
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	54.8	36.3	8.71	11.5	2.25
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	51.5	31.5	7.20	11.5	2.21
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	50.8	28.3	6.36	13.8	2.63
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	50.5	26.8	6.13	12.3	2.41
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						51.0	28.3	6.73	11.5	2.20
LSD (P=.05)							10.82	9.76	2.368	6.40	1.178
Standard Deviation							7.36	6.64	1.610	4.35	0.801
CV							13.99	21.85	22.82	34.56	34.16

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Pest Code										
Crop Variety						CANDY	CANDY	GSS	GSS	GSS
Description						CORNER	CORNER	0966	0966	0966
Rating Date						8/22/03	8/22/03	8/25/03	8/25/03	8/25/03
Rating Data Type						UNMKTBL	UNMKTBL	YIELD	YIELD	S.FANCY
Rating Unit						EAR/PLOT	KG/PLOT	KG/PLOT	EAR/PLOT	EAR/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	10.0	1.52	9.46	38.3	25.8
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	11.3	1.81	8.34	35.8	19.0
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	8.8	1.33	9.46	39.0	23.0
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	7.0	1.15	10.33	40.0	27.5
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	8.5	1.31	9.36	39.0	23.0
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	8.8	1.29	8.44	33.8	23.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	11.5	1.61	8.01	35.5	19.0
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						11.3	1.77	8.00	33.5	21.0
LSD (P=.05)							5.95	0.913	1.765	7.01	7.82
Standard Deviation							4.05	0.620	1.200	4.77	5.32
CV							42.07	42.17	13.44	12.93	23.44

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											
Crop Variety							GSS	GSS	GSS	GSS	GSS
Description							0966	0966	0966	0966	0966
Rating Date							8/25/03	8/25/03	8/25/03	8/25/03	8/25/03
Rating Data Type							S.FANCY	US FANCY	US FANCY	UNMKTBL	UNMKTBL
Rating Unit							KG/PLOT	EAR/PLOT	KG/PLOT	EAR/PLOT	KG/PLOT
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	4.95	4.0	0.57	8.5	0.97
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	3.56	6.3	0.84	10.5	1.18
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	4.37	4.8	0.67	11.3	1.23
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	5.21	4.8	0.70	7.8	0.93
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	4.27	4.3	0.59	11.8	1.35
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	4.30	4.5	0.63	6.0	0.70
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	3.56	4.8	0.65	11.8	1.20
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						3.79	4.5	0.66	8.0	0.92
LSD (P=.05)							1.586	3.03	0.426	6.12	0.647
Standard Deviation							1.079	2.06	0.290	4.16	0.440
CV							25.39	43.67	43.76	44.11	41.58

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											
Crop Variety							ICE	ICE	ICE	ICE	ICE
Description							QUEEN	QUEEN	QUEEN	QUEEN	QUEEN
Rating Date							8/22/03	8/22/03	8/22/03	8/22/03	8/22/03
Rating Data Type							YIELD	YIELD	S.FANCY	S.FANCY	US FANCY
Rating Unit							KG/PLOT	EAR/PLOT	EAR/PLOT	KG/PLOT	EAR/PLOT
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	17.44	55.5	37.8	8.24	9.3
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	17.72	55.3	36.8	8.45	8.0
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	18.55	58.5	45.3	10.06	5.8
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	17.99	57.0	42.5	9.46	7.3
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	17.68	57.0	39.8	8.70	8.3
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	15.93	53.8	35.3	7.47	8.8
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	14.79	52.0	31.5	6.61	9.3
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						13.06	47.3	23.5	4.86	5.5
LSD (P=.05)							2.773	6.73	7.86	1.890	4.62
Standard Deviation							1.885	4.57	5.35	1.285	3.14
CV							11.33	8.39	14.64	16.1	40.51

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											
Crop Variety							ICE QUEEN	ICE QUEEN	ICE QUEEN	SS JUB PLS	SS JUB PLS
Description							8/22/03	8/22/03	8/22/03	8/28/03	8/28/03
Rating Date							US FANCY	UNMKTBL	UNMKTBL	YIELD	YIELD
Rating Data Type							KG/PLOT	EAR/PLOT	KG/PLOT	KG/PLOT	EAR/PLOT
Rating Unit											
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.74	8.5	1.38	11.57	41.3
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	1.54	10.5	1.70	12.45	42.5
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	1.03	7.5	1.30	11.56	40.5
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.37	7.3	1.22	12.46	41.3
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.56	9.0	1.44	11.87	43.8
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.51	9.8	1.43	11.71	41.5
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.68	11.3	1.69	11.07	41.0
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						0.92	18.3	2.78	10.23	35.8
LSD (P=.05)							0.873	6.02	1.055	3.175	8.52
Standard Deviation							0.594	4.09	0.717	2.159	5.79
CV							41.92	39.93	44.41	18.59	14.14

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											
Crop Variety							SS	SS	SS	SS	SS
Description							JUB PLS	JUB PLS	JUB PLS	JUB PLS	JUB PLS
Rating Date							8/28/03	8/28/03	8/28/03	8/28/03	8/28/03
Rating Data Type							S.FANCY	S.FANCY	US FANCY	US FANCY	UNMKTBL
Rating Unit							EAR/PLOT	KG/PLOT	EAR/PLOT	KG/PLOT	EAR/PLOT
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	11.0	3.00	18.5	3.95	11.8
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	12.3	3.40	20.3	4.28	10.0
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	10.5	2.98	16.5	3.51	13.5
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	10.3	2.81	22.3	4.83	8.8
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	10.8	2.85	19.8	3.99	13.3
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	7.8	2.10	22.0	4.62	11.8
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	7.8	2.17	20.5	4.29	12.8
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						5.3	1.47	20.0	4.41	10.5
LSD (P=.05)							5.21	1.560	7.44	1.755	8.79
Standard Deviation							3.54	1.061	5.06	1.193	5.98
CV							37.51	40.89	25.32	28.2	51.82

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code							SS				
Crop Variety							JUB PLS	POLARIS	POLARIS	POLARIS	POLARIS
Description							8/28/03	8/25/03	8/25/03	8/25/03	8/25/03
Rating Date							UNMKTBL	YIELD	YIELD	S.FANCY	S.FANCY
Rating Data Type							KG/PLOT	KG/PLOT	EAR/PLOT	EAR/PLOT	KG/PLOT
Rating Unit											
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.48	15.68	56.3	27.8	6.03
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	1.30	14.71	49.5	26.5	6.08
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	1.90	14.91	51.5	25.5	5.85
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.23	14.66	48.8	24.8	5.65
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.58	14.16	51.5	29.3	6.15
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.56	12.63	46.0	19.8	4.42
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	1.65	14.11	50.8	25.0	5.52
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						1.53	13.00	49.8	17.0	3.71
LSD (P=.05)							1.079	3.039	7.37	8.77	2.228
Standard Deviation							0.734	2.066	5.01	5.96	1.515
CV							48.1	14.52	9.92	24.4	27.94

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
Pest Code											
Crop Variety											
Description							POLARIS	POLARIS	POLARIS	POLARIS	ZENITH
Rating Date							8/25/03	8/25/03	8/25/03	8/25/03	8/28/03
Rating Data Type							US FANCY	US FANCY	UNMKTBL	UNMKTBL	YIELD
Rating Unit							EAR/PLOT	KG/PLOT	EAR/PLOT	KG/PLOT	KG/PLOT
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	16.5	2.94	12.0	1.55	12.79
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	12.0	2.16	11.0	1.56	13.02
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	14.0	2.65	12.0	1.74	13.95
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	13.5	2.67	10.5	1.44	12.71
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	14.3	2.43	8.0	1.05	12.52
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	13.0	2.56	13.3	1.67	12.95
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	14.3	2.97	11.5	1.47	11.79
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						14.3	2.75	18.5	2.48	10.44
LSD (P=.05)							6.94	1.222	6.39	0.881	3.208
Standard Deviation							4.72	0.831	4.35	0.599	2.181
CV							33.76	31.49	35.94	37.06	17.43

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Pest Code											
Crop Variety											
Description							ZENITH	ZENITH	ZENITH	ZENITH	ZENITH
Rating Date							8/28/03	8/28/03	8/28/03	8/28/03	8/28/03
Rating Data Type							YIELD	S.FANCY	S.FANCY	US FANCY	US FANCY
Rating Unit							EAR/PLOT	EAR/PLOT	KG/PLOT	EAR/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	48.3	20.0	4.36	15.3	2.59
	atrazine	4	L	0.75	lb ai/a	PRE					
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	48.8	22.5	4.95	13.5	2.35
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	53.5	22.8	4.99	15.8	2.75
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	46.3	17.3	3.87	16.5	2.95
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	47.0	23.3	5.12	8.5	1.47
	atrazine	4	L	0.75	lb ai/a	PRE					
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	atrazine	4	L	0.5	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	47.8	21.5	4.90	14.3	2.58
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	47.5	16.3	3.65	13.5	2.27
	mesotrione	4	SC	0.188	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
8	untreated						48.3	13.0	2.18	16.3	2.68
LSD (P=.05)							10.47	10.47	2.477	4.84	0.893
Standard Deviation							7.12	7.12	1.684	3.29	0.607
CV							14.7	36.38	39.6	23.21	24.74

Sweet Corn Tolerance of Mesotrione (Callisto) - HTRC

Dept. of Horticulture, MSU

Pest Code								
Crop Variety								
Description							ZENITH	ZENITH
Rating Date							8/28/03	8/28/03
Rating Data Type							UNMKTBL	UNMKTBL
Rating Unit							EAR/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	13.0	1.65
	atrazine	4	L	0.75	lb ai/a	PRE		
2	LUMAX	3.948	EC	2.46	lb ai/a	PRE	12.8	1.52
3	LUMAX	3.948	EC	4.93	lb ai/a	PRE	15.0	1.86
4	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	12.5	1.85
	atrazine	4	L	0.75	lb ai/a	PRE		
	mesotrione	4	SC	0.094	lb ai/a	PO1		
	atrazine	4	L	0.25	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
5	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	15.3	1.85
	atrazine	4	L	0.75	lb ai/a	PRE		
	mesotrione	4	SC	0.188	lb ai/a	PO1		
	atrazine	4	L	0.5	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
6	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	12.0	1.55
	mesotrione	4	SC	0.094	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
7	s-metolachlor II	7.64	EC	1.6	lb ai/a	PRE	17.8	2.13
	mesotrione	4	SC	0.188	lb ai/a	PO1		
	COC		L	1	% v/v	PO1		
8	untreated						19.0	2.17
LSD (P=.05)							9.44	1.070
Standard Deviation							6.42	0.728
CV							43.81	39.98

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Project Code: WC 108-03-01 **Location: HTRC Block 110-111**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 6-10-03**
Spacing: See notes **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 30 ft wide x 40 ft long

Soil Type: Marlette fine sandy loam **OM: 1.6%** **pH: 6.4**
Sand: 64% **Silt: 21%** **Clay: 15%** **CEC: 4.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	6-13	3:15 pm	73/68	°F	Adequate	SE 2	65%	65% cloudy	N
PO1	7-3	6:30 pm	88/83	°F	Dry	SW 5.5	43%	20% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-3	Pumpkin	11″	4-6	
7-3	Cucumber	4″	4-5	
7-3	Squash	5″	3-6	
7-3	GRFT	3″	2-5	few
7-3	COLQ	4″	4-10	moderate
7-3	RRPW	3″	4-12	moderate
7-3	WIRA	5″	4-18	few
7-3	EBNS			

Notes and Comments
1. Sprays applied with 16 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 tractor.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Crops and Varieties: Cucumber – Vlaspik, Pumpkin – Howden, Squash – Burgess Buttercup
4. Planted pumpkin in left row with 6 IN spacing, squash in right row with 6 IN spacing, cucumber in center 3 rows with 3 IN spacing.
5. Spray center 16 ft of plot with tractor; area between plots cultivated until covered with vines.
6. Irrigate field within 24 hours of PRE herbicide application.
7. Harvested all fruit in 40 ft plot.

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Trial ID: WC 108-03-01 Study Director:
Location: HTRC Block 110-111 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PUMPKIN	CUKE	SQUASH	GRFT	COLQ	RRPW
Pest Code										GRFT	COLQ	RRPW
Crop Variety							PUMPKIN	CUKE	SQUASH			
Description												
Rating Date							7/1/03	7/1/03	7/1/03	7/1/03	7/1/03	7/1/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	1.0	2.0	2.0	9.7	9.7	9.3
2	ethalfluralin	3	EC	0.75	lb ai/a	PRE	1.0	1.7	1.7	10.0	10.0	9.7
	clomazone	3	ME	0.25	lb ai/a	PRE						
3	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.7	2.7	2.7	10.0	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
4	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	2.0	2.3	2.7	10.0	10.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	PRE						
5	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.0	2.0	2.0	10.0	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
6	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	1.3	1.7	1.7	10.0	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
7	bensulide	4	EC	6	lb ai/a	PRE	1.0	2.0	1.7	6.7	9.7	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
8	GWN-3031	4	EC	6	lb ai/a	PRE	1.3	2.0	1.7	10.0	10.0	9.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	2.0	4.3	1.7	10.0	10.0	10.0
	sulfentrazone	4	F	0.1	lb ai/a	PRE						
10	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	1.0	2.0	2.3	10.0	10.0	9.7
	sulfentrazone	4	F	0.1	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PRE	1.0	3.3	1.3	10.0	10.0	10.0
12	trifluralin	4	EC	1	lb ai/a	PRE	1.3	3.3	3.0	10.0	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	clomazone	3	ME	0.25	lb ai/a	PRE	1.0	1.7	1.3	10.0	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.7	7.7	2.3	10.0	8.3	9.0
15	weeded control						1.0	1.3	1.3	1.0	1.7	1.0
LSD (P=.05)							0.92	1.17	1.07	2.15	0.85	1.16
Standard Deviation							0.55	0.70	0.64	1.29	0.51	0.69
CV							42.72	26.26	32.66	14.07	5.49	7.62

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Pest Code							WIRA				GRFT	COLQ
Crop Variety								PUMPKIN	CUKE	SQUASH		
Description												
Rating Date							7/1/03	7/14/03	7/14/03	7/14/03	7/14/03	7/14/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	8.7	1.0	1.0	1.0	6.3	7.7
2	ethalfluralin	3	EC	0.75	lb ai/a	PRE	9.7	1.0	1.0	1.0	9.7	7.7
	clomazone	3	ME	0.25	lb ai/a	PRE						
3	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	1.0	1.0	1.0	9.7	8.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
4	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	1.0	1.7	1.0	9.7	9.7
	halosulfuron	75	WG	0.047	lb ai/a	PRE						
5	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	8.7	2.0	2.0	1.3	9.0	9.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
6	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	9.0	1.3	1.3	1.7	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
7	bensulide	4	EC	6	lb ai/a	PRE	8.3	1.0	1.0	1.0	8.0	8.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
8	GWN-3031	4	EC	6	lb ai/a	PRE	6.3	1.0	1.0	1.3	6.7	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
9	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	9.0	1.0	3.7	1.0	10.0	10.0
	sulfentrazone	4	F	0.1	lb ai/a	PRE						
10	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	9.3	3.7	6.0	4.0	9.7	10.0
	sulfentrazone	4	F	0.1	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PRE	9.0	1.0	2.7	2.0	6.7	8.3
12	trifluralin	4	EC	1	lb ai/a	PRE	8.7	1.0	3.7	3.0	9.7	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	clomazone	3	ME	0.25	lb ai/a	PRE	9.0	1.3	1.3	1.7	10.0	6.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	6.0	1.0	7.7	1.0	9.6	4.7
15	weeded control						1.3	1.0	1.0	1.0	3.7	3.0
LSD (P=.05)							2.27	0.62	1.73	1.25	2.72	2.56
Standard Deviation							1.36	0.37	1.04	0.75	1.63	1.53
CV							16.58	28.67	43.22	48.89	19.02	18.86

