HORTICULTURAL REPORT

2005 WEED CONTROL RESEARCH ON FRUIT & VEGETABLE CROPS

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By

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WEED CONTROL IN HORTICULTURAL CROPS - 2005
FORWARD

This report summarizes the results of weed control experiments on horticultural crops in Michigan in 2005. 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

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 7.1.1, 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.
BABR	bald brome (upright brome)	*Bromus racemosus* L.
BFTF	birdsfoot trefoil	*Lotus corniculatus* L.
BHPL	buckhorn plantain	*Plantago lanceolata* L.
BLDO	broadleaf dock	*Rumex obtusifolius* 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

WEED LIST

Abbr.	Common Name	Botanical Name
MECW	mouseear chickweed	*Cerastium vulgatum* L.
MONO	monolepis	*Monolepis nuttaliane* Greene
MWCH	mayweed chamomile	*Anthemis cotula* L.
NLLQ	narrowleaf lambsquarters	*Chenopodium desiccatum* A. Nels
OEDA	oxeye daisy	*Chrysanthemum leucanthemum* L.
ORGR	orchardgrass	*Dactylis glomerata* L.
PAWE	pineappleweed	*Matricaria matricariodes* (Less)C.L.Porter
PESW	Pennsylvania smartweed	*Polygonum pennsylvanicum* L.
POIV	poison ivy	*Rhus radicans* L.
PRKW	prostrate knotweed	*Polygonum aviculare* L.
PRLE	prickly lettuce	*Lactuca serriola* L.
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.
RSFI	redstem filaree	*Erodium cicutarium* (L.) L'Hér. ex Ait.
RUTH	Russian thistle	*Salsola iberica* L.
SHPU	shepherdspurse	*Capsella bursa-pastoris* (L.) Medic.
SPKW	spotted knapweed	*Centaurea biebersteinii* DC.
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.
VICR	Virginia creeper	*Parthenocissus quinquefolia* (L.) Planch.
VIPW	Virginia pepperweed	*Lepidium virginicum* L.
VOAS	volunteer asparagus	*Asparagus officinalis* L.
WESA	western salsify	*Tragopogon dubius* Scop.
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
bentazon	Basagran	4 L	Micro Flo
bromoxynil	Buctril	4 EC	Bayer CropScience
butafenacil	Inspire	0.8 L	Syngenta
carfentrazone	Aim	2.0 EC	FMC
chlorimuron-ethyl	Classic	25 WDG	DuPont
clethodim	Envoy	0.94 L	Valent
clethodim	Select	2 EC	Valent
clethodim	V 10137	1 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
cycloate	Ro-Neet	6 EC	Helm Agro
DCPA	Dacthal	75 WP	Amvac Chemical
dicamba	Clarity	4 L	BASF
diclobenil	Casoron CS	1.38 CS	Chemtura
diclobenil	Casoron G	4 G	Chemtura
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	DuPont
endothall	Desicate II	2 L	Cerexagri.
EPTC	Eptam	7 EC	Gowan
ethalfluralin	Curbit	3 EC	UAP
ethalfluralin 1.6 lb ai + clomazone 0.5 lb ai	Strategy	2.1 EC	UAP
ethofumesate	Nortron SC	4 SC	Bayer CropScience
ethometsulfuron	Muster	75 WG	DuPont
fluazifop-P	Fusilade DX	2 EC	Syngenta
flucarbazone	Everest	70 WDG	Arysta
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
fluroxypyr	Starane	1.5 L	Dow Agrosciences
fomesafen	Reflex	2 EC	Syngenta
foramsulfuron	Option	35 WG	Bayer CropScience

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
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
imazosulfuron	V 10142	75 WDG	Valent
isoxaben	Gallery	75 DF	Dow Agrosciences
KIH-485	KIH-485	60 WG	Kumiai Chemical Co.
linuron	Lorox	50 DF	DuPont
mesotrione	Callisto	4 SC	Syngenta
metribuzin	Sencor	75 DF	Bayer CropScience
napropamide	Devrinol	50 DF	United Phosphorus
naptalam	Alanap	2 EC	Uniroyal
norflurazon	Solicam	80 DF	Syngenta
oryzalin	Surflan	4 AS	United Phosphorus
oxyfluorfen	Goal XL	2 L	Dow Agrosciences
oxyfluorfen	Goaltender	4 SC	Dow Agrosciences
paraquat	Gramoxone Max	3 L	Syngenta
paraquat	Gramoxone Inteon	3 L	Syngenta
pendimethalin	Prowl	3.3 EC	BASF
pendimethalin	Prowl H_2O	3.8 ACS	BASF
penoxsulam	Grasp SC	2 SC	Dow Agrosciences
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	
quizalofop p-ethyl	Assure II	0.88 EC	DuPont
quizalofop p-ethyl	Targa	0.88 EC	Gowan
rimsulfuron	Matrix	25 DF	DuPont
sethoxydim	Poast	1.53 EC	Micro Flo
sethoxydim	Poast Plus	1 EC	Micro Flo
sethoxydim	Vantage	1 L	TopPro
simazine	Princep	90 DF	Syngenta
s-metolachlor	Dual Magnum	7.62 EC	Syngenta

CHEMICAL LIST

COMMON NAME	TRADE NAME	FORMULATION	MANUFACTURER
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
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
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	Loveland
MSO		20% surfactant 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
ACS = Aqueous Capsule Suspension
AS = Aqueous Solution
ASPA = Asparagus
CEC = Cation Exchange Capacity
CS = Capsule Suspension
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
WDG = Water Dispersible Granule
WG = Water Soluble Granule
WP = Wettable Powder
WT = Weight
" = Inches
Y = Yes

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center

Recorded at
MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2005

APRIL				MAY				JUNE			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	56.8	31.8		**1**	51.5	31.2	0.01	**1**	81.7	48.5	
2	50.3	37.0		**2**	47.2	35.5	0.01	**2**	78.2	51.8	
3	57.9	32.7		**3**	42.0	29.6		**3**	75.9	61.2	0.01
4	64.7	33.0		**4**	60.0	24.5		**4**	84.2	58.9	
5	75.2	46.6		**5**	63.1	33.5		**5**	90.8	63.7	0.25
6	78.7	45.7		**6**	69.1	36.3		**6**	82.4	63.4	
7	63.5	40.4		**7**	65.8	41.7	0.07	**7**	90.5	61.6	
8	62.5	31.2		**8**	76.1	41.2		**8**	89.6	64.1	1.04
9	68.1	30.1		**9**	80.6	54.4		**9**	90.6	66.2	0.57
10	73.5	36.6		**10**	79.3	55.7		**10**	89.3	66.6	0.03
11	66.8	41.2		**11**	58.7	46.0	0.14	**11**	85.5	68.7	0.68
12	57.7	37.6		**12**	56.1	36.4		**12**	82.1	69.0	0.05
13	58.7	32.4		**13**	65.5	41.7	0.33	**13**	80.4	67.6	0.72
14	61.3	32.3		**14**	61.5	47.7	0.13	**14**	83.1	65.8	0.21
15	65.9	27.5		**15**	54.1	42.8		**15**	71.4	57.1	0.06
16	73.1	30.5		**16**	52.2	38.0		**16**	68.8	52.1	0.04
17	73.9	47.9		**17**	64.0	34.6		**17**	65.0	49.0	
18	78.2	48.1		**18**	69.3	45.5		**18**	66.8	56.9	
19	80.6	54.8		**19**	58.4	49.9	0.23	**19**	74.7	50.2	
20	68.1	41.8	0.09	**20**	71.7	48.4	0.02	**20**	78.7	49.9	
21	58.7	34.0		**21**	76.3	38.3		**21**	83.8	53.8	0.09
22	50.0	34.8	0.10	**22**	62.7	47.4	0.13	**22**	79.6	49.6	
23	42.8	30.0	0.12	**23**	62.9	49.4	0.24	**23**	85.1	49.7	
24	35.9	29.1	0.37	**24**	61.2	44.8		**24**	91.2	71.2	
25	59.7	34.0	0.01	**25**	73.3	39.0		**25**	91.3	70.5	
26	53.0	42.4	0.07	**26**	71.6	43.0		**26**	91.7	64.8	
27	47.4	37.6	0.02	**27**	70.4	42.9		**27**	91.3	66.2	
28	53.8	32.3		**28**	67.7	42.2		**28**	88.0	70.2	
29	54.3	32.8		**29**	68.8	45.8		**29**	89.9	68.7	0.02
30	55.3	40.3		**30**	73.8	49.9		**30**	82.9	66.3	0.51
				31	78.3	46.6					

TEMPERATURE AND PRECIPITATION DATA

MSU Horticulture Teaching and Research Center

Recorded at
MSU Horticulture Teaching and Research Center (HTRC)
East Lansing, Michigan
2005

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	72.3	56.7		**1**	87.3	63.3		**1**	81.5	56.8	
2	74.6	46.1		**2**	88.0	62.5		**2**	79.4	55.4	
3	80.6	49.4		**3**	89.2	65.4		**3**	77.8	48.2	
4	87.8	59.7	0.81	**4**	83.8	72.0	0.03	**4**	80.4	47.0	
5	81.4	65.4	0.06	**5**	82.7	60.3		**5**	81.5	50.5	
6	72.1	59.1		**6**	85.5	55.1		**6**	84.9	52.6	
7	80.2	53.5		**7**	85.8	58.9		**7**	86.8	57.8	
8	79.8	58.3		**8**	88.0	62.8		**8**	79.2	63.1	
9	84.9	55.3		**9**	89.8	66.0		**9**	82.5	52.1	
10	87.5	54.3		**10**	85.7	70.1	0.06	**10**	86.8	52.5	
11	88.4	58.5		**11**	76.2	64.6	0.03	**11**	88.4	57.8	
12	89.8	65.1		**12**	82.6	66.3	0.29	**12**	89.8	56.2	
13	87.7	68.1		**13**	80.2	64.5		**13**	89.8	62.1	
14	87.6	67.3		**14**	76.7	64.4	0.01	**14**	77.8	60.5	0.04
15	88.6	64.0	0.95	**15**	80.6	61.2		**15**	72.5	51.9	
16	81.3	70.3		**16**	83.6	59.8		**16**	65.2	53.5	1.09
17	86.4	69.1		**17**	85.1	55.7		**17**	74.1	55.4	
18	85.5	67.3	0.49	**18**	79.8	61.0		**18**	78.7	50.1	
19	81.8	59.7		**19**	81.4	66.3		**19**	76.2	54.1	
20	87.1	55.0	0.40	**20**	81.7	60.7	0.21	**20**	77.7	54.4	
21	85.9	66.0	0.03	**21**	77.8	62.6		**21**	85.2	51.2	
22	85.2	64.0	0.02	**22**	68.1	52.7		**22**	80.1	57.6	0.81
23	83.8	57.9	0.15	**23**	71.7	52.7		**23**	69.4	51.1	
24	91.3	67.2	1.20	**24**	78.6	48.7		**24**	69.1	49.4	
25	90.4	75.2		**25**	77.5	51.4		**25**	78.4	60.9	0.22
26	83.5	64.1	0.38	**26**	86.3	60.1		**26**	69.2	54.3	0.37
27	74.5	56.6	0.04	**27**	82.5	59.2		**27**	71.3	42.9	
28	76.4	52.0		**28**	85.2	56.1		**28**	74.5	48.8	0.42
29	77.6	53.7	0.05	**29**	86.7	58.0		**29**	59.2	39.1	0.07
30	79.6	53.8		**30**	82.1	55.4	0.01	**30**	68.5	37.7	
31	83.6	56.8		**31**	80.1	59.1					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station

Recorded at
MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2005

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	57.0	30.0		**1**	52.4	28.3		**1**	80.4	42.3	0.19
2	48.4	31.6		**2**	46.7	36.9		**2**	77.8	44.9	
3	57.2	32.5		**3**	42.1	26.4		**3**	75.0	59.0	
4	64.2	29.3		**4**	60.1	21.7		**4**	84.6	55.5	
5	74.7	46.9		**5**	64.5	28.3		**5**	91.5	60.9	
6	77.1	41.3		**6**	71.0	35.3		**6**	82.7	60.2	0.01
7	64.2	34.9		**7**	65.8	36.3	0.05	**7**	90.0	54.9	0.10
8	60.9	28.5		**8**	77.4	36.3		**8**	88.9	62.5	0.42
9	67.9	28.1		**9**	82.4	56.4		**9**	91.7	64.0	0.10
10	72.3	31.8		**10**	80.4	51.8	0.01	**10**	90.2	65.2	0.05
11	66.9	36.9		**11**	58.1	44.1	0.13	**11**	86.1	69.4	0.03
12	57.0	33.6		**12**	55.9	35.8		**12**	83.0	69.8	
13	56.1	30.3		**13**	62.2	42.1	0.36	**13**	80.2	66.9	0.70
14	59.4	26.0		**14**	61.2	47.0	0.19	**14**	83.4	64.2	0.17
15	65.4	23.9		**15**	54.2	43.0		**15**	71.5	57.8	0.19
16	73.5	26.6		**16**	52.4	36.3		**16**	67.5	47.1	0.09
17	74.6	45.0		**17**	65.3	33.2		**17**	64.3	42.5	
18	78.8	48.4		**18**	71.1	46.5		**18**	66.9	56.0	
19	81.8	48.8		**19**	59.6	50.3	0.13	**19**	74.1	47.3	
20	68.5	40.2	0.09	**20**	72.4	41.9		**20**	79.5	46.0	
21	59.4	29.3		**21**	77.1	33.8		**21**	84.4	49.3	
22	49.3	28.8	0.15	**22**	63.0	43.8	0.07	**22**	78.3	43.7	
23	42.7	30.5	0.14	**23**	62.1	49.3	0.02	**23**	85.7	46.1	
24	35.2	29.2	0.29	**24**	62.1	38.6		**24**	91.0	68.3	0.06
25	58.9	34.0	0.04	**25**	72.5	33.8		**25**	91.5	65.3	
26	52.8	42.4	0.02	**26**	73.1	37.9	0.05	**26**	89.4	59.5	0.23
27	47.1	37.3	0.01	**27**	70.3	38.6	0.02	**27**	91.8	63.4	
28	53.1	29.8		**28**	67.2	39.8	0.04	**28**	88.2	68.9	
29	54.7	26.3		**29**	68.8	36.7		**29**	89.3	66.3	
30	54.8	40.6		**30**	74.6	46.2	0.08	**30**	N/A	N/A	N/A
				31	78.3	40.4					

TEMPERATURE AND PRECIPITATION DATA

MSU Muck Research Station

Recorded at
MSU Muck Research Station (Muck Farm)
Laingsburg, Michigan
2005

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	N/A	N/A	N/A	**1**	88.4	59.9		**1**	82.2	49.9	
2	N/A	N/A	N/A	**2**	88.3	58.3	0.44	**2**	79.8	48.9	
3	N/A	N/A	N/A	**3**	90.2	62.1	0.35	**3**	78.9	43.0	
4	N/A	N/A	N/A	**4**	84.4	70.5	0.16	**4**	80.4	41.3	
5	N/A	N/A	N/A	**5**	82.2	55.2		**5**	80.7	43.5	0.29
6	N/A	N/A	N/A	**6**	85.5	50.2		**6**	83.6	46.5	
7	N/A	N/A	N/A	**7**	87.1	56.4		**7**	86.0	52.5	
8	80.5	53.7		**8**	87.9	59.1		**8**	79.2	61.9	0.06
9	85.9	50.0		**9**	89.3	62.0	0.28	**9**	78.8	49.3	0.41
10	87.2	49.3		**10**	83.8	65.7	0.25	**10**	86.2	45.6	
11	87.2	54.9	0.24	**11**	75.0	58.7		**11**	88.3	59.5	0.10
12	86.8	62.9		**12**	82.3	66.4	0.21	**12**	88.9	53.5	
13	87.0	65.9		**13**	79.3	62.5		**13**	89.0	56.6	
14	85.1	63.1	0.32	**14**	76.7	60.6	0.01	**14**	77.1	52.7	0.02
15	87.2	59.3	0.23	**15**	80.7	53.7		**15**	71.8	42.6	
16	82.1	67.5		**16**	84.2	58.3		**16**	66.4	49.3	0.83
17	86.6	67.5	0.07	**17**	83.4	52.4	0.33	**17**	77.3	46.9	
18	86.0	70.2	0.36	**18**	78.5	60.8	0.01	**18**	78.3	45.2	
19	82.7	58.5		**19**	80.9	61.9		**19**	76.1	48.5	
20	86.8	50.1	0.18	**20**	82.3	57.6	0.12	**20**	78.3	50.0	
21	86.5	63.4	0.03	**21**	78.1	54.3		**21**	85.9	46.0	
22	86.5	59.8	0.01	**22**	68.0	44.2		**22**	73.7	56.1	1.54
23	84.5	52.5	0.02	**23**	71.8	48.4	0.40	**23**	69.4	49.5	
24	91.8	67.6	0.77	**24**	77.4	41.8		**24**	69.8	47.1	
25	89.8	72.3		**25**	76.8	44.6		**25**	79.6	63.5	0.31
26	83.2	64.0	0.53	**26**	86.2	58.1		**26**	70.5	45.2	0.27
27	73.9	53.8	0.03	**27**	81.4	55.3	0.31	**27**	71.7	37.4	
28	76.0	46.7		**28**	84.1	50.3		**28**	74.8	44.5	0.35
29	76.4	47.7		**29**	85.3	54.0	0.32	**29**	59.5	35.4	0.07
30	80.9	46.6		**30**	80.3	49.5		**30**	68.7	32.9	
31	84.2	54.1		**31**	80.3	57.6					

TEMPERATURE AND PRECIPITATION DATA

Fremont & Grant

Recorded at
City of Fremont
Fremont, Michigan
2005

APRIL				MAY				JUNE			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	56.6	28.0		**1**	48.3	32.0		**1**	83.8	51.4	
2	57.3	35.8		**2**	45.9	34.3		**2**	82.6	54.0	
3	56.4	28.2		**3**	47.9	28.5		**3**	74.6	59.1	
4	65.5	25.6		**4**	56.8	24.3		**4**	82.6	63.5	
5	69.8	48.2		**5**	66.8	34.3		**5**	87.3	68.2	0.04
6	75.6	51.7		**6**	65.5	41.2	0.06	**6**	82.5	64.3	
7	67.3	39.1		**7**	71.3	44.2	0.01	**7**	88.2	58.4	
8	66.5	32.3		**8**	80.9	49.8		**8**	87.3	65.2	
9	69.8	35.4		**9**	79.6	58.5		**9**	89.3	65.6	
10	72.4	42.3		**10**	72.3	58.8		**10**	87.3	63.7	
11	66.2	43.4		**11**	58.9	42.2	0.29	**11**	87.0	68.1	0.50
12	58.7	39.3		**12**	54.1	37.7		**12**	82.1	70.1	
13	65.5	32.8		**13**	55.6	38.2	0.61	**13**	84.7	67.6	
14	70.9	29.8		**14**	59.3	43.5	0.09	**14**	77.8	62.4	0.23
15	65.9	34.2		**15**	53.9	41.1	0.01	**15**	64.3	54.1	0.06
16	70.4	35.9		**16**	54.2	33.0		**16**	70.9	50.1	
17	74.6	49.5		**17**	64.0	33.2		**17**	66.1	48.3	
18	78.5	46.2		**18**	69.5	50.7		**18**	70.6	48.7	
19	76.1	51.7		**19**	61.2	50.3	0.35	**19**	79.0	54.7	
20	64.9	47.8	0.29	**20**	72.6	48.1		**20**	81.2	50.6	
21	59.7	33.1		**21**	72.4	39.3		**21**	88.2	57.2	
22	52.7	37.7		**22**	67.2	48.7	0.15	**22**	86.9	55.1	
23	41.4	30.8		**23**	66.4	49.0	0.13	**23**	86.9	53.9	
24	44.7	30.3	0.02	**24**	69.6	47.5		**24**	90.8	72.8	
25	58.3	34.1		**25**	74.9	41.7		**25**	92.7	66.8	
26	55.8	41.7	0.03	**26**	69.7	44.0	0.02	**26**	89.7	62.3	0.16
27	46.8	35.3	0.06	**27**	64.0	41.7	0.04	**27**	92.1	67.2	
28	52.3	30.5		**28**	65.3	46.2		**28**	86.4	69.2	
29	55.8	24.5		**29**	69.2	41.7		**29**	92.7	67.5	
30	54.5	27.3		**30**	76.0	41.6		**30**	83.3	66.5	0.61
				31	80.7	49.1					

TEMPERATURE AND PRECIPITATION DATA

Fremont & Grant

Recorded at
City of Fremont
Fremont, Michigan
2005

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	72.6	48.6		**1**	91.0	62.8		**1**	83.3	54.4	
2	76.3	42.4		**2**	87.7	60.5		**2**	78.0	56.1	
3	80.4	52.4		**3**	89.7	65.1		**3**	80.2	49.5	
4	76.7	61.7	0.28	**4**	82.6	66.5	0.31	**4**	82.6	48.7	
5	83.3	63.3	0.01	**5**	83.9	57.1		**5**	85.2	53.9	
6	78.1	59.3		**6**	86.4	48.8		**6**	83.3	55.9	
7	84.5	53.2		**7**	86.1	51.2		**7**	87.3	59.8	0.09
8	86.1	55.0		**8**	87.6	57.5		**8**	82.9	61.7	
9	88.4	51.4		**9**	90.7	62.7		**9**	83.9	58.2	
10	91.6	50.8		**10**	85.1	64.1		**10**	88.8	55.7	
11	92.4	58.4		**11**	70.1	59.2	0.02	**11**	86.5	62.5	
12	84.3	69.1		**12**	77.8	64.5	0.50	**12**	86.3	62.2	
13	89.8	67.9	0.10	**13**	76.9	58.7		**13**	87.0	66.7	
14	94.9	N/A		**14**	79.0	57.6		**14**	77.4	50.5	0.07
15	93.9	N/A		**15**	83.3	54.0		**15**	69.8	42.5	
16	88.0	69.3	0.29	**16**	84.2	54.7	0.04	**16**	72.6	50.9	0.25
17	88.0	67.9	0.01	**17**	85.1	52.8		**17**	82.0	45.1	
18	86.3	71.5		**18**	72.8	64.3	0.24	**18**	77.6	50.1	
19	81.6	59.7		**19**	75.5	63.1		**19**	73.9	55.0	0.05
20	86.4	54.5	0.02	**20**	81.4	62.8	0.04	**20**	77.4	53.8	
21	82.2	65.0	0.34	**21**	75.4	59.3		**21**	82.5	53.0	
22	89.2	62.7	0.01	**22**	69.8	51.6		**22**	71.4	58.1	0.22
23	84.7	59.1	0.41	**23**	75.0	51.0		**23**	71.1	46.2	
24	91.5	66.6	0.15	**24**	78.7	50.0		**24**	69.7	50.3	
25	90.5	65.5	0.02	**25**	78.6	55.0	0.01	**25**	74.0	61.2	1.86
26	75.5	60.3	0.72	**26**	85.2	57.4		**26**	67.9	47.6	1.07
27	75.2	54.7		**27**	79.8	57.8	0.24	**27**	69.0	42.1	
28	76.3	48.3		**28**	80.7	58.4		**28**	70.3	49.5	0.90
29	80.3	53.8		**29**	83.3	52.9		**29**	58.0	42.9	0.01
30	80.0	52.1		**30**	83.9	54.0		**30**	64.6	41.1	
31	83.4	60.6		**31**	80.7	58.8					

TEMPERATURE AND PRECIPITATION DATA

Hart

Recorded at
Asparagus Research Farm
Hart, Michigan
2005

APRIL				MAY				JUNE			
Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.	Date	High Temp F	Low Temp F	Total Prec. in.
1	56.8	32.4		**1**	47.2	34.2		**1**	79.6	51.9	
2	55.4	62.4		**2**	44.1	36.6		**2**	81.6	53.1	
3	50.7	29.5		**3**	46.9	34.2		**3**	73.5	58.1	
4	63.7	26.5		**4**	56.9	33.1		**4**	83.2	64.0	
5	69.1	49.0		**5**	65.3	37.7		**5**	85.2	67.1	0.04
6	73.5	39.2	0.03	**6**	67.5	44.5		**6**	81.3	60.1	
7	61.7	37.7	0.01	**7**	65.8	42.7		**7**	88.4	60.9	
8	62.8	30.8		**8**	79.4	48.0		**8**	85.6	62.6	0.12
9	66.6	37.4		**9**	74.4	58.9	0.07	**9**	87.4	62.7	
10	72.7	41.8		**10**	68.9	54.6	0.02	**10**	88.4	61.0	
11	69.6	45.7		**11**	55.4	38.5	0.30	**11**	86.2	69.3	
12	61.8	41.0		**12**	54.8	35.9		**12**	79.6	70.7	
13	65.2	31.2		**13**	52.9	39.0	0.43	**13**	84.0	67.5	0.04
14	66.8	31.8		**14**	58.0	42.9	0.11	**14**	78.8	62.0	0.07
15	62.8	35.0		**15**	50.6	40.8	0.01	**15**	64.7	52.8	0.11
16	69.5	39.0		**16**	55.2	31.7		**16**	70.4	51.4	
17	69.9	43.6		**17**	64.8	34.4	0.02	**17**	65.2	47.9	
18	78.1	43.8		**18**	69.5	51.1		**18**	67.6	52.6	
19	75.3	54.2	0.02	**19**	63.1	49.6	0.80	**19**	75.9	51.5	
20	65.1	42.7	0.42	**20**	73.7	46.6		**20**	81.5	50.2	
21	59.6	32.4		**21**	72.9	41.0		**21**	85.5	62.9	
22	55.2	36.1		**22**	70.7	51.0	0.13	**22**	81.7	47.6	
23	36.3	30.5	0.01	**23**	65.7	49.3		**23**	87.1	55.2	
24	45.1	30.2	0.04	**24**	70.8	48.2		**24**	92.1	70.4	
25	57.2	37.3		**25**	69.8	40.9		**25**	90.2	65.7	
26	52.4	34.9	0.04	**26**	68.3	45.4	0.10	**26**	89.2	64.9	
27	44.6	35.4	0.14	**27**	63.1	44.4	0.01	**27**	93.9	69.6	
28	48.2	29.5		**28**	63.5	45.6		**28**	86.3	68.7	0.41
29	51.3	25.6		**29**	67.3	44.2		**29**	87.0	65.7	
30	52.6	27.6		**30**	69.0	39.9		**30**	83.3	67.7	0.22
				31	74.8	43.9					

TEMPERATURE AND PRECIPITATION DATA

Hart

Recorded at
Asparagus Research Farm
Hart, Michigan
2005

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	74.4	49.9		**1**	87.5	66.5		**1**	79.3	50.5	
2	71.9	40.9		**2**	87.5	64.9		**2**	73.3	53.3	
3	78.9	54.7		**3**	89.3	65.8		**3**	73.7	47.1	
4	75.7	65.4	1.18	**4**	83.6	65.7	2.15	**4**	80.3	46.1	
5	76.7	61.5	0.01	**5**	78.9	54.4		**5**	84.4	55.5	
6	76.4	60.0		**6**	80.7	51.2		**6**	83.6	59.2	
7	80.5	54.5		**7**	84.6	53.6		**7**	87.0	57.4	0.27
8	80.5	51.8		**8**	85.5	59.0		**8**	77.3	59.9	
9	84.1	49.0		**9**	89.1	70.4		**9**	82.5	55.7	
10	88.7	53.7		**10**	79.8	61.0	0.03	**10**	86.5	58.7	
11	88.6	61.2		**11**	69.4	59.8	0.12	**11**	84.3	61.7	
12	83.0	67.6	0.01	**12**	77.2	64.6	0.12	**12**	84.9	67.9	
13	87.4	66.7	0.47	**13**	77.2	57.4		**13**	84.7	67.3	0.08
14	88.8	64.7		**14**	79.0	55.1		**14**	71.1	46.3	0.01
15	87.3	63.9		**15**	79.9	53.8		**15**	71.1	42.8	
16	88.8	67.9		**16**	81.3	54.1		**16**	72.7	51.0	0.21
17	88.6	65.8		**17**	83.3	54.3		**17**	77.1	43.4	
18	85.3	72.0		**18**	72.9	65.2	0.34	**18**	78.2	52.6	
19	79.4	56.2		**19**	75.3	63.6	0.03	**19**	73.8	58.7	0.01
20	85.5	56.3	0.11	**20**	79.9	59.6	0.03	**20**	75.8	53.2	
21	82.1	62.9	0.01	**21**	73.8	58.7		**21**	82.7	58.8	
22	83.1	57.3		**22**	70.4	49.9	0.01	**22**	75.3	57.8	0.35
23	83.7	56.4	0.38	**23**	72.6	46.9		**23**	70.7	45.8	
24	91.7	66.4	0.04	**24**	76.9	50.2		**24**	72.0	49.4	
25	90.0	63.4		**25**	70.9	54.8	0.03	**25**	72.2	62.3	1.54
26	77.3	59.5	2.06	**26**	83.8	56.9		**26**	68.3	45.1	0.06
27	71.5	49.6		**27**	78.1	64.0	0.27	**27**	70.3	42.3	0.01
28	74.5	46.7		**28**	76.7	57.5		**28**	69.1	49.5	
29	78.7	55.7	0.02	**29**	79.9	54.2		**29**	56.8	44.2	
30	79.7	48.8		**30**	80.8	56.0		**30**	64.9	41.0	0.01
31	82.6	63.6		**31**	73.9	53.9					