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Pest Code							EBNS	RRPW	WIRA		
Crop Variety										CUKE	CUKE
Description										VINES	# 1 fruit
Rating Date							7/14/03	7/14/03	7/14/03	7/31/03	8/1/03
Rating Data Type							RATING	RATING	RATING	YIELD	YIELD
Rating Unit										KG/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	4.0	6.3	4.7	25.03	1.51
2	ethalfluralin	3	EC	0.75	lb ai/a	PRE	6.3	6.7	7.3	29.14	1.45
	clomazone	3	ME	0.25	lb ai/a	PRE					
3	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	6.0	9.7	10.0	25.88	1.28
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
4	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	7.3	9.7	9.7	23.57	1.41
	halosulfuron	75	WG	0.047	lb ai/a	PRE					
5	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	5.7	9.7	9.7	23.94	1.26
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
6	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	6.3	10.0	10.0	24.61	1.55
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
7	bensulide	4	EC	6	lb ai/a	PRE	3.3	9.3	9.0	23.39	1.08
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	GWN-3031	4	EC	6	lb ai/a	PRE	4.0	10.0	10.0	25.65	1.33
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	10.0	9.7	7.0	10.55	0.61
	sulfentrazone	4	F	0.1	lb ai/a	PRE					
10	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	10.0	10.0	8.0	11.77	1.52
	sulfentrazone	4	F	0.1	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PRE	5.3	9.7	6.7	13.90	0.75
12	trifluralin	4	EC	1	lb ai/a	PRE	8.7	10.0	10.0	14.91	0.85
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	clomazone	3	ME	0.25	lb ai/a	PRE	2.7	9.7	10.0	22.49	1.22
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	8.7	8.7	5.7	1.67	0.14
15	weeded control						1.7	2.3	3.0	22.47	1.25
LSD (P=.05)							4.69	2.07	3.65	5.836	0.627
Standard Deviation							2.80	1.24	2.18	3.483	0.375
CV							46.75	14.16	27.12	17.48	32.69

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CUKE # 2 fruit 8/1/03 YIELD KG/PLOT	CUKE # 3 fruit 8/1/03 YIELD KG/PLOT	CUKE OVERSIZE 8/1/03 YIELD KG/PLOT	CUKE TOT FRUIT 8/1/03 YIELD KG/PLOT
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	7.32	6.82	0.15	15.80
2	ethalfluralin	3	EC	0.75	lb ai/a	PRE	7.29	6.46	0.13	15.33
	clomazone	3	ME	0.25	lb ai/a	PRE				
3	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	6.80	5.21	0.00	13.28
	halosulfuron	75	WG	0.023	lb ai/a	PRE				
4	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	5.72	4.27	0.07	11.47
	halosulfuron	75	WG	0.047	lb ai/a	PRE				
5	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	8.15	5.72	0.13	15.26
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
6	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	9.58	6.56	0.14	17.83
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
7	bensulide	4	EC	6	lb ai/a	PRE	7.50	5.54	0.26	14.38
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
8	GWN-3031	4	EC	6	lb ai/a	PRE	8.14	4.09	0.00	13.57
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
9	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	2.80	4.23	0.34	7.98
	sulfentrazone	4	F	0.1	lb ai/a	PRE				
10	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	4.95	1.76	0.00	8.24
	sulfentrazone	4	F	0.1	lb ai/a	PO1				
11	trifluralin	4	EC	1	lb ai/a	PRE	3.49	3.88	0.08	8.20
12	trifluralin	4	EC	1	lb ai/a	PRE	5.49	5.22	0.11	11.66
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
13	clomazone	3	ME	0.25	lb ai/a	PRE	8.33	4.80	0.00	14.36
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	0.16	0.03	0.00	0.34
15	weeded control						6.80	4.86	0.00	12.91
LSD (P=.05)							2.260	2.881	0.275	4.473
Standard Deviation							1.351	1.723	0.165	2.675
CV							21.91	37.21	174.8	22.22

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Pest Code										
Crop Variety							PUMPKIN	PUMPKIN	SQUASH	SQUASH
Description							TOT FRUIT	TOT FRUIT	TOT FRUIT	TOT FRUIT
Rating Date							10/12/03	10/12/03	10/12/03	10/12/03
Rating Data Type							YIELD	YIELD	YIELD	YIELD
Rating Unit							NUMBER	KG/PLOT	NUMBER	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	25.0	83.36	19.3	12.55
2	ethalfluralin	3	EC	0.75	lb ai/a	PRE	24.0	91.47	23.7	16.87
	clomazone	3	ME	0.25	lb ai/a	PRE				
3	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	31.0	114.52	35.0	22.09
	halosulfuron	75	WG	0.023	lb ai/a	PRE				
4	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	24.3	84.96	19.7	14.20
	halosulfuron	75	WG	0.047	lb ai/a	PRE				
5	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	18.3	69.76	20.3	11.66
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
6	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	21.3	81.71	16.0	9.01
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
7	bensulide	4	EC	6	lb ai/a	PRE	16.7	58.73	23.7	16.23
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
8	GWN-3031	4	EC	6	lb ai/a	PRE	21.3	72.84	23.3	12.17
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
9	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	31.3	109.21	26.0	20.06
	sulfentrazone	4	F	0.1	lb ai/a	PRE				
10	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	19.0	75.07	17.3	9.43
	sulfentrazone	4	F	0.1	lb ai/a	PO1				
11	trifluralin	4	EC	1	lb ai/a	PRE	24.0	91.65	14.0	9.63
12	trifluralin	4	EC	1	lb ai/a	PRE	19.7	75.77	13.0	8.25
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
13	clomazone	3	ME	0.25	lb ai/a	PRE	15.3	57.43	21.0	13.08
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	21.7	73.76	17.3	10.03
15	weeded control						21.7	54.23	17.3	12.25
LSD (P=.05)							14.72	52.640	10.74	7.074
Standard Deviation							8.80	31.480	6.42	4.231
CV							39.46	39.53	31.37	32.13

Weed Control in Cucumber, Pumpkin and Squash - Muck Farm

Project Code: WC 108-03-02 **Location: Muck Farm Block C5-7**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date:6-12-03**
Spacing: See notes **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 20 ft wide x 50 ft long

Soil Type: Houghton Muck **OM: 80%** **pH: 6.6**
Sand: 38% **Silt: 54%** **Clay: 8%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	6-11	4:30 pm	70/64	°F	Adequate	N 6.5	61%	60% cloudy	N
PO1	6-30	4:00 pm	87/71	°F	Dry	W 0	35%	15% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-11	Cucumber			
6-11	Squash			
6-11	Pumpkin			
6-30	Cucumber	4″	1-2	
6-30	Squash	5″	2-3	
6-30	Pumpkin	5″	2-3	
6-30	LATH	3″	4	few
6-30	LACG	2″		moderate
6-30	YENS	4″		many
6-30	COLQ			
6-30	COPU			
6-30	RRPW			
6-30	TUPW			

Notes and Comments

1. Sprays applied with (tractor PRE) 16 nozzle boom FF8002 or (backpack PO1) 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Each rep is a separate block.
4. Crops and varieties: Cucumber – Discover, Pumpkin – Howden, Squash – Burgess Buttercup.
5. Planted pumpkin in left row with 6 IN spacing, squash in right row with 6 IN spacing, cucumber in center 3 rows with 3 IN spacing.
6. Harvested all fruit in 50 ft plot.

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Weed Control in Cucumber, Pumpkin and Squash - Muck Farm

Trial ID: WC 108-03-02 Study Director:
Location: Muck Farm, Block 5-7 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CUCUMBER	PUMPKIN	SQUASH	LACG	COLQ
	Pest Code									LACG	COLQ
	Crop Variety						CUCUMBER	PUMPKIN	SQUASH		
	Description										
	Rating Date						6/30/03	6/30/03	6/30/03	6/30/03	6/30/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING
	Rating Unit										
1	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	2.0	1.3	1.0	3.7	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
2	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	2.0	1.3	1.0	6.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	PRE					
3	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	1.7	1.3	1.3	5.3	9.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
4	clomazone	3	ME	0.3	lb ai/a	PRE	1.3	1.0	1.0	2.3	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
5	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	2.0	1.7	1.0	8.3	7.7
6	weeded control						1.3	1.0	1.0	1.3	3.7
LSD (P=.05)							1.47	0.79	0.43	3.68	5.09
Standard Deviation							0.81	0.43	0.24	2.02	2.80
CV							47.01	34.01	22.33	45.0	33.34

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COPU	RRPW	TUPW	YENS	CUCUMBER
	Pest Code						COPU	RRPW	TUPW	YENS	
	Crop Variety										CUCUMBER
	Description										
	Rating Date						6/30/03	6/30/03	6/30/03	6/30/03	8/15/03
	Rating Data Type						RATING	RATING	RATING	RATING	YIELD FRUIT
	Rating Unit										KG/PLOT
1	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	7.3	8.3	4.3	3.0	28.32
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
2	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	7.0	8.3	5.3	5.7	43.14
	halosulfuron	75	WG	0.047	lb ai/a	PRE					
3	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	8.0	8.7	6.3	1.7	44.26
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
4	clomazone	3	ME	0.3	lb ai/a	PRE	3.3	3.3	2.3	2.0	43.60
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
5	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	6.0	8.0	4.0	5.0	12.76
6	weeded control						1.0	1.0	1.0	1.7	23.45
LSD (P=.05)							3.57	1.23	2.52	2.80	14.649
Standard Deviation							1.96	0.67	1.39	1.54	8.053
CV							36.07	10.75	35.65	48.58	24.71

Pest Code											
Crop Variety							CUCUMBER	PUMPKIN	PUMPKIN	PUMPKIN	PUMPKIN
Description								ORANGE	ORANGE	GREEN	GREEN
Rating Date							8/15/03	10/10/03	10/10/03	10/10/03	10/10/03
Rating Data Type							YIELD VINE	YIELD	YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	NUMBER	KG/PLOT	NUMBER	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	35.76	28.0	348.25	6.7	38.83
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
2	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	42.87	29.0	351.84	8.7	76.24
	halosulfuron	75	WG	0.047	lb ai/a	PRE					
3	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	48.39	26.7	274.52	7.7	50.52
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
4	clomazone	3	ME	0.3	lb ai/a	PRE	55.06	22.0	280.93	10.3	89.77
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
5	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	32.65	29.3	371.82	10.3	78.80
6	weeded control						32.43	24.3	275.62	9.3	62.13
LSD (P=.05)							16.438	11.46	120.764	7.52	52.738
Standard Deviation							9.036	6.30	66.385	4.14	28.990
CV							21.94	23.72	20.93	46.81	43.89

Pest Code								
Crop Variety							SQUASH	SQUASH
Description							TOTAL FRUIT	TOTAL FRUIT
Rating Date							10/15/03	10/15/03
Rating Data Type							YIELD	YIELD
Rating Unit							NUMBER	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	150.3	221.99
	halosulfuron	75	WG	0.023	lb ai/a	PRE		
2	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	193.7	267.91
	halosulfuron	75	WG	0.047	lb ai/a	PRE		
3	STRATEGY	2.1	SE	1.31	lb ai/a	PRE	160.3	223.23
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
4	clomazone	3	ME	0.3	lb ai/a	PRE	159.3	211.83
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
5	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	169.0	240.29
6	weeded control						163.3	230.24
LSD (P=.05)							43.30	55.122
Standard Deviation							23.80	30.301
CV							14.34	13.03

Weed Control in Arugula, Coriander, Dill, Fennel, Parsley - HTRC

Project Code: WC 117-03-01 **Location: HTRC Block 108**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: seeded **Planting Date:**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 7 ft wide x 35 ft long

Soil Type: Spinks loamy sand **OM: 2.6%** **pH: 7.0**
Sand: 40% **Silt: 40%** **Clay: 20%** **CEC: 8.5**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5-14	3:00 pm	68/60	°F	Adequate	NE 3	23%	50% cloudy	N
PRE	5-19	5:30 pm	73/72	°F	Adequate	SE 6	63%	45% cloudy	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 5 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.
3. Crops and varieties: Arugula - Astro II, Coriander (Cilantro)- Santo, Dill – Bouquet, Fennel – Rudy, Parsley – Forest Green

Weed Control in Arugula, Coriander, Dill, Fennel, Parsley - HTRC

Dept. of Horticulture, MSU

Weed Control in Arugula, Coriander, Dill, Fennel, Parsley - HTRC

Trial ID: WC 117-03-01 **Study Director:**
Location: HTRC Block 108 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ARUGULA 6/13/03 RATING	CORIAND 6/13/03 RATING	DILL 6/13/03 RATING	FENNEL 6/13/03 RATING	PARSLEY 6/13/03 RATING	YEFT 6/13/03 RATING
1	sulfentrazone	4	F	0.2	lb ai/a	PRE	8.7	9.3	9.0	9.0	0.0	10.0
2	napropramide	50	DF	2	lb ai/a	PRE	1.3	1.7	2.0	4.0	0.0	6.3
3	bensulide	4	EC	4	lb ai/a	PPI	1.0	1.7	1.3	1.0	0.0	5.7
4	trifluralin	4	EC	1	lb ai/a	PPI	1.0	1.0	1.3	4.0	0.0	6.7
5	linuron	50	DF	0.5	lb ai/a	PRE	10.0	1.3	3.3	7.0	0.0	8.7
6	prometryn	4	L	1	lb ai/a	PRE	8.3	1.3	2.3	4.0	0.0	8.3
7	flufenacet	60	DF	0.6	lb ai/a	PRE	8.0	2.0	2.7	3.3	0.0	10.0
8	clomazone	3	ME	0.25	lb ai/a	PRE	9.0	3.0	3.3	3.7	0.0	7.7
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	1.7	1.7	1.7	2.0	0.0	9.7
10	untreated						1.0	2.3	1.0	3.0	0.0	1.7
LSD (P=.05)							1.18	1.59	1.13	4.46	0.00	2.73
Standard Deviation							0.69	0.92	0.66	2.60	0.00	1.59
CV							13.72	36.51	23.61	63.38	0.0	21.29