TEMPERATURE AND PRECIPITATION DATA

Hudsonville

Recorded at
Michigan Celery Cooperative
Hudsonville, Michigan
2005

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	58.4	29.9		**1**	49.7	31.4		**1**	81.6	51.5	
2	58.0	37.3		**2**	45.8	36.7		**2**	80.7	53.6	
3	53.2	31.7		**3**	45.5	32.7		**3**	76.6	60.9	0.02
4	67.8	27.1		**4**	58.7	29.0		**4**	83.5	64.9	
5	75.0	49.7		**5**	67.6	36.1		**5**	88.7	67.1	0.18
6	79.3	48.7		**6**	69.7	43.5	0.16	**6**	82.0	64.5	
7	62.5	42.6		**7**	72.1	43.8	0.01	**7**	88.0	61.1	
8	66.0	32.8		**8**	83.8	52.8		**8**	89.1	68.7	0.17
9	70.9	37.6		**9**	81.7	60.3		**9**	90.9	69.3	
10	76.2	44.2		**10**	74.4	55.7		**10**	90.0	67.5	0.49
11	71.7	44.6		**11**	58.9	50.2	0.45	**11**	85.9	71.0	
12	62.2	40.4		**12**	55.8	41.0		**12**	82.7	70.4	
13	62.9	37.4		**13**	64.2	40.5	0.58	**13**	82.2	69.5	0.43
14	70.0	30.3		**14**	58.6	45.9	0.24	**14**	79.8	67.5	
15	68.0	33.0		**15**	52.6	44.5		**15**	67.9	55.1	0.02
16	73.1	36.4		**16**	54.8	38.5		**16**	71.7	49.3	
17	73.8	50.4		**17**	62.9	36.6		**17**	66.7	45.8	
18	81.0	44.8		**18**	70.8	52.0		**18**	74.9	54.2	
19	79.5	54.7		**19**	62.0	51.3	0.45	**19**	78.9	52.9	
20	70.1	49.9	0.11	**20**	73.0	48.8		**20**	81.8	49.9	
21	60.9	38.6		**21**	72.5	40.3		**21**	82.9	56.9	
22	49.2	41.4	0.45	**22**	69.2	49.8	0.06	**22**	82.9	51.2	
23	44.2	30.4	0.01	**23**	65.6	50.9	0.20	**23**	89.5	55.7	
24	44.5	30.9	0.07	**24**	67.5	47.9		**24**	91.9	72.0	
25	60.4	36.4		**25**	73.4	41.1		**25**	93.7	65.5	
26	56.2	39.3	0.06	**26**	67.8	45.1	0.01	**26**	90.2	68.9	
27	47.8	37.5	0.11	**27**	65.9	45.4		**27**	94.3	68.8	
28	49.5	30.4		**28**	65.2	44.7		**28**	89.6	69.4	0.02
29	56.3	29.3		**29**	67.2	44.6		**29**	90.9	66.7	
30	55.7	30.8		**30**	71.1	44.7		**30**	85.8	68.5	0.77
				31	81.2	44.2					

TEMPERATURE AND PRECIPITATION DATA

Hudsonville

Recorded at
Michigan Celery Cooperative
Hudsonville, Michigan
2005

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	75.1	56.0		**1**	91.7	64.8		**1**	83.3	53.3	
2	76.1	43.6		**2**	91.8	63.0		**2**	76.4	54.0	
3	82.8	53.3		**3**	94.1	70.2		**3**	81.8	48.6	
4	82.3	62.1	0.04	**4**	87.8	65.5	0.03	**4**	82.8	48.7	
5	82.2	62.0		**5**	86.7	58.1		**5**	86.3	54.7	
6	78.4	62.5		**6**	87.6	50.9		**6**	86.5	59.5	
7	84.1	54.7		**7**	89.9	53.2		**7**	89.8	59.2	
8	83.8	53.3		**8**	90.8	58.2		**8**	84.1	65.3	
9	88.0	50.9		**9**	92.9	65.3		**9**	86.1	60.6	
10	92.5	48.5		**10**	86.1	64.6		**10**	90.6	59.1	
11	91.5	56.4		**11**	74.9	57.1		**11**	90.7	63.8	
12	88.3	68.3		**12**	80.7	68.7	0.40	**12**	89.5	65.4	
13	90.3	72.5		**13**	79.6	65.4		**13**	92.9	68.6	
14	93.7	68.5		**14**	79.9	62.4		**14**	79.6	54.0	0.15
15	93.0	65.5		**15**	84.1	58.7		**15**	69.3	42.7	
16	89.6	69.4	0.66	**16**	83.4	59.9	0.23	**16**	71.0	50.9	0.44
17	91.0	67.0		**17**	85.9	53.6		**17**	79.1	44.9	
18	88.1	68.3		**18**	79.3	67.7	0.12	**18**	81.0	48.3	
19	82.7	61.1		**19**	76.4	64.6		**19**	77.8	56.5	0.04
20	90.1	57.1	0.34	**20**	81.7	63.2	0.12	**20**	78.8	52.5	
21	85.5	63.4	0.44	**21**	76.9	57.5		**21**	88.1	58.1	
22	88.0	65.7	0.01	**22**	71.3	49.9		**22**	74.3	62.5	0.49
23	84.6	59.8	0.06	**23**	73.5	54.2		**23**	70.4	50.9	0.01
24	93.6	69.0	0.07	**24**	79.4	52.0		**24**	70.2	54.6	
25	93.5	68.1		**25**	78.8	57.1		**25**	78.2	62.6	0.13
26	80.3	61.5	0.42	**26**	88.6	58.8		**26**	71.1	51.0	0.23
27	76.5	56.2		**27**	78.9	61.3	0.47	**27**	72.4	43.5	
28	76.5	49.4		**28**	80.1	57.4		**28**	74.8	49.2	0.91
29	80.3	55.1		**29**	86.1	53.7	0.04	**29**	58.5	43.8	0.01
30	82.7	56.5		**30**	82.8	52.9		**30**	69.4	42.4	
31	86.2	61.6		**31**	80.5	58.5					

Weed Control in Asparagus - Hart

Project Code: WC 120-05-01 **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: 4.5 ft wide x 50 ft long

Soil Type: Spinks Loamy Fine Sand **OM: 1.5%** **pH: 5.7**
Sand: 89% **Silt: 10%** **Clay: 1%** **CEC: 7.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/24/05	11:00 am	42/46	°F	Damp	6 NW	75	100% Cloudy	Y
PO1	5/31/05	8:00 am	57/60	°F	Dry	1 NW	73	Clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	ASPA = asparagus			
5/31	FISB = field sandbur		cot-2 leaf	many
5/31	COLQ = common lambsquarters	1-3 in	2-4 leaf	many
5/31	COMW = common milkweed	4-8 in	6-12 leaf	many
	EBNS = eastern black nightshade			
5/31	RRPW = redroot pigweed	0.5-1 in	1-2 leaf	moderate
5/31	RUTH = russian thistle	1-4 in	4-6 leaf	moderate
5/31	WICA = wild carrot	1-6	4-10 leaf	many

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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

Trial ID: WC 120-05-01 Study Director: Michael Particka
Location: Hart, MI Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA	FISB	COLQ	COMW	RRPW	RUTH
	Pest Code						ASPA	FISB	COLQ	COMW	RRPW	RUTH
	Rating Date						5/31/05	5/31/05	5/31/05	5/31/05	5/31/05	5/31/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	diuron	80	DF	1.2	lb ai/a	PRE	1.7	6.7	1.7	6.7	7.7	6.7
	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	3.0	2.0	9.3	6.3	10.0	9.3
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WDG	0.2	lb ai/a	PRE	2.0	2.3	9.3	5.3	10.0	9.3
4	norflurazon	80	DF	2	lb ai/a	PRE	1.7	9.3	1.3	4.3	9.3	5.3
5	flumioxazin	51	WDG	0.4	lb ai/a	PRE	2.0	7.7	10.0	6.3	10.0	10.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	1.7	8.3	9.7	5.3	10.0	9.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.7	6.7	7.7	7.3	10.0	10.0
8	diuron	80	DF	1.2	lb ai/a	PRE	1.7	2.7	8.0	5.7	9.3	8.7
	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	4.3	7.7	6.0	7.0	10.0
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.7	5.3	1.0	2.0	6.0	8.7
	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	4.7	5.7	1.7	3.7	7.7
	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	6.0	8.3	1.7	1.0	7.7
	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	1.7	4.7	2.3	2.7	5.7	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	PRE	1.7	10.0	5.7	5.0	6.0	5.3
15	AXIOM	68	DF	1	lb ai/a	PRE	1.3	5.3	9.3	6.7	9.3	4.0
	LSD (P=.05)						1.10	4.82	2.41	3.68	3.71	4.19
	Standard Deviation						0.66	2.88	1.44	2.20	2.22	2.50
	CV						39.12	50.25	22.31	45.26	28.94	32.11

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	WICA	FISB	COLQ	EBNS	COMW	RRPW	RUTH
	Pest Code						WICA	FISB	COLQ	EBNS	COMW	RRPW	RUTH
	Rating Date						5/31/05	7/7/05	7/7/05	7/7/05	7/7/05	7/7/05	7/7/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit												
1	diuron	80	DF	1.2	lb ai/a	PRE	4.0	10.0	10.0	10.0	9.0	10.0	10.0
	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	6.7	7.0	9.3	10.0	6.7	8.0	10.0
	metribuzin	75	DF	0.6	lb ai/a	PRE							
3	flumioxazin	51	WDG	0.2	lb ai/a	PRE	5.7	4.7	8.7	10.0	6.3	8.7	8.7
4	norflurazon	80	DF	2	lb ai/a	PRE	7.3	10.0	2.7	10.0	4.7	10.0	8.3
5	flumioxazin	51	WDG	0.4	lb ai/a	PRE	6.3	5.7	10.0	10.0	4.0	10.0	10.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	4.3	8.3	10.0	10.0	7.3	10.0	10.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	9.0	8.3	5.3	8.3	9.7	9.3	10.0
8	diuron	80	DF	1.2	lb ai/a	PRE	8.3	4.7	9.0	10.0	7.3	10.0	10.0
	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	9.7	9.0	8.7	10.0	5.3	6.7	10.0
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	5.0	10.0	3.3	10.0	6.3	10.0	10.0
	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	1.7	10.0	10.0	10.0	8.0	9.5	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	6.3	8.0	10.0	10.0	3.3	3.7	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	4.0	10.0	10.0	10.0	6.0	8.7	9.3
	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	PRE	1.3	8.7	5.3	10.0	7.3	9.0	8.0
15	AXIOM	68	DF	1	lb ai/a	PRE	4.0	8.3	7.3	10.0	7.0	10.0	3.0
	LSD (P=.05)						4.57	3.78	1.75	0.66	2.95	2.96	2.25
	Standard Deviation						2.73	2.26	1.05	0.39	1.76	1.76	1.34
	CV						49.03	27.65	13.14	3.99	26.91	19.77	14.67

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Pest Code							ASPA	ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date							5/10/05	5/16/05	5/19/05	5/22/05	5/24/05	5/26/05
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							G/PLOT	G/PLOT	G/PLOT	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	290.0	146.3	283.7	223.3	143.3	129.7
	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	201.3	147.0	219.7	191.3	98.3	98.3
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WDG	0.2	lb ai/a	PRE	307.7	205.0	279.0	242.3	169.3	164.3
4	norflurazon	80	DF	2	lb ai/a	PRE	284.0	111.0	238.3	161.7	98.7	120.7
5	flumioxazin	51	WDG	0.4	lb ai/a	PRE	491.7	217.3	404.0	245.3	179.0	248.0
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	325.7	107.7	301.3	159.3	153.0	178.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	230.0	181.7	422.0	316.3	146.7	164.3
8	diuron	80	DF	1.2	lb ai/a	PRE	385.7	137.0	311.0	169.7	97.3	133.7
	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	535.7	266.3	371.0	340.3	149.3	159.7
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	543.7	227.3	419.0	257.7	176.0	164.0
	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	407.0	200.0	365.3	286.0	181.0	254.7
	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	415.3	193.7	325.3	276.0	177.3	130.0
	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	497.7	168.7	302.0	173.0	129.3	165.3
	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	PRE	378.3	154.7	237.0	206.0	136.0	107.7
15	AXIOM	68	DF	1	lb ai/a	PRE	326.0	181.3	243.7	251.3	158.3	148.0
LSD (P=.05)							261.41	125.00	165.00	125.99	80.27	90.60
Standard Deviation							156.33	74.75	98.67	75.35	48.01	54.18
CV							41.73	42.39	31.34	32.29	32.84	34.35

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 5/28/05 YIELD G/PLOT	ASPA 6/1/05 YIELD G/PLOT	ASPA 6/3/05 YIELD G/PLOT	ASPA 6/4/05 YIELD G/PLOT	ASPA 6/5/05 YIELD G/PLOT	ASPA 6/6/05 YIELD G/PLOT
1	diuron	80	DF	1.2	lb ai/a	PRE	157.3	40.7	179.3	126.0	115.3	56.7
	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	130.7	54.0	143.3	70.3	107.3	40.3
	metribuzin	75	DF	0.6	lb ai/a	PRE						
3	flumioxazin	51	WDG	0.2	lb ai/a	PRE	172.7	63.0	151.0	119.7	93.7	83.3
4	norflurazon	80	DF	2	lb ai/a	PRE	127.3	62.0	110.0	81.7	86.3	41.7
5	flumioxazin	51	WDG	0.4	lb ai/a	PRE	264.0	134.0	323.3	163.7	85.0	84.7
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	159.3	50.3	179.0	61.7	90.7	55.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	177.3	109.3	180.7	156.0	118.7	119.0
8	diuron	80	DF	1.2	lb ai/a	PRE	154.3	53.3	197.3	102.7	112.7	60.0
	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	234.7	91.7	226.0	186.3	123.7	84.0
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	154.0	144.7	250.3	134.7	166.0	96.3
	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	178.7	78.3	223.7	86.3	135.3	67.0
	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	211.0	56.7	224.7	102.3	131.3	63.0
	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	183.7	102.7	130.3	113.7	122.0	59.0
	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	PRE	178.7	52.7	106.0	133.0	91.0	75.3
15	AXIOM	68	DF	1	lb ai/a	PRE	201.3	54.7	140.0	132.3	75.3	77.3
LSD (P=.05)							96.20	60.58	107.36	73.22	76.96	59.76
Standard Deviation							57.53	36.23	64.20	43.79	46.02	35.74
CV							32.14	47.34	34.83	37.1	41.73	50.42

Weed Control in Asparagus - Hart

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 6/7/05 YIELD G/PLOT	ASPA 6/8/05 YIELD G/PLOT	ASPA 6/9/05 YIELD G/PLOT	ASPA 6/10/05 YIELD G/PLOT	ASPA TOT YLD KG/PLOT
1	diuron	80	DF	1.2	lb ai/a	PRE	96.0	15.7	71.7	48.7	2.124
	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	106.7	43.3	57.0	44.0	1.753
	metribuzin	75	DF	0.6	lb ai/a	PRE					
3	flumioxazin	51	WDG	0.2	lb ai/a	PRE	110.3	30.7	50.7	61.0	2.304
4	norflurazon	80	DF	2	lb ai/a	PRE	38.0	21.0	45.7	51.0	1.679
5	flumioxazin	51	WDG	0.4	lb ai/a	PRE	100.3	81.0	98.7	137.0	3.257
6	sulfentrazone	75	DF	0.25	lb ai/a	PRE	85.0	39.0	70.7	89.3	2.106
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	118.7	46.0	68.0	73.3	2.628
8	diuron	80	DF	1.2	lb ai/a	PRE	83.0	43.7	78.3	52.7	2.172
	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	116.3	50.0	73.0	101.0	3.109
10	halosulfuron	75	WG	0.023	lb ai/a	PO1	83.7	62.3	58.3	103.7	3.042
	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	107.3	45.7	98.3	59.7	2.774
	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	97.7	58.0	63.0	34.7	2.560
	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	55.0	25.7	111.3	75.0	2.414
	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	PRE	66.3	11.7	67.0	56.3	2.058
15	AXIOM	68	DF	1	lb ai/a	PRE	61.0	39.3	89.0	96.0	2.244
LSD (P=.05)							65.28	42.48	64.69	57.92	0.8973
Standard Deviation							39.04	25.41	38.68	34.64	0.5366
CV							44.18	62.17	52.72	47.96	22.22

Weed Control in a New Asparagus Field - Hart

Project Code: WC 120-04-02 **Location: Hart, MI Res. Station**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Asparagus **Variety: Millennium (Guelph)**
Planting Method: Transplant **Planting Date: 4/30/04**
Spacing: 12 IN **Row Spacing: 4.5 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 4 ft wide x 50 ft long

Soil Type: Spinks Loamy Fine Sand **OM: 1.4%** **pH: 6.7**
Sand: 84% **Silt: 12%** **Clay: 4%** **CEC: 6.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5/6/04	11:00 am	60/54	°F	Damp	3 SE	75	100% Cloudy	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/15	Asparagus			
6/15	FISB = Field sandbur			
6/15	RRPW = Redroot pigweed			
6/15	RUTH = Russian thistle			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Herbicide treatments applied after planting in 2004. In 2005, diuron applied for crop maintenance.

Weed Control in a New Asparagus Field - Hart

Dept. of Horticulture, MSU

Trial ID: WC 120-04-02 Study Director:
Location: Hart MI Investigator: Dr. Bernard Zandstra

Pest Code							ASPA	ASPA	FISB	RRPW	RUTH
Rating Date							5/31/05	6/15/04	6/15/04	6/15/04	6/15/04
Rating Data Type							INJURY	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.5	lb ai/a	PRE	2.3	1.3	7.7	2.7	9.3
2	metribuzin	75	DF	0.5	lb ai/a	PRE	2.3	1.3	7.0	2.7	6.0
3	linuron	50	DF	0.5	lb ai/a	PRE	2.3	1.7	9.0	5.0	4.3
4	halosulfuron	75	WG	0.032	lb ai/a	PRE	3.0	2.3	7.3	8.0	6.7
5	clomazone	3	ME	0.375	lb ai/a	PRE	1.7	2.3	10.0	5.7	10.0
6	flumioxazin	51	WDG	0.096	lb ai/a	PRE	1.3	2.3	10.0	10.0	10.0
7	sulfentrazone	75	DF	0.1875	lb ai/a	PRE	2.0	2.0	9.7	7.7	10.0
8	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	2.7	2.0	9.3	3.0	7.0
9	imazamox	1	AS	0.031	lb ai/a	PRE	3.3	2.3	10.0	4.3	7.3
10	napropramide	50	DF	4	lb ai/a	PRE	2.3	2.3	7.3	10.0	10.0
LSD (P=.05)							1.13	1.19	4.57	3.77	4.62
Standard Deviation							0.66	0.70	2.66	2.20	2.69
CV							28.33	34.83	30.47	37.25	33.39

Weed Control in Asparagus - HTRC

Project Code: WC 120-05-03 **Location: HTRC, Sandhill**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Asparagus **Variety: Jersey Giant**
Planting Method: Transplant **Planting Date: 4/20/99**
Spacing: 12 IN **Row Spacing: 6 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 6 ft wide x 50 ft long

Soil Type: Riddles Sandy Loam **OM: 1.0%** **pH: 8.1**
Sand: 83% **Silt: 6%** **Clay: 8%** **CEC: 13.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/18/05	10:20 pm	72/50	°F	Dry	4 SE	37	5% Cloudy	N
PO1	6/3/05	3:00 pm	75/71	°F	Dry	3.5 S	61	95% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/3	ASPA = asparagus			
6/3	QUGR = quackgrass	10-15 in		many
6/3	WICA = wild carrot	3-5 in		few
	MATA = marestail (horseweed)			
	SPKW = spotted knapweed			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.

Weed Control in Asparagus - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 120-05-03 Study Director: Michael Particka

Location: HTRC Sandhill Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 6/3/05 RATING	QUGR 6/3/05 RATING	MATA 6/3/05 RATING	SPKW 6/3/05 RATING	WICA 6/3/05 RATING	ASPA 6/21/05 RATING
1	diuron	80	DF	1.2	lb ai/a	PRE	1.7	2.3	7.7	6.3	7.0	1.3
2	metribuzin	75	DF	0.5	lb ai/a	PRE	1.0	6.3	9.7	10.0	8.3	1.0
3	diuron	80	DF	1.2	lb ai/a	PRE	1.3	9.0	10.0	7.3	10.0	1.3
	metribuzin	75	DF	0.5	lb ai/a	PRE						
4	terbacil	80	WP	1.2	lb ai/a	PRE	2.3	10.0	10.0	10.0	10.0	1.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	1.7	4.0	4.7	4.0	3.7	1.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	1.3	5.0	7.0	3.7	2.0	1.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.3	2.0	1.0	5.7	10.0	1.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	1.3	2.0	7.7	4.3	7.7	1.7
9	diuron	80	DF	1.2	lb ai/a	PRE	1.3	3.0	4.0	4.0	3.0	2.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE						
10	clomazone	3	ME	1	lb ai/a	PRE	2.0	8.0	1.7	9.3	1.7	1.3
11	diuron	80	DF	1.2	lb ai/a	PRE	1.3	3.7	7.0	2.3	3.3	1.7
	mesotrione	4	SC	0.094	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
	AMS	100	DF	2	% ai/v	PO1						
12	diuron	80	DF	1.2	lb ai/a	PRE	1.0	5.7	3.0	2.0	1.0	1.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
	AMS	100	DF	2	% ai/v	PO1						
LSD (P=.05)							1.06	4.45	4.37	4.57	4.34	1.13
Standard Deviation							0.63	2.63	2.58	2.70	2.56	0.67
CV							42.5	51.74	42.22	46.97	45.44	47.19

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	QUGR 6/21/05 RATING	MATA 6/21/05 RATING	SPKW 6/21/05 RATING	WICA 6/21/05 RATING	ASPA 5/10/05 GOOD SPR NUMBER	ASPA 5/10/05 BAD SPR NUMBER
1	diuron	80	DF	1.2	lb ai/a	PRE	2.7	3.3	7.3	7.7	21.7	0.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	6.0	9.0	8.0	7.7	25.7	0.3
3	diuron	80	DF	1.2	lb ai/a	PRE	8.0	9.3	7.3	8.0	19.3	0.7
	metribuzin	75	DF	0.5	lb ai/a	PRE						
4	terbacil	80	WP	1.2	lb ai/a	PRE	10.0	10.0	10.0	10.0	20.3	2.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	3.7	5.7	4.3	7.3	21.0	1.7
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	5.0	3.3	3.7	2.7	24.0	1.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	3.7	1.3	5.0	9.0	19.7	1.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	3.7	5.7	1.0	4.7	27.3	1.0
9	diuron	80	DF	1.2	lb ai/a	PRE	3.7	4.7	3.3	4.7	16.7	0.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE						
10	clomazone	3	ME	1	lb ai/a	PRE	8.0	1.0	8.7	6.3	24.0	0.7
11	diuron	80	DF	1.2	lb ai/a	PRE	5.7	10.0	5.3	9.7	22.7	1.7
	mesotrione	4	SC	0.094	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
	AMS	100	DF	2	% ai/v	PO1						
12	diuron	80	DF	1.2	lb ai/a	PRE	7.7	5.7	2.0	4.3	18.7	0.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
	AMS	100	DF	2	% ai/v	PO1						
LSD (P=.05)							4.20	3.45	5.05	4.48	10.72	1.77
Standard Deviation							2.48	2.04	2.98	2.64	6.33	1.04
CV							43.95	35.4	54.27	38.7	29.09	104.45

Weed Control in Asparagus - HTRC

Dept. of Horticulture, MSU

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date						5/10/05	5/10/05	5/13/05	5/13/05	5/13/05
Rating Data Type						GOOD SPR	BAD SPR	GOOD SPR	BAD SPR	GOOD SPR
Rating Unit						GRAMS	GRAMS	NUMBER	NUMBER	GRAMS
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	diuron	80	DF	1.2	lb ai/a	PRE	371.7	8.7	12.7	2.0	276.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	426.3	4.0	17.3	1.7	370.0
3	diuron	80	DF	1.2	lb ai/a	PRE	342.3	13.0	18.7	2.0	402.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	354.7	47.3	13.3	1.0	281.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	346.3	34.3	13.3	1.3	271.7
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	443.0	14.0	14.0	2.7	288.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	350.7	24.0	11.0	1.3	239.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	531.3	20.3	14.7	1.7	322.7
9	diuron	80	DF	1.2	lb ai/a	PRE	293.7	2.7	11.7	1.0	213.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	398.0	7.0	10.0	3.7	132.3
11	diuron	80	DF	1.2	lb ai/a	PRE	419.0	34.3	13.0	1.0	265.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	316.3	4.7	13.3	1.3	287.0
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							200.70	34.30	6.34	2.13	156.72
Standard Deviation							118.52	20.25	3.74	1.26	92.55
CV							30.96	113.39	27.55	73.18	33.15

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date						5/13/05	5/16/05	5/16/05	5/16/05	5/16/05
Rating Data Type						BAD SPR	GOOD SPR	BAD SPR	GOOD SPR	BAD SPR
Rating Unit						GRAMS	NUMBER	NUMBER	GRAMS	GRAMS
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	diuron	80	DF	1.2	lb ai/a	PRE	42.3	11.3	1.0	268.7	19.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	38.7	13.3	2.3	330.3	40.7
3	diuron	80	DF	1.2	lb ai/a	PRE	25.0	13.7	1.0	334.7	19.7
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	20.7	13.3	2.0	341.3	35.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	33.7	10.0	1.3	276.7	41.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	49.7	14.7	1.7	270.7	39.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	35.3	12.0	0.7	278.3	18.0
8	mesotrione	4	SC	0.094	lb ai/a	PRE	34.3	19.3	2.0	433.3	41.0
9	diuron	80	DF	1.2	lb ai/a	PRE	20.0	17.7	2.0	394.3	32.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	61.0	15.7	1.3	319.3	23.0
11	diuron	80	DF	1.2	lb ai/a	PRE	20.7	13.0	1.7	341.0	40.7
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	18.7	17.3	1.0	433.0	22.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							45.52	9.09	2.31	246.83	49.30
Standard Deviation							26.88	5.37	1.36	145.76	29.11
CV							80.64	37.61	90.82	43.49	93.5

Weed Control in Asparagus - HTRC

Dept. of Horticulture, MSU

Pest Code							ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date							5/18/05	5/18/05	5/18/05	5/18/05	5/20/05
Rating Data Type							GOOD SPR	BAD SPR	GOOD SPR	BAD SPR	GOOD SPR
Rating Unit							NUMBER	NUMBER	GRAMS	GRAMS	NUMBER
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.2	lb ai/a	PRE	12.7	1.3	221.0	25.3	15.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	13.7	2.0	261.0	34.7	15.7
3	diuron	80	DF	1.2	lb ai/a	PRE	9.3	1.0	167.0	23.3	14.0
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	10.7	0.7	227.3	13.0	12.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	9.0	1.7	181.0	36.0	9.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	15.3	1.7	316.3	36.7	16.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	8.3	0.7	170.0	12.0	16.0
8	mesotrione	4	SC	0.094	lb ai/a	PRE	11.0	1.7	223.3	31.0	11.3
9	diuron	80	DF	1.2	lb ai/a	PRE	12.7	0.3	259.7	7.0	13.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	12.7	1.3	208.3	20.7	8.7
11	diuron	80	DF	1.2	lb ai/a	PRE	8.3	0.7	168.0	9.7	10.7
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	13.0	1.0	239.0	16.0	14.0
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							7.68	2.08	168.65	41.63	6.67
Standard Deviation							4.53	1.23	99.59	24.58	3.94
CV							39.82	105.51	45.24	111.17	30.1

Pest Code							ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date							5/20/05	5/20/05	5/20/05	5/23/05	5/23/05
Rating Data Type							BAD SPR	GOOD SPR	BAD SPR	GOOD SPR	BAD SPR
Rating Unit							NUMBER	GRAMS	GRAMS	NUMBER	NUMBER
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.2	lb ai/a	PRE	2.0	295.7	42.3	20.3	3.3
2	metribuzin	75	DF	0.5	lb ai/a	PRE	0.7	254.0	13.0	25.0	4.7
3	diuron	80	DF	1.2	lb ai/a	PRE	0.7	232.7	8.3	20.0	2.7
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	1.3	241.7	26.7	17.7	6.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	2.0	185.7	42.0	20.0	2.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	0.7	280.0	21.3	19.3	3.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.0	258.3	17.7	15.3	2.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	0.7	220.0	16.7	22.0	4.0
9	diuron	80	DF	1.2	lb ai/a	PRE	1.7	215.7	26.3	26.0	2.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	2.7	157.0	46.0	19.7	2.3
11	diuron	80	DF	1.2	lb ai/a	PRE	2.0	201.7	34.0	18.0	3.7
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	2.3	271.3	39.0	18.0	2.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							2.18	100.07	46.84	11.37	3.27
Standard Deviation							1.29	59.09	27.66	6.71	1.93
CV							87.62	25.2	99.57	33.39	58.39

Weed Control in Asparagus - HTRC

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 5/23/05 GOOD SPR GRAMS	ASPA 5/23/05 BAD SPR GRAMS	ASPA 5/25/05 GOOD SPR NUMBER	ASPA 5/25/05 BAD SPR NUMBER	ASPA 5/25/05 GOOD SPR GRAMS
1	diuron	80	DF	1.2	lb ai/a	PRE	1382.7	72.0	8.3	1.0	188.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	440.7	88.0	8.3	0.7	163.0
3	diuron	80	DF	1.2	lb ai/a	PRE	463.3	20.7	8.7	1.7	164.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	343.0	121.7	4.7	2.0	77.7
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	428.3	51.0	6.7	0.7	128.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	412.0	68.3	10.3	3.3	186.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	341.0	43.0	10.7	3.0	195.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	413.3	81.3	8.0	2.7	155.0
9	diuron	80	DF	1.2	lb ai/a	PRE	286.0	49.3	9.7	1.3	196.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	356.7	33.3	6.7	1.3	119.7
11	diuron	80	DF	1.2	lb ai/a	PRE	367.7	66.3	7.7	2.0	135.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	358.0	55.7	11.7	3.3	889.7
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							846.69	59.07	6.93	2.25	602.77
Standard Deviation							499.99	34.88	4.10	1.33	355.95
CV							107.28	55.76	48.5	69.32	164.33

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 5/25/05 BAD SPR GRAMS	ASPA 5/27/05 GOOD SPR NUMBER	ASPA 5/27/05 BAD SPR NUMBER	ASPA 5/27/05 GOOD SPR GRAMS	ASPA 5/27/05 BAD SPR GRAMS
1	diuron	80	DF	1.2	lb ai/a	PRE	23.7	15.0	0.7	278.7	25.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	10.7	21.0	1.0	383.7	21.3
3	diuron	80	DF	1.2	lb ai/a	PRE	40.0	19.0	2.3	336.3	40.7
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	26.0	20.7	1.7	403.0	31.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	10.7	16.0	2.7	308.3	51.7
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	58.0	18.7	1.0	325.0	14.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	56.7	17.3	1.3	346.3	27.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	57.0	17.0	2.7	321.3	43.3
9	diuron	80	DF	1.2	lb ai/a	PRE	26.0	19.0	0.7	322.3	18.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	21.0	23.0	2.0	407.0	27.7
11	diuron	80	DF	1.2	lb ai/a	PRE	28.0	18.7	2.7	348.0	38.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	86.0	23.7	0.7	409.3	18.7
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							53.38	12.21	1.52	239.93	31.58
Standard Deviation							31.52	7.21	0.89	141.69	18.65
CV							85.25	37.77	55.53	40.58	62.51

Weed Control in Asparagus - HTRC

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 5/31/05 GOOD SPR NUMBER	ASPA 5/31/05 BAD SPR NUMBER	ASPA 5/31/05 GOOD SPR GRAMS	ASPA 5/31/05 BAD SPR GRAMS	ASPA 6/1/05 GOOD SPR NUMBER
1	diuron	80	DF	1.2	lb ai/a	PRE	29.0	2.7	475.3	49.3	11.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	35.7	4.0	609.7	58.0	16.7
3	diuron	80	DF	1.2	lb ai/a	PRE	41.3	4.3	668.7	88.3	12.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	34.3	5.3	533.0	88.7	13.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	31.7	6.0	522.0	97.7	16.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	36.0	5.7	539.3	82.3	12.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	32.0	4.0	524.3	66.7	10.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	37.7	3.7	549.3	59.0	16.7
9	diuron	80	DF	1.2	lb ai/a	PRE	30.7	3.7	491.3	63.0	9.7
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	31.3	2.0	443.3	28.3	13.7
11	diuron	80	DF	1.2	lb ai/a	PRE	32.3	7.3	482.3	103.7	14.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	37.3	4.0	508.7	64.0	17.0
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							14.70	4.85	229.15	81.12	8.46
Standard Deviation							8.68	2.87	135.32	47.91	5.00
CV							25.45	65.28	25.58	67.71	36.65

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 6/1/05 BAD SPR NUMBER	ASPA 6/1/05 GOOD SPR GRAMS	ASPA 6/1/05 BAD SPR GRAMS	ASPA 6/2/05 GOOD SPR NUMBER	ASPA 6/2/05 BAD SPR NUMBER
1	diuron	80	DF	1.2	lb ai/a	PRE	1.7	214.7	29.3	3.0	0.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	2.7	307.7	55.0	10.3	0.7
3	diuron	80	DF	1.2	lb ai/a	PRE	1.3	210.7	34.0	5.7	0.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	0.7	202.0	10.3	6.3	1.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	0.3	283.3	4.0	2.7	0.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	1.7	218.3	23.7	7.0	0.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	0.0	224.7	0.0	4.7	0.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	2.0	323.0	31.0	4.7	0.0
9	diuron	80	DF	1.2	lb ai/a	PRE	2.3	180.7	43.7	5.0	0.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	2.7	272.0	40.7	6.3	1.3
11	diuron	80	DF	1.2	lb ai/a	PRE	3.3	279.0	54.3	3.3	0.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	1.3	298.7	24.7	4.7	0.0
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							2.89	147.82	47.66	4.19	1.59
Standard Deviation							1.71	87.29	28.14	2.47	0.94
CV							102.47	34.75	96.31	46.59	188.29

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 6/2/05 GOOD SPR GRAMS	ASPA 6/2/05 BAD SPR GRAMS	ASPA 6/3/05 GOOD SPR NUMBER	ASPA 6/3/05 BAD SPR NUMBER	ASPA 6/3/05 GOOD SPR GRAMS
1	diuron	80	DF	1.2	lb ai/a	PRE	50.0	9.0	8.7	0.7	123.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	188.3	12.3	9.3	0.3	182.3
3	diuron	80	DF	1.2	lb ai/a	PRE	85.7	10.7	6.7	1.7	112.7
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	119.0	17.7	7.0	1.0	127.7
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	55.0	4.0	7.3	0.3	129.0
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	134.7	9.7	10.0	0.7	182.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	80.3	6.3	9.0	0.3	161.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	97.3	0.0	9.0	1.0	186.0
9	diuron	80	DF	1.2	lb ai/a	PRE	104.3	7.7	7.7	1.0	142.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	108.7	18.3	9.7	0.0	173.3
11	diuron	80	DF	1.2	lb ai/a	PRE	69.0	7.0	11.3	0.7	189.0
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	80.7	0.0	8.7	0.3	197.7
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							75.26	26.16	6.71	1.31	109.40
Standard Deviation							44.44	15.45	3.96	0.77	64.61
CV							45.47	180.59	45.54	116.04	40.65

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA 6/3/05 BAD SPR GRAMS	ASPA 6/6/05 GOOD SPR NUMBER	ASPA 6/6/05 BAD SPR NUMBER	ASPA 6/6/05 GOOD SPR GRAMS	ASPA 6/6/05 BAD SPR GRAMS
1	diuron	80	DF	1.2	lb ai/a	PRE	11.0	25.3	1.0	486.3	17.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	5.7	31.3	1.0	552.3	22.3
3	diuron	80	DF	1.2	lb ai/a	PRE	28.3	26.3	1.0	505.3	19.0
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	12.3	22.3	1.0	453.0	24.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	11.7	26.0	2.0	509.0	41.7
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	14.3	38.7	1.3	642.7	30.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	4.0	22.3	0.7	404.3	11.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	17.3	26.3	1.7	478.7	35.7
9	diuron	80	DF	1.2	lb ai/a	PRE	15.7	27.0	1.0	491.7	17.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	0.0	24.3	3.3	399.3	79.7
11	diuron	80	DF	1.2	lb ai/a	PRE	9.7	21.3	0.0	380.3	0.0
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	4.7	2.0	1.7	34.3	111.7
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							21.08	14.97	1.61	245.22	78.15
Standard Deviation							12.45	8.84	0.95	144.81	46.15
CV							110.95	36.16	72.62	32.56	134.86

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Pest Code							ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date							6/8/05	6/8/05	6/8/05	6/8/05	6/10/05
Rating Data Type							GOOD SPR	BAD SPR	GOOD SPR	BAD SPR	GOOD SPR
Rating Unit							NUMBER	NUMBER	GRAMS	GRAMS	NUMBER
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.2	lb ai/a	PRE	15.7	1.0	302.3	14.7	17.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	18.0	1.3	347.0	26.3	20.0
3	diuron	80	DF	1.2	lb ai/a	PRE	16.3	1.3	308.7	29.7	22.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	19.7	2.0	374.7	39.7	15.0
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	16.0	2.7	282.0	54.7	17.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	17.0	1.0	296.7	19.3	24.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	15.3	2.3	323.0	39.3	12.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	18.7	1.7	385.0	29.3	20.0
9	diuron	80	DF	1.2	lb ai/a	PRE	14.0	1.7	265.0	43.0	11.3
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	11.3	1.3	205.7	24.0	13.7
11	diuron	80	DF	1.2	lb ai/a	PRE	12.3	8.7	252.3	163.0	15.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	15.0	6.0	292.7	124.3	20.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							10.09	4.13	209.79	84.23	9.09
Standard Deviation							5.96	2.44	123.88	49.74	5.37
CV							37.77	94.52	40.9	98.28	30.73

Pest Code							ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date							6/10/05	6/10/05	6/10/05	6/13/05	6/13/05
Rating Data Type							BAD SPR	GOOD SPR	BAD SPR	GOOD SPR	BAD SPR
Rating Unit							NUMBER	GRAMS	GRAMS	NUMBER	NUMBER
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	1.2	lb ai/a	PRE	0.0	309.3	0.0	44.3	0.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	1.0	367.3	20.3	37.0	0.0
3	diuron	80	DF	1.2	lb ai/a	PRE	0.0	455.7	0.0	43.3	0.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	0.3	293.0	6.7	43.7	0.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	1.0	303.0	21.3	37.0	0.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	0.3	546.7	5.0	45.3	0.3
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	0.3	254.3	15.0	35.3	0.0
8	mesotrione	4	SC	0.094	lb ai/a	PRE	0.3	356.3	7.0	40.7	0.3
9	diuron	80	DF	1.2	lb ai/a	PRE	0.0	198.0	0.0	40.0	1.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	0.3	210.7	3.3	39.3	0.3
11	diuron	80	DF	1.2	lb ai/a	PRE	0.0	280.3	0.0	43.3	0.0
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	0.3	375.0	6.3	49.0	0.0
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							0.98	226.95	21.39	18.48	1.07
Standard Deviation							0.58	134.02	12.63	10.92	0.63
CV							173.21	40.72	178.29	26.28	253.46

Weed Control in Asparagus - HTRC

Dept. of Horticulture, MSU

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date						6/13/05	6/13/05	6/15/05	6/15/05	6/15/05
Rating Data Type						GOOD SPR	BAD SPR	GOOD SPR	BAD SPR	GOOD SPR
Rating Unit						GRAMS	GRAMS	NUMBER	NUMBER	GRAMS
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	diuron	80	DF	1.2	lb ai/a	PRE	652.3	0.0	20.3	0.3	289.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	607.7	0.0	23.3	0.3	327.3
3	diuron	80	DF	1.2	lb ai/a	PRE	762.3	29.3	25.0	0.7	374.7
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	687.7	18.3	22.7	0.3	354.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	573.7	9.3	10.3	1.3	141.0
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	731.7	9.0	18.0	1.7	251.0
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	545.0	0.0	20.0	0.3	317.3
8	mesotrione	4	SC	0.094	lb ai/a	PRE	682.0	7.0	27.3	0.0	387.0
9	diuron	80	DF	1.2	lb ai/a	PRE	395.3	22.0	18.3	0.0	259.7
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	534.7	5.3	22.3	0.7	304.0
11	diuron	80	DF	1.2	lb ai/a	PRE	655.0	0.0	18.3	1.0	269.7
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	729.3	0.0	25.3	0.0	370.3
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							336.22	34.99	12.91	1.31	207.09
Standard Deviation							198.55	20.66	7.63	0.77	122.29
CV							31.53	247.11	36.41	138.96	40.26

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA
Rating Date						6/15/05	6/17/05	6/17/05	6/17/05	6/17/05
Rating Data Type						BAD SPR	GOOD SPR	BAD SPR	GOOD SPR	BAD SPR
Rating Unit						GRAMS	NUMBER	NUMBER	GRAMS	GRAMS
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	diuron	80	DF	1.2	lb ai/a	PRE	6.7	8.3	1.3	131.0	21.3
2	metribuzin	75	DF	0.5	lb ai/a	PRE	7.0	11.3	0.3	169.0	4.0
3	diuron	80	DF	1.2	lb ai/a	PRE	9.0	15.3	0.3	263.0	4.3
	metribuzin	75	DF	0.5	lb ai/a	PRE					
4	terbacil	80	WP	1.2	lb ai/a	PRE	4.0	10.3	1.3	173.0	19.3
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	20.0	16.7	1.3	303.3	23.3
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	30.3	11.7	1.7	280.7	25.7
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	4.7	7.7	1.0	130.3	17.7
8	mesotrione	4	SC	0.094	lb ai/a	PRE	0.0	9.7	1.3	170.7	24.7
9	diuron	80	DF	1.2	lb ai/a	PRE	0.0	9.7	1.0	147.7	20.0
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE					
10	clomazone	3	ME	1	lb ai/a	PRE	6.3	12.3	0.7	216.3	15.3
11	diuron	80	DF	1.2	lb ai/a	PRE	19.0	11.0	0.3	178.7	6.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
12	diuron	80	DF	1.2	lb ai/a	PRE	0.0	12.7	0.7	233.0	13.7
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	COC		L	1	% v/v	PO1					
	AMS	100	DF	2	% ai/v	PO1					
LSD (P=.05)							20.33	8.88	1.78	164.62	32.66
Standard Deviation							12.00	5.24	1.05	97.21	19.29
CV							134.63	46.03	111.23	48.67	118.28

Weed Control in Asparagus - HTRC

Dept. of Horticulture, MSU

Pest Code							ASPA	ASPA	ASPA	ASPA
Rating Date										
Rating Data Type							GOOD SPR	BAD SPR	GOOD SPR	BAD SPR
Rating Unit							TOT NO.	TOT NO.	TOT KG/PL	TOT KG/PL
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	diuron	80	DF	1.2	lb ai/a	PRE	300.3	21.3	6.317	0.419
2	metribuzin	75	DF	0.5	lb ai/a	PRE	353.0	25.0	6.057	0.440
3	diuron	80	DF	1.2	lb ai/a	PRE	337.3	23.3	6.190	0.443
	metribuzin	75	DF	0.5	lb ai/a	PRE				
4	terbacil	80	WP	1.2	lb ai/a	PRE	307.7	30.7	5.587	0.563
5	flumioxazin	51	WDG	0.192	lb ai/a	PRE	286.7	29.3	5.228	0.588
6	sulfentrazone	75	DF	0.375	lb ai/a	PRE	353.0	30.3	6.345	0.552
7	halosulfuron	75	WG	0.047	lb ai/a	PRE	280.0	21.0	5.145	0.399
8	mesotrione	4	SC	0.094	lb ai/a	PRE	341.3	28.3	6.236	0.536
9	diuron	80	DF	1.2	lb ai/a	PRE	299.7	21.7	4.857	0.414
	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE				
10	clomazone	3	ME	1	lb ai/a	PRE	304.7	28.0	4.966	0.461
11	diuron	80	DF	1.2	lb ai/a	PRE	295.0	37.0	5.282	0.635
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
	AMS	100	DF	2	% ai/v	PO1				
12	diuron	80	DF	1.2	lb ai/a	PRE	321.7	26.7	6.324	0.610
	carfentrazone	1.9	EW	0.03	lb ai/a	PO1				
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
	AMS	100	DF	2	% ai/v	PO1				
LSD (P=.05)							102.42	14.93	2.4537	0.3339
Standard Deviation							60.48	8.82	1.4490	0.1972
CV							19.2	32.8	25.37	39.04

Weed Control in Asparagus with New Herbicides - HTRC

Project Code: WC 120-05-02 **Location: HTRC Block 128 & 129**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Asparagus **Variety: Jersey Knight**
Planting Method: Transplant **Planting Date: 1993**
Spacing: 12 IN **Row Spacing: 6 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 6 ft wide x 50 ft long

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

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/18/05	11:45 pm	74/52	°F	Dry	2 S	37	5% Cloudy	N
PO1	6/3/05	3:15 pm	74/71	°F	Dry	5 S	61	95% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/3	ASPA = asparagus			
6/3	QUGR = quackgrass	8-14 in		many
6/3	COMW = common milkweed	4-12 in		few
6/3	WICA = wild carrot	3-6 in		few
	YEFT = yellow foxtail			
	DAND = dandelion			
	MATA = marestail (horseweed)			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.

Weed Control in Asparagus with New Herbicides - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 120-05-02 Study Director: Michael Particka
Location: HTRC 128-129 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA	QUGR	DAND	MATA	WICA	ASPA
Pest Code							ASPA	QUGR	DAND	MATA	WICA	ASPA
Description												
Rating Date							6/3/05	6/3/05	6/3/05	6/3/05	6/3/05	6/21/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	diuron	80	DF	3	lb ai/a	PRE	2.0	6.7	10.0	10.0	2.0	1.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	1.3	7.0	10.0	10.0	1.3	2.0
3	terbacil	80	WP	1.2	lb ai/a	PRE	1.7	9.7	10.0	10.0	9.3	1.7
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	1.7	5.3	4.0	7.0	1.0	2.7
5	mesotrione	4	SC	0.188	lb ai/a	PRE	2.0	6.0	10.0	8.7	6.0	2.3
6	mesotrione	4	SC	0.24	lb ai/a	PRE	2.0	2.7	10.0	10.0	6.3	2.3
7	mesotrione	4	SC	0.24	lb ai/a	PRE	1.7	4.3	10.0	10.0	4.0	2.0
	mesotrione	4	SC	0.094	lb ai/a	PO1						
8	mesotrione	4	SC	0.094	lb ai/a	PO1	2.3	7.0	7.3	4.7	1.0	2.0
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	1.3	4.3	6.7	7.0	5.0	2.0
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	2.0	5.3	4.0	10.0	4.7	2.7
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	1.7	4.0	9.3	10.0	9.0	2.7
12	untreated					PRE	2.3	2.0	1.3	4.7	1.0	1.3
	linuron	50	DF	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							1.39	6.38	4.11	4.38	4.92	1.43
Standard Deviation							0.82	3.77	2.43	2.59	2.90	0.85
CV							44.79	70.24	31.43	30.46	68.79	40.11

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	QUGR	YEFT	COMW	DAND	MATA	WICA
Pest Code							QUGR	YEFT	COMW	DAND	MATA	WICA
Description												
Rating Date							6/21/05	6/21/05	6/21/05	6/21/05	6/21/05	6/21/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	diuron	80	DF	3	lb ai/a	PRE	4.3	4.0	10.0	7.7	10.0	1.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	5.7	2.3	10.0	10.0	10.0	3.0
3	terbacil	80	WP	1.2	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	10.0
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	5.3	10.0	9.3	4.3	7.0	1.7
5	mesotrione	4	SC	0.188	lb ai/a	PRE	6.0	3.7	7.3	9.7	10.0	7.0
6	mesotrione	4	SC	0.24	lb ai/a	PRE	2.0	5.7	7.0	6.3	10.0	6.7
7	mesotrione	4	SC	0.24	lb ai/a	PRE	4.3	8.0	7.3	9.7	10.0	5.0
	mesotrione	4	SC	0.094	lb ai/a	PO1						
8	mesotrione	4	SC	0.094	lb ai/a	PO1	7.3	8.3	9.0	9.7	9.3	4.3
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	4.7	10.0	7.3	7.7	7.0	4.7
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	6.3	9.3	10.0	5.0	10.0	6.0
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	3.3	2.7	7.7	10.0	9.3	6.7
12	untreated					PRE	7.7	9.3	6.0	5.0	9.3	1.0
	linuron	50	DF	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							6.00	3.51	4.85	4.50	3.45	4.88
Standard Deviation							3.54	2.07	2.87	2.66	2.04	2.88
CV							63.44	29.86	34.05	33.58	21.83	60.01

Weed Control in Asparagus with New Herbicides - HTRC

Dept. of Horticulture, MSU

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA	ASPA
Description						SPEARS	SPEARS	SPEARS	SPEARS	SPEARS	SPEARS
Rating Date						5/10/05	5/13/05	5/16/05	5/18/05	5/20/05	5/23/05
Rating Data Type						YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit						G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	3	lb ai/a	PRE	205.3	263.3	116.3	195.7	112.0	341.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	114.7	247.0	88.0	163.3	108.0	345.0
3	terbacil	80	WP	1.2	lb ai/a	PRE	176.7	258.7	86.3	133.0	84.3	299.0
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	127.0	138.7	125.0	106.7	83.3	348.0
5	mesotrione	4	SC	0.188	lb ai/a	PRE	104.7	154.0	113.3	156.0	127.3	325.0
6	mesotrione	4	SC	0.24	lb ai/a	PRE	173.3	242.0	99.3	271.7	120.7	370.3
7	mesotrione	4	SC	0.24	lb ai/a	PRE	126.0	116.3	103.7	136.7	137.0	274.0
	mesotrione	4	SC	0.094	lb ai/a	PO1						
8	mesotrione	4	SC	0.094	lb ai/a	PO1	206.0	149.0	102.0	152.3	85.0	270.3
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	225.3	202.7	154.3	242.3	141.3	245.7
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	106.0	163.3	124.7	171.7	134.3	274.3
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	200.7	286.0	183.7	209.0	102.3	458.3
12	untreated					PRE	115.0	132.7	84.7	161.3	81.7	260.3
	linuron	50	DF	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							143.82	197.88	101.64	151.66	115.13	173.84
Standard Deviation							84.93	116.85	60.02	89.56	67.99	102.65
CV							54.19	59.58	52.14	51.19	61.93	32.32

Pest Code						ASPA	ASPA	ASPA	ASPA	ASPA	ASPA
Description						SPEARS	SPEARS	SPEARS	SPEARS	SPEARS	SPEARS
Rating Date						5/25/05	5/27/05	5/31/05	6/1/05	6/2/05	6/3/05
Rating Data Type						YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit						G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT	G/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	diuron	80	DF	3	lb ai/a	PRE	145.0	174.0	522.7	221.7	114.3	125.7
2	metribuzin	75	DF	0.5	lb ai/a	PRE	114.0	174.7	409.7	195.3	92.0	157.0
3	terbacil	80	WP	1.2	lb ai/a	PRE	167.0	163.7	534.3	130.3	84.7	195.3
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	85.7	227.3	389.7	82.0	43.7	130.0
5	mesotrione	4	SC	0.188	lb ai/a	PRE	124.0	136.3	482.7	178.3	115.3	212.3
6	mesotrione	4	SC	0.24	lb ai/a	PRE	110.7	197.7	648.7	196.0	187.7	268.3
7	mesotrione	4	SC	0.24	lb ai/a	PRE	104.0	198.0	430.3	107.7	67.0	164.0
	mesotrione	4	SC	0.094	lb ai/a	PO1						
8	mesotrione	4	SC	0.094	lb ai/a	PO1	175.7	121.7	430.3	130.3	59.0	160.7
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	199.7	204.3	572.7	279.3	123.3	259.7
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	176.7	117.7	495.7	201.7	106.0	156.7
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	204.7	156.0	561.3	282.0	116.3	237.3
12	untreated					PRE	117.7	175.3	376.3	129.0	86.7	117.7
	linuron	50	DF	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							151.70	158.64	328.62	183.82	91.89	142.42
Standard Deviation							89.58	93.68	194.06	108.55	54.26	84.10
CV							62.33	54.93	39.78	61.05	54.44	46.19

Weed Control in Asparagus with New Herbicides - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA SPEARS 6/6/05 YIELD G/PLOT	ASPA SPEARS 6/8/05 YIELD G/PLOT	ASPA SPEARS 6/10/05 YIELD G/PLOT	ASPA SPEARS 6/14/05 YIELD G/PLOT	ASPA SPEARS 6/15/05 YIELD G/PLOT	ASPA SPEARS 6/17/05 YIELD G/PLOT
1	diuron	80	DF	3	lb ai/a	PRE	418.7	243.3	250.3	404.0	133.7	55.0
2	metribuzin	75	DF	0.5	lb ai/a	PRE	398.7	233.0	235.0	304.7	129.3	77.0
3	terbacil	80	WP	1.2	lb ai/a	PRE	287.0	310.0	213.7	346.7	83.7	136.3
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	330.0	274.0	190.3	222.3	110.3	46.3
5	mesotrione	4	SC	0.188	lb ai/a	PRE	288.3	280.3	243.3	349.3	74.3	71.0
6	mesotrione	4	SC	0.24	lb ai/a	PRE	361.0	339.3	265.7	274.0	72.7	97.3
7	mesotrione	4	SC	0.24	lb ai/a	PRE	320.3	203.7	174.3	297.3	110.3	72.3
	mesotrione	4	SC	0.094	lb ai/a	PO1						
8	mesotrione	4	SC	0.094	lb ai/a	PO1	332.0	224.3	163.3	314.3	76.7	67.7
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	428.7	211.0	245.3	404.0	75.3	53.0
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	309.7	181.7	245.3	271.0	115.7	102.0
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	392.0	341.3	284.7	484.0	147.7	77.0
12	untreated					PRE	360.0	268.7	216.3	284.7	102.0	100.0
	linuron	50	DF	1	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							277.04	260.40	183.01	266.87	122.45	82.17
Standard Deviation							163.60	153.77	108.07	157.59	72.31	48.53
CV							46.45	59.32	47.55	47.8	70.45	60.97

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ASPA TOT SPEARS YIELD KG/PLOT
1	diuron	80	DF	3	lb ai/a	PRE	4.043
2	metribuzin	75	DF	0.5	lb ai/a	PRE	3.587
3	terbacil	80	WP	1.2	lb ai/a	PRE	3.690
4	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	3.060
5	mesotrione	4	SC	0.188	lb ai/a	PRE	3.540
6	mesotrione	4	SC	0.24	lb ai/a	PRE	4.297
7	mesotrione	4	SC	0.24	lb ai/a	PRE	3.143
	mesotrione	4	SC	0.094	lb ai/a	PO1	
8	mesotrione	4	SC	0.094	lb ai/a	PO1	3.220
9	flumioxazin	51	WDG	0.192	lb ai/a	PRE	4.267
10	sulfentrazone	75	DF	0.375	lb ai/a	PRE	3.457
11	halosulfuron	75	WG	0.047	lb ai/a	PRE	4.727
12	untreated					PRE	3.170
	linuron	50	DF	1	lb ai/a	PO1	
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1	
	NIS		L	0.25	% v/v	PO1	
LSD (P=.05)							2.4463
Standard Deviation							1.4446
CV							39.22

Weed Control in Snap Bean - HTRC

Project Code: WC 125-05-01 **Location: HTRC Block 68**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Snap Bean **Variety: Hercules**
Planting Method: Seeded **Planting Date: 5/11/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 2.0%** **pH: 6.8**
Sand: 46% **Silt: 33%** **Clay: 20%** **CEC: 10.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5/11/05	8:30 am	59/58	°F	Dry	2 N	72	100% Cloudy	N
PRE	5/11/05	1:30 pm	61/69	°F	Dry	3 SW	79	100% Cloudy	N
PO1	6/15/05	1:30 pm	71/68	°F	Wet	4 W	70	40% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/15	SNBE = snapbean	4-6 in	2-3 tri	
6/15	COLQ = common lambsquarters	2-6 in		moderate
6/15	RRPW = redroot pigweed	4-6 in		few
6/15	VELE = velvetleaf	2-8 in		moderate
	GRFT = green foxtail			
	YENS = yellow nutsedge			
	EBNS = eastern black nightshade			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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.