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COCW 6/13/03 RATING	COLQ 6/13/03 RATING	FIPC 6/13/03 RATING	RRPW 6/13/03 RATING	WIRA 6/13/03 RATING	ARUGULA 7/3/03 YIELD KG/PLOT
1	sulfentrazone	4	F	0.2	lb ai/a	PRE	10.0	10.0	9.0	10.0	5.0	1.59
2	napropramide	50	DF	2	lb ai/a	PRE	9.7	9.0	5.7	7.7	5.3	7.50
3	bensulide	4	EC	4	lb ai/a	PPI	8.7	7.0	1.7	4.7	2.3	3.05
4	trifluralin	4	EC	1	lb ai/a	PPI	7.7	8.0	3.0	6.7	2.3	4.79
5	linuron	50	DF	0.5	lb ai/a	PRE	10.0	10.0	9.7	10.0	8.3	0.14
6	prometryn	4	L	1	lb ai/a	PRE	10.0	9.3	7.7	9.3	6.0	0.86
7	flufenacet	60	DF	0.6	lb ai/a	PRE	9.7	10.0	8.3	10.0	6.3	2.50
8	clomazone	3	ME	0.25	lb ai/a	PRE	9.7	9.7	8.3	4.3	2.7	0.38
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	8.7	8.3	6.3	9.0	2.7	3.74
10	untreated						3.0	1.3	1.0	1.0	1.0	4.84
LSD (P=.05)							2.86	1.56	2.78	3.12	2.89	2.713
Standard Deviation							1.67	0.91	1.62	1.82	1.68	1.582
CV							19.2	10.97	26.69	25.01	40.1	53.8

Weed Control in Arugula, Coriander, Dill, Fennel, Parsley - HTRC

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	DILL YIELD KG/PLOT	FENNEL YIELD KG/PLOT	PARSLEY YIELD KG/PLOT	PARSLEY YIELD KG/PLOT	PARSLEY TOT. YLD KG/PLOT	CORIAND YIELD KG/PLOT
	Pest Code											
	Crop Code						DILL	FENNEL	PARSLEY	PARSLEY	PARSLEY	CORIAND
	Rating Date						7/15/03	7/16/03	7/23/03	8/12/03		7/15/03
	Rating Data Type						YIELD	YIELD	YIELD	YIELD	TOT. YLD	YIELD
	Rating Unit						KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
1	sulfentrazone	4	F	0.2	lb ai/a	PRE	2.00	0.84	0.00	0.00	0.00	1.70
2	napropramide	50	DF	2	lb ai/a	PRE	8.58	0.89	0.21	0.08	0.30	9.46
3	bensulide	4	EC	4	lb ai/a	PPI	6.65	2.23	0.25	0.09	0.34	8.79
4	trifluralin	4	EC	1	lb ai/a	PPI	8.76	1.60	0.31	0.10	0.41	10.22
5	linuron	50	DF	0.5	lb ai/a	PRE	8.01	2.09	0.40	0.29	0.69	11.79
6	prometryn	4	L	1	lb ai/a	PRE	8.56	3.13	0.32	0.20	0.53	10.14
7	flufenacet	60	DF	0.6	lb ai/a	PRE	7.83	2.79	0.20	0.11	0.31	10.03
8	clomazone	3	ME	0.25	lb ai/a	PRE	6.86	2.90	0.15	0.07	0.22	9.19
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	6.57	2.39	0.21	0.10	0.31	8.25
10	untreated						6.23	2.77	0.23	0.09	0.33	8.07
	LSD (P=.05)						2.606	2.332	0.086	0.098	0.158	3.241
	Standard Deviation						1.519	1.359	0.050	0.057	0.092	1.889
	CV						21.69	62.86	21.95	50.02	26.88	21.56

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CORIAND YIELD KG/PLOT	CORIAND TOT. YLD KG/PLOT
	Pest Code							
	Crop Code						CORIAND	CORIAND
	Rating Date						8/12/03	
	Rating Data Type						YIELD	TOT. YLD
	Rating Unit						KG/PLOT	KG/PLOT
1	sulfentrazone	4	F	0.2	lb ai/a	PRE	0.99	2.69
2	napropramide	50	DF	2	lb ai/a	PRE	2.20	11.66
3	bensulide	4	EC	4	lb ai/a	PPI	1.08	9.87
4	trifluralin	4	EC	1	lb ai/a	PPI	2.88	13.10
5	linuron	50	DF	0.5	lb ai/a	PRE	5.39	17.18
6	prometryn	4	L	1	lb ai/a	PRE	4.23	14.37
7	flufenacet	60	DF	0.6	lb ai/a	PRE	2.35	12.38
8	clomazone	3	ME	0.25	lb ai/a	PRE	1.53	10.71
9	s-metolachlor	7.62	EC	0.75	lb ai/a	PRE	1.70	9.95
10	untreated						1.13	9.20
	LSD (P=.05)						1.264	3.459
	Standard Deviation						0.737	2.016
	CV						31.38	18.14

Preemergence Weed Control in Onion – Muck Farm

Project Code: WC 112-03-01 **Location: Muck Farm E-1**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Benchmark**
Planting Method: Seeded **Planting Date: 5-17-03**
Spacing: 1 IN **Row Spacing: 16 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 16.67 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.5**
Sand: 32% **Silt: 58%** **Clay: 10%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-27	1:00 pm	76/54	°F	Adequate	W 2	56%	60% cloudy	N
PO1	6-23	10:00 am	83/63	°F	Dry	W 3.5	34%	0% cloudy	N
PO2	7-22	11:00 am	69/68	°F	Dry	NE 2.6	76%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-27	Onion			
6-23	Onion		2	
6-23	LATH	3″		few
6-23	COLQ	3″		few
6-23	YENS	5″		few
6-23	COPU	0.5″		few
6-23	RRPW	3″		few
6-23	COCW	3″		few
7-22	Onion	18″		
7-22	LATH	5″		few
7-22	COLQ			
7-22	YENS	6″		few
7-22	COPU	4″		few
7-22	RRPW			
7-22	COCW			
7-22	NLLQ			
7-22	MAYC			

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.
3. Spring application of 500 lbs/a 8-21-29 + 0.5% Zn + 1% Mn.
4. Applied at planting liquid fertilizer 8-25-3 10 gal/a + 28% UAN 10 gal/a
5. Applied Lorsban 15G with seed at planting.
6. Entire trial gets Goal XL + Poast or Select for POST weed control; except treatment 12.
7. Harvested all onions in entire plot.

Preemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Preemergence Weed Control in Onion - Muck Farm

Trial ID: WC 112-03-01 **Study Director:**
Location: Muck Farm Block E1 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION	COCW	YENS	COLQ	COPU	LATH
Pest Code												
Description							ONION					
Rating Date							6/16/03	6/16/03	6/16/03	6/16/03	6/16/03	6/16/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	4.0	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
2	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	1.0	9.7	5.7	8.7	9.3	7.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2						
3	s-metolachlor	7.62	EC	1.7	lb ai/a	PRE	1.0	9.3	7.7	7.7	9.0	3.7
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1,2						
4	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	9.3	8.0	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
5	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	4.7	10.0	10.0	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
6	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	9.7	8.7	10.0	9.7	9.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	8.0	10.0	9.3	10.0
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
8	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.3	9.7	5.7	10.0	9.7	10.0
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2						
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	9.7	6.3	10.0	9.7	9.7
	flumioxazin	51	WG	0.094	lb ai/a	PO1,2						
10	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.7	9.7	7.7	10.0	9.7	9.7
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2						
	NIS		L	0.25	% v/v	PO1,2						
11	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	8.3	10.0	10.0	9.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WG	0.063	lb ai/a	PO2						
12	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	9.0	8.0	10.0	9.3	10.0
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.25	% v/v	PO1,2						
13	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	7.3	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.1	lb ai/a	PRE						
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2						
14	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	9.7	8.3	10.0	10.0	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2						
15	clomazone	3	ME	0.3	lb ai/a	PRE	10.0	9.0	4.3	9.0	9.0	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
16	weeded control						1.0	5.3	6.0	1.0	1.0	1.0
LSD (P=.05)							0.35	2.09	3.50	1.50	0.97	1.42
Standard Deviation							0.21	1.25	2.10	0.90	0.58	0.85
CV							12.97	13.37	30.9	9.81	6.38	9.77

Preemergence Weed Control in Onion – Muck Farm

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	NLLQ	RRPW		YENS	COLQ	MAYC
	Description								ONION			
	Rating Date						6/16/03	6/16/03	6/30/03	6/30/03	6/30/03	6/30/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	1.3	4.3	10.0	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
2	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	6.0	9.7	1.3	6.7	7.7	6.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2						
3	s-metolachlor	7.62	EC	1.7	lb ai/a	PRE	4.3	9.7	1.3	8.7	8.3	7.3
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1,2						
4	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	2.0	6.7	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
5	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	1.3	5.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
6	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.7	10.0	1.3	6.3	10.0	9.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	3.0	6.3	10.0	10.0
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
8	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	2.0	9.0	10.0	10.0
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2						
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	2.3	9.0	10.0	10.0
	flumioxazin	51	WG	0.094	lb ai/a	PO1,2						
10	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	3.7	9.0	10.0	10.0
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2						
	NIS		L	0.25	% v/v	PO1,2						
11	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	1.7	7.7	10.0	9.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WG	0.063	lb ai/a	PO2						
12	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.7	10.0	5.7	10.0	10.0	10.0
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.25	% v/v	PO1,2						
13	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	7.0	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.1	lb ai/a	PRE						
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2						
14	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.7	10.0	6.3	9.7	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2						
15	clomazone	3	ME	0.3	lb ai/a	PRE	7.7	7.3	10.0	2.0	10.0	4.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
16	weeded control						1.0	1.0	1.0	9.3	9.7	8.7
LSD (P=.05)							1.91	0.96	1.23	2.49	0.85	2.11
Standard Deviation							1.15	0.58	0.74	1.49	0.51	1.26
CV							13.3	6.31	23.03	19.94	5.21	13.95

Preemergence Weed Control in Onion – Muck Farm

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	NLLQ RATING 6/30/03	RRPW RATING 6/30/03	YENS ONION RATING 7/29/03	YENS RATING 7/29/03	ONION YIELD KG/PLOT 9/30/03
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	1.0	3.7	38.13
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
2	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	5.0	9.7	1.7	10.0	36.83
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2					
3	s-metolachlor	7.62	EC	1.7	lb ai/a	PRE	6.0	9.7	2.7	9.3	32.02
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1,2					
4	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	1.3	6.7	34.20
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2					
5	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	1.7	6.0	40.34
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1					
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2					
6	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.3	1.0	8.3	33.24
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2					
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	9.7	1.3	7.0	40.29
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1					
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2					
8	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	2.3	7.0	37.84
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2					
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	3.0	8.3	40.07
	flumioxazin	51	WG	0.094	lb ai/a	PO1,2					
10	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	4.3	7.0	33.10
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2					
	NIS		L	0.25	% v/v	PO1,2					
11	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.7	10.0	2.3	8.7	35.25
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	flumioxazin	51	WG	0.063	lb ai/a	PO2					
12	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	5.7	7.0	25.65
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2					
	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2					
	NIS		L	0.25	% v/v	PO1,2					
13	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	6.7	10.0	16.71
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	sulfentrazone	4	F	0.1	lb ai/a	PRE					
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2					
14	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	6.7	10.0	16.48
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	sulfentrazone	4	F	0.1	lb ai/a	PO1,2					
15	clomazone	3	ME	0.3	lb ai/a	PRE	10.0	7.0	10.0	5.7	0.00
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
16	weeded control						8.3	9.3	1.0	9.7	34.68
LSD (P=.05)							2.10	1.62	1.28	2.82	7.937
Standard Deviation							1.26	0.97	0.77	1.69	4.761
CV							13.54	10.05	23.4	21.73	15.39

Postemergence Weed Control in Onion – Muck Farm

Project Code: WC 112-03-02 **Location: Muck Farm Block E2**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Benchmark**
Planting Method: Seeded **Planting Date: 5-17-03**
Spacing: 1 IN **Row Spacing: 16 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 16.67 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.5**
Sand: 32% **Silt: 58%** **Clay: 10%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-23	10:00 am	83/63	°F	Dry	W 3.5	34%	0% cloudy	N
PO2	7-22	11:00 am	69/68	°F	Dry	NE 2.6	76%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-23	ONION		2	
6-23	YENS	6″	8-10	few
6-23	COPU	1″		few
6-23	LATH	3″		few
6-23	MAYC	5″		few
6-23	RRPW	2″		moderate
7-22	ONION	18″		
7-22	YENS	6″		moderate
7-22	COPU	12″		few
7-22	LATH	5″		few
7-22	MAYC	8″		few
7-22	RRPW	7″		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.
3. Spring application of 500 lbs/a 8-21-29 + 0.5% Cu + 0.5% Zn + 1% Mn.
4. Applied at planting liquid fertilizer 8-25-3 10 gal/a + 28% UAN 10 gal/a.
5. Applied Lorsban 15G with seed at planting.
6. Entire trial gets Prowl 2 lb ai/a PRE and two-leaf stage.
7. Harvested all onions in entire plot.

Postemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Postemergence Weed Control in Onion - Muck Farm

Trial ID: WC 112-03-02 **Study Director:**
Location: Muck Farm Block E2 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION	YENS	COLQ	MAYC	RRPW	SHPU
	Rating Date						6/30/03	6/30/03	6/30/03	6/30/03	6/30/03	6/30/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.0	2.7	10.0	7.7	9.0	6.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	1.3	5.3	10.0	9.0	10.0	5.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.25	lb ai/a	PO1,2	2.7	3.7	10.0	9.3	10.0	8.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	5.7	8.3	10.0	10.0	10.0	10.0
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
5	flumioxazin	51	WG	0.032	lb ai/a	PO1,2	6.0	9.0	9.7	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
6	flumioxazin	51	WG	0.063	lb ai/a	PO1,2	6.0	8.7	10.0	10.0	10.0	9.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
7	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2	7.0	8.7	10.0	10.0	10.0	10.0
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
8	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2	3.7	3.3	10.0	10.0	9.7	10.0
	bromoxynil	4	EC	0.2	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
9	sulfentrazone	4	F	0.1	lb ai/a	PO1,2	5.0	9.3	10.0	10.0	10.0	9.7
10	mesotrione	4	SC	0.094	lb ai/a	PO1,2	2.7	8.3	10.0	8.7	8.0	9.0
11	imazamox	1	AS	0.03	lb ai/a	PO1,2	2.0	8.0	10.0	10.0	10.0	4.0
12	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2	2.0	3.7	9.0	10.0	5.3	6.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
13	bromoxynil	4	EC	0.2	lb ai/a	PO1,2	2.7	1.7	10.0	10.0	10.0	9.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
14	ethofumesate	4	SC	1	lb ai/a	PO1,2	1.3	2.3	10.0	9.7	8.7	8.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
15	weeded control						2.0	4.0	10.0	9.0	5.7	6.7
LSD (P=.05)							1.69	3.71	0.77	0.96	2.19	3.92
Standard Deviation							1.01	2.22	0.46	0.57	1.31	2.34
CV							29.69	38.2	4.65	5.98	14.42	28.67

Postemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Pest Code								LACG	YENS	COPU	LATH	MAYC
Description								ONION				
Rating Date								7/29/03	7/29/03	7/29/03	7/29/03	7/29/03	7/29/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2		1.0	10.0	1.7	10.0	9.0	6.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
	NIS		L	0.5	% v/v	PO1,2							
2	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2		1.0	10.0	4.7	10.0	9.0	7.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
	NIS		L	0.5	% v/v	PO1,2							
3	oxyfluorfen	2	L	0.25	lb ai/a	PO1,2		2.0	10.0	4.3	10.0	10.0	9.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
	NIS		L	0.5	% v/v	PO1,2							
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2		4.3	7.0	6.3	10.0	9.0	9.3
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2							
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
5	flumioxazin	51	WG	0.032	lb ai/a	PO1,2		3.3	10.0	2.3	10.0	9.0	9.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
6	flumioxazin	51	WG	0.063	lb ai/a	PO1,2		3.0	10.0	6.3	10.0	10.0	10.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
7	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2		4.7	10.0	4.3	10.0	9.7	10.0
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2							
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
8	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2		1.0	10.0	2.0	10.0	10.0	9.3
	bromoxynil	4	EC	0.2	lb ai/a	PO1,2							
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
9	sulfentrazone	4	F	0.1	lb ai/a	PO1,2		1.7	7.7	8.7	10.0	9.3	7.0
10	mesotrione	4	SC	0.094	lb ai/a	PO1,2		3.0	7.7	9.3	1.0	10.0	10.0
11	imazamox	1	AS	0.03	lb ai/a	PO1,2		5.7	10.0	5.7	5.0	9.3	10.0
12	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2		1.3	6.3	2.0	5.7	6.0	6.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
13	bromoxynil	4	EC	0.2	lb ai/a	PO1,2		1.3	10.0	1.0	9.3	10.0	6.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
14	ethofumesate	4	SC	1	lb ai/a	PO1,2		1.3	10.0	4.0	10.0	7.7	5.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2							
	NIS		L	0.5	% v/v	PO1,2							
15	weeded control							1.0	4.0	2.7	1.7	3.3	3.0
LSD (P=.05)								1.49	3.97	3.35	2.52	3.41	3.96
Standard Deviation								0.89	2.38	2.01	1.51	2.04	2.37
CV								37.35	26.85	46.05	18.46	23.31	29.87

Postemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 7/29/03 RATING	ONION 10/2/03 YIELD KG/PLOT
	Pest Code						RRPW	
	Description							ONION
	Rating Date						7/29/03	10/2/03
	Rating Data Type						RATING	YIELD
	Rating Unit							KG/PLOT
1	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	7.3	36.97
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
2	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	8.3	39.52
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
3	oxyfluorfen	2	L	0.25	lb ai/a	PO1,2	9.3	34.75
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	10.0	30.35
	flumioxazin	51	WG	0.063	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
5	flumioxazin	51	WG	0.032	lb ai/a	PO1,2	10.0	30.12
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
6	flumioxazin	51	WG	0.063	lb ai/a	PO1,2	10.0	34.04
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
7	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2	10.0	30.00
	flumioxazin	51	WG	0.032	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
8	oxyfluorfen	2	L	0.032	lb ai/a	PO1,2	6.3	34.56
	bromoxynil	4	EC	0.2	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
9	sulfentrazone	4	F	0.1	lb ai/a	PO1,2	10.0	34.82
10	mesotrione	4	SC	0.094	lb ai/a	PO1,2	9.3	13.15
11	imazamox	1	AS	0.03	lb ai/a	PO1,2	9.3	9.34
12	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2	2.7	35.39
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
13	bromoxynil	4	EC	0.2	lb ai/a	PO1,2	9.3	31.34
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
14	ethofumesate	4	SC	1	lb ai/a	PO1,2	4.3	32.45
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
15	weeded control						1.7	41.40
	LSD (P=.05)						2.09	7.752
	Standard Deviation						1.25	4.636
	CV						15.89	14.85

Preharvest Desiccation of Onion – Muck Farm

Project Code: WC 112-03-03 **Location: Muck Farm E-1 & 2**

Personnel: Jorge Arboleya, Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Benchmark**
Planting Method: Seeded **Planting Date: 5-17-03**
Spacing: 1 IN **Row Spacing: 16 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 50 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.5**
Sand: 32% **Silt: 58%** **Clay: 10%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PREHAR	9-4	9:45 am	62/66	°F	Dry	NW 2-8	69%	0% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
9-4	Onion			
9-4	YENS			moderate
9-4	BRDLF = Broadleaf weeds			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.
3. Spring application of 500 lbs/a 8-21-29 + 0.5% Zn + 1% Mn.
4. Applied at planting liquid fertilizer 8-25-3 10 gal/a + 28% UAN 10 gal/a
5. Applied Lorsban 15G with seed at planting.
6. Entire trial gets Goal XL + Poast or Select for POST weed control.
7. Onions were 40 – 75% down and 40 – 60% green at time of PREHAR application.
8. Harvested about 250 to 300 onions per plot on 9-29-03.
9. Onions placed in storage on 10-8-03.

Preharvest Desiccation of Onion – Muck Farm

Dept. of Horticulture, MSU

Preharvest Desiccation of Onion - Muck Farm

Trial ID: WC 112-03-03 Study Director:
Location: Muck Farm Investigator: Dr. Bernard Zandstra

Pest Code								YENS	BRDLF		YENS	BRDLF
Description							ONION			ONION		
Rating Date							9/11/03	9/11/03	9/11/03	9/18/03	9/18/03	9/18/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	paraquat	3	L	0.5	lb ai/a	PREHAR	6.7	8.0	7.7	8.3	8.3	8.0
2	diquat	2	L	0.5	lb ai/a	PREHAR	7.0	8.3	8.3	8.3	8.7	9.0
3	endothall	2	L	1	lb ai/a	PREHAR	8.3	2.3	4.7	9.7	3.3	4.7
4	endothall	2	L	1	lb ai/a	PREHAR	7.7	2.3	5.3	9.3	2.7	5.3
	UAN		L	1	% v/v	PREHAR						
5	bromoxynil	4	EC	0.5	lb ai/a	PREHAR	6.7	2.0	5.3	7.7	2.7	5.0
6	bromoxynil	4	EC	0.5	lb ai/a	PREHAR	5.7	1.3	5.0	7.0	2.3	5.3
	UAN		L	1	% v/v	PREHAR						
7	bromoxynil	4	EC	0.5	lb ai/a	PREHAR	6.7	2.7	5.3	8.3	3.3	6.3
	FREEWAY		L	0.5	% v/v	PREHAR						
8	imazamox	1	AS	0.04	lb ai/a	PREHAR	5.3	1.7	3.3	6.0	2.7	4.3
	UAN		L	1	% v/v	PREHAR						
9	butafenacil	0.8	L	0.05	lb ai/a	PREHAR	6.3	3.0	5.0	7.7	3.0	5.0
10	untreated						4.3	1.0	1.0	6.0	1.3	1.0
LSD (P=.05)							1.40	0.72	1.15	1.16	0.64	0.80
Standard Deviation							0.81	0.42	0.67	0.67	0.38	0.47
CV							12.59	12.77	13.13	8.62	9.79	8.66

Weed Control in Onion - Hudsonville

Project Code: WC 112-03-04 **Location: Schreur Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Livingston**
Planting Method: Seeded **Planting Date: 5-1-03**
Spacing: 1 IN **Row Spacing: 14 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 3.33 ft wide x 35 ft long

Soil Type: Carlisle Muck **OM: 7.1%** **pH: 5.7**
Sand: 19% **Silt: 70%** **Clay: 11%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6-17	10:30 am	76/67	°F	Adequate	NE 4	45%	25% cloudy	N
PO2	7-23	12:00 pm	74/68	°F	Dry	NE 5	58%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-17	Onion		3	
6-17	COGR	3″		few
6-17	SHPU			
6-17	CORW	2″		few
6-17	LATH	2″		few
6-17	SWSW			
7-23	Onion	19″	8-10	
7-23	COGR	7″	4-10	few
7-23	SHPU	5″	2-8	few
7-23	CORW	2″	6-8	few
7-23	LATH			
7-23	SWSW			

Notes and Comments
1. Sprays applied with 2 nozzle boom FF11002, 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.
3. Crop was harvested by grower before yields could be taken.

Weed Control in Onion - Hudsonville

Dept. of Horticulture, MSU

Weed Control in Onion - Hudsonville

Trial ID: WC 112-03-04 **Study Director:**
Location: Schreur Farm **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION 7/23/03 RATING	YENS 7/23/03 RATING	COGS 7/23/03 RATING	CORW 7/23/03 RATING	LATH 7/23/03 RATING	SHPU 7/23/03 RATING
1	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.0	10.0	7.7	10.0	10.0	8.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.0	9.0	9.7	10.0	9.7	9.0
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	dimethenamid-p	6	EC	0.98	lb ai/a	PO1	1.0	8.7	7.7	10.0	9.7	5.7
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2						
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.0	10.0	10.0	10.0	10.0	9.7
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.7	10.0	10.0	10.0	10.0	9.0
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2						
6	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	2.0	10.0	10.0	10.0	10.0	10.0
	flumioxazin	51	WG	0.064	lb ai/a	PO1,2						
7	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	2.0	9.0	10.0	10.0	9.7	8.7
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
8	pendimethalin	3.3	EC	2	lb ai/a	PO1	2.3	9.7	10.0	10.0	9.0	10.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2						
9	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.0	9.3	10.0	9.7	9.7	10.0
	bromoxynil	4	EC	0.12	lb ai/a	PO1,2						
	fluazifop-P	2	EC	0.16	lb ai/a	PO1,2						
10	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.0	9.3	8.0	10.0	9.7	9.3
	ethofumesate	4	SC	1	lb ai/a	PO1,2						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2						
	COC		L	1	% v/v	PO1,2						
11	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	1.3	8.3	7.7	9.7	9.7	9.7
	fluroxypyr	1.5	L	0.063	lb ai/a	PO1						
	oxyfluorfen	2	L	0.063	lb ai/a	PO2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
12	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	4.0	9.7	7.0	9.7	9.3	8.0
	sulfentrazone	4	F	0.15	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.25	% v/v	PO1,2						
LSD (P=.05)							0.50	1.84	3.08	0.49	0.82	1.88
Standard Deviation							0.30	1.08	1.82	0.29	0.48	1.11
CV							18.45	11.51	20.29	2.91	4.97	12.46

Weed Control in Onion - Hudsonville

Dept. of Horticulture, MSU

Pest Code							SWSW	
Description								ONION
Rating Date							7/23/03	7/30/03
Rating Data Type							RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	2.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1		
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2		
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
2	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	9.0	1.0
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO1		
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2		
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
3	dimethenamid-p	6	EC	0.98	lb ai/a	PO1	9.0	1.3
	s-metolachlor	7.62	EC	1.7	lb ai/a	PO2		
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
4	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	2.3
	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	NIS		L	0.5	% v/v	PO1,2		
5	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	5.7
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2		
6	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	6.0
	flumioxazin	51	WG	0.064	lb ai/a	PO1,2		
7	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	5.3
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
8	pendimethalin	3.3	EC	2	lb ai/a	PO1	10.0	5.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2		
	flumioxazin	51	WG	0.047	lb ai/a	PO1,2		
9	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	2.3
	bromoxynil	4	EC	0.12	lb ai/a	PO1,2		
	fluazifop-P	2	EC	0.16	lb ai/a	PO1,2		
10	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	1.3
	ethofumesate	4	SC	1	lb ai/a	PO1,2		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1,2		
	COC		L	1	% v/v	PO1,2		
11	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	9.7	2.0
	fluroxypyr	1.5	L	0.063	lb ai/a	PO1		
	oxyfluorfen	2	L	0.063	lb ai/a	PO2		
	clethodim	2	EC	0.125	lb ai/a	PO1,2		
12	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	7.3
	sulfentrazone	4	F	0.15	lb ai/a	PO1,2		
	clethodim	2	EC	0.125	lb ai/a	PO1,2		
	NIS		L	0.25	% v/v	PO1,2		
LSD (P=.05)							1.27	1.49
Standard Deviation							0.75	0.88
CV							7.67	24.88

Preemergence Weed Control in Leek and Green Onion – Muck Farm

Project Code: WC 122-03-01 **Location: Muck Farm Block F15**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5-16-03**
Spacing: 1 IN **Row Spacing: 16 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.3 ft wide x 16.7 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.5**
Sand:32% **Silt:58%** **Clay:10%** **CEC:**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5-27	11:30 am	65/54	°F	Adequate	SW 1.8	50%	35% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-27	Leek			
5-27	Onion			
5-27	Bunching Onion			
5-27	YENS			
5-27	MAYC			

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.
3. Crops and varieties: Leek – American Flag, Onion – Benchmark, Bunching Onion – White Spear Bunching.
4. The trial was sprayed with Goal 0.125 lb ai/a + Outlook 0.98 lb ai/a + NIS 0.5% v/v twice postmergence to suppress yellow nutsedge.
5. The trial was heavily infested with yellow nutsege.

Preemergence Weed Control in Leek and Green Onion – Muck Farm

Dept. of Horticulture, MSU

Preemergence Weed Control in Leek and Green Onion - Muck Farm

Trial ID: WC 122-03-01 **Study Director:**
Location: Muck Farm, Blocl F15 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LEEK 6/30/03 RATING	ONION 6/30/03 RATING	GR ONION 6/30/03 RATING	YENS 6/30/03 RATING	MAYC 6/30/03 RATING
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	2.3	1.3	1.3	3.0	9.7
2	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	1.3	1.0	1.0	5.0	6.7
3	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	2.0	1.7	1.3	5.0	8.0
4	weeded control						2.7	2.0	2.0	3.3	1.0
LSD (P=.05)							1.10	1.10	0.88	4.28	3.18
Standard Deviation							0.55	0.55	0.44	2.14	1.59
CV							26.53	36.85	31.13	52.43	25.1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	GR ONION 8/8/03 YIELD KG/PLOT	ONION 9/16/03 YIELD KG/PLOT	LEEK 9/16/03 YIELD KG/PLOT
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	6.35	9.20	9.92
2	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	6.76	9.12	9.27
3	s-metolachlor	7.62	EC	1.6	lb ai/a	PRE	5.54	7.27	8.65
4	weeded control						3.56	4.63	7.72
LSD (P=.05)							3.138	3.018	3.347
Standard Deviation							1.571	1.511	1.675
CV							28.28	20.0	18.84

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Project Code: WC 101-03-01 **Location: HTRC Block 79**

Personnel: Vijai Pandian, Bernard H. Zandstra, Michael Particka
Crop: Tomato **Variety: Pik-Rite**
Planting Method: Transplant **Planting Date: 6-2-03**
Spacing: 18 IN **Row Spacing: 36 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 4**
Plot Size: 8 ft wide x 35 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.5%** **pH: 6.4**
Sand: 47% **Silt: 27%** **Clay: 26%** **CEC: 8.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRT	6-2	11:30 am	74/59	°F	Adequate	W 3	30%	5% cloudy	N
POT	6-2	3:20 pm	73/72	°F	Adequate	W 3	30%	5% cloudy	N
PO1	7-1	11:00 am	85/70	°F	Dry	W 0	45%	5% cloudy	N
PO-DIR	7-1	11:00 am	85/70	°F	Dry	W 0	45%	5% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-1	Tomato	9″		
7-1	EBNS	1.5″		moderate
7-1	COLQ	4″		many
7-1	RRPW	5″		many
7-1	LATH	3.5″		moderate
7-1	CORW	4″		many
7-1	COPU			
7-1	FIPC			
7-1	GRFT	3″		few
7-1	COCW			
7-1	WIBW			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002 (PO-DIR applied with 2 nozzle shielded boom FF11002), 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.
3. Bad tomato yield are tomatoes with bloosm end rot; good tomatoes are marketable tomatoes.
4. Planted 2 rows of tomato per plot.