Weed Control in Snap Bean - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 125-05-01 Study Director: Michael Particka
Location: HTRC Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SNBE	GRFT	COLQ	EBNS	RRPW	VELE
	Pest Code						SNBE	GRFT	COLQ	EBNS	RRPW	VELE
	Description											
	Rating Date						6/14/05	6/14/05	6/14/05	6/14/05	6/14/05	6/14/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	2.0	9.7	6.7	10.0	7.7	10.0
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	1.7	10.0	8.7	10.0	10.0	7.0
3	pendimethalin	3.8	CS	1	lb ai/a	PRE	1.7	8.7	10.0	9.0	9.3	10.0
4	sulfentrazone	4	F	0.14	lb ai/a	PRE	2.7	9.7	10.0	10.0	10.0	10.0
5	clomazone	3	ME	0.25	lb ai/a	PRE	2.3	10.0	8.0	10.0	3.3	10.0
6	flufenacet	60	DF	0.6	lb ai/a	PRE	2.0	10.0	9.3	9.0	9.0	10.0
7	halosulfuron	75	WG	0.023	lb ai/a	PPI	2.0	7.0	7.3	6.7	9.0	10.0
	EPTC	7	EC	3.5	lb ai/a	PPI						
8	halosulfuron	75	WG	0.047	lb ai/a	PPI	2.0	5.0	7.0	4.7	9.0	9.7
	EPTC	7	EC	3.5	lb ai/a	PPI						
9	EPTC	7	EC	3.5	lb ai/a	PPI	1.7	9.7	6.3	4.7	6.0	10.0
	fomesafen	2	EC	0.156	lb ai/a	PO1						
10	EPTC	7	EC	3.5	lb ai/a	PPI	1.3	9.7	4.3	5.0	6.0	7.0
	halosulfuron	75	WG	0.031	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.7	10.0	10.0	10.0	10.0	9.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
12	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.0	10.0	4.7	9.7	6.7	5.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.0	10.0	5.7	10.0	7.3	7.0
	fomesafen	2	EC	0.25	lb ai/a	PO1						
14	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	3.0	9.7	4.3	9.3	8.0	4.3
	imazamox	1	AS	0.031	lb ai/a	PO1						
15	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.0	10.0	4.3	10.0	9.0	7.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
16	untreated						2.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.50	2.44	4.16	3.13	4.10	4.74
Standard Deviation							0.90	1.46	2.50	1.88	2.46	2.85
CV							43.63	16.69	37.09	23.31	32.41	35.67

Weed Control in Snap Bean - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SNBE	GRFT	YENS	COLQ	EBNS	RRPW
	Pest Code											
	Description											
	Rating Date						6/22/05	6/22/05	6/22/05	6/22/05	6/22/05	6/22/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	2.0	10.0	9.0	6.3	10.0	10.0
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	1.7	10.0	8.3	7.7	10.0	10.0
3	pendimethalin	3.8	CS	1	lb ai/a	PRE	2.3	10.0	1.7	9.7	10.0	8.0
4	sulfentrazone	4	F	0.14	lb ai/a	PRE	2.7	9.7	7.3	10.0	10.0	10.0
5	clomazone	3	ME	0.25	lb ai/a	PRE	1.0	10.0	1.0	10.0	9.3	2.0
6	flufenacet	60	DF	0.6	lb ai/a	PRE	1.7	10.0	4.3	9.0	10.0	9.0
7	halosulfuron	75	WG	0.023	lb ai/a	PPI	1.3	6.3	6.7	8.7	2.3	10.0
	EPTC	7	EC	3.5	lb ai/a	PPI						
8	halosulfuron	75	WG	0.047	lb ai/a	PPI	1.7	5.3	6.7	6.3	3.0	9.3
	EPTC	7	EC	3.5	lb ai/a	PPI						
9	EPTC	7	EC	3.5	lb ai/a	PPI	2.0	10.0	9.0	7.0	10.0	10.0
	fomesafen	2	EC	0.156	lb ai/a	PO1						
10	EPTC	7	EC	3.5	lb ai/a	PPI	2.3	6.3	8.0	5.7	2.3	9.0
	halosulfuron	75	WG	0.031	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.3	9.7	9.7	9.3	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
12	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.3	10.0	9.3	5.7	10.0	9.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.3	10.0	9.3	7.7	10.0	10.0
	fomesafen	2	EC	0.25	lb ai/a	PO1						
14	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	3.3	10.0	8.7	4.7	10.0	9.7
	imazamox	1	AS	0.031	lb ai/a	PO1						
15	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	7.3	10.0	10.0	9.0	10.0	10.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
16	untreated						2.3	7.3	4.7	6.3	4.7	8.3
LSD (P=.05)							1.44	2.22	3.43	2.89	2.45	1.76
Standard Deviation							0.87	1.33	2.06	1.73	1.47	1.05
CV							35.84	14.69	28.94	22.53	17.84	11.67

Weed Control in Snap Bean - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	VELE	SNBE FRUIT	SNBE PLANT
	Pest Code						VELE	SNBE	SNBE
	Description							FRUIT	PLANT
	Rating Date						6/22/05	7/20/05	7/20/05
	Rating Data Type						RATING	YIELD	YIELD
	Rating Unit							KG/PLOT	KG/PLOT
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	10.0	7.286	10.09
2	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	7.0	8.118	11.72
3	pendimethalin	3.8	CS	1	lb ai/a	PRE	10.0	6.071	9.13
4	sulfentrazone	4	F	0.14	lb ai/a	PRE	10.0	7.673	10.91
5	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	4.449	7.03
6	flufenacet	60	DF	0.6	lb ai/a	PRE	10.0	7.722	10.99
7	halosulfuron	75	WG	0.023	lb ai/a	PPI	10.0	6.476	9.75
	EPTC	7	EC	3.5	lb ai/a	PPI			
8	halosulfuron	75	WG	0.047	lb ai/a	PPI	10.0	7.379	10.73
	EPTC	7	EC	3.5	lb ai/a	PPI			
9	EPTC	7	EC	3.5	lb ai/a	PPI	10.0	6.638	9.89
	fomesafen	2	EC	0.156	lb ai/a	PO1			
10	EPTC	7	EC	3.5	lb ai/a	PPI	10.0	5.931	10.29
	halosulfuron	75	WG	0.031	lb ai/a	PO1			
	NIS		L	0.25	% v/v	PO1			
11	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	7.7	7.273	11.23
	halosulfuron	75	WG	0.023	lb ai/a	PRE			
12	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	9.3	5.616	11.03
	halosulfuron	75	WG	0.023	lb ai/a	PO1			
	NIS		L	0.25	% v/v	PO1			
13	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	8.3	6.861	10.06
	fomesafen	2	EC	0.25	lb ai/a	PO1			
14	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	6.3	4.706	8.67
	imazamox	1	AS	0.031	lb ai/a	PO1			
15	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	10.0	1.514	8.87
	sulfentrazone	4	F	0.14	lb ai/a	PO1			
16	untreated						9.0	4.852	7.23
LSD (P=.05)							3.32	3.1240	2.963
Standard Deviation							1.99	1.8737	1.777
CV							21.55	30.42	18.04

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

Project Code: WC 109-05-01 **Location: HTRC Block 72**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5/5/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Capac Loam **OM: 6.4%** **pH: 7.3**
Sand: 42% **Silt: 34%** **Clay: 23%** **CEC: 18.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5/4/05	9:00 am	52/46	°F	Dry	4 SW	28	Clear	N
PRE	5/6/05	11:30 am	69/53	°F	Dry	6 SW	26	20% Cloudy	N
PO1	6/9/05	1:20 pm	88/77	°F	Dry	5 SW	50	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/9	REBE = red beet	4-6 in	4-6 leaf	
6/9	SUBE = sugar beet	4-6 in	4-6 leaf	
6/9	CHARD = swiss chard	4-6 in	6-10 leaf	
6/9	SPIN = spinach	3-5 in	6-10 leaf	
6/9	BYGR = barnyardgrass			
6/9	COLQ = common lambsquarters	2-10 in		many
6/9	CORW = common ragweed	2 in		few
6/9	LATH = ladysthumb	2-6 in		few
6/9	RRPW = redroot pigweed	2 in		few

Notes and Comments

1. Sprays applied with 5-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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 – Giant Fordhook, Spinach – UniPack 151.

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

Dept. of Horticulture, MSU

Trial ID: WC 109-05-01 Study Director: Michael Particka
Location: HTRC Block 72 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	REBE	CHARD	SPIN	SUBE	BYGR	COLQ
Pest Code							REBE	CHARD	SPIN	SUBE	BYGR	COLQ
Description												
Rating Date							6/6/05	6/6/05	6/6/05	6/6/05	6/6/05	6/6/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	pyrazon	68	DF	3	lb ai/a	PRE	1.3	1.7	6.7	1.3	5.0	5.7
2	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.7	1.3	1.0	1.7	10.0	1.7
3	ethofumesate	4	SC	2	lb ai/a	PRE	1.0	1.0	9.3	2.0	5.3	8.0
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	2.7	2.3	6.7	2.7	10.0	4.3
5	cycloate	6	EC	3.0	lb ai/a	PPI	2.3	1.3	2.3	2.3	6.0	6.3
6	flucarbazone	70	WDG	0.025	lb ai/a	PRE	8.3	6.3	4.7	6.7	2.0	3.3
7	s-metolachlor	7.62	EC	0.5	lb ai/a	PRE	1.0	1.0	1.0	1.0	10.0	1.7
	PROGRESS	1.8	L	0.33	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.0	1.3	1.7	1.3	10.0	2.7
	triflusulfuron	50	WG	0.0156	lb ai/a	PO1						
	phenmedipham	1.3	L	1	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
9	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.7	1.3	2.3	2.0	10.0	3.7
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
10	untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.0
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
LSD (P=.05)							1.13	1.16	1.78	1.29	2.93	1.98
Standard Deviation							0.66	0.67	1.04	0.75	1.71	1.15
CV							29.92	36.16	28.31	34.22	24.66	30.04

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

Dept. of Horticulture, MSU

Pest Code												
Description												
Rating Date							6/6/05	6/28/05	6/28/05	6/28/05	6/16/05	7/15/05
Rating Data Type							RATING	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	pyrazon	68	DF	3	lb ai/a	PRE	7.0	1.0	1.0	1.0	0.15	11.66
2	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	7.3	1.7	1.7	2.0	1.55	7.20
3	ethofumesate	4	SC	2	lb ai/a	PRE	6.0	1.0	1.0	1.0	0.01	9.97
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	1.3	1.3	1.3	0.18	10.51
5	cycloate	6	EC	3.0	lb ai/a	PPI	2.7	2.0	1.3	2.0	1.61	10.25
6	flucarbazone	70	WDG	0.025	lb ai/a	PRE	1.3	6.7	4.7	7.0	0.50	2.37
7	s-metolachlor	7.62	EC	0.5	lb ai/a	PRE	1.7	2.7	1.7	2.7	1.44	4.32
	PROGRESS	1.8	L	0.33	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.0	2.0	2.3	2.3	1.25	6.97
	triflusulfuron	50	WG	0.0156	lb ai/a	PO1						
	phenmedipham	1.3	L	1	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
9	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.3	2.0	2.0	2.0	1.17	8.02
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
10	untreated					PRE	1.0	3.7	2.7	3.3	0.69	5.69
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
LSD (P=.05)							3.64	1.53	1.52	1.99	0.750	3.408
Standard Deviation							2.12	0.89	0.89	1.16	0.437	1.987
CV							52.55	37.18	45.16	47.01	51.15	25.82

Pest Code							REBE	REBE ROOT	REBE TOP	SUBE ROOT	SUBE ROOT
Description											
Rating Date							7/27/05	7/27/05	7/27/05	10/5/05	10/5/05
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							NUMBER	KG/PLOT	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	81.3	5.33	3.13	49.7	24.60
2	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	58.0	3.94	1.99	45.3	19.79
3	ethofumesate	4	SC	2	lb ai/a	PRE	75.0	4.95	3.02	44.7	19.73
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	79.0	5.58	2.84	50.0	27.37
5	cycloate	6	EC	3.0	lb ai/a	PPI	55.3	3.83	2.43	36.3	16.77
6	flucarbazone	70	WDG	0.025	lb ai/a	PRE	8.7	0.82	0.48	7.0	2.31
7	s-metolachlor	7.62	EC	0.5	lb ai/a	PRE	32.3	1.12	1.45	34.3	9.68
	PROGRESS	1.8	L	0.33	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
8	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	70.0	3.35	2.65	40.7	14.77
	triflusulfuron	50	WG	0.0156	lb ai/a	PO1					
	phenmedipham	1.3	L	1	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
9	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	59.0	3.98	3.19	54.7	26.20
	clopyralid	3	EC	0.125	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
10	untreated					PRE	36.0	1.93	2.07	32.3	15.81
	clopyralid	3	EC	0.125	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
LSD (P=.05)							26.69	2.433	1.054	12.82	9.471
Standard Deviation							15.56	1.418	0.614	7.47	5.521
CV							28.05	40.72	26.42	18.91	31.19

Weed Control in Cabbage and Cauliflower - HTRC

Project Code: WC 114-05-05 **Location: HTRC Block 108**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cabbage, Cauliflower **Variety: Blue Lagoon, Candid Charm**
Planting Method: Transplant **Planting Date: 5-17-05**
Spacing: 24 IN **Row Spacing: 36 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Capac Loam **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	5-16-05	1:00 pm	52/54	°F	Dry	3 E	41	90% Cloudy	N
PRT	5-16-05	2:15 pm	59/55	°F	Dry	1 E	44	100% Cloudy	N
POT	5-17-05	2:45 pm	61/56	°F	Dry	5 E	37	90% Cloudy	N
PO1	6-15-05	1:20 pm	75/71	°F	Wet	5 W	75	40% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/15	CABB = cabbage	6-10 in		
6/15	CAUL = cauliflower	6-10 in		
6/15	BYGR = barnyardgrass			
6/15	GRFT = green foxtail			
6/15	COLQ = common lambsquarters	1-8 in		many
6/15	EBNS = eastern black nightshade	1-2 in		moderate
6/15	FIPC = field pennycress			
6/15	RRPW = redroot pigweed	4-10 in		moderate
6/15	WIRA = wild radish	4-8 in		moderate

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. One row planted for each crop/plot.
4. Cabbage harvested 4 times, all mature heads each harvest.
5. Cauliflower harvested 2 times, all mature heads each harvest.

Weed Control in Cabbage and Cauliflower - HTRC

Dept. of Horticulture, MSU
Trial ID: WC 114-05-05 Study Director: Michael Particka
Location: HTRC Block 108 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CABB	CAUL	GRFT	COLQ	FIPC	RRPW
	Pest Code						CABB	CAUL	GRFT	COLQ	FIPC	RRPW
	Rating Date						6/6/05	6/6/05	6/6/05	6/6/05	6/6/05	6/6/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	trifluralin	4	EC	1	lb ai/a	PPI	1.0	2.0	9.7	8.7	8.7	9.3
2	trifluralin	4	EC	1	lb ai/a	PPI	1.0	2.3	10.0	10.0	10.0	10.0
	oxyfluorfen	2	L	0.5	lb ai/a	PRT						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.3	2.3	10.0	10.0	9.3	10.0
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	1.0	1.7	10.0	10.0	9.0	10.0
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	1.3	1.7	10.0	10.0	7.0	10.0
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	3.3	3.7	10.0	10.0	10.0	10.0
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	1.3	2.0	10.0	10.0	10.0	10.0
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	1.7	2.0	10.0	10.0	10.0	10.0
9	trifluralin	4	EC	1	lb ai/a	PPI	1.0	2.7	9.3	7.3	9.3	9.7
	oxyfluorfen	2	L	0.063	lb ai/a	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	1.0	2.0	9.0	5.0	6.3	9.7
	oxyfluorfen	4	F	0.063	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	1.0	2.7	10.0	6.3	9.7	9.3
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	3.3	6.7	7.3	8.7	10.0	10.0
13	flufenacet	4	SC	0.6	lb ai/a	POT	1.3	1.7	10.0	10.0	10.0	10.0
14	KIH-485	60	WG	0.112	lb ai/a	POT	1.0	2.3	10.0	10.0	10.0	10.0
15	untreated						1.3	1.7	3.3	1.7	6.0	4.0
	LSD (P=.05)						0.83	1.78	1.96	2.81	3.05	2.28
	Standard Deviation						0.50	1.06	1.17	1.68	1.83	1.36
	CV						33.93	42.74	12.7	19.75	20.23	14.41

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	WIRA	CABB	CAUL	BYGR	COLQ	EBNS
	Pest Code						WIRA	CABB	CAUL	BYGR	COLQ	EBNS
	Rating Date						6/6/05	6/22/05	6/22/05	6/22/05	6/22/05	6/22/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	trifluralin	4	EC	1	lb ai/a	PPI	4.3	1.0	1.0	9.3	7.3	4.0
2	trifluralin	4	EC	1	lb ai/a	PPI	9.0	1.0	2.3	10.0	9.3	9.3
	oxyfluorfen	2	L	0.5	lb ai/a	PRT						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.3	1.0	1.3	10.0	7.3	9.7
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	4.3	1.0	1.7	10.0	7.3	10.0
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	6.0	1.3	1.3	8.3	8.0	4.3
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	8.3	3.0	3.3	9.3	9.7	9.0
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	7.3	1.0	1.7	10.0	7.7	10.0
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	7.3	1.3	1.7	8.7	10.0	10.0
9	trifluralin	4	EC	1	lb ai/a	PPI	7.7	2.7	3.7	8.7	7.3	10.0
	oxyfluorfen	2	L	0.063	lb ai/a	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	5.3	1.3	2.3	7.3	7.0	10.0
	oxyfluorfen	4	F	0.063	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	4.3	1.0	3.0	10.0	9.7	10.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	8.7	5.3	8.7	3.3	4.3	4.7
13	flufenacet	4	SC	0.6	lb ai/a	POT	9.3	1.3	1.7	10.0	9.7	10.0
14	KIH-485	60	WG	0.112	lb ai/a	POT	8.7	1.3	2.3	9.7	9.3	10.0
15	untreated						1.0	1.0	1.0	1.0	1.0	1.0
	LSD (P=.05)						2.69	1.34	1.88	1.79	2.02	3.16
	Standard Deviation						1.61	0.80	1.13	1.07	1.21	1.89
	CV						25.66	48.88	45.63	12.78	15.75	23.2

Weed Control in Cabbage and Cauliflower - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LATH	RRPW	WIRA	CABB	CABB
Pest Code							LATH	RRPW	WIRA	CABB	CABB
Rating Date							6/22/05	6/22/05	6/22/05	7/15/05	7/15/05
Rating Data Type							RATING	RATING	RATING	YIELD	YIELD
Rating Unit										HEAD/PLT	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	8.7	8.3	1.3	0.7	1.04
2	trifluralin	4	EC	1	lb ai/a	PPI	9.7	10.0	8.3	0.3	0.42
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	9.3	10.0	2.3	0.0	0.00
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	8.0	9.7	4.7	1.3	1.91
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	7.0	5.0	4.7	0.0	0.00
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	10.0	9.0	8.3	0.0	0.00
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	10.0	9.7	4.3	0.7	1.15
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	9.7	10.0	7.0	1.3	2.03
9	trifluralin	4	EC	1	lb ai/a	PPI	10.0	9.7	7.3	1.7	2.59
	oxyfluorfen	2	L	0.063	lb ai/a	PO1					
10	trifluralin	4	EC	1	lb ai/a	PPI	9.3	9.7	4.3	2.0	3.00
	oxyfluorfen	4	F	0.063	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	8.3	9.7	6.3	0.3	0.47
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	10.0	9.7	9.3	0.0	0.00
13	flufenacet	4	SC	0.6	lb ai/a	POT	10.0	9.3	9.0	0.7	0.83
14	KIH-485	60	WG	0.112	lb ai/a	POT	9.7	10.0	8.7	0.7	0.73
15	untreated						3.0	1.0	1.0	0.0	0.00
LSD (P=.05)							2.19	1.22	2.28	1.35	2.144
Standard Deviation							1.31	0.73	1.36	0.81	1.282
CV							14.8	8.41	23.47	125.64	135.68

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CABB	CABB	CABB	CABB	CABB
Pest Code							CABB	CABB	CABB	CABB	CABB
Rating Date							7/22/05	7/22/05	7/28/05	7/28/05	8/5/05
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							HEAD/PLT	KG/PLOT	HEAD/PLT	KG/PLOT	HEAD/PLT
1	trifluralin	4	EC	1	lb ai/a	PPI	6.3	9.41	0.7	0.90	4.0
2	trifluralin	4	EC	1	lb ai/a	PPI	10.7	17.09	1.3	1.65	2.3
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.7	14.27	1.3	1.70	2.3
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	7.7	12.51	2.0	3.05	3.3
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	9.0	12.43	1.7	2.03	3.3
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	2.7	3.81	4.7	6.90	4.7
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	8.3	11.83	3.7	5.58	3.7
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	12.7	21.05	2.3	3.73	1.0
9	trifluralin	4	EC	1	lb ai/a	PPI	12.0	19.99	1.0	1.89	1.7
	oxyfluorfen	2	L	0.063	lb ai/a	PO1					
10	trifluralin	4	EC	1	lb ai/a	PPI	13.7	20.97	0.3	0.37	0.7
	oxyfluorfen	4	F	0.063	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	11.3	18.49	2.0	2.91	2.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	0.0	0.00	0.7	0.89	2.3
13	flufenacet	4	SC	0.6	lb ai/a	POT	11.0	14.95	1.3	1.53	3.3
14	KIH-485	60	WG	0.112	lb ai/a	POT	9.0	12.54	2.3	3.08	4.7
15	untreated						6.7	9.01	2.3	2.75	6.7
LSD (P=.05)							6.56	9.592	2.75	4.085	3.45
Standard Deviation							3.92	5.736	1.65	2.443	2.06
CV							44.71	43.38	89.22	93.99	67.24

Weed Control in Cabbage and Cauliflower - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CABB 8/5/05 YIELD KG/PLOT	CABB TOT YIELD HEAD/PLT	CABB TOT YIELD KG/PLOT	CAUL 8/5/05 YIELD HEAD/PLT	CAUL 8/5/05 YIELD KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	3.81	11.7	15.16	4.7	4.14
2	trifluralin	4	EC	1	lb ai/a	PPI	1.85	14.7	21.01	5.3	6.58
	oxyfluorfen	2	L	0.5	lb ai/a	PRT					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.11	14.3	18.08	5.7	4.61
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	3.77	14.3	21.24	7.0	6.19
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	3.42	14.0	17.89	5.7	4.39
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	5.66	12.0	16.37	5.3	4.67
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	3.93	16.3	22.48	6.7	5.69
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	1.27	17.3	28.09	8.7	8.89
9	trifluralin	4	EC	1	lb ai/a	PPI	1.47	16.3	25.94	4.7	5.32
	oxyfluorfen	2	L	0.063	lb ai/a	PO1					
10	trifluralin	4	EC	1	lb ai/a	PPI	0.77	16.7	25.11	7.7	6.55
	oxyfluorfen	4	F	0.063	lb ai/a	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	2.54	15.7	24.41	5.0	4.98
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	1.87	3.0	2.77	0.3	0.26
13	flufenacet	4	SC	0.6	lb ai/a	POT	3.36	16.3	20.67	8.3	8.25
14	KIH-485	60	WG	0.112	lb ai/a	POT	4.94	16.7	21.29	8.0	7.58
15	untreated						7.37	15.7	19.13	5.0	3.47
LSD (P=.05)							3.780	4.12	7.369	5.21	6.027
Standard Deviation							2.260	2.46	4.407	3.11	3.604
CV							70.44	17.17	22.06	53.09	66.27

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CAUL 8/10/05 YIELD HEAD/PLT	CAUL 8/10/05 YIELD KG/PLOT	CAUL TOT YIELD HEAD/PLT	CAUL TOT YIELD KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	5.0	1.94	9.7	6.08
2	trifluralin	4	EC	1	lb ai/a	PPI	2.0	1.33	7.3	7.91
	oxyfluorfen	2	L	0.5	lb ai/a	PRT				
3	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	2.7	0.98	8.3	5.59
4	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	2.3	0.97	9.3	7.16
5	ethalfluralin	3	EC	1.13	lb ai/a	POT	2.3	1.35	8.0	5.75
6	STRATEGY	2.1	SE	1.05	lb ai/a	POT	1.7	0.92	7.0	5.60
7	dimethenamid-p	6	EC	0.75	lb ai/a	POT	3.3	1.85	10.0	7.54
8	sulfentrazone	4	F	0.14	lb ai/a	PRT	3.7	2.78	12.3	11.67
9	trifluralin	4	EC	1	lb ai/a	PPI	3.0	2.09	7.7	7.41
	oxyfluorfen	2	L	0.063	lb ai/a	PO1				
10	trifluralin	4	EC	1	lb ai/a	PPI	3.0	2.21	10.7	8.76
	oxyfluorfen	4	F	0.063	lb ai/a	PO1				
11	trifluralin	4	EC	1	lb ai/a	PPI	3.3	2.44	8.3	7.42
	sulfentrazone	4	F	0.14	lb ai/a	PO1				
12	flucarbazone	70	WDG	0.026	lb ai/a	POT	0.3	0.22	0.7	0.48
13	flufenacet	4	SC	0.6	lb ai/a	POT	3.3	2.99	11.7	11.25
14	KIH-485	60	WG	0.112	lb ai/a	POT	1.7	0.78	9.7	8.36
15	untreated						3.7	1.74	8.7	5.21
LSD (P=.05)							3.93	2.575	6.08	6.093
Standard Deviation							2.35	1.540	3.63	3.644
CV							85.39	93.96	42.16	51.48

Preemergence Weed Control in Carrot - Fremont

Project Code: WC 107-05-01 **Location: Vogel Farm, Fremont**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax**
Planting Method: Seeded **Planting Date: 5/20/05**
Spacing: 0.32 IN **Row Spacing: 18 IN, 3 rows/plot**
Tillage Type: Conventional **Study Design: RCB** **Replications:3**
Plot Size: 5.5 ft wide x 30 ft long

Soil Type: Pipestone Sand **OM: 2.4%** **pH: 5.8**
Sand: 89% **Silt: 7%** **Clay: 4%** **CEC: 5.2**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5/25/04	10:00 am	54/55	°F	Wet	5 NE	85	100% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	Carrot			
	COLQ = common lambsquarters			
	EBNS = eastern black nightshade			
	RRPW = redroot pigweed			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Location: South of 80th on Wisner on East side of road.
4. Harvested all carrots from 5 ft of bed.

Preemergence Weed Control in Carrot - Fremont

Dept. of Horticulture, MSU

Trial ID: WC 107-05-01 Study Director: Michael Particka
Location: Fremont Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT 6/23/05 RATING	COLQ 6/23/05 RATING	EBNS 6/23/05 RATING	RRPW 6/23/05 RATING	CARROT 7/8/05 RATING	CARROT 8/24/05 YIELD KG/ 5 FT
1	linuron	50	DF	0.25	lb ai/a	PRE	1.3	8.3	9.0	7.7	1.0	14.11
2	linuron	50	DF	0.25	lb ai/a	PRE	5.0	9.3	9.3	9.3	4.3	11.46
	metribuzin	75	DF	0.125	lb ai/a	PRE						
3	linuron	50	DF	0.25	lb ai/a	PRE	2.0	9.0	9.7	8.7	2.0	13.22
	prometryn	4	L	0.5	lb ai/a	PRE						
4	linuron	50	DF	0.25	lb ai/a	PRE	9.0	10.0	10.0	10.0	7.3	6.81
	flumioxazin	51	WDG	0.032	lb ai/a	PRE						
5	linuron	50	DF	0.25	lb ai/a	PRE	3.0	9.0	10.0	9.7	2.3	12.00
	s-metolachlor	7.62	EC	0.6	lb ai/a	PRE						
6	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	3.3	8.7	9.3	8.7	3.3	11.13
7	pendimethalin	3.8	CS	1.5	lb ai/a	PRE	1.7	10.0	10.0	8.7	1.7	12.29
8	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.0	8.3	8.7	7.0	1.3	14.78
9	clomazone	3	ME	0.5	lb ai/a	PRE	5.7	9.7	9.7	9.3	4.3	9.53
10	flumioxazin	51	WDG	0.032	lb ai/a	PRE	8.3	7.0	7.0	7.0	7.0	8.27
11	untreated					PRE	1.0	1.0	1.0	1.0	1.3	13.58
LSD (P=.05)							1.38	2.87	2.84	2.83	1.30	3.005
Standard Deviation							0.81	1.69	1.67	1.66	0.76	1.764
CV							21.02	20.54	19.59	21.01	23.37	15.26

Postemergence Weed Control in Carrot – Fremont

Project Code: WC 107-05-02 **Location: Vogel Farm, Fremont**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax**
Planting Method: Seeded **Planting Date: 5/20/05**
Spacing: 0.32 IN **Row Spacing: 18 IN, 3 rows/plot**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.5 ft wide x 30 ft long

Soil Type: Pipestone Sand **OM: 2.4%** **pH: 5.8**
Sand: 89% **Silt: 7%** **Clay: 4%** **CEC: 5.2**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6/23/05	11:00 am	81/71	°F	Dry	8 SW	41	5% Cloudy	N
PO2	7/20/05	12:05 pm	81/80	°F	Damp	6 SW	54	30% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/23	Carrot	4-6 in	4-5 leaf	
6/23	COLQ = common lambsquarters	2-8 in		moderate
6/23	EBNS = eastern black nightshade	1-5 in		few
6/23	LATH = ladysthumb			
6/23	RRPW = redroot pigweed	2-12 in		moderate
7/20	Carrot	10-14 in		

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Location: South of 80th on Wisner on East side of road.
4. Harvested all carrots in 5 ft. of each bed.