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Trial ID: WC 101-03-01 **Study Director:**
Location: HTRC Block 79 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TOMATO	GRFT	COCW	COLQ	COPU	CORW
	Rating Date						6/30/03	6/30/03	6/30/03	6/30/03	6/30/03	6/30/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	untreated						1.0	1.0	1.0	1.0	1.0	1.0
2	weeded control						1.0	10.0	10.0	10.0	10.0	10.0
3	metribuzin	75	DF	0.5	lb ai/a	PRT	1.0	8.3	10.0	9.5	10.0	9.3
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	2.0	8.5	9.3	10.0	10.0	3.5
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	2.3	3.8	1.5	9.3	10.0	6.8
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	1.5	1.3	10.0	10.0	9.5	8.0
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	1.0	3.8	10.0	2.5	10.0	6.8
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	1.0	7.8	10.0	1.8	10.0	4.5
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	1.8	10.0	10.0	1.8	10.0	1.5
10	napropramide	50	DF	2	lb ai/a	POT	1.0	6.3	7.8	1.5	1.0	1.5
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	1.0	1.5	10.0	3.0	10.0	9.3
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	1.0	5.5	10.0	2.0	10.0	1.0
13	metribuzin	75	DF	0.25	lb ai/a	PO1						
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1						
15	pyridate	3.75	EC	0.9	lb ai/a	PO1						
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1						
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1						
18	halosulfuron	75	WG	0.031	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR						
	NIS		L	0.5	% v/v	PO-DIR						
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR						
	NIS		L	0.5	% v/v	PO-DIR						
	LSD (P=.05)						0.60	4.54	1.98	1.15	0.42	2.76
	Standard Deviation						0.42	3.14	1.37	0.80	0.29	1.91
	CV						32.32	55.88	16.5	15.39	3.41	36.45

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							EBNS	FIPC	LATH	RRPW	WIBW	
Description												TOMATO
Rating Date							6/30/03	6/30/03	6/30/03	6/30/03	6/30/03	7/10/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	untreated						1.0	1.0	1.0	1.0	7.8	1.0
2	weeded control						10.0	10.0	10.0	10.0	10.0	1.0
3	metribuzin	75	DF	0.5	lb ai/a	PRT	1.0	10.0	9.8	9.5	10.0	1.0
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	7.8	9.5	7.5	10.0	10.0	1.5
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	10.0	10.0	9.5	10.0	10.0	2.0
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	9.5	10.0	8.3	10.0	10.0	1.3
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	7.0	10.0	8.3	10.0	5.5	1.0
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	10.0	10.0	9.3	10.0	7.8	1.0
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	10.0	10.0	8.3	7.8	7.8	1.3
10	napropramide	50	DF	2	lb ai/a	POT	1.0	3.5	3.0	1.0	10.0	1.3
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	5.0	10.0	7.3	9.5	5.5	1.3
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	1.0	10.0	5.5	10.0	10.0	1.0
13	metribuzin	75	DF	0.25	lb ai/a	PO1						1.0
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1						1.0
15	pyridate	3.75	EC	0.9	lb ai/a	PO1						1.0
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1						2.5
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1						3.0
18	halosulfuron	75	WG	0.031	lb ai/a	PO1						1.8
	NIS		L	0.5	% v/v	PO1						
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1						1.0
	NIS		L	0.5	% v/v	PO1						
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR						8.0
	NIS		L	0.5	% v/v	PO-DIR						
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR						3.3
	NIS		L	0.5	% v/v	PO-DIR						
LSD (P=.05)							2.95	1.86	3.74	1.94	4.24	0.82
Standard Deviation							2.04	1.29	2.59	1.35	2.94	0.58
CV							33.48	14.83	35.5	16.37	33.84	32.71

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							GRFT	COCW	COLQ	COPU	CORW	EBNS
Description												
Rating Date							7/10/03	7/10/03	7/10/03	7/10/03	7/10/03	7/10/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	untreated						1.0	1.0	1.0	1.0	1.0	1.0
2	weeded control						10.0	10.0	10.0	10.0	10.0	10.0
3	metribuzin	75	DF	0.5	lb ai/a	PRT	9.8	10.0	10.0	10.0	9.5	1.0
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	7.5	9.3	10.0	10.0	5.0	10.0
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	1.5	2.3	8.8	10.0	5.3	10.0
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	1.0	10.0	10.0	10.0	8.5	9.8
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	2.8	10.0	5.5	10.0	7.0	6.0
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	10.0	10.0	4.0	10.0	4.3	10.0
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	10.0	10.0	4.8	10.0	1.8	10.0
10	napropramide	50	DF	2	lb ai/a	POT	7.3	7.8	2.0	1.0	3.3	1.0
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	2.0	10.0	5.0	10.0	8.0	4.0
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	4.0	10.0	5.0	8.5	1.3	1.0
13	metribuzin	75	DF	0.25	lb ai/a	PO1	1.0	10.0	7.5	9.0	2.8	1.0
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1	7.3	7.8	1.0	3.3	1.8	1.0
15	pyridate	3.75	EC	0.9	lb ai/a	PO1	1.3	3.3	9.0	1.0	1.0	7.8
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1	1.3	1.0	4.3	3.5	3.0	9.0
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1	1.0	3.3	2.8	1.0	1.3	9.0
18	halosulfuron	75	WG	0.031	lb ai/a	PO1	1.8	5.5	1.0	1.0	7.0	1.0
	NIS		L	0.5	% v/v	PO1						
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1	5.8	8.5	1.3	3.8	5.5	5.8
	NIS		L	0.5	% v/v	PO1						
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR	1.3	2.0	10.0	10.0	10.0	10.0
	NIS		L	0.5	% v/v	PO-DIR						
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR	1.5	10.0	6.8	10.0	8.8	10.0
	NIS		L	0.5	% v/v	PO-DIR						
LSD (P=.05)							2.28	3.15	1.85	2.45	2.52	1.73
Standard Deviation							1.61	2.23	1.31	1.73	1.79	1.22
CV							38.08	30.91	23.05	25.45	35.45	19.99

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	FIPC	LATH	RRPW	WIBW	TOMATO
Pest Code							FIPC	LATH	RRPW	WIBW	
Description											TOMATO
Rating Date							7/10/03	7/10/03	7/10/03	7/10/03	8/19/03
Rating Data Type							RATING	RATING	RATING	RATING	YIELD GOOD
Rating Unit											KG/PLOT
1	untreated						1.0	2.8	1.0	10.0	0.08
2	weeded control						10.0	10.0	10.0	10.0	0.56
3	metribuzin	75	DF	0.5	lb ai/a	PRT	10.0	9.3	9.8	10.0	0.51
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	10.0	7.3	10.0	10.0	0.30
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	7.8	9.3	10.0	8.0	0.24
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	7.8	9.0	10.0	10.0	0.20
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	10.0	8.0	9.0	3.3	0.29
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	10.0	10.0	10.0	7.8	0.61
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	10.0	7.8	10.0	7.8	0.00
10	napropramide	50	DF	2	lb ai/a	POT	2.0	1.3	1.0	7.8	0.00
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	10.0	5.3	9.8	5.5	0.13
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	10.0	7.3	10.0	7.8	0.21
13	metribuzin	75	DF	0.25	lb ai/a	PO1	9.0	9.3	7.5	8.3	0.56
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1	10.0	6.5	5.5	8.3	0.36
15	pyridate	3.75	EC	0.9	lb ai/a	PO1	2.3	2.0	4.3	3.5	0.16
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1	2.3	6.0	6.3	10.0	0.29
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1	1.0	7.3	9.3	10.0	0.23
18	halosulfuron	75	WG	0.031	lb ai/a	PO1	8.5	6.0	4.8	7.5	0.71
	NIS		L	0.5	% v/v	PO1					
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1	6.5	6.3	3.8	7.8	0.43
	NIS		L	0.5	% v/v	PO1					
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR	7.8	10.0	10.0	10.0	0.13
	NIS		L	0.5	% v/v	PO-DIR					
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR	3.5	3.8	9.5	8.0	0.28
	NIS		L	0.5	% v/v	PO-DIR					
LSD (P=.05)							2.82	3.32	1.46	4.62	0.539
Standard Deviation							2.00	2.34	1.03	3.26	0.381
CV							28.08	34.19	13.4	40.1	128.84

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code										
Description							TOMATO	TOMATO	TOMATO	TOMATO
Rating Date							8/19/03	8/26/03	8/26/03	9/5/03
Rating Data Type							YIELD BAD	YIELD GOOD	YIELD BAD	YIELD GOOD
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	untreated						6.11	1.73	4.31	3.86
2	weeded control						9.12	4.30	6.56	5.60
3	metribuzin	75	DF	0.5	lb ai/a	PRT	13.96	4.09	17.01	8.22
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	9.70	7.15	9.42	18.46
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	7.37	4.17	7.36	13.47
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	7.98	2.48	6.50	12.61
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	11.65	3.85	11.04	7.64
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	8.00	4.22	12.48	15.02
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	7.54	2.11	9.88	5.97
10	napropramide	50	DF	2	lb ai/a	POT	10.89	2.22	9.08	8.83
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	11.54	3.60	11.59	10.08
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	12.27	2.54	12.23	8.40
13	metribuzin	75	DF	0.25	lb ai/a	PO1	11.70	5.51	7.00	11.74
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1	6.85	2.86	6.28	7.49
15	pyridate	3.75	EC	0.9	lb ai/a	PO1	6.90	2.99	4.86	7.84
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1	6.04	2.85	4.28	6.86
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1	4.19	2.83	5.94	14.99
18	halosulfuron	75	WG	0.031	lb ai/a	PO1	6.77	5.02	6.91	11.70
	NIS		L	0.5	% v/v	PO1				
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1	7.17	2.73	6.97	11.45
	NIS		L	0.5	% v/v	PO1				
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR	0.05	0.38	0.85	0.85
	NIS		L	0.5	% v/v	PO-DIR				
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR	2.88	3.35	8.47	7.42
	NIS		L	0.5	% v/v	PO-DIR				
LSD (P=.05)							2.573	2.650	3.272	8.357
Standard Deviation							1.820	1.874	2.314	5.909
CV							22.66	55.47	28.75	62.53

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code										
Description							TOMATO	TOMATO	TOMATO	TOMATO
Rating Date							9/5/03	9/12/03	9/19/03	9/25/03
Rating Data Type							YIELD BAD	YIELD GOOD	YIELD GOOD	YIELD GOOD
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	untreated						1.46	1.88	6.05	8.51
2	weeded control						3.17	5.31	7.13	13.70
3	metribuzin	75	DF	0.5	lb ai/a	PRT	8.02	9.75	14.07	14.68
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	5.73	13.24	15.43	10.71
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	5.72	9.34	12.68	15.83
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	5.54	12.31	15.91	16.81
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	5.01	9.07	10.34	15.14
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	6.15	13.42	16.34	12.67
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	5.57	9.18	9.25	9.24
10	napropramide	50	DF	2	lb ai/a	POT	4.01	9.68	12.71	16.02
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	6.46	9.26	15.17	11.28
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	5.92	7.48	9.64	7.54
13	metribuzin	75	DF	0.25	lb ai/a	PO1	5.13	9.85	11.16	8.33
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1	2.14	4.79	5.86	5.74
15	pyridate	3.75	EC	0.9	lb ai/a	PO1	2.80	6.31	6.86	4.46
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1	1.77	7.78	8.33	6.73
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1	0.91	13.53	21.79	4.79
18	halosulfuron	75	WG	0.031	lb ai/a	PO1	2.69	9.92	10.68	7.30
	NIS		L	0.5	% v/v	PO1				
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1	2.81	7.80	10.12	13.94
	NIS		L	0.5	% v/v	PO1				
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR	0.09	3.99	10.97	5.24
	NIS		L	0.5	% v/v	PO-DIR				
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR	1.08	11.95	15.49	10.42
	NIS		L	0.5	% v/v	PO-DIR				
LSD (P=.05)							2.491	5.802	6.255	8.407
Standard Deviation							1.762	4.103	4.423	5.945
CV							45.04	46.37	37.77	56.99

Eastern Black Nightshade Control in Transplanted Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TOMATO YIELD KG/PLOT	TOMATO GOOD TOTAL KG/PLOT	TOMATO BAD TOTAL KG/PLOT	TOMATO TOTAL YIELD KG/PLOT
	Pest Code									
	Description									
	Rating Date						10/1/03			
	Rating Data Type									
	Rating Unit									
1	untreated						3.09	25.17	11.87	37.04
2	weeded control						2.33	38.92	18.84	57.76
3	metribuzin	75	DF	0.5	lb ai/a	PRT	4.04	55.36	38.99	94.34
4	sulfentrazone	75	DF	0.3	lb ai/a	PRT	5.10	70.38	24.84	95.21
5	oxyfluorfen	2	L	0.25	lb ai/a	PRT	5.28	61.00	20.45	81.45
6	flumioxazin	51	WG	0.047	lb ai/a	PRT	6.57	66.89	20.01	86.90
7	sulfosulfuron	75	WG	0.031	lb ai/a	PRT	5.33	51.64	27.70	79.33
8	dimethenamid-p	6	EC	0.98	lb ai/a	POT	3.96	66.24	26.62	92.86
9	s-metolachlor	7.62	EC	1.6	lb ai/a	POT	2.63	38.38	22.99	61.37
10	napropramide	50	DF	2	lb ai/a	POT	8.77	58.21	23.98	82.19
11	sulfosulfuron	75	WG	0.031	lb ai/a	POT	4.02	53.54	29.58	83.12
12	rimsulfuron	25	DF	0.031	lb ai/a	POT	3.85	39.65	30.42	70.06
13	metribuzin	75	DF	0.25	lb ai/a	PO1	5.21	52.35	23.82	76.16
14	rimsulfuron	25	DF	0.031	lb ai/a	PO1	2.65	29.74	15.26	45.00
15	pyridate	3.75	EC	0.9	lb ai/a	PO1	3.95	32.56	14.55	47.11
16	sulfentrazone	75	DF	0.1	lb ai/a	PO1	4.18	37.01	12.08	49.09
17	sulfentrazone	75	DF	0.2	lb ai/a	PO1	3.52	61.66	11.05	72.70
18	halosulfuron	75	WG	0.031	lb ai/a	PO1	2.06	47.38	16.37	63.75
	NIS		L	0.5	% v/v	PO1				
19	sulfosulfuron	75	WG	0.031	lb ai/a	PO1	4.55	51.00	16.95	67.95
	NIS		L	0.5	% v/v	PO1				
20	carfentrazone	2	EC	0.16	lb ai/a	PO-DIR	4.06	25.61	0.99	26.60
	NIS		L	0.5	% v/v	PO-DIR				
21	flumioxazin	51	WG	0.047	lb ai/a	PO-DIR	4.87	53.77	12.43	66.20
	NIS		L	0.5	% v/v	PO-DIR				
	LSD (P=.05)						3.912	20.722	5.002	21.977
	Standard Deviation						2.766	14.653	3.537	15.540
	CV						64.53	30.27	17.7	22.72

Weed Control in Pepper and Tomato - HTRC

Project Code: WC 101-03-02 **Location: HTRC Block 66**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Bell Pepper, Tomato **Variety: Karma, Jackpot**
Planting Method: Transplant **Planting Date: 6-3-03**
Spacing: 18 IN **Row Spacing: 36 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 35 ft long

Soil Type: capac loam **OM: 2.2%** **pH: 6.6**
Sand:42% **Silt:26%** **Clay:32%** **CEC: 11.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	6-2	3:00 pm	73/70	°F	Adequate	S 2	34%	5% cloudy	N
PRT	6-3	9:00 am	70/65	°F	Adequate	W 2	24%	0% cloudy	N
POT	6-10	9:00 am	67/57	°F	Adequate	W 2	61%	65% cloudy	N
14 DAP	6-18	11:00 am	79/72	°F	Adequate	W 2	40%	0% cloudy	N
PO1	7-1	4:00 pm	84/89	°F	Dry	W 0	39%	15% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
6-3	Bell Pepper	2″	2-3	
6-3	Tomato	3″	3-4	
6-18	Bell Pepper	2″	2-4	
6-18	Tomato	4″	3-5	
7-1	Bell Pepper	4″		
7-1	Tomato	9″		
7-1	GRFT	6″		moderate
7-1	COLQ	4″		few
7-1	EBNS	1.5″		moderate
7-1	LATH	2″		many
7-1	RRPW	6″		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.
3. Days After Planting=DAP.
4. Yield Bad = fruit with blossom end rot.