Postemergence Weed Control in Carrot – Fremont

Dept. of Horticulture, MSU

Trial ID: WC 107-05-02 Study Director: Michael Particka
Location: Fremont Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT 7/8/05 RATING	COLQ 7/8/05 RATING	EBNS 7/8/05 RATING	LATH 7/8/05 RATING	RRPW 7/8/05 RATING	CARROT 8/24/05 YIELD KG/ 5 FT
1	linuron	50	DF	0.25	lb ai/a	PO1,2	1.7	10.0	7.0	10.0	6.3	12.36
	NIS		L	0.5	% v/v	PO1,2						
2	linuron	50	DF	0.5	lb ai/a	PO1,2	2.7	10.0	9.3	8.0	8.3	11.23
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	2.7	7.0	10.0	10.0	5.0	9.24
4	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	2.0	5.7	7.0	9.7	5.0	9.41
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	2.3	5.0	7.7	10.0	5.7	10.16
6	oxyfluorfen	4	SC	0.125	lb ai/a	PO1,2	2.7	6.3	7.7	10.0	5.0	9.76
7	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	2.3	5.0	9.3	9.7	4.7	7.95
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
8	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2	3.0	4.3	10.0	9.3	5.7	9.87
9	prometryn	4	L	0.75	lb ai/a	PO1,2	3.3	6.7	10.0	10.0	9.0	8.85
	NIS		L	0.5	% v/v	PO1,2						
10	metribuzin	75	DF	0.5	lb ai/a	PO1,2	2.7	9.3	4.7	9.7	6.7	6.47
11	untreated					PO1,2	2.7	6.0	4.7	7.0	6.0	9.18
LSD (P=.05)							1.54	5.15	6.14	3.40	4.90	5.832
Standard Deviation							0.90	3.02	3.61	1.99	2.88	3.424
CV							35.54	44.11	45.44	21.23	47.01	36.05

Preemergence Weed Control in Carrot – Muck Farm

Project Code: WC 107-05-03 **Location: Muck Farm B17**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax 54**
Planting Method: Seeded **Planting Date: 5/9/05**
Spacing: 0.5 IN **Row Spacing: 16 IN, 3 rows/plot**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.5 ft wide x 16.67 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 7.0**
Sand: 6% **Silt: 13%** **Clay: 2%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5/16/05	9:30 am	47/50	°F	Damp	5 W	57	35% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/7	Carrot			
6/7	LACG = large crabgrass			
6/7	COLQ = common lambsquarters			
6/7	COPU = common purslane			
6/7	LATH = ladysthumb			
6/7	MAYC = marsh yellowcress			
6/7	PRPW = prostrate pigweed			
6/7	RRPW = redroot pigweed			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Harvested all carrots in 5 ft. of each bed.

Preemergence Weed Control in Carrot – Muck Farm

Dept. of Horticulture, MSU
Trial ID: WC107-05-03 Study Director: Michael Particka
Location: Muck Farm B 17 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT	LACG	COLQ	COPU	LATH	MAYC	PRPW
	Rating Date						6/7/05	6/7/05	6/7/05	6/7/05	6/7/05	6/7/05	6/7/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit												
1	linuron	50	DF	0.5	lb ai/a	PRE	1.0	10.0	9.7	8.7	8.7	4.3	7.7
2	linuron	50	DF	1	lb ai/a	PRE	1.3	10.0	10.0	9.0	9.0	6.0	9.3
3	linuron	50	DF	0.5	lb ai/a	PRE	1.3	9.7	10.0	9.3	8.7	4.3	10.0
	metribuzin	75	DF	0.25	lb ai/a	PRE							
4	linuron	50	DF	0.5	lb ai/a	PRE	1.7	10.0	10.0	9.7	9.0	2.7	9.7
	prometryn	4	L	0.5	lb ai/a	PRE							
5	prometryn	4	L	1	lb ai/a	PRE	1.0	9.7	9.7	9.3	9.0	3.0	9.3
6	linuron	50	DF	0.5	lb ai/a	PRE	1.7	10.0	10.0	10.0	9.0	5.3	10.0
	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE							
7	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	1.3	10.0	9.0	9.0	8.3	2.0	10.0
8	linuron	50	DF	0.5	lb ai/a	PRE	1.0	10.0	9.7	9.7	9.0	1.7	9.0
	flumioxazin	51	WDG	0.032	lb ai/a	PRE							
9	flumioxazin	51	WDG	0.064	lb ai/a	PRE	1.3	10.0	8.0	8.0	9.0	1.0	9.0
10	clomazone	3	ME	1	lb ai/a	PRE	1.0	10.0	7.0	9.7	10.0	1.7	6.3
11	flufenacet	60	DF	0.6	lb ai/a	PRE	1.0	10.0	8.3	9.3	8.3	1.3	9.7
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	10.0	10.0	9.7	2.0	10.0
13	AXIOM	68	DF	1	lb ai/a	PRE	1.3	10.0	10.0	10.0	9.3	6.7	10.0
14	ethofumesate	4	SC	2	lb ai/a	PRE	1.0	10.0	6.3	9.7	9.3	1.0	7.7
15	untreated					PRE	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	LSD (P=.05)						0.67	0.34	2.57	0.93	0.99	2.69	2.19
	Standard Deviation						0.40	0.20	1.53	0.55	0.59	1.61	1.31
	CV						33.53	2.17	17.89	6.29	6.98	54.87	15.26

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW	CARROT	CARROT
	Rating Date						6/7/05	6/20/05	8/22/05
	Rating Data Type						RATING	RATING	YIELD
	Rating Unit								KG/5FT
1	linuron	50	DF	0.5	lb ai/a	PRE	7.7	1.0	15.03
2	linuron	50	DF	1	lb ai/a	PRE	9.0	1.0	15.62
3	linuron	50	DF	0.5	lb ai/a	PRE	9.7	1.3	15.91
	metribuzin	75	DF	0.25	lb ai/a	PRE			
4	linuron	50	DF	0.5	lb ai/a	PRE	9.0	2.0	15.44
	prometryn	4	L	0.5	lb ai/a	PRE			
5	prometryn	4	L	1	lb ai/a	PRE	9.7	1.7	15.99
6	linuron	50	DF	0.5	lb ai/a	PRE	10.0	1.3	15.45
	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE			
7	s-metolachlor	7.62	EC	1.9	lb ai/a	PRE	9.7	2.0	15.24
8	linuron	50	DF	0.5	lb ai/a	PRE	8.3	1.3	15.91
	flumioxazin	51	WDG	0.032	lb ai/a	PRE			
9	flumioxazin	51	WDG	0.064	lb ai/a	PRE	8.3	1.3	16.82
10	clomazone	3	ME	1	lb ai/a	PRE	4.3	1.7	15.65
11	flufenacet	60	DF	0.6	lb ai/a	PRE	9.0	1.7	17.14
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	9.7	1.3	15.52
13	AXIOM	68	DF	1	lb ai/a	PRE	10.0	2.0	15.85
14	ethofumesate	4	SC	2	lb ai/a	PRE	9.3	1.3	16.71
15	untreated					PRE	1.0	1.7	15.13
	LSD (P=.05)						1.70	1.10	2.323
	Standard Deviation						1.02	0.66	1.389
	CV						12.25	43.48	8.78

Postemergence Weed Control in Carrot – Muck Farm

Project Code: WC 107-05-04 **Location: Muck Farm B17**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Carrot **Variety: Sugarsnax 54**
Planting Method: Seeded **Planting Date: 5/9/05**
Spacing: 0.5 IN **Row Spacing: 16 IN, 3 rows /plot**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.5 ft wide x 16.67 ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 7.0**
Sand: 6% **Silt: 13%** **Clay: 2%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6/10/05	2:00 pm	80/72	°F	Moist	5 SW	50	10% Cloudy	N
PO2	7/6/05	1130 am	65/71	°F	Damp	3 NW	75	85% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	Carrot			
	LACG = large crabgrass			
	YENS = yellow nutsedge			
	COLQ = common lambsquarters			
	LATH = ladysthumb			
	MAYC = marsh yellowcress			
	RRPW = redroot pigweed			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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 – Muck Farm

Dept. of Horticulture, MSU

Trial ID: WC 107-05-04 Study Director: Michael Particka
Location: Muck Farm Block B17 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CARROT 6/20/05 RATING	LACG 6/20/05 RATING	YENS 6/20/05 RATING	COLQ 6/20/05 RATING	LATH 6/20/05 RATING	MAYC 6/20/05 RATING
1	linuron	50	DF	0.25	lb ai/a	PO1,2	1.0	10.0	7.3	10.0	10.0	8.3
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	linuron	50	DF	0.5	lb ai/a	PO1,2	1.3	10.0	9.3	10.0	9.7	8.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.3	10.0	6.7	7.7	8.0	4.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.0	10.0	4.7	8.7	8.3	3.3
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	1.3	10.0	4.7	6.7	6.7	3.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
6	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	3.3	5.0	6.0	5.0	9.7	3.3
7	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	4.0	10.0	7.0	9.7	9.7	5.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
8	metribuzin	75	DF	0.25	lb ai/a	PO1,2	1.3	7.7	8.7	10.0	10.0	9.0
9	metribuzin	75	DF	0.5	lb ai/a	PO1,2	2.3	10.0	10.0	10.0	10.0	10.0
10	prometryn	4	L	1	lb ai/a	PO1,2	2.3	10.0	8.7	10.0	10.0	7.7
11	untreated					PO1,2	1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.89	2.39	1.99	1.80	0.94	1.58
Standard Deviation							0.53	1.41	1.17	1.05	0.55	0.93
CV							28.41	16.51	17.4	13.08	6.51	16.14

Postemergence Weed Control in Carrot – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 6/20/05 RATING	CARROT 7/11/05 RATING	YENS 7/11/05 RATING	COLQ 7/11/05 RATING	LATH 7/11/05 RATING	MAYC 7/11/05 RATING
1	linuron	50	DF	0.25	lb ai/a	PO1,2	8.7	1.0	6.7	10.0	9.3	8.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	linuron	50	DF	0.5	lb ai/a	PO1,2	10.0	1.0	9.3	10.0	9.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	7.0	3.0	3.3	8.3	5.7	3.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	8.0	3.0	2.3	7.7	6.7	2.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	7.3	2.3	1.3	4.3	5.3	2.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
6	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	10.0	2.0	2.7	5.3	7.3	4.0
7	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	10.0	3.3	3.0	10.0	8.0	6.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
8	metribuzin	75	DF	0.25	lb ai/a	PO1,2	10.0	2.0	8.7	10.0	9.0	9.0
9	metribuzin	75	DF	0.5	lb ai/a	PO1,2	10.0	3.0	10.0	10.0	10.0	10.0
10	prometryn	4	L	1	lb ai/a	PO1,2	10.0	2.0	7.0	10.0	9.7	9.3
11	untreated					PO1,2	1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.40	0.43	2.25	1.94	1.96	2.38
Standard Deviation							0.82	0.25	1.32	1.14	1.15	1.40
CV							9.83	11.72	26.22	14.49	15.48	22.92

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 7/11/05 RATING	CARROT 7/29/05 RATING	YENS 7/29/05 RATING	LATH 7/29/05 RATING	CARROT 8/22/05 YIELD KG/5 FT
1	linuron	50	DF	0.25	lb ai/a	PO1,2	8.7	1.0	9.0	9.0	15.74
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
	NIS		L	0.5	% v/v	PO1,2					
2	linuron	50	DF	0.5	lb ai/a	PO1,2	9.7	1.0	10.0	10.0	16.34
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
	NIS		L	0.5	% v/v	PO1,2					
3	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	4.3	1.3	3.7	4.7	8.54
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
	NIS		L	0.5	% v/v	PO1,2					
4	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	5.3	1.0	1.7	4.7	8.82
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	4.0	1.7	3.0	3.3	8.34
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
6	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	7.0	1.3	2.7	4.7	6.33
7	flumioxazin	51	WDG	0.064	lb ai/a	PO1,2	8.7	1.7	2.0	6.3	8.56
	clethodim	2	EC	0.125	lb ai/a	PO1,2					
8	metribuzin	75	DF	0.25	lb ai/a	PO1,2	10.0	1.0	9.7	10.0	14.67
9	metribuzin	75	DF	0.5	lb ai/a	PO1,2	10.0	1.3	10.0	10.0	12.50
10	prometryn	4	L	1	lb ai/a	PO1,2	9.7	1.3	8.7	9.3	11.98
11	untreated					PO1,2	1.0	1.7	3.0	6.0	10.06
LSD (P=.05)							1.86	0.85	2.31	3.72	3.002
Standard Deviation							1.09	0.50	1.36	2.18	1.763
CV							15.3	38.26	23.54	30.78	15.91

Weed Control in Celery – Muck Farm

Project Code: WC 113-05-01 **Location: Muck Farm B16**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Celery **Variety: Duchess**
Planting Method: Transplant **Planting Date: 5/25/05**
Spacing: 6 IN **Row Spacing: 36 IN, 2 rows/plot**
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: 6% **Silt: 14%** **Clay: 2%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	5/26/05	9:00 am	66/54	°F	Dry	4 SW	57	10% Cloudy	N
PO1	6/30/05	2:00 pm	75/73	°F	Dry	8 S	83	100% Cloudy	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
5/26	Celery	2-3 in		
6/30	Celery	7-12 in		
6/30	COPU = common purslane	6 in		moderate
6/30	RRPW = redroot pigweed	4-8 in		few
	LACG = large crabgrass			
	YENS = yellow nutsedge			
	LATH = ladysthumb			
	MAYC = marsh yellowcress			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Harvested 10 plants from each of 2 rows; 20 total plants

Weed Control in Celery – Muck Farm

Dept. of Horticulture, MSU

Trial ID: WC 113-05-01 Study Director: Michael Particka
Location: Muck Farm B 16 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CELERY 7/11/05 RATING	LACG 7/11/05 RATING	YENS 7/11/05 RATING	COPU 7/11/05 RATING	LATH 7/11/05 RATING	MAYC 7/11/05 RATING
1	prometryn	4	L	1	lb ai/a	POT	1.7	8.3	5.3	10.0	8.7	8.7
	prometryn	4	L	1	lb ai/a	PO1						
2	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.3	8.3	9.7	9.3	8.0	9.0
	prometryn	4	L	1	lb ai/a	PO1						
3	dimethenamid-p	6	EC	0.98	lb ai/a	POT	2.7	10.0	9.3	10.0	9.7	9.3
	prometryn	4	L	1	lb ai/a	PO1						
4	linuron	50	DF	1	lb ai/a	POT	1.3	8.3	9.0	10.0	8.7	9.3
	linuron	50	DF	1	lb ai/a	PO1						
5	sulfentrazone	4	F	0.14	lb ai/a	POT	1.7	6.0	8.7	9.0	8.3	8.0
	prometryn	4	L	1	lb ai/a	PO1						
6	prometryn	4	L	1	lb ai/a	POT	1.7	5.3	6.3	5.0	7.7	4.7
	flumioxazin	51	WDG	0.064	lb ai/a	PO1						
7	flumioxazin	51	WDG	0.064	lb ai/a	POT	1.3	9.7	4.0	9.3	9.0	7.0
	prometryn	4	L	1	lb ai/a	PO1						
8	s-metolachlor	7.62	EC	3.8	lb ai/a	POT	1.3	10.0	9.7	10.0	9.7	8.7
	prometryn	4	L	1	lb ai/a	PO1						
9	KIH-485	60	WG	0.112	lb ai/a	POT	1.7	9.3	5.7	9.0	7.7	8.0
	prometryn	4	L	1	lb ai/a	PO1						
10	flucarbazone	70	WDG	0.026	lb ai/a	POT	6.3	5.3	4.3	8.0	9.0	6.0
	prometryn	4	L	1	lb ai/a	PO1						
11	pendimethalin	3.8	CS	2	lb ai/a	POT	1.0	9.0	6.0	9.0	9.0	7.3
	prometryn	4	L	1	lb ai/a	PO1						
12	prometryn	4	L	1	lb ai/a	POT	1.7	10.0	9.3	10.0	9.0	10.0
	linuron	50	DF	1	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	prometryn	4	L	1	lb ai/a	POT	1.7	3.3	3.7	5.7	9.0	3.7
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1						
14	prometryn	4	L	1	lb ai/a	POT	3.0	4.0	4.3	9.3	8.7	5.0
	oxyfluorfen	2	L	0.063	lb ai/a	PO1						
15	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.07	3.26	4.01	1.82	2.35	3.66
Standard Deviation							0.64	1.95	2.40	1.09	1.40	2.19
CV							32.66	27.07	37.37	13.07	17.12	31.06

Weed Control in Celery – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 7/11/05 RATING	CELERY 7/26/05 RATING	LACG 7/26/05 RATING	COPU 7/26/05 RATING	LATH 7/26/05 RATING	MAYC 7/26/05 RATING
1	prometryn	4	L	1	lb ai/a	POT	7.0	1.3	8.3	9.3	8.7	8.3
	prometryn	4	L	1	lb ai/a	PO1						
2	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	7.7	1.3	10.0	9.7	8.7	8.7
	prometryn	4	L	1	lb ai/a	PO1						
3	dimethenamid-p	6	EC	0.98	lb ai/a	POT	10.0	2.0	10.0	9.7	9.0	8.0
	prometryn	4	L	1	lb ai/a	PO1						
4	linuron	50	DF	1	lb ai/a	POT	7.7	2.0	7.7	9.7	8.3	10.0
	linuron	50	DF	1	lb ai/a	PO1						
5	sulfentrazone	4	F	0.14	lb ai/a	POT	9.0	2.7	7.7	9.3	8.7	8.0
	prometryn	4	L	1	lb ai/a	PO1						
6	prometryn	4	L	1	lb ai/a	POT	9.0	2.0	8.0	5.7	8.0	7.3
	flumioxazin	51	WDG	0.064	lb ai/a	PO1						
7	flumioxazin	51	WDG	0.064	lb ai/a	POT	10.0	2.3	9.3	9.3	9.7	8.3
	prometryn	4	L	1	lb ai/a	PO1						
8	s-metolachlor	7.62	EC	3.8	lb ai/a	POT	10.0	2.0	10.0	10.0	9.7	7.3
	prometryn	4	L	1	lb ai/a	PO1						
9	KIH-485	60	WG	0.112	lb ai/a	POT	10.0	2.3	10.0	10.0	10.0	8.3
	prometryn	4	L	1	lb ai/a	PO1						
10	flucarbazone	70	WDG	0.026	lb ai/a	POT	7.7	6.3	8.7	8.0	9.7	8.3
	prometryn	4	L	1	lb ai/a	PO1						
11	pendimethalin	3.8	CS	2	lb ai/a	POT	7.7	1.7	9.0	9.7	8.3	8.3
	prometryn	4	L	1	lb ai/a	PO1						
12	prometryn	4	L	1	lb ai/a	POT	9.7	2.3	10.0	9.3	9.7	9.3
	linuron	50	DF	1	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
13	prometryn	4	L	1	lb ai/a	POT	3.7	2.0	9.7	7.7	8.7	7.7
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1						
14	prometryn	4	L	1	lb ai/a	POT	7.7	3.0	8.0	7.0	10.0	8.0
	oxyfluorfen	2	L	0.063	lb ai/a	PO1						
15	untreated						1.0	2.3	10.0	8.3	9.7	8.7
LSD (P=.05)							1.87	1.06	2.03	1.46	2.01	1.85
Standard Deviation							1.12	0.63	1.21	0.87	1.20	1.10
CV							14.26	26.55	13.36	9.89	13.2	13.28

Weed Control in Celery – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 7/26/05 RATING	CELERY 8/18/05 YIELD 20PLT KG/5 FT
	Pest Code						RRPW	CELERY
	Rating Date						7/26/05	8/18/05
	Rating Data Type						RATING	YIELD 20PLT
	Rating Unit							KG/5 FT
1	prometryn	4	L	1	lb ai/a	POT	8.7	22.34
	prometryn	4	L	1	lb ai/a	PO1		
2	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	8.7	25.68
	prometryn	4	L	1	lb ai/a	PO1		
3	dimethenamid-p	6	EC	0.98	lb ai/a	POT	10.0	22.69
	prometryn	4	L	1	lb ai/a	PO1		
4	linuron	50	DF	1	lb ai/a	POT	9.3	24.15
	linuron	50	DF	1	lb ai/a	PO1		
5	sulfentrazone	4	F	0.14	lb ai/a	POT	9.3	25.17
	prometryn	4	L	1	lb ai/a	PO1		
6	prometryn	4	L	1	lb ai/a	POT	8.0	25.43
	flumioxazin	51	WDG	0.064	lb ai/a	PO1		
7	flumioxazin	51	WDG	0.064	lb ai/a	POT	10.0	26.42
	prometryn	4	L	1	lb ai/a	PO1		
8	s-metolachlor	7.62	EC	3.8	lb ai/a	POT	10.0	23.93
	prometryn	4	L	1	lb ai/a	PO1		
9	KIH-485	60	WG	0.112	lb ai/a	POT	9.7	23.75
	prometryn	4	L	1	lb ai/a	PO1		
10	flucarbazone	70	WDG	0.026	lb ai/a	POT	8.0	14.86
	prometryn	4	L	1	lb ai/a	PO1		
11	pendimethalin	3.8	CS	2	lb ai/a	POT	8.7	26.15
	prometryn	4	L	1	lb ai/a	PO1		
12	prometryn	4	L	1	lb ai/a	POT	9.0	18.41
	linuron	50	DF	1	lb ai/a	PO1		
	clethodim	2	EC	0.125	lb ai/a	PO1		
	NIS		L	0.5	% v/v	PO1		
13	prometryn	4	L	1	lb ai/a	POT	7.7	23.69
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1		
14	prometryn	4	L	1	lb ai/a	POT	7.0	23.58
	oxyfluorfen	2	L	0.063	lb ai/a	PO1		
15	untreated						9.0	20.11
	LSD (P=.05)						1.97	4.789
	Standard Deviation						1.18	2.864
	CV						13.3	12.4

Weed Control in Celery - Hudsonville

Project Code: WC 113-05-02 **Location: Schreur Farm, Hudsonville**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Celery **Variety: Duchess**
Planting Method: Transplant **Planting Date: 5/15/05**
Spacing: 6 IN **Row Spacing: 24 IN, 2 rows/plot**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 4 ft wide x 30 ft long

Soil Type: Carlisle Muck **OM: 70%** **pH: 5.5**
Sand: 6% **Silt: 21%** **Clay: 3%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
POT	5/24/05	10:00 am	65/58	°F	Moist	2 N	54	10% Cloudy	N
PO1	7/5/05	2:30 pm	84/75	°F	Dry	2 SW	36	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
7/5	Celery	12-14 in		
7/5	COLQ = common lambsquarters			
7/5	COPU = common purslane	6-12 in		moderate
7/5	CORW = common ragweed			
7/5	HAGA = hairy galinsoga	4-10 in		many
7/5	LATH = ladysthumb	4-12 in		moderate
7/5	RRPW = redroot pigweed	4-12 in		moderate

Notes and Comments

1. Sprays applied with 2 nozzle shielded boom FF11002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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 20 plants from each row.

Weed Control in Celery - Hudsonville

Dept. of Horticulture, MSU

Trial ID: WC 113-05-02 Study Director: Michael Particka
Location: Schreur Farm Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CELERY 6/24/05 RATING	COLQ 6/24/05 RATING	COPU 6/24/05 RATING	CORW 6/24/05 RATING	LATH 6/24/05 RATING	RRPW 6/24/05 RATING
1	prometryn	4	L	1	lb ai/a	POT	1.0	8.7	8.0	10.0	9.7	7.3
	prometryn	4	L	1	lb ai/a	PO1						
2	prometryn	4	L	2	lb ai/a	POT	1.0	9.7	8.0	9.3	10.0	7.3
	linuron	50	DF	1	lb ai/a	PO1						
3	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	1.0	8.7	9.0	10.0	10.0	8.3
	prometryn	4	L	1	lb ai/a	PO1						
4	dimethenamid-p	6	EC	0.98	lb ai/a	POT	1.3	9.7	9.0	9.7	8.7	8.3
	prometryn	4	L	1	lb ai/a	PO1						
5	prometryn	4	L	1	lb ai/a	POT	1.0	9.3	7.3	10.0	9.7	6.0
	flumioxazin	51	WDG	0.064	lb ai/a	PO1						
6	prometryn	4	L	1	lb ai/a	POT	1.0	9.7	7.7	10.0	9.0	6.3
	sulfentrazone	4	F	0.1	lb ai/a	PO1						
7	prometryn	4	L	1	lb ai/a	POT	1.0	9.0	7.3	9.3	8.7	7.0
	penoxsulam	2	SC	0.027	lb ai/a	PO1						
8	prometryn	4	L	1	lb ai/a	POT	1.3	9.0	8.0	9.7	7.7	7.0
	oxyfluorfen	4	F	0.063	lb ai/a	PO1						
9	prometryn	4	L	1	lb ai/a	POT	1.0	9.3	7.0	10.0	8.0	7.0
	flucarbazone	70	WDG	0.026	lb ai/a	PO1						
10	KIH-485	60	WG	0.112	lb ai/a	POT	1.0	10.0	8.3	10.0	7.7	6.7
	prometryn	4	L	1	lb ai/a	PO1						
11	untreated						1.0	4.0	3.3	4.0	3.7	2.7
LSD (P=.05)							0.43	2.89	2.41	2.73	2.70	2.65
Standard Deviation							0.25	1.69	1.42	1.60	1.58	1.56
CV							23.78	19.21	18.76	17.26	18.81	23.14

Weed Control in Celery - Hudsonville

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CELERY 7/14/05 RATING	COPU 7/14/05 RATING	HAGA 7/14/05 RATING	LATH 7/14/05 RATING	RRPW 7/14/05 RATING
1	prometryn	4	L	1	lb ai/a	POT	1.7	7.7	9.7	9.0	10.0
	prometryn	4	L	1	lb ai/a	PO1					
2	prometryn	4	L	2	lb ai/a	POT	1.3	8.0	10.0	9.0	9.3
	linuron	50	DF	1	lb ai/a	PO1					
3	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	2.0	8.0	8.7	9.3	10.0
	prometryn	4	L	1	lb ai/a	PO1					
4	dimethenamid-p	6	EC	0.98	lb ai/a	POT	2.0	7.7	10.0	7.0	10.0
	prometryn	4	L	1	lb ai/a	PO1					
5	prometryn	4	L	1	lb ai/a	POT	1.7	5.0	6.0	9.3	10.0
	flumioxazin	51	WDG	0.064	lb ai/a	PO1					
6	prometryn	4	L	1	lb ai/a	POT	3.0	4.0	3.7	9.3	10.0
	sulfentrazone	4	F	0.1	lb ai/a	PO1					
7	prometryn	4	L	1	lb ai/a	POT	8.0	1.7	7.3	7.0	10.0
	penoxsulam	2	SC	0.027	lb ai/a	PO1					
8	prometryn	4	L	1	lb ai/a	POT	3.0	6.7	4.7	5.0	9.3
	oxyfluorfen	4	F	0.063	lb ai/a	PO1					
9	prometryn	4	L	1	lb ai/a	POT	4.3	5.0	6.7	5.7	9.7
	flucarbazone	70	WDG	0.026	lb ai/a	PO1					
10	KIH-485	60	WG	0.112	lb ai/a	POT	2.0	6.3	5.3	9.0	8.0
	prometryn	4	L	1	lb ai/a	PO1					
11	untreated						1.0	5.3	4.0	8.3	8.0
LSD (P=.05)							0.97	3.41	5.88	3.22	1.90
Standard Deviation							0.57	2.00	3.45	1.89	1.11
CV							20.88	33.66	49.96	23.64	11.75

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CELERY 8/3/05 YIELD 40PLT KG/10FT
1	prometryn	4	L	1	lb ai/a	POT	43.34
	prometryn	4	L	1	lb ai/a	PO1	
2	prometryn	4	L	2	lb ai/a	POT	44.37
	linuron	50	DF	1	lb ai/a	PO1	
3	s-metolachlor	7.62	EC	1.9	lb ai/a	POT	50.62
	prometryn	4	L	1	lb ai/a	PO1	
4	dimethenamid-p	6	EC	0.98	lb ai/a	POT	44.39
	prometryn	4	L	1	lb ai/a	PO1	
5	prometryn	4	L	1	lb ai/a	POT	46.14
	flumioxazin	51	WDG	0.064	lb ai/a	PO1	
6	prometryn	4	L	1	lb ai/a	POT	42.59
	sulfentrazone	4	F	0.1	lb ai/a	PO1	
7	prometryn	4	L	1	lb ai/a	POT	0.00
	penoxsulam	2	SC	0.027	lb ai/a	PO1	
8	prometryn	4	L	1	lb ai/a	POT	45.67
	oxyfluorfen	4	F	0.063	lb ai/a	PO1	
9	prometryn	4	L	1	lb ai/a	POT	0.00
	flucarbazone	70	WDG	0.026	lb ai/a	PO1	
10	KIH-485	60	WG	0.112	lb ai/a	POT	49.02
	prometryn	4	L	1	lb ai/a	PO1	
11	untreated						47.93
LSD (P=.05)							7.490
Standard Deviation							4.398
CV							11.68

Weed Control in Collard, Kale, Kohlrabi, Mustard, & Turnip Greens - HTRC

Project Code: WC 114-05-01 **Location: HTRC Block 139**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5/18/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 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
PPI	5/18/05	11:00 am	62/54	°F	Dry	9 SE	40	85% Cloudy	N
PRE	5/19/05	9:00 am	56/55	°F	Damp	3 S	60	100% Cloudy	Y
PO1	6/20/05	9:30 am	70/62	°F	Dry	2 W	66	Clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/20	collard	3-5 in	4-5 leaf	
6/20	kale	4-5 in	6-7 leaf	
6/20	kohlrabi	4-6 in	5-6 leaf	
6/20	mustard	6-8 in	4-5 leaf	
6/20	turnip	8-10 in	8 leaf	

BYGR = barnyardgrass
COLQ = common lambsquarters
CORW = common ragweed
RRPW = redroot pigweed
GRFT = green foxtail

Notes and Comments

1. Sprays applied with 5-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Planted 1 row of Collard, Kale, Kohlrabi, Mustard, and Turnip Greens per plot.
4. Crops and varieties: Collard - Vates, Kale - Blue Scotch, Kohlrabi - White Vienna, Mustard - Southern Curled, and Turnip Greens - Purple Top White Globe.