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Weed Control in Pepper and Tomato - HTRC

Trial ID: WC 101-03-02 Study Director:
Location: HTRC Block 66 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER 6/30/03 RATING	TOMATO 6/30/03 RATING	PEPPER 6/30/03 PLANT NUMBER	TOMATO 6/30/03 PLANT NUMBER	GRFT 6/30/03 RATING
1	trifluralin	4	EC	1	lb ai/a	PPI	10.0	1.0	1.0	22.3	9.0
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	2.3	1.3	15.3	22.7	10.0
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	3.0	17.3	21.7	10.0
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	3.0	3.3	12.7	20.3	10.0
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.0	2.0	19.0	21.7	10.0
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	2.0	2.7	11.7	22.7	10.0
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.3	2.0	13.7	23.3	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	9.3	4.3	2.0	18.0	10.0
9	AXIOM	68	DF	1	lb ai/a	PRT	9.3	1.0	1.3	23.3	10.0
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	4.3	4.0	13.3	20.7	10.0
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	2.7	3.0	8.3	22.0	10.0
12	trifluralin	4	EC	1	lb ai/a	PPI	2.7	2.0	11.7	21.7	10.0
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	2.3	1.3	11.3	22.7	9.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	1.7	1.0	15.0	22.3	10.0
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	2.3	1.0	16.0	22.3	9.0
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	3.3	2.0	10.3	20.3	10.0
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	2.3	1.7	13.3	21.0	10.0
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						1.7	1.3	15.0	22.0	1.0
LSD (P=.05)							2.10	1.99	6.11	1.81	0.99
Standard Deviation							1.26	1.19	3.66	1.08	0.59
CV							35.44	56.48	31.66	4.99	6.34

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							COLQ	EBNS	LATH	RRPW	
Description											PEPPER
Rating Date							6/30/03	6/30/03	6/30/03	6/30/03	7/14/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING
Rating Unit											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	trifluralin	4	EC	1	lb ai/a	PPI	9.0	7.3	9.0	9.3	10.0
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	8.3	9.3	9.0	9.3	1.0
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	4.3	10.0	4.7	10.0	1.0
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	9.3	10.0	10.0	10.0	2.3
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	8.7	10.0	9.7	10.0	1.7
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	9.7	10.0	10.0	10.0	2.3
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	8.3	10.0	9.3	10.0	2.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	10.0	10.0	10.0	10.0	9.0
9	AXIOM	68	DF	1	lb ai/a	PRT	10.0	10.0	10.0	10.0	6.3
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	10.0	10.0	10.0	10.0	3.7
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	6.7	10.0	7.3	9.7	1.0
12	trifluralin	4	EC	1	lb ai/a	PPI	9.0	6.7	6.3	9.3	4.7
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	8.0	6.0	3.7	8.3	2.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	9.0	3.7	5.7	9.0	2.7
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	8.3	3.3	4.7	6.3	9.7
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	8.0	6.0	4.7	7.7	2.7
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	8.7	2.3	4.3	7.3	8.0
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						1.0	1.0	1.0	1.0	1.3
LSD (P=.05)							1.64	3.89	1.94	2.41	2.97
Standard Deviation							0.98	2.33	1.17	1.45	1.78
CV							12.09	30.97	16.22	16.54	44.19

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							GRFT	COLQ	EBNS	LATH
Description						TOMATO				
Rating Date						7/14/03	7/14/03	7/14/03	7/14/03	7/14/03
Rating Data Type						RATING	RATING	RATING	RATING	RATING
Rating Unit										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	trifluralin	4	EC	1	lb ai/a	PPI	1.0	5.3	8.0	3.3	9.7
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.3	10.0	5.0	10.0	3.3
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.3	10.0	1.0	10.0	1.0
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.3	9.3	8.3	10.0	9.0
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.0	8.3	6.0	10.0	7.0
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.0	10.0	8.0	10.0	9.7
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.0	10.0	7.0	10.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	3.7	8.0	10.0	9.7	9.0
9	AXIOM	68	DF	1	lb ai/a	PRT	1.0	10.0	10.0	9.7	9.3
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	2.3	9.0	10.0	10.0	8.7
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	1.7	10.0	1.0	10.0	1.0
12	trifluralin	4	EC	1	lb ai/a	PPI	1.0	10.0	9.7	2.0	9.0
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	1.3	10.0	8.3	2.3	8.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	1.7	10.0	8.7	6.7	7.7
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	3.7	10.0	10.0	10.0	9.0
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	2.3	9.0	7.0	4.0	8.3
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	1.3	10.0	10.0	2.0	9.3
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						1.3	9.3	9.7	9.7	9.7
LSD (P=.05)							1.26	1.90	2.39	2.36	1.56
Standard Deviation							0.75	1.14	1.43	1.42	0.94
CV							46.23	12.21	18.76	18.32	12.17

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							RRPW				
Description								PEPPER	PEPPER	PEPPER	PEPPER
Rating Date							7/14/03	8/27/03	8/27/03	9/8/03	9/8/03
Rating Data Type							RATING	YIELD	YIELD	YIELD	YIELD
Rating Unit								NUMBER	KG/PLOT	NUMBER	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	trifluralin	4	EC	1	lb ai/a	PPI	8.7	1.7	0.23	2.0	0.33
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	16.7	2.61	16.0	2.71
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.0	14.3	2.15	5.3	0.78
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	13.3	2.32	16.7	3.00
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	9.3	17.0	3.12	28.3	4.76
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	14.7	2.53	14.0	2.19
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	9.7	1.69	9.3	1.62
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	10.0	1.0	0.22	4.0	0.58
9	AXIOM	68	DF	1	lb ai/a	PRT	10.0	1.3	0.20	4.7	0.59
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	10.0	21.3	4.16	25.7	4.19
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	8.7	11.3	1.74	5.7	0.91
12	trifluralin	4	EC	1	lb ai/a	PPI	9.7	2.0	0.25	10.3	1.52
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	10.0	14.7	2.17	8.3	1.27
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	10.0	1.7	0.19	7.7	1.31
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	10.0	1.0	0.11	2.3	0.40
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	10.0	6.7	1.08	13.3	2.22
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	9.7	1.3	0.13	3.3	0.51
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						9.7	15.3	2.26	5.3	0.87
LSD (P=.05)							1.14	10.75	1.882	11.80	1.970
Standard Deviation							0.68	6.45	1.129	7.08	1.182
CV							7.04	70.32	74.75	69.85	71.5

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code										
Description						PEPPER	PEPPER	PEPPER	PEPPER	TOMATO
Rating Date						9/24/03	9/24/03	9/24/03		8/26/03
Rating Data Type						YIELD	YIELD	TOT YLD	TOT YLD	YLD GOOD
Rating Unit						NUMBER	KG/PLOT	NUMBER	KG/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	trifluralin	4	EC	1	lb ai/a	PPI	2.0	0.28	5.7	0.84	1.60
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	13.7	1.91	46.3	7.23	0.94
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	8.0	1.08	27.7	4.01	0.87
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	14.0	2.17	44.0	7.48	3.70
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	29.3	4.32	74.7	12.21	6.79
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	17.3	2.54	46.0	7.27	5.17
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	19.0	2.82	38.0	6.13	6.74
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	5.0	0.96	10.0	1.76	1.52
9	AXIOM	68	DF	1	lb ai/a	PRT	3.3	0.46	9.3	1.25	1.70
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	31.3	5.04	78.3	13.39	6.30
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	6.7	0.92	23.7	3.57	0.91
12	trifluralin	4	EC	1	lb ai/a	PPI	10.0	1.38	22.3	3.15	1.82
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	20.3	2.67	43.3	6.12	3.61
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	22.3	2.63	31.7	4.13	2.77
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	7.7	1.18	11.0	1.69	3.90
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	14.7	2.36	34.7	5.65	0.30
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	9.7	1.51	14.3	2.14	3.43
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						8.7	1.41	29.3	4.54	3.45
LSD (P=.05)							18.56	2.850	32.50	5.463	3.628
Standard Deviation							11.13	1.709	19.49	3.277	2.176
CV							82.45	86.31	59.43	63.71	70.53

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TOMATO YLD BAD 8/26/03 KG/PLOT	TOMATO YIELD 9/3/03 KG/PLOT	TOMATO YIELD 9/10/03 KG/PLOT	TOMATO YIELD 9/17/03 KG/PLOT	TOMATO YIELD 9/24/03 KG/PLOT
	Pest Code										
	Description						TOMATO	TOMATO	TOMATO	TOMATO	TOMATO
	Rating Date						8/26/03	9/3/03	9/10/03	9/17/03	9/24/03
	Rating Data Type						YLD BAD	YIELD	YIELD	YIELD	YIELD
	Rating Unit						KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	5.95	12.02	12.51	10.11	9.88
	metribuzin	75	DF	0.5	lb ai/a	PPI					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	6.62	8.08	9.04	8.61	9.73
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.51	7.77	10.90	8.61	3.52
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	5.25	15.25	21.39	17.14	11.43
	halosulfuron	75	WG	0.031	lb ai/a	PRT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	5.14	18.19	28.50	15.70	10.74
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	5.88	16.42	25.98	18.78	12.34
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	5.61	25.69	25.00	14.01	9.34
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	2.53	7.40	14.90	13.97	17.34
9	AXIOM	68	DF	1	lb ai/a	PRT	10.07	9.06	16.63	10.06	8.92
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	5.47	15.15	27.98	15.66	12.36
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	4.00	6.35	10.40	8.54	6.78
12	trifluralin	4	EC	1	lb ai/a	PPI	5.33	10.93	21.20	11.78	9.81
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
13	trifluralin	4	EC	1	lb ai/a	PPI	5.74	21.69	19.64	13.46	9.10
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
14	trifluralin	4	EC	1	lb ai/a	PPI	6.62	13.08	24.89	20.37	9.54
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
15	trifluralin	4	EC	1	lb ai/a	PPI	1.15	15.90	35.05	24.04	28.51
	sulfentrazone	4	F	0.2	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
16	trifluralin	4	EC	1	lb ai/a	PPI	2.78	8.61	33.69	25.81	11.46
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1					
17	trifluralin	4	EC	1	lb ai/a	PPI	5.86	13.54	17.13	13.80	10.99
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
18	weeded control						4.70	8.10	7.99	5.45	15.05
LSD (P=.05)							3.453	11.194	14.222	9.322	8.456
Standard Deviation							2.071	6.714	8.530	5.591	5.072
CV							41.34	51.82	42.32	39.33	44.14

Weed Control in Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TOMATO YIELD KG/PLOT	TOMATO TOT YLD KG/PLOT
	Pest Code							
	Description						TOMATO	TOMATO
	Rating Date						10/1/03	
	Rating Data Type						YIELD	TOT YLD
	Rating Unit						KG/PLOT	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	2.85	48.97
	metribuzin	75	DF	0.5	lb ai/a	PPI		
2	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	2.56	38.97
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.22	32.91
4	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	3.40	72.32
	halosulfuron	75	WG	0.031	lb ai/a	PRT		
5	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	4.08	84.00
	halosulfuron	75	WG	0.023	lb ai/a	14 DAP		
6	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	3.56	82.25
	halosulfuron	75	WG	0.047	lb ai/a	14 DAP		
7	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	1.45	82.23
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
8	flumioxazin	51	WG	0.094	lb ai/a	PRT	2.51	57.65
9	AXIOM	68	DF	1	lb ai/a	PRT	4.63	50.98
10	sulfentrazone	4	F	0.3	lb ai/a	PRT	3.63	81.09
11	dimethenamid-p	6	EC	0.98	lb ai/a	POT	2.19	35.16
12	trifluralin	4	EC	1	lb ai/a	PPI	2.82	58.36
	rimsulfuron	25	DF	0.031	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
13	trifluralin	4	EC	1	lb ai/a	PPI	4.32	71.83
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
14	trifluralin	4	EC	1	lb ai/a	PPI	1.89	72.54
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
15	trifluralin	4	EC	1	lb ai/a	PPI	4.39	111.79
	sulfentrazone	4	F	0.2	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
16	trifluralin	4	EC	1	lb ai/a	PPI	4.47	84.34
	trifloxysulfuron	75	WG	0.0045	lb ai/a	PO1		
17	trifluralin	4	EC	1	lb ai/a	PPI	3.12	62.02
	metribuzin	75	DF	0.25	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
18	weeded control						2.71	42.74
	LSD (P=.05)						2.932	34.817
	Standard Deviation						1.758	20.882
	CV						56.71	32.12

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Project Code: WC 101-02-03 **Location: HTRC Block 87**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cucumber, Snapbean **Variety: Vlaspik Hercules**
Planting Method: seeded **Planting Date:**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 35 ft long

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

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	6-7-02	4:00 pm	78/73	F	Moist	SE 2	35	5% cloudy	N
PO1	7-11-02	5:45 pm	80/82	F	Moist	E 7	30	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
7-11-02	Tomato	15″		
7-11-02	CORW	5″		few
7-11-02	WIRA	12″		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.
3. Tomato planted in all plots in 2002.
4. Herbicide treatments applied in 2002.
5. Cucumber and snapbean planted across 2002 plots.
6. Harvested 5 ft of five 14 inch rows of cucumber and snapbean.

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Matrix Weed Control in Tomato and Carryover on Cucumber and Snap Bean - HTRC

Trial ID: WC 101-02-03 Study Dir.:
Location: East Lansing, MI Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	TOMATO RATING	YEFT RATING	COLQ RATING	COPU RATING	CORW RATING
	Weed Code						TOMATO	YEFT	COLQ	COPU	CORW
	Rating Data Type						RATING	RATING	RATING	RATING	RATING
	Rating Unit										
	Rating Date						7/10/02	7/10/02	7/10/02	7/10/02	7/10/02
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	10.0	10.0	10.0	10.0
	metribuzin	75	DF	0.25	lb ai/a	POT					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.7	10.0	10.0	10.0	9.3
	rimsulfuron	25	DF	0.032	lb ai/a	POT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.7	10.0	10.0	10.0	9.7
	rimsulfuron	25	DF	0.063	lb ai/a	POT					
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.3	10.0	10.0	10.0	10.0
	rimsulfuron	25	DF	0.125	lb ai/a	POT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.0	10.0	10.0	10.0	10.0
	rimsulfuron	25	DF	0.25	lb ai/a	POT					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	10.0	10.0	10.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	POT					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	9.7	10.0	10.0	7.3
	rimsulfuron	25	DF	0.063	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	3.3	10.0	10.0	10.0	6.3
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	10.0	10.0	10.0	9.3
	sulfentrazone	75	DF	0.1	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
10	handweeded control						1.0	2.3	1.0	1.0	1.0
	LSD (P=.05)						1.35	1.27	0.00	0.00	2.49
	Standard Deviation						0.78	0.74	0.00	0.00	1.45
	CV						36.75	8.07	0.0	0.0	17.49

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	EBNS RATING	RRPW RATING	WIRA RATING	TOMATO RATING	COLQ RATING
	Weed Code						EBNS	RRPW	WIRA	TOMATO	COLQ
	Rating Data Type						RATING	RATING	RATING	RATING	RATING
	Rating Unit										
	Rating Date						7/10/02	7/10/02	7/10/02	7/19/02	7/19/02
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	7.3	2.0	10.0
	metribuzin	75	DF	0.25	lb ai/a	POT					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	8.3	2.0	10.0
	rimsulfuron	25	DF	0.032	lb ai/a	POT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	2.0	10.0
	rimsulfuron	25	DF	0.063	lb ai/a	POT					
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	2.0	10.0
	rimsulfuron	25	DF	0.125	lb ai/a	POT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	2.0	10.0
	rimsulfuron	25	DF	0.25	lb ai/a	POT					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	2.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	POT					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	3.3	2.0	10.0
	rimsulfuron	25	DF	0.063	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	5.3	2.3	10.0
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	4.7	5.3	10.0
	sulfentrazone	75	DF	0.1	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
10	handweeded control						1.0	1.0	1.0	1.0	10.0
LSD (P=.05)							0.00	0.00	3.08	0.46	0.00
Standard Deviation							0.00	0.00	1.79	0.27	0.00
CV							0.0	0.0	25.63	11.7	0.0

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Weed Code							COPU	CORW	EBNS	RRPW	WIRA
Rating Data Type							RATING	RATING	RATING	RATING	RATING
Rating Unit											
Rating Date							7/19/02	7/19/02	7/19/02	7/19/02	7/19/02
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg					
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.7	10.0	10.0	10.0	8.3
	metribuzin	75	DF	0.25	lb ai/a	POT					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	9.7	9.0	10.0	8.0
	rimsulfuron	25	DF	0.032	lb ai/a	POT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	9.7	10.0	10.0	10.0
	rimsulfuron	25	DF	0.063	lb ai/a	POT					
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	10.0	10.0
	rimsulfuron	25	DF	0.125	lb ai/a	POT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	10.0	10.0
	rimsulfuron	25	DF	0.25	lb ai/a	POT					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	10.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	POT					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	7.3	10.0	10.0	8.7
	rimsulfuron	25	DF	0.063	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	7.3	10.0	10.0	8.7
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	9.7	10.0	10.0	8.7
	sulfentrazone	75	DF	0.1	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
10	handweeded control						10.0	10.0	10.0	10.0	10.0
LSD (P=.05)							0.31	1.49	0.94	0.00	1.77
Standard Deviation							0.18	0.87	0.55	0.00	1.03
CV							1.83	9.3	5.53	0.0	11.19

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Weed Code							TOMATO	TOMATO	TOMATO	TOMATO	TOMATO
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
Rating Date							8/20/02	8/27/02	9/3/02	9/10/02	9/17/02
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg					
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.49	6.99	35.22	38.17	9.83
	metribuzin	75	DF	0.25	lb ai/a	POT					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	3.52	10.46	34.01	44.50	9.24
	rimsulfuron	25	DF	0.032	lb ai/a	POT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	3.84	7.44	36.78	29.63	18.61
	rimsulfuron	25	DF	0.063	lb ai/a	POT					
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.85	8.32	36.51	37.78	14.92
	rimsulfuron	25	DF	0.125	lb ai/a	POT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.66	5.48	39.14	33.27	11.65
	rimsulfuron	25	DF	0.25	lb ai/a	POT					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.86	7.28	36.51	30.95	14.45
	halosulfuron	75	WG	0.047	lb ai/a	POT					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.32	6.21	30.84	32.89	15.54
	rimsulfuron	25	DF	0.063	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.86	5.50	25.64	18.21	17.13
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.12	6.19	10.51	8.02	13.97
	sulfentrazone	75	DF	0.1	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
10	handweeded control						2.71	8.41	34.42	31.84	17.10
LSD (P=.05)							1.589	4.278	14.247	16.741	11.033
Standard Deviation							0.926	2.494	8.305	9.759	6.431
CV							38.2	34.49	25.99	31.97	45.15

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Weed Code							TOMATO	TOMATO	SNBE	CUCU	CUCU
Rating Data Type							YIELD	TOT YLD	INJURY	INJURY	VINES
Rating Unit							KG/PLOT	KG/PLOT			KG/PLOT
Rating Date							9/26/02		7/17/03	7/17/03	8/4/03
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg					
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	4.96	97.67	3.3	2.3	2.85
	metribuzin	75	DF	0.25	lb ai/a	POT					
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	5.82	107.54	1.7	2.7	3.25
	rimsulfuron	25	DF	0.032	lb ai/a	POT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	6.18	102.47	2.7	5.7	1.61
	rimsulfuron	25	DF	0.063	lb ai/a	POT					
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	4.59	104.98	1.7	2.7	3.91
	rimsulfuron	25	DF	0.125	lb ai/a	POT					
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	7.13	98.32	3.0	1.7	4.05
	rimsulfuron	25	DF	0.25	lb ai/a	POT					
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	6.28	97.33	4.3	3.3	2.93
	halosulfuron	75	WG	0.047	lb ai/a	POT					
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.84	97.65	2.3	2.0	2.79
	rimsulfuron	25	DF	0.063	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	16.58	84.92	2.0	2.0	3.30
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	26.00	65.82	2.0	2.3	2.28
	sulfentrazone	75	DF	0.1	lb ai/a	PO1					
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.5	% v/v	PO1					
10	handweeded control						13.02	107.50	1.0	1.7	3.31
LSD (P=.05)							6.702	31.861	2.33	3.39	2.146
Standard Deviation							3.907	18.573	1.36	1.98	1.251
CV							38.91	19.26	56.59	75.03	41.3

Matrix Weed Control in Tomato and Carryover in Cucumber and Snap Bean - HTRC

Dept. of Horticulture, MSU

Weed Code							CUCU	SNBE	SNBE
Rating Data Type							FRUIT	PLANTS	FRUIT
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT
Rating Date							8/4/03	8/4/03	8/4/03
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg			
1	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	4.79	1.33	0.71
	metribuzin	75	DF	0.25	lb ai/a	POT			
2	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	5.06	2.04	1.67
	rimsulfuron	25	DF	0.032	lb ai/a	POT			
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.23	1.21	0.82
	rimsulfuron	25	DF	0.063	lb ai/a	POT			
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	7.36	2.22	1.77
	rimsulfuron	25	DF	0.125	lb ai/a	POT			
5	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.25	1.89	1.47
	rimsulfuron	25	DF	0.25	lb ai/a	POT			
6	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	6.02	1.31	0.87
	halosulfuron	75	WG	0.047	lb ai/a	POT			
7	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	5.61	1.33	0.91
	rimsulfuron	25	DF	0.063	lb ai/a	PO1			
	metribuzin	75	DF	0.25	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
8	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	5.95	1.69	1.41
	sulfosulfuron	75	WG	0.031	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
9	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	4.39	1.35	1.19
	sulfentrazone	75	DF	0.1	lb ai/a	PO1			
	metribuzin	75	DF	0.25	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
	NIS		L	0.5	% v/v	PO1			
10	handweeded control						6.75	1.69	1.11
LSD (P=.05)							6.947	1.230	1.377
Standard Deviation							4.050	0.717	0.802
CV							71.79	44.62	67.32

Weed Control in Pepper Under Clear Plastic - HTRC

Project Code: WC 101-03-04 **Location: HTRC Block 60**

Personnel: Bernard H. Zandstra, Michael Particka, Sylvia Morse
Crop: Bell Pepper **Variety: Karma**
Planting Method: Transplant **Planting Date: 5-29-03**
Spacing: 2 FT **Row Spacing: 8 FT**
Tillage Type: **Study Design: RCB** **Replications: 2**
Plot Size: 10 ft wide x 120 ft long

Soil Type: Marlette fine sandy loam **OM: 2.1%** **pH: 5.8**
Sand:53% **Silt:23%** **Clay:24%** **CEC: 9.9**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRT	5-22	10:00 am	56/51	°F	Adequate	NE 4	54%	40% cloudy	N
PRT	5-22	3:00 pm	73/54	°F	Adequate	E 4	27%	0% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-22	Bell Pepper			

Notes and Comments

1. Sprays applied with 2 nozzle boom FF11002, 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.
3. First application applied to bed surface before plastic was laid. Second application applied to row middles after plastic was laid.
4. Plastic was laid on 5-22-02.
5. One row = One rep.
6. 60 plants per row.

Weed Control in Pepper Under Clear Plastic - HTRC

Dept. of Horticulture, MSU

Weed Control in Pepper Under Clear Plastic - HTRC

Trial ID: WC 101-03-04 **Study Director:**
Location: HTRC **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER 7/18/03 NUMBER PLT/PLOT	PEPPER 7/18/03 RATING	PEPPER 8/25/03 YIELD NUMBER	PEPPER 8/25/03 YIELD KG/PLOT	PEPPER 9/8/03 YIELD NUMBER	PEPPER 9/8/03 YIELD KG/PLOT
1	untreated					PRT	19.5	3.5	12.0	1.42	15.0	1.92
2	oxyfluorfen 2		L	0.5	lb ai/a	PRT	28.5	3.5	85.0	16.30	104.0	19.18
3	oxyfluorfen 2		L	1.0	lb ai/a	PRT	17.5	6.5	29.0	4.82	72.0	8.19
LSD (P=.05)							17.57	3.51	43.17	7.767	107.20	8.078
Standard Deviation							4.08	0.82	10.03	1.805	24.91	1.877
CV							18.7	18.14	23.89	24.04	39.13	19.24

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER 9/24/03 YIELD NUMBER	PEPPER 9/24/03 YIELD KG/PLOT	PEPPER TOT YIELD NUMBER	PEPPER TOT YIELD KG/PLOT
1	untreated					PRT	10.5	1.49	37.5	4.83
2	oxyfluorfen 2		L	0.5	lb ai/a	PRT	59.0	11.50	248.0	46.97
3	oxyfluorfen 2		L	1.0	lb ai/a	PRT	72.5	12.12	173.5	25.12
LSD (P=.05)							138.87	21.891	261.32	33.016
Standard Deviation							32.27	5.087	60.73	7.673
CV							68.18	60.78	39.69	29.93

Weed Control in Strawberries -HTRC

Project Code: WC 126-02-01 **Location: HTRC Block 25**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Strawberry **Variety: Mira**
Planting Method: Transplant **Planting Date: 4-30-01**
Spacing: 2 FT **Row Spacing: 6 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 6 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
DMT	10-28-02	10:55 am	46/45	°F	Adequate	4	55%	100% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
10-28-02	Strawberry	4″		
10-28-02	QUGR			
10-28-02	GFPW			
10-28-02	MWCH			

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.
3. Herbicides were applied in Fall 2002

Weed Control in Strawberries -HTRC

Dept. of Horticulture, MSU

Weed Control in Strawberries - HTRC

Trial ID: WC 126-02-01 **Study Director:**
Location: HTRC Block 25 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 5/30/03 RATING	MWCH 5/30/03 RATING	GFPW 5/30/03 RATING	QUGR 5/30/03 RATING	STBE 6/13/03 YIELD G/PLOT	STBE 6/17/03 YIELD G/PLOT
1	napropramide	50	DF	4	lb ai/a	DMT	1.1	1.0	1.0	3.7	43.3	698.7
2	terbacil	80	WP	0.4	lb ai/a	DMT	1.7	9.7	10.0	6.0	175.3	1074.0
3	flumioxazin	51	WG	0.094	lb ai/a	DMT	2.0	8.0	7.7	5.0	93.7	763.7
4	flumioxazin	51	WG	0.188	lb ai/a	DMT	1.3	9.7	9.7	6.0	160.0	1128.7
5	flumioxazin	51	WG	0.375	lb ai/a	DMT	1.0	9.7	10.0	9.3	85.3	839.7
6	oxyfluorfen	2	L	0.5	lb ai/a	DMT	1.3	9.0	8.7	5.7	110.0	972.0
7	sulfentrazone	75	DF	0.25	lb ai/a	DMT	1.3	9.0	9.0	3.7	104.7	883.0
8	sulfentrazone	75	DF	0.375	lb ai/a	DMT	1.0	9.0	9.3	5.3	48.3	751.3
9	sulfentrazone	75	DF	0.5	lb ai/a	DMT	1.7	9.7	8.3	7.0	72.7	995.7
10	untreated						1.3	4.0	3.7	2.7	60.3	570.0
LSD (P=.05)							0.94	3.39	2.21	5.03	151.52	508.40
Standard Deviation							0.54	1.97	1.29	2.93	88.32	296.37
CV							39.48	25.1	16.68	53.96	92.62	34.16

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 6/23/03 YIELD G/PLOT	STBE 6/26/03 YIELD G/PLOT	STBE 6/30/03 YIELD G/PLOT	STBE TOTAL YIELD KG/PLOT
1	napropramide	50	DF	4	lb ai/a	DMT	3251.3	2040.7	677.7	6.712
2	terbacil	80	WP	0.4	lb ai/a	DMT	3352.7	1018.3	524.3	6.145
3	flumioxazin	51	WG	0.094	lb ai/a	DMT	2975.0	991.0	361.0	5.184
4	flumioxazin	51	WG	0.188	lb ai/a	DMT	3908.3	1588.0	846.3	7.631
5	flumioxazin	51	WG	0.375	lb ai/a	DMT	4096.7	1594.3	731.0	7.347
6	oxyfluorfen	2	L	0.5	lb ai/a	DMT	2950.7	1755.7	333.0	6.121
7	sulfentrazone	75	DF	0.25	lb ai/a	DMT	3962.0	1568.0	692.0	7.210
8	sulfentrazone	75	DF	0.375	lb ai/a	DMT	3429.3	1243.3	561.0	6.033
9	sulfentrazone	75	DF	0.5	lb ai/a	DMT	4742.0	1997.7	644.7	8.453
10	untreated						3883.0	1676.3	587.7	6.777
LSD (P=.05)							1330.62	1038.83	271.36	2.1770
Standard Deviation							775.66	605.57	158.19	1.2690
CV							21.22	39.14	26.55	18.77

Weed Control in Apple -HTRC

Project Code: WC 128-03-01 **Location: HTRC Block 17**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Apple **Variety: several**
Planting Method: Transplant **Planting Date: 5-1-01**
Spacing: 6 FT **Row Spacing: 17 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 35 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.9%** **pH: 6.9**
Sand: 47% **Silt: 23%** **Clay: 30%** **CEC: 8.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5-13	3:00 pm	68/55	°F	Adequate	N 5	30%	0% cloudy	N
PO1	6-18	3:30 pm	88/74	°F	Adequate	W 2	39%	10% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-13	Apple	bloom		
5-13	QUGR	6″		moderate
5-13	DAND	3″		moderate
5-13	CLOV = clover species			
6-18	Apple	.5″ fruit		
6-18	QUGR	30″		moderate
6-18	DAND	5″		moderate
6-18	CLOV	5″		few
6-18	REFE			
6-18	WICA			

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.
3. One boom pass on each side of row

Weed Control in Apple -HTRC

Dept. of Horticulture, MSU

Weed Control in Apple - HTRC

Trial ID: WC 128-03-01 **Study Director:**
Location: HTRC Block 17 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	APPLE 6/11/03 RATING	QUGR 6/11/03 RATING	REFE 6/11/03 RATING	CLOV 6/11/03 RATING	DAND 6/11/03 RATING	WICA 6/11/03 RATING
1	diuron	80	DF	3	lb ai/a	LPRE	1.0	8.7	9.7	10.0	9.7	5.3
	glyphosate	5	L	1	lb ai/a	LPRE						
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	6.0	7.0	7.0	7.0	7.0
	glufosinate	1	L	1	lb ai/a	LPRE						
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	9.0	10.0	10.0	10.0	10.0
	glyphosate	5	L	1	lb ai/a	LPRE						
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	9.7	10.0	10.0	10.0	10.0
	glyphosate	5	L	1	lb ai/a	LPRE						
5	sulfentrazone	4	F	0.5	lb ai/a	LPRE	1.0	8.7	10.0	9.7	9.3	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	glyphosate	5.5	L	1	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	AMS	100	DF	3.4	lb ai/a	PO1						
7	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	glyphosate	5.5	L	1	lb ai/a	PO1						
	AMS	100	DF	3.4	lb ai/a	PO1						
8	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	paraquat	3	L	0.31	lb ai/a	PO1						
	diuron	80	DF	3	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	oxyfluorfen	2	L	0.25	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
10	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.00	2.50	2.85	2.89	2.90	3.47
Standard Deviation							0.00	1.46	1.66	1.68	1.69	2.02
CV							0.0	31.0	32.19	32.52	33.18	42.78

Weed Control in Apple -HTRC

Dept. of Horticulture, MSU

Pest Code								QUGR	CLOV	DAND	WICA
Description								APPLE			
Rating Date								7/1/03	7/1/03	7/1/03	7/1/03	7/1/03
Rating Data Type								RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	3	lb ai/a	LPRE		1.0	7.0	9.3	5.3	6.0
	glyphosate	5	L	1	lb ai/a	LPRE						
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE		1.0	2.3	7.7	7.0	9.4
	glufosinate	1	L	1	lb ai/a	LPRE						
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE		1.0	7.3	7.0	9.3	6.7
	glyphosate	5	L	1	lb ai/a	LPRE						
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE		1.0	8.3	9.3	9.7	9.7
	glyphosate	5	L	1	lb ai/a	LPRE						
5	sulfentrazone	4	F	0.5	lb ai/a	LPRE		1.0	8.3	9.0	9.7	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	glyphosate	5.5	L	1	lb ai/a	PO1		1.0	3.0	6.7	4.3	8.3
	AMS	100	DF	3.4	lb ai/a	PO1						
7	carfentrazone	2	EC	0.03	lb ai/a	PO1		1.0	6.3	10.0	7.3	10.0
	glyphosate	5.5	L	1	lb ai/a	PO1						
	AMS	100	DF	3.4	lb ai/a	PO1						
8	carfentrazone	2	EC	0.03	lb ai/a	PO1		1.0	8.1	9.7	9.3	10.0
	paraquat	3	L	0.31	lb ai/a	PO1						
	diuron	80	DF	3	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	carfentrazone	2	EC	0.03	lb ai/a	PO1		1.0	7.0	8.0	8.3	6.0
	oxyfluorfen	2	L	0.25	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
10	untreated							1.0	3.3	2.3	3.0	3.7
LSD (P=.05)								0.00	2.51	3.25	4.49	4.13
Standard Deviation								0.00	1.46	1.89	2.61	2.39
CV								0.0	23.86	23.98	35.66	30.04

Weed Control in Blueberry - HTRC

Project Code: WC 127-03-01 **Location: HTRC Block 114**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Blueberry **Variety: Several**
Planting Method: Transplant **Planting Date: 5-3-71**
Spacing: 4 FT **Row Spacing: 10 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.33 ft wide x 20 ft long

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

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5-18	4:45 pm	68/71	°F	Adequate	SE 6	56%	45% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-18	Blueberry			
5-18	BHPL			
5-18	CWBS			
5-18	DAND			
5-18	GRFT			
5-18	MATA			
5-18	QUGR			
5-18	REFE			
5-18	WICA			

Notes and Comments
1. Sprays applied with 2 nozzle boom FF11002, 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.
3. Application made with 2 nozzle boom with one pass on each side of row.
4. 4 plants per plot

Weed Control in Blueberry - HTRC

Dept. of Horticulture, MSU

Weed Control in Blueberry - HTRC

Trial ID: WC-127-03-01 **Study Director:**
Location: HTRC Block 114 **Investigator: Dr. Bernard Zandstra**

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	BLBE	QUGR	REFE	BHPL	CWBS	DAND
	Rating Date						6/10/03	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
1	diuron	80	DF	3	lb ai/a	LPRE	1.0	9.3	9.0	9.3	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
2	norflurazon	80	DF	4	lb ai/a	LPRE	1.3	9.7	10.0	10.0	8.0	8.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
3	diclobenil	1.38	L	4	lb ai/a	LPRE	1.0	9.7	10.0	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
4	diuron	80	DF	2	lb ai/a	LPRE	1.3	10.0	10.0	10.0	8.0	10.0
	terbacil	80	WP	1.2	lb ai/a	LPRE						
	glyphosate	5.5	L	1	lb ai/a	LPRE						
5	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	10.0	10.0	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	10.0	10.0	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
7	sulfentrazone	4	F	0.375	lb ai/a	LPRE	1.0	10.0	9.3	10.0	10.0	10.0
	glufosinate	1	L	1	lb ai/a	LPRE						
8	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.52	0.56	0.72	0.72	2.81	2.15
Standard Deviation							0.30	0.32	0.41	0.41	1.60	1.22
CV							27.58	3.65	4.71	4.64	19.15	14.2

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	BLBE	GRFT	REFE	DAND	MATA	WICA
	Rating Date						7/18/03	7/18/03	7/18/03	7/18/03	7/18/03	7/18/03
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
1	diuron	80	DF	3	lb ai/a	LPRE	1.0	4.0	7.3	8.7	7.0	6.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
2	norflurazon	80	DF	4	lb ai/a	LPRE	1.0	8.7	9.3	9.7	10.0	6.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
3	diclobenil	1.38	L	4	lb ai/a	LPRE	1.0	5.0	8.3	9.7	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
4	diuron	80	DF	2	lb ai/a	LPRE	1.0	9.7	9.7	9.7	10.0	9.3
	terbacil	80	WP	1.2	lb ai/a	LPRE						
	glyphosate	5.5	L	1	lb ai/a	LPRE						
5	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	8.7	9.7	10.0	8.7	9.7
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	9.3	9.7	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
7	sulfentrazone	4	F	0.375	lb ai/a	LPRE	1.0	3.3	7.0	9.0	10.0	10.0
	glufosinate	1	L	1	lb ai/a	LPRE						
8	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.00	3.82	2.03	1.08	3.39	4.42
Standard Deviation							0.00	2.18	1.16	0.62	1.94	2.52
CV							0.0	35.17	14.93	7.3	23.26	32.2

Weed Control in Cherry and Peach

Project Code: WC 128-03-02 **Location: HTRC Block 7 & 8**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cherry, Peach **Variety: Montmorency, Coral Star**
Planting Method: Transplant **Planting Date: 5-5-99**
Spacing: 15 FT **Row Spacing: 20 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.5%** **pH: 7.8**
Sand: 57% **Silt: 25%** **Clay: 18%** **CEC: 9.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5-13	3:30 pm	68/66	°F	Adequate	N 2	34%	0% cloudy	N
PO1	6-18	4:30 pm	81/88	°F	Adequate	S 6	41%	60% cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Number of Leaves	Density
5-13	Cherry	E. Bloom		
5-13	Peach	E. Bloom		
5-13	DAND	4″		moderate
5-13	CLOV = clover species	5″		few
5-13	SHPU	9″		few
6-18	Cherry	.5″ fruit		
6-18	Peach	.5″ fruit		
6-18	DAND	6″		moderate
6-18	CLOV	6″		moderate
6-18	SHPU			
6-18	CLOV			
6-18	WICA			

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.

Weed Control in Cherry and Peach

Dept. of Horticulture, MSU

Weed Control in Cherry & Peach

Trial ID: WC 128-03-02 **Study Director:**
Location: HTRC Block 7,8 **Investigator: Dr. Bernard Zandstra**

Pest Code									REFE	CLOV	DAND	WICA
Description							CHERRY	PEACH				
Rating Date							6/11/03	6/11/03	6/11/03	6/11/03	6/11/03	6/11/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	diuron	80	WP	3	lb ai/a	LPRE	1.0	1.0	9.3	10.0	9.0	9.3
	glyphosate	5	L	1	lb ai/a	LPRE						
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	1.0	10.0	10.0	10.0	10.0
	glufosinate	1	L	1	lb ai/a	LPRE						
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	1.0	9.7	9.3	10.0	8.3
	glyphosate	5	L	1	lb ai/a	LPRE						
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	1.0	9.7	8.3	10.0	7.7
	glyphosate	5	L	1	lb ai/a	LPRE						
5	glyphosate	5.5	L	1	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	AMS	100	DF	3.4	lb ai/a	PO1						
6	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	glyphosate	5.5	L	1	lb ai/a	PO1						
	AMS	100	DF	3.4	lb ai/a	PO1						
7	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	paraquat	3	L	0.31	lb ai/a	PO1						
	diuron	80	DF	3	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
8	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	oxyfluorfen	2	L	0.25	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.00	0.00	0.83	0.97	0.58	2.83
Standard Deviation							0.00	0.00	0.48	0.56	0.33	1.64
CV							0.0	0.0	9.92	11.84	6.82	36.5

Weed Control in Cherry and Peach

Dept. of Horticulture, MSU

Pest Code												
Description							CHERRY	PEACH	QUGR	CLOV	DAND	CHERRY
Rating Date							7/1/03	7/1/03	7/1/03	7/1/03	7/1/03	8/20/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	diuron	80	WP	3	lb ai/a	LPRE	1.0	1.0	9.7	9.7	9.3	1.0
	glyphosate	5	L	1	lb ai/a	LPRE						
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	1.0	10.0	10.0	9.7	1.0
	glufosinate	1	L	1	lb ai/a	LPRE						
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	1.0	8.7	9.0	9.0	1.0
	glyphosate	5	L	1	lb ai/a	LPRE						
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	1.0	9.7	9.7	10.0	2.0
	glyphosate	5	L	1	lb ai/a	LPRE						
5	glyphosate	5.5	L	1	lb ai/a	PO1	1.0	1.0	8.0	4.7	2.3	2.0
	AMS	100	DF	3.4	lb ai/a	PO1						
6	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	7.0	7.7	7.7	1.0
	glyphosate	5.5	L	1	lb ai/a	PO1						
	AMS	100	DF	3.4	lb ai/a	PO1						
7	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	10.0	9.7	8.3	1.0
	paraquat	3	L	0.31	lb ai/a	PO1						
	diuron	80	DF	3	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
8	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	1.0	7.0	9.0	7.0	1.0
	oxyfluorfen	2	L	0.25	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	untreated						1.0	1.0	3.0	1.7	1.0	1.5
LSD (P=.05)							0.00	0.00	4.00	2.11	1.54	2.30
Standard Deviation							0.00	0.00	2.31	1.22	0.89	1.01
CV							0.0	0.0	28.47	15.45	12.41	79.34

Weed Control in Cherry and Peach

Dept. of Horticulture, MSU

Pest Code								BYGR	YEFT	CLOV	DAND	MATA
Description							PEACH					
Rating Date							8/20/03	8/20/03	8/20/03	8/20/03	8/20/03	8/20/03
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	diuron	80	WP	3	lb ai/a	LPRE	1.0	5.3	3.0	8.3	6.7	10.0
	glyphosate	5	L	1	lb ai/a	LPRE						
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	9.7	7.7	9.7	8.0	6.0
	glufosinate	1	L	1	lb ai/a	LPRE						
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	1.0	9.0	6.0	5.7	5.0	6.7
	glyphosate	5	L	1	lb ai/a	LPRE						
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	1.0	10.0	7.0	8.0	5.3	9.7
	glyphosate	5	L	1	lb ai/a	LPRE						
5	glyphosate	5.5	L	1	lb ai/a	PO1	2.0	10.0	8.7	2.7	2.7	10.0
	AMS	100	DF	3.4	lb ai/a	PO1						
6	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	10.0	7.7	4.0	3.7	10.0
	glyphosate	5.5	L	1	lb ai/a	PO1						
	AMS	100	DF	3.4	lb ai/a	PO1						
7	carfentrazone	2	EC	0.03	lb ai/a	PO1	1.0	10.0	10.0	10.0	5.0	10.0
	paraquat	3	L	0.31	lb ai/a	PO1						
	diuron	80	DF	3	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
8	carfentrazone	2	EC	0.03	lb ai/a	PO1	2.0	10.0	9.7	4.7	3.0	1.7
	oxyfluorfen	2	L	0.25	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
9	untreated						1.0	10.0	7.0	2.7	4.0	3.0
LSD (P=.05)							13.83	1.89	5.63	4.05	3.72	3.27
Standard Deviation							1.33	1.09	3.25	2.34	2.15	1.89
CV							109.09	11.71	43.88	37.8	44.58	25.38

Weed Control in Cherry and Peach

Dept. of Horticulture, MSU

Pest Code							RRPW
Description							
Rating Date							8/20/03
Rating Data Type							RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	
1	diuron	80	WP	3	lb ai/a	LPRE	6.7
	glyphosate	5	L	1	lb ai/a	LPRE	
2	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	9.7
	glufosinate	1	L	1	lb ai/a	LPRE	
3	flumioxazin	51	WDG	0.375	lb ai/a	LPRE	10.0
	glyphosate	5	L	1	lb ai/a	LPRE	
4	flumioxazin	51	WDG	0.75	lb ai/a	LPRE	10.0
	glyphosate	5	L	1	lb ai/a	LPRE	
5	glyphosate	5.5	L	1	lb ai/a	PO1	10.0
	AMS	100	DF	3.4	lb ai/a	PO1	
6	carfentrazone	2	EC	0.03	lb ai/a	PO1	10.0
	glyphosate	5.5	L	1	lb ai/a	PO1	
	AMS	100	DF	3.4	lb ai/a	PO1	
7	carfentrazone	2	EC	0.03	lb ai/a	PO1	9.7
	paraquat	3	L	0.31	lb ai/a	PO1	
	diuron	80	DF	3	lb ai/a	PO1	
	COC		L	1	% v/v	PO1	
8	carfentrazone	2	EC	0.03	lb ai/a	PO1	10.0
	oxyfluorfen	2	L	0.25	lb ai/a	PO1	
	COC		L	1	% v/v	PO1	
9	untreated						10.0
LSD (P=.05)							1.04
Standard Deviation							0.60
CV							6.29