Weed Control in Collard, Kale, Kohlrabi, Mustard, & Turnip Greens - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 114-05-01 Study Director: Michael Particka
Location: HTRC Block 139 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COLLARD	KALE	KOHLRABI	MUSTARD	TURNIP GREENS	BYGR
	Pest Code											
	Description											
	Rating Date						6/15/05	6/15/05	6/15/05	6/15/05	6/15/05	6/15/05
	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	HANDWEEDED CHK						1.0	1.0	1.0	1.0	1.0	1.0
3	flufenacet	4	SC	0.6	lb ai/a	PRE	2.3	2.7	2.0	4.3	6.3	10.0
4	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.0	1.3	1.0	2.7	1.3	9.7
5	flucarbazone	70	WDG	0.026	lb ai/a	PRE	8.7	9.0	9.0	10.0	9.7	9.3
6	KIH 485	60	WG	0.089	lb ai/a	PRE	4.7	6.7	4.0	6.3	6.0	10.0
7	ethofumesate	4	SC	1.0	lb ai/a	PRE	1.3	1.3	1.3	2.3	1.0	9.3
8	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	1.7	2.7	1.3	3.7	2.0	10.0
9	pendimethalin	3.8	CS	1	lb ai/a	PRE	2.0	3.3	3.0	4.3	3.7	10.0
10	sulfentrazone	4	F	0.094	lb ai/a	PRE	1.7	3.7	3.3	4.3	7.3	10.0
11	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	9.7
12	oxyfluorfen	4	SC	0.25	lb ai/a	PRE	1.3	2.3	1.3	6.7	5.0	10.0
13	penoxsulam	2	SC	0.022	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	10.0
14	trifluralin	4	EC	1	lb ai/a	PPI	1.0	3.0	1.0	1.7	1.3	10.0
15	ethalfluralin	3	EC	1.13	lb ai/a	PRE	1.0	1.0	1.0	1.0	1.0	7.0
16	clomazone	3	ME	0.25	lb ai/a	PRE	1.0	2.3	1.3	2.3	2.0	9.7
17	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.0	3.0	1.0	3.3	2.3	10.0
18	s-metolachlor	7.62	EC	0.95	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
19	flucarbazone	70	WDG	0.026	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	NIS		L	0.25	% v/v	PO1						
20	KIH 485	60	WG	0.089	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
21	ethofumesate	4	SC	1.0	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
22	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
23	oxyfluorfen	4	SC	0.25	lb ai/a	PO1	1.0	1.0	1.0	1.3	1.0	1.0
24	penoxsulam	2	SC	0.022	lb ai/a	PO1	1.0	1.0	1.0	1.0	1.0	1.0
	MSO		L	1.0	% v/v	PO1						
	LSD (P=.05)						1.24	1.02	1.06	1.45	1.31	1.88
	Standard Deviation						0.75	0.62	0.64	0.88	0.80	1.14
	CV						31.27	20.83	25.83	25.66	24.47	17.78

Weed Control in Collard, Kale, Kohlrabi, Mustard, & Turnip Greens - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COLQ	CORW	RRPW	COLLARD	KALE	KOHLRABI
Pest Code							COLQ	CORW	RRPW	COLLARD	KALE	KOHLRABI
Description												
Rating Date							6/15/05	6/15/05	6/15/05	6/27/05	6/27/05	6/27/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	untreated						1.0	1.0	1.0	1.0	1.7	1.7
2	HANDWEEDED CHK						1.0	1.0	1.0	1.7	1.0	1.0
3	flufenacet	4	SC	0.6	lb ai/a	PRE	9.0	9.7	9.7	1.3	4.0	3.0
4	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	7.7	7.7	10.0	1.0	1.0	1.0
5	flucarbazone	70	WDG	0.026	lb ai/a	PRE	8.7	10.0	10.0	8.7	9.0	9.3
6	KIH 485	60	WG	0.089	lb ai/a	PRE	9.7	10.0	10.0	3.7	5.7	2.3
7	ethofumesate	4	SC	1.0	lb ai/a	PRE	8.7	9.0	9.3	1.0	1.3	1.3
8	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	10.0	10.0	1.7	2.7	1.7
9	pendimethalin	3.8	CS	1	lb ai/a	PRE	10.0	7.0	9.7	2.3	2.0	2.3
10	sulfentrazone	4	F	0.094	lb ai/a	PRE	10.0	10.0	10.0	1.7	2.3	2.0
11	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	8.7	10.0	10.0	10.0	10.0	10.0
12	oxyfluorfen	4	SC	0.25	lb ai/a	PRE	10.0	10.0	10.0	1.0	2.0	1.3
13	penoxsulam	2	SC	0.022	lb ai/a	PRE	10.0	10.0	10.0	10.0	10.0	9.7
14	trifluralin	4	EC	1	lb ai/a	PPI	8.7	9.3	10.0	1.3	2.0	1.0
15	ethalfluralin	3	EC	1.13	lb ai/a	PRE	6.0	7.0	6.3	1.0	1.0	1.0
16	clomazone	3	ME	0.25	lb ai/a	PRE	9.7	10.0	9.7	2.0	2.7	2.7
17	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	10.0	10.0	2.0	2.3	2.3
18	s-metolachlor	7.62	EC	0.95	lb ai/a	PO1	1.0	1.0	1.0	1.3	1.7	1.3
19	flucarbazone	70	WDG	0.026	lb ai/a	PO1	1.0	1.0	1.0	8.3	8.7	8.3
	NIS		L	0.25	% v/v	PO1						
20	KIH 485	60	WG	0.089	lb ai/a	PO1	1.0	1.0	1.0	1.3	2.3	2.0
21	ethofumesate	4	SC	1.0	lb ai/a	PO1	1.0	1.0	1.0	4.0	4.3	2.7
22	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	1.0	1.0	1.0	5.7	6.3	4.7
23	oxyfluorfen	4	SC	0.25	lb ai/a	PO1	1.0	1.0	1.0	5.0	4.3	4.0
24	penoxsulam	2	SC	0.022	lb ai/a	PO1	1.0	1.0	1.0	8.7	8.7	8.7
	MSO		L	1.0	% v/v	PO1						
LSD (P=.05)							1.78	2.93	1.67	1.44	1.77	1.48
Standard Deviation							1.08	1.77	1.01	0.87	1.07	0.90
CV							17.79	28.63	15.84	24.43	26.58	25.27

Weed Control in Collard, Kale, Kohlrabi, Mustard, & Turnip Greens - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	MUSTARD	TURNIP GREENS	GRFT	COLQ	RRPW	MUSTARD
Pest Code												
Description												
Rating Date							6/27/05	6/27/05	6/27/05	6/27/05	6/27/05	6/30/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	YIELD
Rating Unit												KG/PLOT
1	untreated						1.0	1.0	1.0	1.0	1.0	4.06
2	HANDWEEDED CHK						1.0	1.0	1.0	1.0	1.0	5.33
3	flufenacet	4	SC	0.6	lb ai/a	PRE	3.0	2.0	10.0	7.7	8.0	2.02
4	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	1.3	1.0	10.0	7.3	9.7	5.47
5	flucarbazone	70	WDG	0.026	lb ai/a	PRE	9.7	9.3	3.7	5.7	9.3	0.00
6	KIH 485	60	WG	0.089	lb ai/a	PRE	3.3	2.7	9.3	7.7	10.0	1.45
7	ethofumesate	4	SC	1.0	lb ai/a	PRE	1.0	1.0	3.7	4.3	8.0	5.01
8	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	3.7	1.0	10.0	9.0	10.0	2.07
9	pendimethalin	3.8	CS	1	lb ai/a	PRE	2.0	2.0	9.0	10.0	8.7	3.26
10	sulfentrazone	4	F	0.094	lb ai/a	PRE	1.3	4.0	6.7	10.0	9.7	4.85
11	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	10.0	10.0	5.7	7.0	10.0	1.81
12	oxyfluorfen	4	SC	0.25	lb ai/a	PRE	3.3	2.3	7.0	9.0	9.3	1.94
13	penoxsulam	2	SC	0.022	lb ai/a	PRE	10.0	10.0	9.3	10.0	10.0	0.01
14	trifluralin	4	EC	1	lb ai/a	PPI	1.3	1.0	9.7	7.0	8.7	5.53
15	ethalfluralin	3	EC	1.13	lb ai/a	PRE	1.0	1.0	10.0	8.7	8.3	6.61
16	clomazone	3	ME	0.25	lb ai/a	PRE	1.0	1.7	10.0	9.7	8.7	7.48
17	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.3	1.7	9.7	9.7	9.3	5.33
18	s-metolachlor	7.62	EC	0.95	lb ai/a	PO1	1.3	1.3	3.3	4.7	7.0	6.31
19	flucarbazone	70	WDG	0.026	lb ai/a	PO1	8.7	8.3	9.7	2.3	7.7	1.83
	NIS		L	0.25	% v/v	PO1						
20	KIH 485	60	WG	0.089	lb ai/a	PO1	4.0	4.3	3.7	3.3	4.3	5.67
21	ethofumesate	4	SC	1.0	lb ai/a	PO1	4.3	4.7	1.7	5.0	5.3	5.14
22	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	6.7	5.7	2.0	2.3	2.7	2.66
23	oxyfluorfen	4	SC	0.25	lb ai/a	PO1	6.3	6.3	6.0	4.3	7.7	5.23
24	penoxsulam	2	SC	0.022	lb ai/a	PO1	9.0	8.7	9.7	4.7	7.7	1.42
	MSO		L	1.0	% v/v	PO1						
LSD (P=.05)							1.05	1.66	3.18	2.29	2.37	2.337
Standard Deviation							0.63	1.01	1.93	1.39	1.44	1.416
CV							15.9	26.3	28.59	21.99	18.94	37.57

Weed Control in Collard, Kale, Kohlrabi, Mustard, & Turnip Greens - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	TURNIP GREENS 6/30/05 YIELD KG/PLOT	KALE 7/12/05 YIELD KG/PLOT	COLLARD 7/12/05 YIELD KG/PLOT	KOHLRABI 7/26/05 YIELD BULB/PLT	KOHLRABI 7/26/05 YIELD KG/PLOT
1	untreated						9.50	1.00	1.59	17.7	1.48
2	HANDWEEDED CHK						8.23	1.04	1.26	41.7	6.69
3	flufenacet	4	SC	0.6	lb ai/a	PRE	2.59	1.77	2.08	26.0	5.60
4	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	9.21	3.31	5.04	56.0	12.79
5	flucarbazone	70	WDG	0.026	lb ai/a	PRE	0.27	0.02	0.22	1.7	0.14
6	KIH 485	60	WG	0.089	lb ai/a	PRE	3.08	0.52	1.79	24.3	7.09
7	ethofumesate	4	SC	1.0	lb ai/a	PRE	10.85	2.26	2.65	27.0	4.79
8	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	9.23	2.84	3.85	39.3	12.30
9	pendimethalin	3.8	CS	1	lb ai/a	PRE	5.35	2.01	2.92	18.0	5.37
10	sulfentrazone	4	F	0.094	lb ai/a	PRE	2.22	1.77	4.46	31.3	11.59
11	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	0.00	0.00	0.01	0.0	0.00
12	oxyfluorfen	4	SC	0.25	lb ai/a	PRE	4.52	3.51	7.03	42.3	16.95
13	penoxsulam	2	SC	0.022	lb ai/a	PRE	0.01	0.00	0.03	1.7	0.20
14	trifluralin	4	EC	1	lb ai/a	PPI	9.81	2.28	4.28	48.3	11.90
15	ethalfluralin	3	EC	1.13	lb ai/a	PRE	9.58	2.72	4.87	42.3	9.43
16	clomazone	3	ME	0.25	lb ai/a	PRE	10.65	3.27	5.37	65.0	18.07
17	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	7.78	2.64	4.71	61.0	17.10
18	s-metolachlor	7.62	EC	0.95	lb ai/a	PO1	10.80	3.68	4.16	50.7	10.53
19	flucarbazone	70	WDG	0.026	lb ai/a	PO1	4.85	0.00	0.19	0.0	0.00
	NIS		L	0.25	% v/v	PO1					
20	KIH 485	60	WG	0.089	lb ai/a	PO1	9.46	2.67	2.51	47.7	7.55
21	ethofumesate	4	SC	1.0	lb ai/a	PO1	9.05	2.59	3.58	46.0	6.97
22	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	7.08	0.87	1.52	20.0	2.05
23	oxyfluorfen	4	SC	0.25	lb ai/a	PO1	7.90	2.81	3.51	46.3	9.92
24	penoxsulam	2	SC	0.022	lb ai/a	PO1	2.52	0.00	0.00	0.0	0.00
	MSO		L	1.0	% v/v	PO1					
LSD (P=.05)							3.607	1.300	2.126	26.64	7.005
Standard Deviation							2.186	0.788	1.288	16.15	4.245
CV							33.94	43.39	45.71	51.37	57.07

Weed Control in Sweet Corn - HTRC

Project Code: WC 106-05-01 **Location: HTRC Block 56**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Sweet Corn **Variety: BSS 0977 & GSS 0966**
Planting Method: Seeded **Planting Date: 5/25/05**
Spacing: 3 IN **Row Spacing: 28 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Capac Loam **OM: 2.0%** **pH: 6.7**
Sand: 49% **Silt: 30%** **Clay: 20%** **CEC: 10.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5/26/05	12:15 pm	77/58	°F	Dry	7 SW	37	10% Cloudy	N
PO1	6/17/05	9:30 am	66/60	°F	Damp	6 NW	60	30% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/17	BSS 0977	8 in	4-5 leaf	
6/17	GSS 0966	8 in	4-5 leaf	
6/17	YENS = yellow nutsedge	1-4 in		few
6/17	COLQ = common lambsquarters	1-4 in		few
6/17	RRPW = redroot pigweed	1-4 in		few
	BYGR = barnyardgrass			
	GRFT = green foxtail			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Planted one row of each variety per plot.
4. Spray PO1 when sweet corn is 5-8 inches tall.

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 106-05-01 Study Director: Michael Particka
Location: HTRC Block 56 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	BSS 0977 6/16/05 RATING	GSS 0966 6/16/05 RATING	BYGR 6/16/05 RATING	YENS 6/16/05 RATING	COLQ 6/16/05 RATING
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	1.3	1.0	9.7	9.7	9.0
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.3	1.3	10.0	9.0	8.3
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	1.0	1.0	10.0	8.3	7.7
4	flufenacet	60	DF	0.5	lb ai/a	PRE	1.3	1.3	10.0	9.0	9.0
5	AXIOM	68	DF	0.5	lb ai/a	PRE	1.0	1.0	10.0	8.3	9.7
6	mesotrione	4	SC	0.188	lb ai/a	PRE	1.0	1.0	10.0	9.7	10.0
7	atrazine	4	L	1	lb ai/a	PRE	1.0	1.0	10.0	6.3	10.0
8	LUMAX	3.948	EC	2.46	lb ai/a	PRE	1.0	1.0	10.0	9.7	9.0
9	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	10.0	10.0
	atrazine	4	L	0.5	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PRE					
10	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	8.7	8.3
	foramsulfuron	35	WDG	0.033	lb ai/a	PO1					
11	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	9.3	8.7
	fluroxypyr	1.5	L	0.125	lb ai/a	PO1					
12	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.3	1.0	10.0	8.7	8.3
	clopyralid	3	EC	0.125	lb ai/a	PO1					
13	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.7	1.3	10.0	9.7	8.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
14	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	8.7	9.0
	atrazine	4	L	0.5	lb ai/a	PO1					
15	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.3	1.0	10.0	9.7	8.7
	carfentrazone	1.9	EW	0.008	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
16	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	9.7	8.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
17	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	9.7	8.3
	rimsulfuron	25	DF	0.016	lb ai/a	PO1					
18	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.0	1.0	10.0	8.7	8.0
	DISTINCT	76.4	WDG	0.095	lb ai/a	PO1					
19	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	1.3	1.0	10.0	10.0	8.3
	glufosinate	1.67	L	0.26	lb ai/a	PO1					
20	untreated						1.0	1.0	7.7	8.0	4.3
LSD (P=.05)							0.52	0.37	1.51	2.36	1.90
Standard Deviation							0.31	0.22	0.92	1.43	1.15
CV							27.66	21.3	9.29	15.86	13.43

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Pest Code							RRPW	BSS 0977	GSS 0966	GRFT	YENS
Rating Date							6/16/05	6/28/05	6/28/05	6/28/05	6/28/05
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	9.3	1.3	1.3	10.0	10.0
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.3	1.3	1.3	10.0	9.3
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	1.3	1.3	10.0	9.0
4	flufenacet	60	DF	0.5	lb ai/a	PRE	9.7	1.3	1.3	10.0	8.7
5	AXIOM	68	DF	0.5	lb ai/a	PRE	10.0	1.3	1.3	10.0	9.0
6	mesotrione	4	SC	0.188	lb ai/a	PRE	10.0	1.0	1.0	9.3	9.7
7	atrazine	4	L	1	lb ai/a	PRE	10.0	1.0	1.0	9.7	7.7
8	LUMAX	3.948	EC	2.46	lb ai/a	PRE	10.0	1.0	1.0	10.0	10.0
9	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	1.0	1.0	10.0	10.0
	atrazine	4	L	0.5	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PRE					
10	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.0	1.3	1.3	10.0	10.0
	foramsulfuron	35	WDG	0.033	lb ai/a	PO1					
11	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.3	1.7	1.3	10.0	10.0
	fluroxypyr	1.5	L	0.125	lb ai/a	PO1					
12	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	1.0	1.0	9.7	9.7
	clopyralid	3	EC	0.125	lb ai/a	PO1					
13	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.3	1.0	1.0	10.0	10.0
	mesotrione	4	SC	0.094	lb ai/a	PO1					
14	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	1.3	1.3	10.0	9.7
	atrazine	4	L	0.5	lb ai/a	PO1					
15	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	2.0	2.0	10.0	9.7
	carfentrazone	1.9	EW	0.008	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
16	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	1.3	1.3	7.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
17	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	1.3	1.3	10.0	10.0
	rimsulfuron	25	DF	0.016	lb ai/a	PO1					
18	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	1.0	1.0	10.0	10.0
	DISTINCT	76.4	WDG	0.095	lb ai/a	PO1					
19	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	1.3	1.0	10.0	10.0
	glufosinate	1.67	L	0.26	lb ai/a	PO1					
20	untreated						4.0	1.0	1.0	10.0	10.0
LSD (P=.05)							2.19	0.69	0.67	1.94	1.69
Standard Deviation							1.32	0.42	0.41	1.18	1.02
CV							14.09	33.42	33.29	12.02	10.63

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COLQ 6/28/05 RATING	RRPW 6/28/05 RATING	BSS 0977 8/11/05 YIELD EAR/PLOT	BSS 0977 8/11/05 YIELD KG/PLOT	GSS 0966 8/15/05 YIELD EAR/PLOT
1	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	8.3	9.7	48.0	8.65	50.0
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	8.0	10.0	50.7	9.45	57.7
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	8.0	9.7	55.7	10.67	61.3
4	flufenacet	60	DF	0.5	lb ai/a	PRE	9.3	10.0	59.7	10.65	49.0
5	AXIOM	68	DF	0.5	lb ai/a	PRE	8.7	9.7	58.7	10.65	53.7
6	mesotrione	4	SC	0.188	lb ai/a	PRE	10.0	9.7	59.0	11.73	51.3
7	atrazine	4	L	1	lb ai/a	PRE	10.0	8.0	62.0	12.66	66.3
8	LUMAX	3.948	EC	2.46	lb ai/a	PRE	8.7	9.7	54.3	10.20	52.3
9	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	10.0	56.7	11.07	71.7
	atrazine	4	L	0.5	lb ai/a	PRE					
	mesotrione	4	SC	0.094	lb ai/a	PRE					
10	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	7.7	9.7	58.3	10.61	49.0
	foramsulfuron	35	WDG	0.033	lb ai/a	PO1					
11	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	8.3	10.0	68.7	12.87	58.7
	fluroxypyr	1.5	L	0.125	lb ai/a	PO1					
12	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	7.7	9.7	62.0	12.13	62.0
	clopyralid	3	EC	0.125	lb ai/a	PO1					
13	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	10.0	63.7	13.13	59.3
	mesotrione	4	SC	0.094	lb ai/a	PO1					
14	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	10.0	64.0	12.50	55.7
	atrazine	4	L	0.5	lb ai/a	PO1					
15	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	9.7	80.7	14.85	54.0
	carfentrazone	1.9	EW	0.008	lb ai/a	PO1					
	atrazine	4	L	0.25	lb ai/a	PO1					
16	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	7.7	10.0	54.3	10.07	57.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
17	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	8.3	10.0	74.3	13.52	47.0
	rimsulfuron	25	DF	0.016	lb ai/a	PO1					
18	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	9.7	10.0	63.7	12.25	60.0
	DISTINCT	76.4	WDG	0.095	lb ai/a	PO1					
19	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.0	10.0	65.3	14.30	84.3
	glufosinate	1.67	L	0.26	lb ai/a	PO1					
20	untreated						10.0	10.0	63.0	12.79	53.0
LSD (P=.05)							0.86	1.42	16.75	3.712	25.72
Standard Deviation							0.52	0.86	10.15	2.249	15.59
CV							5.81	8.84	16.6	19.16	27.02

Weed Control in Sweet Corn - HTRC

Dept. of Horticulture, MSU

Pest Code	GSS 0966
Rating Date	8/15/05
Rating Data Type	YIELD
Rating Unit	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	10.10
2	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	11.97
3	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	13.16
4	flufenacet	60	DF	0.5	lb ai/a	PRE	10.77
5	AXIOM	68	DF	0.5	lb ai/a	PRE	11.58
6	mesotrione	4	SC	0.188	lb ai/a	PRE	11.58
7	atrazine	4	L	1	lb ai/a	PRE	13.61
8	LUMAX	3.948	EC	2.46	lb ai/a	PRE	10.52
9	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	14.46
	atrazine	4	L	0.5	lb ai/a	PRE	
	mesotrione	4	SC	0.094	lb ai/a	PRE	
10	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.56
	foramsulfuron	35	WDG	0.033	lb ai/a	PO1	
11	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	12.31
	fluroxypyr	1.5	L	0.125	lb ai/a	PO1	
12	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	13.82
	clopyralid	3	EC	0.125	lb ai/a	PO1	
13	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	13.46
	mesotrione	4	SC	0.094	lb ai/a	PO1	
14	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	12.61
	atrazine	4	L	0.5	lb ai/a	PO1	
15	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	11.58
	carfentrazone	1.9	EW	0.008	lb ai/a	PO1	
	atrazine	4	L	0.25	lb ai/a	PO1	
16	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	11.93
	halosulfuron	75	WG	0.023	lb ai/a	PO1	
17	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	10.20
	rimsulfuron	25	DF	0.016	lb ai/a	PO1	
18	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	12.37
	DISTINCT	76.4	WDG	0.095	lb ai/a	PO1	
19	s-metolachlor II	7.64	EC	1.3	lb ai/a	PRE	17.30
	glufosinate	1.67	L	0.26	lb ai/a	PO1	
20	untreated						11.17

LSD (P=.05)	4.602
Standard Deviation	2.789
CV	22.76

Callisto in Poast Tolerant Sweet Corn – HTRC

Project Code: WC 106-05-02 **Location: HTRC Block 55**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Sweet Corn **Variety: GH 2042**
Planting Method: Seeded **Planting Date: 5/25/05**
Spacing: 3 IN **Row Spacing: 28 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Capac Loam **OM: 2.0%** **pH: 6.7**
Sand: 49% **Silt: 30%** **Clay: 20%** **CEC: 10.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6/17/05	8:30 am	60/58	°F	Damp	8 NW	76	50% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/17	GH 2042	8 in	4-5 leaf	
6/17	Grasses	1-4 in		few
6/17	YENS = yellow nutsedge	1-4 in		few
6/17	COLQ = common lambsquarters	1-4 in		few
6/17	RRPW = redroot pigweed	1-4 in		few

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Two rows of corn planted per plot.
4. All mature ears were harvested in a single pass.

Callisto in Poast Tolerant Sweet Corn – HTRC

Dept. of Horticulture, MSU

Trial ID: WC 106-05-02 Study Director: Michael Particka
Location: HTRC Block 55 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SWCORN 6/28/05 RATING	SWCORN 7/13/05 RATING	SWCORN 8/9/05 YIELD EAR/PLOT	SWCORN 8/9/05 YIELD KG/PLOT
1	untreated						1.0	1.0	116.7	25.15
2	sethoxydim	1	EC	0.094	lb ai/a	PO1	1.0	1.7	128.3	24.55
	COC		L	1.0	% v/v	PO1				
3	sethoxydim	1	EC	0.19	lb ai/a	PO1	1.0	2.7	88.7	16.35
	COC		L	1.0	% v/v	PO1				
4	mesotrione	4	SC	0.094	lb ai/a	PO1	1.0	2.0	117.7	23.78
	COC		L	1	% v/v	PO1				
5	sethoxydim	1	EC	0.094	lb ai/a	PO1	1.3	1.3	138.3	29.24
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
6	sethoxydim	1	EC	0.19	lb ai/a	PO1	4.0	2.7	123.0	25.81
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
7	sethoxydim	1	EC	0.094	lb ai/a	PO1	2.7	2.0	133.3	25.36
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	atrazine	4	L	0.25	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
8	sethoxydim	1	EC	0.19	lb ai/a	PO1	4.3	2.7	123.7	26.49
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	atrazine	4	L	0.25	lb ai/a	PO1				
	COC		L	1	% v/v	PO1				
9	sethoxydim	1	EC	0.094	lb ai/a	PO1	1.0	2.3	117.0	21.57
	NIS		L	0.25	% v/v	PO1				
10	sethoxydim	1	EC	0.19	lb ai/a	PO1	1.0	2.3	121.0	23.13
	NIS		L	0.25	% v/v	PO1				
11	mesotrione	4	SC	0.094	lb ai/a	PO1	1.0	1.0	131.3	28.37
	NIS		L	0.25	% v/v	PO1				
12	sethoxydim	1	EC	0.094	lb ai/a	PO1	3.0	2.0	126.0	25.59
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
13	sethoxydim	1	EC	0.19	lb ai/a	PO1	4.3	2.3	136.0	28.19
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
14	sethoxydim	1	EC	0.094	lb ai/a	PO1	2.3	1.0	132.7	28.77
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	atrazine	4	L	0.25	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
15	sethoxydim	1	EC	0.19	lb ai/a	PO1	5.3	2.7	142.7	30.39
	mesotrione	4	SC	0.094	lb ai/a	PO1				
	atrazine	4	L	0.25	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
LSD (P=.05)							0.61	0.98	29.96	6.658
Standard Deviation							0.36	0.59	17.92	3.982
CV							15.86	29.74	14.33	15.6

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Project Code: WC 108-05-01 **Location: HTRC Block 60, 70, 79**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5/26/05**
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: 2.0%** **pH: 5.6**
Sand: 58% **Silt: 26%** **Clay: 16%** **CEC: 7.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5/24/05	2:00 pm	67/66	°F	Dry	8 NE	46	10% Cloudy	N
PRE	5/27/05	1:30 pm	69/64	°F	Dry	7 W	45	65% Cloudy	N
PO1	6/17/05	11:20 am	62/60	°F	Damp	6 NW	58	90% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/17	CUKE = cucumber	10-12 in		
6/17	PUMP = pumpkin	4-6 in		
	squash			
	BYGR = barnyardgrass			
	GRFT = green foxtail			
	COLQ = common lambsquarters			
	CORW = common ragweed			
	EBNS = eastern black nightshade			
	LATH = ladysthumb			
	RRPW = redroot pigweed			
	WIBW = wild buckwheat			

Notes and Comments

1. Sprays applied with 16 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 tractor mounted sprayer.
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 – Golden Hubbard
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. Harvested all fruit in 40 ft plot.
7. Squash was not harvested due to poor stand establishment.

Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 108-05-01 Study Director: Michael Particka
Location: HTRC Block 60, 70, 79 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CUKE	PUMP	SQUASH	BYGR	GRFT	COLQ
	Pest Code											
	Description											
	Rating Date						6/14/05	6/14/05	6/14/05	6/14/05	6/14/05	6/14/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	2.3	2.0	5.0	7.3	9.0	9.3
2	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.7	1.3	4.3	9.0	9.7	10.0
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	1.0	1.0	5.7	9.3	9.7	9.3
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	imazamox	1	AS	0.031	lb ai/a	PRE	4.0	2.0	5.0	4.3	5.0	9.3
5	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.7	1.7	6.3	6.7	8.0	8.7
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
6	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.7	1.7	4.3	5.7	6.3	8.3
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
7	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.3	1.3	6.7	6.3	7.0	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.3	1.3	4.0	3.3	4.7	7.0
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	bensulide	4	EC	6	lb ai/a	PPI	2.3	2.7	7.0	8.3	9.3	9.3
	halosulfuron	75	WG	0.047	lb ai/a	PPI						
10	bensulide	4	EC	6	lb ai/a	PPI	1.0	1.0	3.7	6.3	7.3	8.3
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	imazosulfuron	75	WG	0.1	lb ai/a	PRE	1.7	1.7	6.3	6.3	8.7	8.7
12	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.0	1.7	6.0	7.0	8.7	8.7
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	ethalfluralin	3	EC	0.75	lb ai/a	PRE	1.0	1.0	4.3	4.3	6.3	6.3
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
14	ethalfluralin	3	EC	0.75	lb ai/a	PRE	1.3	1.3	6.3	6.3	8.3	8.0
	imazosulfuron	75	WG	0.1	lb ai/a	PO1						
15	untreated						1.0	1.0	5.0	1.7	1.7	1.0
LSD (P=.05)							1.35	1.34	4.63	3.17	2.98	1.70
Standard Deviation							0.81	0.80	2.77	1.89	1.78	1.02
CV							47.94	52.99	51.96	30.76	24.35	12.5

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	CORW	EBNS	LATH	RRPW	WIBW	CUKE
	Pest Code											
	Description											
	Rating Date						6/14/05	6/14/05	6/14/05	6/14/05	6/14/05	6/22/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING	RATING
	Rating Unit											
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	7.3	10.0	9.0	8.7	8.7	1.7
2	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	10.0	9.7	9.3	10.0	1.7
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	9.3	10.0	10.0	8.7	10.0	1.3
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	imazamox	1	AS	0.031	lb ai/a	PRE	9.3	10.0	9.7	9.7	9.7	4.7
5	halosulfuron	75	WG	0.035	lb ai/a	PRE	10.0	10.0	10.0	9.7	8.3	2.0
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
6	halosulfuron	75	WG	0.035	lb ai/a	PRE	10.0	6.0	10.0	10.0	10.0	1.3
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
7	halosulfuron	75	WG	0.035	lb ai/a	PRE	10.0	8.3	10.0	10.0	9.3	2.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.035	lb ai/a	PRE	10.0	7.0	10.0	9.7	9.3	2.3
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	bensulide	4	EC	6	lb ai/a	PPI	10.0	9.3	10.0	10.0	8.7	2.7
	halosulfuron	75	WG	0.047	lb ai/a	PPI						
10	bensulide	4	EC	6	lb ai/a	PPI	5.3	9.3	9.3	9.0	7.0	2.0
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	imazosulfuron	75	WG	0.1	lb ai/a	PRE	10.0	10.0	10.0	10.0	9.7	1.3
12	ethalfluralin	3	EC	0.75	lb ai/a	PRE	7.0	10.0	9.3	7.0	5.0	2.3
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	ethalfluralin	3	EC	0.75	lb ai/a	PRE	6.0	10.0	9.7	7.0	7.0	7.3
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
14	ethalfluralin	3	EC	0.75	lb ai/a	PRE	4.3	9.7	10.0	8.3	9.7	2.3
	imazosulfuron	75	WG	0.1	lb ai/a	PO1						
15	untreated						1.7	3.7	1.0	1.0	1.0	1.0
LSD (P=.05)							3.42	3.23	0.85	2.00	2.98	1.81
Standard Deviation							2.05	1.93	0.51	1.20	1.78	1.08
CV							25.51	21.76	5.51	14.03	21.69	45.1

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	PUMP	SQUASH	BYGR	COLQ	EBNS	RRPW
Pest Code												
Description												
Rating Date							6/22/05	6/22/05	6/22/05	6/22/05	6/22/05	6/22/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	1.7	2.3	5.7	8.3	10.0	8.0
2	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	1.7	1.7	8.3	9.3	10.0	9.3
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	1.0	2.7	8.0	9.0	10.0	8.7
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	imazamox	1	AS	0.031	lb ai/a	PRE	1.7	2.3	2.0	7.3	10.0	10.0
5	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.7	5.3	5.3	7.7	9.3	10.0
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
6	halosulfuron	75	WG	0.035	lb ai/a	PRE	1.3	3.7	4.0	7.0	7.0	10.0
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
7	halosulfuron	75	WG	0.035	lb ai/a	PRE	4.0	6.7	6.0	9.0	8.3	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.035	lb ai/a	PRE	3.7	3.7	2.0	8.7	5.3	10.0
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	bensulide	4	EC	6	lb ai/a	PPI	3.0	7.0	7.0	10.0	4.3	10.0
	halosulfuron	75	WG	0.047	lb ai/a	PPI						
10	bensulide	4	EC	6	lb ai/a	PPI	3.3	4.0	6.7	8.3	5.0	8.7
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	imazosulfuron	75	WG	0.1	lb ai/a	PRE	1.7	4.0	3.0	8.0	9.3	10.0
12	ethalfluralin	3	EC	0.75	lb ai/a	PRE	3.7	6.0	8.0	9.7	10.0	10.0
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	ethalfluralin	3	EC	0.75	lb ai/a	PRE	6.7	7.7	3.3	10.0	10.0	10.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
14	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.7	5.3	5.3	8.0	7.7	8.7
	imazosulfuron	75	WG	0.1	lb ai/a	PO1						
15	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.28	3.77	3.11	1.53	3.25	1.00
Standard Deviation							0.77	2.26	1.86	0.91	1.94	0.60
CV							29.77	53.45	36.9	11.31	24.84	6.66

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 VINE	CUKE FRUIT	CUKE FRUIT 1	CUKE FRUIT 2	CUKE FRUIT 3	CUKE FRUIT OS
	Pest Code											
	Description						VINE	FRUIT	FRUIT 1	FRUIT 2	FRUIT 3	FRUIT OS
	Rating Date						7/18/05	7/18/05	7/18/05	7/18/05	7/18/05	7/18/05
	Rating Data Type						YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
	Rating Unit						KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	21.29	21.57	1.16	3.93	11.73	4.19
2	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	24.79	26.98	1.44	3.19	13.12	8.49
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	26.69	29.87	1.17	3.71	13.20	11.32
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	imazamox	1	AS	0.031	lb ai/a	PRE	8.50	8.53	0.74	2.08	6.59	3.82
5	halosulfuron	75	WG	0.035	lb ai/a	PRE	27.32	32.17	1.01	3.07	15.47	14.83
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
6	halosulfuron	75	WG	0.035	lb ai/a	PRE	26.44	34.77	1.20	3.55	14.92	13.96
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
7	halosulfuron	75	WG	0.035	lb ai/a	PRE	30.63	41.83	0.83	2.84	17.81	14.10
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.035	lb ai/a	PRE	26.54	28.40	1.20	5.24	20.03	6.58
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	bensulide	4	EC	6	lb ai/a	PPI	25.89	31.64	1.26	3.70	13.98	11.70
	halosulfuron	75	WG	0.047	lb ai/a	PPI						
10	bensulide	4	EC	6	lb ai/a	PPI	27.01	28.35	1.05	3.69	16.25	6.63
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	imazosulfuron	75	WG	0.1	lb ai/a	PRE	23.73	23.17	1.58	4.65	11.76	4.29
12	ethalfluralin	3	EC	0.75	lb ai/a	PRE	28.47	37.43	0.91	3.80	18.87	12.89
	halosulfuron	75	WG	0.035	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	ethalfluralin	3	EC	0.75	lb ai/a	PRE	4.55	2.55	0.24	1.11	1.15	0.00
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
14	ethalfluralin	3	EC	0.75	lb ai/a	PRE	23.84	25.77	1.09	3.59	13.94	6.66
	imazosulfuron	75	WG	0.1	lb ai/a	PO1						
15	untreated						30.23	40.48	0.85	3.29	15.50	15.08
LSD (P=.05)							11.822	17.766	0.619	1.898	8.921	9.853
Standard Deviation							7.070	10.624	0.370	1.135	5.335	5.893
CV							29.79	38.54	35.33	33.09	39.17	65.7

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	PUMP ORANGE 9/27/05 YIELD NO./PLOT	PUMP ORANGE 9/27/05 YIELD KG/PLOT	PUMP GREEN 9/27/05 YIELD NO./PLOT	PUMP GREEN 9/27/05 YIELD KG/PLOT
1	ethalfluralin	3	EC	1.13	lb ai/a	PRE	13.0	40.15	1.3	3.21
2	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	28.7	96.07	3.7	10.90
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	23.3	92.33	2.3	11.04
	clomazone	3	ME	0.25	lb ai/a	PRE				
4	imazamox	1	AS	0.031	lb ai/a	PRE	13.7	40.75	2.3	5.12
5	halosulfuron	75	WG	0.035	lb ai/a	PRE	18.3	62.59	3.0	8.39
	quizalofop	0.88	EC	0.034	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
6	halosulfuron	75	WG	0.035	lb ai/a	PRE	17.0	56.23	1.0	2.04
	quizalofop	0.88	EC	0.069	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
7	halosulfuron	75	WG	0.035	lb ai/a	PRE	23.0	78.88	1.3	3.15
	halosulfuron	75	WG	0.023	lb ai/a	PO1				
	clethodim	2	EC	0.094	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
8	halosulfuron	75	WG	0.035	lb ai/a	PRE	16.3	52.20	2.0	9.69
	halosulfuron	75	WG	0.035	lb ai/a	PO1				
	quizalofop	0.88	EC	0.069	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
9	bensulide	4	EC	6	lb ai/a	PPI	20.3	72.18	4.0	11.99
	halosulfuron	75	WG	0.047	lb ai/a	PPI				
10	bensulide	4	EC	6	lb ai/a	PPI	24.7	105.05	1.3	3.67
	halosulfuron	75	WG	0.035	lb ai/a	PO1				
	clethodim	2	EC	0.094	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
11	imazosulfuron	75	WG	0.1	lb ai/a	PRE	20.0	64.43	0.7	1.53
12	ethalfluralin	3	EC	0.75	lb ai/a	PRE	31.3	130.69	4.3	12.39
	halosulfuron	75	WG	0.035	lb ai/a	PO1				
	clethodim	2	EC	0.094	lb ai/a	PO1				
	NIS		L	0.25	% v/v	PO1				
13	ethalfluralin	3	EC	0.75	lb ai/a	PRE	17.0	63.47	1.3	5.61
	sulfentrazone	4	F	0.14	lb ai/a	PO1				
14	ethalfluralin	3	EC	0.75	lb ai/a	PRE	23.3	70.25	3.0	6.06
	imazosulfuron	75	WG	0.1	lb ai/a	PO1				
15	untreated						27.0	88.97	0.7	2.89
LSD (P=.05)							12.42	57.995	3.54	11.492
Standard Deviation							7.43	34.682	2.12	6.872
CV							35.15	46.69	98.34	105.55

Weed Control in Lettuce – Imlay City

Project Code: WC 116-05-01 **Location: Van Dyk Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Lettuce **Variety: Romaine Sun Devil**
Planting Method: Seeded **Planting Date: 6/7/05**
Spacing: 12 in **Row Spacing: 24 in, 2 rows/plot**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 3.33 ft wide x 30 ft long

Soil Type: Muck **OM: 65%** **pH: 7.0**
Sand: 17% **Silt: 15%** **Clay: 3%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	6/7/05	11:00 am	88/70	°F	Dry	1 SW	84	Clear	N
PO1	6/20/05	11:00 am	73/65	°F	Dry	2 SW	52	20% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/20	Lettuce	0.5-1 in	2-3 leaf	
	COPU = common purslane	0.5-1 in		many
	RRPW = redroot pigweed	0.5-1 in		many

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.

Weed Control in Lettuce – Imlay City

Dept. of Horticulture, MSU

Trial ID: WC 116-05-01 Study Director: Michael Particka
Location: Imlay City Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LETTUCE RATING 6/20/05	BARLEY RATING 6/20/05	COPU RATING 6/20/05	RRPW RATING 6/20/05	LETTUCE RATING 7/7/05	COPU RATING 7/7/05
1	pronamide	50	WP	4	lb ai/a	PRE	1.3	9.7	9.3	9.3	4.0	7.0
2	mesotrione	4	SC	0.19	lb ai/a	PRE	10.0	5.3	8.7	9.7	10.0	2.3
3	sulfentrazone	4	F	0.14	lb ai/a	PRE	10.0	4.3	9.0	9.7	9.0	7.7
4	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	9.3	4.7	8.3	9.0	8.0	4.0
5	mesotrione	4	SC	0.09	lb ai/a	PO1	2.3	7.0	1.0	1.0	9.7	1.0
6	imazamox	1	AS	0.016	lb ai/a	PO1	4.3	7.0	1.7	1.0	2.3	2.3
7	imazethapyr	2	AS	0.047	lb ai/a	PO1	1.0	7.0	1.0	1.0	2.3	6.0
8	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	1.0	4.0	1.0	1.0	10.0	1.3
LSD (P=.05)							2.50	8.39	1.04	0.73	3.19	2.62
Standard Deviation							1.43	4.79	0.59	0.42	1.82	1.50
CV							29.06	78.23	11.85	7.98	26.33	37.79

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW RATING 7/7/05	LETTUCE YIELD HEAD/PLT 7/29/05	LETTUCE YIELD KG/PLOT 7/29/05
1	pronamide	50	WP	4	lb ai/a	PRE	3.7	38.3	22.18
2	mesotrione	4	SC	0.19	lb ai/a	PRE	8.7	0.0	0.00
3	sulfentrazone	4	F	0.14	lb ai/a	PRE	7.7	4.3	1.76
4	imazosulfuron	75	WDG	0.1	lb ai/a	PRE	7.7	11.7	5.04
5	mesotrione	4	SC	0.09	lb ai/a	PO1	10.0	0.0	0.00
6	imazamox	1	AS	0.016	lb ai/a	PO1	10.0	37.3	16.19
7	imazethapyr	2	AS	0.047	lb ai/a	PO1	10.0	39.3	18.36
8	imazosulfuron	75	WDG	0.1	lb ai/a	PO1	7.3	0.0	0.00
LSD (P=.05)							3.55	12.77	5.821
Standard Deviation							2.03	7.29	3.323
CV							24.96	44.52	41.85

Weed Control in Mint – St. Johns

Project Code: WC 121-05-01 **Location: Tom Irrer Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Mint **Variety: Native Spearmint**
Planting Method: Seeded **Planting Date: 3/30/02**
Spacing: Solid **Row Spacing: Meadow Mint**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 15 ft wide x 120 ft long

Soil Type: Gilford Loam **OM: 2.7%** **pH: 6.0**
Sand: 74% **Silt: 15%** **Clay: 11%** **CEC: 9.5**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/1/05								
PO1									

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	Mint			
	COLQ = common lambsquarters			
	CORW = common ragweed			
	FIPA = field pansy			
	MATA = marestail (horseweed)			
	RRPW = redroot pigweed			

Notes and Comments

1. Sprays applied with 15ft boom FF8002, 22 gpa, 22 psi, 2.27 mph, tractor mounted sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.

Weed Control in Mint – St. Johns

Dept. of Horticulture, MSU

Trial ID: WC 121-05-01 Study Director: Tom Irrer
Location: Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	MINT 6/3/05 RATING	COLQ 6/3/05 RATING	CORW 6/3/05 RATING	FIPA 6/3/05 RATING	MATA 6/3/05 RATING	PUSW 6/3/05 RATING
1	flumioxazin	51	WDG	0.128	lb ai/a	PRE	2.3	10.0	10.0	10.0	7.0	7.7
2	flumioxazin	51	WDG	0.128	lb ai/a	PRE	2.7	10.0	10.0	10.0	10.0	10.0
	paraquat	3	L	0.49	lb ai/a	PRE						
	NIS		L	0.25	% v/v	PRE						
3	flumioxazin	0.0625	G	200	lb/a	PRE	1.3	9.0	8.3	7.7	7.0	6.0
4	flumioxazin	0.0625	G	400	lb/a	PRE	1.7	7.7	7.7	10.0	6.7	4.7
5	flumioxazin	51	WDG	0.064	lb ai/a	PRE	2.0	10.0	10.0	10.0	10.0	10.0
	terbacil	80	WP	0.4	lb ai/a	PRE						
	paraquat	3	L	0.49	lb ai/a	PRE						
	NIS		L	0.25	% v/v	PRE						
6	oxyfluorfen	2	L	0.5	lb ai/a	PRE	2.0	10.0	10.0	10.0	9.7	9.0
	paraquat	3	L	0.49	lb ai/a	PRE						
7	mesotrione	4	SC	0.15	lb ai/a	PRE	5.7	10.0	10.0	10.0	10.0	10.0
8	mesotrione	4	SC	0.3	lb ai/a	PRE	7.3	10.0	10.0	10.0	10.0	10.0
9	sulfentrazone	75	DF	0.188	lb ai/a	PRE	2.0	10.0	10.0	10.0	10.0	10.0
10	clomazone	3	ME	0.5	lb ai/a	PRE	3.3	10.0	10.0	10.0	10.0	10.0
11	terbacil	80	WP	0.4	lb ai/a	PRE	2.7	10.0	10.0	7.7	10.0	10.0
	clomazone	3	ME	0.5	lb ai/a	PRE						
	flumioxazin	51	WDG	0.064	lb ai/a	PRE						
12	clomazone	3	ME	0.5	lb ai/a	PRE	2.0	10.0	10.0	10.0	10.0	10.0
	sulfentrazone	75	DF	0.188	lb ai/a	PRE						
	oxyfluorfen	2	L	0.5	lb ai/a	PRE						
13	terbacil	80	WP	1.0	lb ai/a	PRE	2.3	10.0	10.0	7.7	10.0	10.0
14	untreated					PRE	1.7	4.0	4.0	1.0	4.0	1.0
	terbacil	80	WP	0.2	lb ai/a	PO1						
	bentazon	4	L	1.0	lb ai/a	PO1						
	clopyralid	3	EC	0.188	lb ai/a	PO1						
	clethodim	2	EC	0.2	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
LSD (P=.05)							1.77	2.69	3.17	3.14	4.27	3.67
Standard Deviation							1.05	1.60	1.89	1.87	2.55	2.18
CV							37.79	17.17	20.31	21.12	28.66	25.84

Preemergence Weed Control in Onion – Muck Farm

Project Code: WC 112-05-01 **Location: Muck Farm Block B 19**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Millineum**
Planting Method: Seeded **Planting Date: 4/28/05**
Spacing: 2 IN **Row Spacing: 16 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.5 ft wide x 16.67ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.8**
Sand: 5% **Silt: 14%** **Clay: 2%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	5/6/05	10:00 am	58/	°F	Damp	8 S	36	20% Cloudy	N
PO1	6/10/05	10:00 am	85/72	°F	Moist	5 SW	71	Clear	N
PO1.5	6/15/05	10:00 am	69/69	°F	Damp	8 W	69	30% Cloudy	N
PO2	7/6/05	11:30 am	65/71	°F	Damp	3 NW	75	85% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/10	Onion	4-6 in	2 leaf	
6/10	COCW = common chickweed	2-4 in		moderate
6/10	COLQ = common lambsquarters	1-3 in		few
6/10	MAYC = marsh yellowcress	2-4 in		moderate
7/6	Onion	14-18 in		
7/6	YENS = yellow nutsedge	4-6 in		few
7/6	LATH = ladysthumb	4-7 in		moderate
7/6	MAYC = marsh yellowcress	8-10 in		moderate
	LACG = large crabgrass			
	COPU = common purslane			
	NLLQ = narrowleaf lambsquarter			
	TUPW = tumble pigweed			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Two rows were 3 inches apart and three row groupings were 16 inches apart on a raised bed.
4. Harvested 16.67 ft from each plot.

Preemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Trial ID: WC 112-05-01 Study Director: Michael Particka
Location: Muck Farm B 19 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION 6/7/05 RATING	LACG 6/7/05 RATING	COLQ 6/7/05 RATING	COPU 6/7/05 RATING	LATH 6/7/05 RATING	MAYC 6/7/05 RATING	NLLQ 6/7/05 RATING
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.3	10.0	10.0	9.7	7.7	9.0	9.3
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2							
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	8.7	9.0	7.7	8.3	8.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2							
3	s-metolachlor	7.62	EC	1.2	lb ai/a	PRE	1.3	9.3	6.7	9.0	5.0	6.7	5.3
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1,2							
4	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	2.7	10.0	7.7	9.7	5.3	9.3	7.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2							
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.3	10.0	8.7	9.3	6.7	8.3	9.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1							
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2							
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	9.7	9.7	7.7	6.7	9.3
	flumioxazin	51	WDG	0.016	lb ai/a	PRE							
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2							
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2							
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.7	10.0	10.0	9.7	8.7	9.0	10.0
	flumioxazin	51	WDG	0.016	lb ai/a	PRE							
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2							
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2							
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	9.7	9.0	8.0	7.0	9.7
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2							
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	10.0	9.7	9.3	7.7	7.7	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2							
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2							
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	9.7	9.0	7.3	6.7	8.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2							
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2							
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.3	10.0	9.7	9.3	7.7	8.0	9.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1							
	flumioxazin	51	WDG	0.064	lb ai/a	PO2							
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.3	10.0	8.3	9.3	7.0	7.3	8.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1							
	flumioxazin	51	WDG	0.032	lb ai/a	PO1							
	pendimethalin	3.8	CS	2	lb ai/a	PO2							
13	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	9.7	10.0	9.7	7.7	6.0	8.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1							
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2							
	flumioxazin	51	WDG	0.032	lb ai/a	PO2							
14	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	9.3	9.3	8.3	5.3	8.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1							
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5							
	pendimethalin	3.8	CS	2	lb ai/a	PO2							
15	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.3	10.0	9.0	8.7	8.7	6.3	9.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2							
	sulfentrazone	4	F	0.14	lb ai/a	PO1							
16	untreated						1.0	3.7	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							0.70	2.02	2.27	0.92	2.04	2.10	2.32
Standard Deviation							0.42	1.21	1.36	0.55	1.22	1.26	1.39
CV							33.05	12.72	15.85	6.29	17.47	17.89	16.78

Preemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Pest Code							RRPW	ONION	LACG	COCW	COPU	LATH
Rating Date							6/7/05	6/20/05	6/20/05	6/20/05	6/20/05	6/20/05
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	pendimethalin	3.3	EC	2	lb ai/a	PRE	8.7	2.0	10.0	9.3	10.0	7.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.3	1.0	9.7	9.7	10.0	7.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
3	s-metolachlor	7.62	EC	1.2	lb ai/a	PRE	9.0	1.3	10.0	1.7	6.0	7.0
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1,2						
4	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	10.0	2.7	10.0	6.0	7.3	6.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2						
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	9.0	1.7	10.0	8.7	9.7	8.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2						
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.3	1.7	9.7	9.3	10.0	8.3
	flumioxazin	51	WDG	0.016	lb ai/a	PRE						
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.3	4.3	10.0	10.0	10.0	9.0
	flumioxazin	51	WDG	0.016	lb ai/a	PRE						
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.3	1.3	9.7	8.3	9.3	8.3
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	8.7	4.7	10.0	10.0	10.0	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.7	1.3	9.0	9.3	9.7	8.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.0	2.7	9.7	7.3	9.3	8.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.064	lb ai/a	PO2						
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.0	5.3	10.0	10.0	10.0	9.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1						
	pendimethalin	3.8	CS	2	lb ai/a	PO2						
13	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.7	1.0	8.0	8.7	9.3	7.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO2						
14	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.7	1.7	10.0	8.7	9.0	9.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5						
	pendimethalin	3.8	CS	2	lb ai/a	PO2						
15	pendimethalin	3.8	CS	2	lb ai/a	PRE	8.3	2.3	9.7	9.0	10.0	9.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
16	untreated						1.0	1.0	9.7	9.3	10.0	9.3
LSD (P=.05)							1.41	0.84	1.11	1.62	2.37	1.56
Standard Deviation							0.85	0.50	0.67	0.97	1.42	0.94
CV							10.35	22.41	6.89	11.46	15.21	11.21

Preemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	MAYC 6/20/05 RATING	RRPW 6/20/05 RATING	ONION 7/7/05 RATING	COLQ 7/7/05 RATING	LATH 7/7/05 RATING	MAYC 7/7/05 RATING
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	8.0	9.7	1.7	10.0	8.3	9.7
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.7	10.0	1.0	9.7	8.3	8.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
3	s-metolachlor	7.62	EC	1.2	lb ai/a	PRE	7.3	10.0	2.3	4.7	6.7	8.7
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1,2						
4	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	7.0	10.0	2.7	7.0	8.0	9.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2						
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.3	10.0	1.3	10.0	7.0	7.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2						
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	4.3	10.0	1.3	10.0	8.0	7.0
	flumioxazin	51	WDG	0.016	lb ai/a	PRE						
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	4.7	10.0	9.7	10.0
	flumioxazin	51	WDG	0.016	lb ai/a	PRE						
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	4.3	10.0	1.0	9.7	8.0	8.3
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	9.3	10.0	5.0	10.0	10.0	10.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	6.7	10.0	1.0	10.0	8.3	8.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	4.3	10.0	1.7	10.0	7.3	7.7
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.064	lb ai/a	PO2						
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	10.0	3.7	10.0	8.7	10.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1						
	pendimethalin	3.8	CS	2	lb ai/a	PO2						
13	pendimethalin	3.8	CS	2	lb ai/a	PRE	4.0	9.7	3.0	10.0	8.7	9.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO2						
14	pendimethalin	3.8	CS	2	lb ai/a	PRE	6.0	10.0	1.3	9.7	8.3	8.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5						
	pendimethalin	3.8	CS	2	lb ai/a	PO2						
15	pendimethalin	3.8	CS	2	lb ai/a	PRE	7.0	10.0	1.3	10.0	9.0	8.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
16	untreated						9.0	10.0	1.0	1.0	1.7	3.0
LSD (P=.05)							4.25	0.35	0.76	2.34	1.56	2.28
Standard Deviation							2.55	0.21	0.45	1.40	0.93	1.37
CV							39.13	2.08	21.34	15.86	11.86	16.52

Preemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	NLLQ 7/7/05 RATING	RRPW 7/7/05 RATING	TUPW 7/7/05 RATING	ONION 7/29/05 RATING	ONION 9/7/05 YIELD KG/PLOT
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	8.0	9.0	1.0	63.94
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	9.7	7.7	9.3	1.0	70.10
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2					
3	s-metolachlor	7.62	EC	1.2	lb ai/a	PRE	3.3	9.3	10.0	1.7	57.83
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1,2					
4	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	6.7	10.0	10.0	2.0	58.19
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1,2					
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	8.3	10.0	1.3	70.88
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2					
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	10.0	10.0	1.0	71.68
	flumioxazin	51	WDG	0.016	lb ai/a	PRE					
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2					
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2					
7	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	10.0	3.0	42.24
	flumioxazin	51	WDG	0.016	lb ai/a	PRE					
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2					
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	9.3	10.0	1.0	71.06
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2					
9	pendimethalin	3.3	EC	2	lb ai/a	PRE	10.0	10.0	10.0	4.0	40.75
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2					
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2					
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	8.7	10.0	1.0	71.10
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2					
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2					
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	8.3	10.0	1.7	64.88
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	flumioxazin	51	WDG	0.064	lb ai/a	PO2					
12	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	10.0	10.0	2.0	58.18
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	flumioxazin	51	WDG	0.032	lb ai/a	PO1					
	pendimethalin	3.8	CS	2	lb ai/a	PO2					
13	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	10.0	10.0	3.0	44.34
	pendimethalin	3.8	CS	2	lb ai/a	PO1					
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2					
	flumioxazin	51	WDG	0.032	lb ai/a	PO2					
14	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	9.7	10.0	1.0	72.34
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1					
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5					
	pendimethalin	3.8	CS	2	lb ai/a	PO2					
15	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.0	10.0	10.0	1.0	70.97
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2					
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
16	untreated						2.0	2.0	3.0	1.3	63.65
LSD (P=.05)							1.54	1.37	1.53	0.46	5.820
Standard Deviation							0.92	0.82	0.92	0.28	3.490
CV							10.4	9.33	9.72	16.38	5.63

Postemergence Weed Control in Onion – Muck Farm

Project Code: WC 112-05-02 **Location: Muck Farm Block B 18**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Millineum**
Planting Method: Seeded **Planting Date: 4/28/05**
Spacing: 2 IN **Row Spacing: See notes**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 5.5 ft wide x 16.67ft long

Soil Type: Houghton Muck **OM: 79%** **pH: 6.6**
Sand: 4% **Silt: 15%** **Clay: 2%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6/10/05	10:00 am	85/72	°F	Moist	5 SW	71	Clear	N
PO1.5	6/15/05	10:00 am	69/69	°F	Damp	8 W	69	30% Cloudy	N
PO2	7/6/05	11:30 am	65/71	°F	Damp	3 NW	75	85% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/10	Onion	4-6 in	2 leaf	
6/10	YNES = yellow nutsedge	2-6 in		moderate
6/10	LATH = ladysthumb	1-3 in		moderate
6/10	RRPW = redroot pigweed	1-4 in		moderate
7/6	Onion	14-18 in		
7/6	YNES = yellow nutsedge	4-6 in		moderate
7/6	LATH = ladysthumb	4-7 in		moderate
7/6	RRPW = redroot pigweed	2-6 in		moderate
	LACG = large crabgrass			
	COCW = common chickweed			
	COLQ = common lambsquarters			
	MAYC = marsh yellowcress			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Two rows were 2 inches apart and three row groupings were 16 inches apart on a raised bed.
4. Harvested 30 ft from each plot.

Postemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU
Trial ID: WC 112-05-02 Study Director: Michael Particka
Location: Muck Farm B 18 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION 6/20/05 RATING	LACG 6/20/05 RATING	YENS 6/20/05 RATING	COCW 6/20/05 RATING	COLQ 6/20/05 RATING	COPU 6/20/05 RATING
1	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.7	10.0	7.7	9.7	10.0	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.7	10.0	6.3	9.7	8.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	1.7	10.0	6.0	9.7	8.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	1.7	10.0	4.7	10.0	8.3	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	2.0	10.0	6.3	9.7	6.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
6	oxyfluorfen	4	SC	0.125	lb ai/a	PO1,2	2.3	10.0	5.7	9.7	8.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
7	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	2.0	7.0	3.7	8.3	10.0	10.0
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
8	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	1.0	4.7	5.3	9.7	9.7	10.0
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
9	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.0	5.0	7.0	9.0	10.0	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
10	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	1.3	4.7	3.7	9.7	9.3	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
11	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.3	4.7	6.3	9.3	10.0	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
12	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	1.3	4.3	4.0	9.7	6.0	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
13	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	4.7	10.0	8.3	10.0	9.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
14	oxyfluorfen	2	L	0.063	lb ai/a	PO1	1.3	10.0	6.0	10.0	9.7	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
	flumioxazin	51	WDG	0.064	lb ai/a	PO2						
15	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2	1.0	6.3	3.7	10.0	7.0	9.7
16	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	2.3	10.0	6.7	10.0	9.3	10.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5						
17	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	5.0	10.0	8.3	10.0	10.0	10.0
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
18	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	2.7	10.0	6.0	10.0	9.7	10.0
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
19	oxyfluorfen	2	L	0.063	lb ai/a	PO1	1.0	4.7	2.7	10.0	5.0	10.0
	sulfentrazone	4	F	0.14	lb ai/a	PO2						
20	untreated						1.0	8.3	10.0	9.7	9.3	9.3
LSD (P=.05)							1.11	4.55	3.37	0.90	3.24	0.30
Standard Deviation							0.67	2.76	2.04	0.55	1.96	0.18
CV							35.51	34.51	34.47	5.63	22.34	1.81

Postemergence Weed Control in Onion – Muck Farm

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LATH 6/20/05 RATING	MAYC 6/20/05 RATING	RRPW 6/20/05 RATING	ONION 7/7/05 RATING	ONION 7/29/05 RATING	ONION 9/7/05 YIELD KG/PLOT
1	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	8.3	8.7	10.0	2.7	1.7	50.03
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	8.7	9.7	9.7	2.3	1.0	49.37
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	9.3	9.3	10.0	2.0	1.0	50.86
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	7.7	6.3	6.3	2.0	1.0	44.98
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	7.0	7.7	8.3	2.7	1.7	47.36
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
6	oxyfluorfen	4	SC	0.125	lb ai/a	PO1,2	8.7	9.3	10.0	2.3	1.7	50.56
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
7	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	9.0	8.3	10.0	1.7	1.3	43.87
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
8	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	8.0	9.3	10.0	1.3	1.0	51.53
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
9	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	9.3	9.7	10.0	1.0	1.0	51.23
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
10	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	9.3	9.3	10.0	1.0	1.0	49.77
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
11	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	9.7	9.7	10.0	1.7	1.3	45.95
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
12	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	9.7	6.3	10.0	1.7	1.0	46.86
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
13	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	9.3	9.7	10.0	4.0	3.0	28.19
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
14	oxyfluorfen	2	L	0.063	lb ai/a	PO1	8.3	9.0	10.0	1.0	1.0	50.56
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
	flumioxazin	51	WDG	0.064	lb ai/a	PO2						
15	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2	7.0	8.3	10.0	1.0	1.3	47.62
16	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	8.7	9.3	9.3	2.3	1.3	53.85
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1.5						
17	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	10.0	10.0	5.0	5.0	11.61
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
18	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	9.7	9.7	10.0	3.3	1.7	35.10
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
19	oxyfluorfen	2	L	0.063	lb ai/a	PO1	8.7	7.3	9.3	1.7	2.3	40.48
	sulfentrazone	4	F	0.14	lb ai/a	PO2						
20	untreated						9.3	9.7	9.0	1.0	1.3	41.98
LSD (P=.05)							1.25	2.64	1.42	0.81	0.65	9.546
Standard Deviation							0.76	1.60	0.86	0.49	0.39	5.785
CV							8.64	18.12	8.95	23.62	24.75	12.97

Weed Control in Onion - Hudsonville

Project Code: WC 112-05-03 **Location: Schreur Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Infinity**
Planting Method: Seeded **Planting Date: 4/19/05**
Spacing: 1 in **Row Spacing: 14 in, 3 rows/plot**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 3.33 ft wide x 30 ft long

Soil Type: Carlisle Muck **OM: 65%** **pH: 5.9**
Sand: 5% **Silt: 27%** **Clay: 3%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/27/05	3:00 pm	46/48	°F	Damp	8 NW	64	50% Cloudy	N
PO1	6/7/05	10:00 am	81/69	°F	Dry	4 W	53	5% Cloudy	N
PO2	6/28/05	2:15 pm	84/77	°F	Dry	5 SW	63	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/7	Onion	5-7 in	2-3 leaf	
6/28	Onion	12-16 in	5-7 leaf	

YENS = yellow nutsedge
COGR = common groundsel
CORW = common ragweed
LATH = ladysthumb
RRPW = redroot pigweed

Notes and Comments

1. Sprays applied with 2 nozzle boom FF11002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Field had yellow nutsedge pressure at harvest.

Weed Control in Onion - Hudsonville

Dept. of Horticulture, MSU
Trial ID: WC 112-05-03 Study Director: Michael Particka
Location: Schreur Farm Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION 6/7/05 RATING	YENS 6/7/05 RATING	CORW 6/7/05 RATING	LATH 6/7/05 RATING	RRPW 6/7/05 RATING	ONION 6/24/05 RATING
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	1.0	5.7	10.0	9.3	9.3	1.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	3.3	10.0	7.3	8.3	1.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	5.7	8.7	8.0	9.7	1.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	2.3	8.7	7.3	8.0	1.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.125	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	4.3	9.0	8.3	9.7	2.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	2.3	9.7	7.3	10.0	1.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
7	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	4.7	10.0	10.0	9.3	1.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	3.0	10.0	8.7	8.7	1.0
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
9	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	1.0	10.0	10.0	9.3	1.0
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	1.7	9.3	8.3	9.3	1.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	ethofumesate	4	SC	1	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	1.7	9.7	9.0	8.0	1.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
12	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	1.0	3.7	10.0	6.7	9.7	1.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
LSD (P=.05)							0.00	3.67	1.74	2.51	2.51	0.64
Standard Deviation							0.00	2.17	1.03	1.48	1.48	0.38
CV							0.0	66.1	10.71	17.72	16.26	33.02

Weed Control in Onion - Hudsonville

Dept. of Horticulture, MSU

Pest Code						YENS	COGR	CORW	LATH	RRPW	ONION
Rating Date						6/24/05	6/24/05	6/24/05	6/24/05	6/24/05	7/14/05
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	pendimethalin	3.3	EC	2	lb ai/a	PRE	4.7	8.3	10.0	8.3	8.3	1.0
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.0	9.3	9.7	7.0	8.3	1.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	pendimethalin	3.8	CS	2	lb ai/a	PRE	5.7	9.3	9.0	8.7	9.0	1.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.7	8.7	9.3	8.0	9.7	1.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.125	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	5.3	9.7	10.0	8.0	10.0	2.0
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.0	8.3	10.0	7.0	9.7	2.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
7	pendimethalin	3.8	CS	2	lb ai/a	PRE	5.3	8.7	10.0	9.7	10.0	4.3
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	3.3	8.3	10.0	8.0	8.3	1.3
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1						
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
9	pendimethalin	3.8	CS	2	lb ai/a	PRE	2.3	8.7	10.0	10.0	8.7	2.3
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1						
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	2.3	9.7	9.3	8.7	9.7	1.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	ethofumesate	4	SC	1	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	1.0	10.0	10.0	10.0	8.0	2.7
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2						
	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
12	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	3.7	9.3	10.0	6.0	9.7	1.3
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2						
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
LSD (P=.05)							3.28	2.41	1.17	2.90	2.46	1.23
Standard Deviation							1.94	1.42	0.69	1.71	1.46	0.73
CV							53.66	15.74	7.05	20.68	15.98	37.36

Weed Control in Onion - Hudsonville

Dept. of Horticulture, MSU

Pest Code							ONION
Rating Date							8/31/05
Rating Data Type							YIELD
Rating Unit							KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type		Rate Unit	Growth Stage	
1	pendimethalin	3.3	EC	2	lb ai/a	PRE	44.51
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
2	pendimethalin	3.8	CS	2	lb ai/a	PRE	45.37
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
3	pendimethalin	3.8	CS	2	lb ai/a	PRE	53.01
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
4	pendimethalin	3.8	CS	2	lb ai/a	PRE	42.57
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	oxyfluorfen	4	F	0.125	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
5	pendimethalin	3.8	CS	2	lb ai/a	PRE	43.42
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	flumioxazin	51	WDG	0.032	lb ai/a	PO1	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
6	pendimethalin	3.8	CS	2	lb ai/a	PRE	37.68
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
7	pendimethalin	3.8	CS	2	lb ai/a	PRE	10.29
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	oxyfluorfen	4	F	0.063	lb ai/a	PO1,2	
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
8	pendimethalin	3.8	CS	2	lb ai/a	PRE	41.23
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO1	
	dimethenamid-p	6	EC	0.98	lb ai/a	PO2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
9	pendimethalin	3.8	CS	2	lb ai/a	PRE	42.32
	dimethenamid-p	6	EC	0.98	lb ai/a	PO1	
	s-metolachlor	7.62	EC	1.2	lb ai/a	PO2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
10	pendimethalin	3.8	CS	2	lb ai/a	PRE	41.50
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	ethofumesate	4	SC	1	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
11	pendimethalin	3.8	CS	2	lb ai/a	PRE	28.86
	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	
	fluroxypyr	1.5	L	0.063	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
12	dimethenamid-p	6	EC	0.98	lb ai/a	PRE	43.68
	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	
	clethodim	2	EC	0.125	lb ai/a	PO1,2	
	NIS		L	0.5	% v/v	PO1,2	
LSD (P=.05)							12.614
Standard Deviation							7.449
CV							18.84

Postemergence Weed Control in Onion – Grant

Project Code: WC 112-05-04 **Location: Brink Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Onion **Variety: Genesis**
Planting Method: Seeded **Planting Date: 4/18/05**
Spacing: 2 IN **Row Spacing: See notes**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 6 ft wide x 30ft long

Soil Type: Adrian Muck **OM: 60%** **pH: 6.1**
Sand: 17% **Silt: 19%** **Clay: 4%** **CEC: N/A**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	6/8/05	11:30 am	85/74	°F	Dry	7 SW	53	Clear	N
PO2	7/8/05	11:00 am	80/73	°F	Dry	2 NE	54	Clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/8	Onion	6-8 in	2-3 leaf	
7/8	Onion	12-14 in	5-6 leaf	

COLQ = common lambsquarters
LATH = ladysthumb
COGR = common groundsel

Notes and Comments

1. Sprays applied with 2 nozzle boom FF11002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Two rows were 10 inches apart and double rows were 34 inches apart.
4. Harvested 30 ft from each plot.

Postemergence Weed Control in Onion – Grant

Dept. of Horticulture, MSU
Trial ID: WC 112-05-04 Study Director: Michael Particka
Location: Brink Farm Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ONION 6/23/05 RATING	COGR 6/23/05 RATING	COLQ 6/23/05 RATING	LATH 6/23/05 RATING	ONION 7/8/05 RATING	COLQ 7/8/05 RATING
1	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.0	9.3	9.0	7.7	1.7	5.3
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
2	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.0	9.7	8.3	9.0	1.0	6.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
3	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	2.7	9.3	9.7	8.0	2.3	7.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
4	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	1.3	10.0	8.3	8.0	1.7	5.3
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	2.0	10.0	9.0	7.7	3.0	7.0
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
6	oxyfluorfen	4	SC	0.125	lb ai/a	PO1,2	1.3	9.3	8.3	8.3	1.3	5.3
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
7	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.0	10.0	8.0	8.7	1.0	5.7
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2						
8	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	1.3	9.7	9.3	8.0	1.7	8.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
9	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	1.7	10.0	9.0	8.7	1.3	7.3
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
10	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	1.0	10.0	9.3	8.3	1.0	7.3
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
11	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	2.0	10.0	10.0	8.7	2.3	9.0
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
12	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	3.0	10.0	10.0	10.0	4.0	9.7
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
13	oxyfluorfen	2	L	0.063	lb ai/a	PO1	1.3	10.0	9.0	9.0	1.0	6.7
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.5	% v/v	PO1						
	flumioxazin	51	WDG	0.064	lb ai/a	PO2						
14	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	5.0	10.0	10.0	10.0	5.3	10.0
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
15	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	3.0	10.0	10.0	8.7	3.3	10.0
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2						
	clethodim	2	EC	0.125	lb ai/a	PO1,2						
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2						
	NIS		L	0.5	% v/v	PO1,2						
16	untreated						1.0	2.7	2.3	2.0	1.3	8.7
LSD (P=.05)							1.41	1.49	1.46	1.93	1.63	2.37
Standard Deviation							0.84	0.89	0.87	1.16	0.97	1.42
CV							45.48	9.52	10.0	14.15	46.78	19.19

Postemergence Weed Control in Onion – Grant

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LATH 7/8/05 RATING	ONION 7/14/05 RATING	LATH 7/14/05 RATING	ONION 8/29/05 YIELD KG/PLOT
1	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	6.3	1.7	5.7	60.09
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
2	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	7.3	1.3	6.7	65.02
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
3	oxyfluorfen	2	L	0.125	lb ai/a	PO1,2	6.7	2.0	6.7	57.11
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
4	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	8.0	2.3	6.3	56.18
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
5	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	5.3	2.3	6.0	54.05
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
6	oxyfluorfen	4	SC	0.125	lb ai/a	PO1,2	6.7	1.3	6.7	59.01
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
7	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	7.7	1.3	8.0	64.32
	flumioxazin	51	WDG	0.016	lb ai/a	PO1,2				
8	oxyfluorfen	2	L	0.031	lb ai/a	PO1,2	7.0	1.7	6.3	62.70
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
9	oxyfluorfen	4	SC	0.031	lb ai/a	PO1,2	8.3	1.3	7.7	65.11
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
10	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	8.3	1.0	7.3	67.80
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
11	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2	8.3	1.7	8.3	62.12
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
12	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2	8.3	5.0	9.3	35.47
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
13	oxyfluorfen	2	L	0.063	lb ai/a	PO1	8.3	1.3	8.0	58.12
	clethodim	2	EC	0.125	lb ai/a	PO1				
	NIS		L	0.5	% v/v	PO1				
	flumioxazin	51	WDG	0.064	lb ai/a	PO2				
14	pendimethalin	3.3	EC	2	lb ai/a	PO1,2	10.0	6.0	10.0	16.59
	oxyfluorfen	2	L	0.063	lb ai/a	PO1,2				
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
15	pendimethalin	3.8	CS	2	lb ai/a	PO1,2	9.3	4.0	9.3	29.59
	oxyfluorfen	4	SC	0.063	lb ai/a	PO1,2				
	clethodim	2	EC	0.125	lb ai/a	PO1,2				
	flumioxazin	51	WDG	0.032	lb ai/a	PO1,2				
	NIS		L	0.5	% v/v	PO1,2				
16	untreated						9.3	1.3	7.7	64.71
LSD (P=.05)							2.28	1.11	2.60	12.565
Standard Deviation							1.37	0.67	1.56	7.536
CV							17.46	29.86	20.78	13.73

Weed Control in Pea - HTRC

Project Code: WC 131-05-01 **Location: HTRC Block 132**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Pea **Variety: Super Snappy**
Planting Method: Seeded **Planting Date: 4/22/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.4%** **pH: 6.4**
Sand: 56% **Silt: 26%** **Clay: 17%** **CEC: 7.5**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	4/22/05	11:00 am	50/52	°F	Dry	5 E	42	90% Cloudy	N
PRE	4/26/05	2:00 pm	50/49	°F	Wet	5 S	63	60% Cloudy	N
PO1	6/9/05	3:00 pm	90/83	°F	Dry	5 S	42	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/9	Pea	6-10 in		
6/9	GRFT = green foxtail	2-4 in		many
6/9	COLQ = common lambsquarters	2-8 in		many
	EBNS = eastern black nightshade			
	LATH = ladysthumb			
	RRPW= redroot pigweed			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Planted 3 rows of pea 14 inches apart.
4. Harvested all plants in plot.

Weed Control in Pea - HTRC

Dept. of Horticulture, MSU
Trial ID: WC 131-05-01 Study Director: Michael Particka
Location: HTRC Block 132 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEA	GRFT	COLQ	EBNS	LATH	RRPW
Pest Code							PEA	GRFT	COLQ	EBNS	LATH	RRPW
Description												
Rating Date							6/15/05	6/15/05	6/15/05	6/15/05	6/15/05	6/15/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	trifluralin	4	EC	0.75	lb ai/a	PPI	1.0	6.3	7.0	4.7	5.3	8.7
2	s-metolachlor	7.62	EC	1.5	lb ai/a	PRE	1.7	8.0	6.0	9.7	6.3	9.3
3	clomazone	3	ME	0.5	lb ai/a	PRE	1.3	9.3	9.3	9.7	10.0	7.7
4	imazethapyr	2	AS	0.047	lb ai/a	PRE	1.3	1.0	4.3	4.7	4.7	6.3
5	imazamox	1	AS	0.064	lb ai/a	PRE	1.0	1.0	6.0	7.0	7.0	7.0
6	halosulfuron	75	WG	0.023	lb ai/a	PRE	2.7	8.7	5.3	1.0	7.7	9.3
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
7	halosulfuron	75	WG	0.032	lb ai/a	PRE	2.0	9.0	4.3	1.3	8.3	9.7
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.047	lb ai/a	PRE	4.0	9.7	6.0	1.7	9.7	10.0
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	trifluralin	4	EC	0.75	lb ai/a	PPI	5.7	6.0	8.3	3.7	10.0	10.0
	halosulfuron	75	WG	0.047	lb ai/a	PPI						
10	untreated						2.7	4.3	5.7	4.0	5.7	8.0
LSD (P=.05)							2.46	1.96	4.02	3.96	4.74	3.71
Standard Deviation							1.43	1.14	2.34	2.31	2.76	2.16
CV							61.39	18.03	37.61	48.74	37.03	25.12

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEA	PEA
Pest Code							PEA	PEA
Description							VINE	POD
Rating Date							7/13/05	7/13/05
Rating Data Type							YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT
1	trifluralin	4	EC	0.75	lb ai/a	PPI	3.99	3.22
2	s-metolachlor	7.62	EC	1.5	lb ai/a	PRE	3.32	2.83
3	clomazone	3	ME	0.5	lb ai/a	PRE	6.40	5.09
4	imazethapyr	2	AS	0.047	lb ai/a	PRE	2.75	2.19
5	imazamox	1	AS	0.064	lb ai/a	PRE	3.56	3.09
6	halosulfuron	75	WG	0.023	lb ai/a	PRE	4.13	2.85
	quizalofop	0.88	EC	0.069	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
7	halosulfuron	75	WG	0.032	lb ai/a	PRE	4.43	2.87
	quizalofop	0.88	EC	0.069	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
8	halosulfuron	75	WG	0.047	lb ai/a	PRE	3.95	2.91
	quizalofop	0.88	EC	0.069	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
9	trifluralin	4	EC	0.75	lb ai/a	PPI	2.69	2.12
	halosulfuron	75	WG	0.047	lb ai/a	PPI		
10	untreated						4.13	2.42
LSD (P=.05)							1.983	1.327
Standard Deviation							1.156	0.773
CV							29.38	26.12

Weed Control in Transplanted Pepper and Tomato - HTRC

Project Code: WC 101-05-01 **Location: HTRC Block 138**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Bell Pepper, Tomato **Variety: Bell Tower, Jackpot**
Planting Method: Transplant **Planting Date: 5-17-05**
Spacing: 24 IN **Row Spacing: 36 IN**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 1.8%** **pH: 5.5**
Sand: 55% **Silt: 30%** **Clay: 15%** **CEC: 6.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5/15/05	1:00 pm	52/54	°F	Dry	3 E	41	90% Cloudy	N
PRT	5/15/05	2:15 pm	59/55	°F	Dry	1 E	44	100% Cloudy	N
POT	5/17/05	2:45 pm	61/56	°F	Dry	5 E	37	90% Cloudy	N
PO1	6/16/05	3:00 pm	67/59	°F	Dry	9 NW	53	80% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/16	Pepper	4-6 in		
6/16	Tomato	6-10 in		
6/16	GRFT = green foxtail	2-6 in		moderate
6/16	COLQ = common lambsquarters	1-3 in		moderate
6/16	EBNS = eastern black nightshade	1-2 in		few
6/16	LATH = ladysthumb	1-2 in		few
	BYGR = barnyardgrass			
	RRPW = redroot pigweed			
	WIBW = wild buckwheat			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 101-05-01 Study Director: Michael Particka
Location: HTRC Block 138 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER 6/16/05 COUNT	TOMATO 6/16/05 COUNT	PEPPER 6/15/05 RATING	TOMATO 6/15/05 RATING	GRFT 6/15/05 RATING	COLQ 6/15/05 RATING
1	trifluralin	4	EC	1	lb ai/a	PPI	17.3	16.3	1.7	1.0	6.7	7.0
2	trifluralin	4	EC	1	lb ai/a	PPI	9.0	17.7	3.7	1.7	8.7	9.0
	metribuzin	75	DF	0.5	lb ai/a	PPI						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	17.0	16.3	1.7	2.0	8.7	4.3
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	17.0	16.3	1.3	2.0	9.7	8.0
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	17.0	18.0	2.3	1.3	8.3	4.3
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	17.0	16.7	1.7	2.0	9.7	8.3
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	17.0	17.0	2.7	1.0	5.3	9.7
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	16.3	17.3	3.0	1.7	3.0	9.0
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	17.0	17.3	2.7	1.7	4.3	9.0
	quizalofop	0.88	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	17.3	17.0	1.7	2.0	8.0	6.0
	metribuzin	75	DF	0.25	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	17.7	17.0	1.7	1.0	7.7	7.7
	rimsulfuron	25	DF	0.031	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
12	trifluralin	4	EC	1	lb ai/a	PPI	17.7	15.3	2.0	1.3	8.7	7.3
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	16.7	18.3	2.3	3.0	10.0	10.0
	clomazone	3	ME	0.5	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	18.0	16.7	2.0	1.3	10.0	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
15	untreated						17.0	16.3	1.0	1.0	1.0	1.0
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	17.3	17.7	1.7	2.3	9.7	10.0
LSD (P=.05)							1.99	1.72	1.41	1.21	1.88	2.06
Standard Deviation							1.19	1.03	0.84	0.73	1.13	1.24
CV							7.16	6.09	40.93	44.2	15.12	16.39

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	EBNS 6/15/05 RATING	LATH 6/15/05 RATING	RRPW 6/15/05 RATING	WIBW 6/15/05 RATING	PEPPER 6/22/05 RATING	TOMATO 6/22/05 RATING
1	trifluralin	4	EC	1	lb ai/a	PPI	7.7	8.3	8.3	4.3	1.0	1.0
2	trifluralin	4	EC	1	lb ai/a	PPI	9.0	10.0	10.0	9.7	2.7	1.7
	metribuzin	75	DF	0.5	lb ai/a	PPI						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	9.0	8.0	9.3	6.7	1.7	2.0
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	10.0	10.0	10.0	1.3	1.7
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	9.7	8.3	9.0	8.0	2.0	1.0
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	9.0	10.0	10.0	9.3	1.3	1.3
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	6.7	10.0	10.0	10.0	2.3	1.0
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	2.7	10.0	10.0	10.0	3.0	1.0
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	5.3	10.0	10.0	10.0	2.7	1.3
	quizalofop	0.88	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	9.0	7.0	9.0	10.0	3.7	2.0
	metribuzin	75	DF	0.25	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	10.0	8.0	9.0	6.0	2.0	1.3
	rimsulfuron	25	DF	0.031	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
12	trifluralin	4	EC	1	lb ai/a	PPI	9.3	8.0	9.3	10.0	7.7	7.3
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	10.0	10.0	10.0	2.7	2.3
	clomazone	3	ME	0.5	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	9.7	9.7	10.0	2.3	1.7
	flumioxazin	51	WDG	0.032	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
15	untreated						1.0	1.0	1.0	1.0	1.0	1.0
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	10.0	10.0	10.0	10.0	1.0	1.7
LSD (P=.05)							2.35	1.19	1.36	3.12	1.27	1.09
Standard Deviation							1.41	0.71	0.81	1.87	0.76	0.65
CV							17.55	8.27	9.0	22.18	31.76	35.68

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	BYGR 6/22/05 RATING	COLQ 6/22/05 RATING	EBNS 6/22/05 RATING	LATH 6/22/05 RATING	RRPW 6/22/05 RATING	WIBW 6/22/05 RATING
1	trifluralin	4	EC	1	lb ai/a	PPI	4.3	6.7	5.3	7.0	9.3	6.0
2	trifluralin	4	EC	1	lb ai/a	PPI	8.0	8.3	8.7	9.3	9.7	10.0
	metribuzin	75	DF	0.5	lb ai/a	PPI						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	8.3	6.0	9.3	7.0	10.0	4.7
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	10.0	7.7	10.0	8.7	10.0	10.0
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	7.7	5.3	10.0	7.0	10.0	7.3
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	10.0	7.7	10.0	9.3	10.0	7.3
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	7.7	9.7	4.7	10.0	10.0	7.7
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	8.0	9.3	3.0	10.0	10.0	10.0
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	8.3	9.3	4.0	10.0	10.0	10.0
	quizalofop	0.88	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	9.3	9.0	7.3	9.7	10.0	10.0
	metribuzin	75	DF	0.25	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	8.7	8.3	5.3	9.3	10.0	9.0
	rimsulfuron	25	DF	0.031	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
12	trifluralin	4	EC	1	lb ai/a	PPI	9.3	9.7	10.0	10.0	10.0	10.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	10.0	10.0	10.0	10.0	10.0	10.0
	clomazone	3	ME	0.5	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	9.7	10.0	10.0	9.7	10.0	10.0
	flumioxazin	51	WDG	0.032	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
15	untreated						1.0	1.0	1.0	1.0	1.0	1.0
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	10.0	9.7	10.0	10.0	9.3	10.0
LSD (P=.05)							1.90	1.41	3.14	1.15	0.43	4.18
Standard Deviation							1.14	0.85	1.88	0.69	0.26	2.51
CV							13.97	10.62	25.4	8.03	2.74	30.18

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							TOMATO	TOMATO	TOMATO	TOMATO	TOMATO	TOMATO
Rating Date							8/12/05	8/19/05	8/26/05	9/2/05	9/9/05	9/15/05
Rating Data Type							YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT	KG/PLOT	KG/PLOT	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	4.45	6.01	6.99	6.90	7.00	8.97
2	trifluralin	4	EC	1	lb ai/a	PPI	5.67	13.72	6.85	11.49	9.32	7.51
	metribuzin	75	DF	0.5	lb ai/a	PPI						
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	1.51	4.13	4.32	4.55	4.35	2.94
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	5.05	5.40	3.63	7.02	8.37	8.39
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	1.02	1.93	1.13	2.64	3.69	3.17
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	3.07	4.08	6.17	6.01	6.43	4.89
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	3.59	4.95	6.73	5.13	7.11	7.69
	quizalofop	0.88	EC	0.034	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	3.78	5.06	3.88	5.17	7.30	8.52
	quizalofop	0.88	EC	0.069	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	4.72	5.01	4.08	6.43	8.51	5.91
	quizalofop	0.88	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	trifluralin	4	EC	1	lb ai/a	PPI	6.41	11.32	12.25	8.31	7.77	9.78
	metribuzin	75	DF	0.25	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	6.54	8.75	9.38	9.62	9.47	7.63
	rimsulfuron	25	DF	0.031	lb ai/a	PO1						
	clethodim	2	EC	0.125	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
12	trifluralin	4	EC	1	lb ai/a	PPI	1.20	2.44	5.73	13.74	8.17	11.83
	sulfentrazone	4	F	0.14	lb ai/a	PO1						
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	9.76	14.38	15.43	8.55	12.93	7.54
	clomazone	3	ME	0.5	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	5.84	11.52	8.98	10.42	8.42	9.21
	flumioxazin	51	WDG	0.032	lb ai/a	PRT						
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	clethodim	2	EC	0.094	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
15	untreated						10.54	10.03	3.96	9.73	4.75	3.93
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	6.35	9.71	10.40	9.24	8.97	9.69
LSD (P=.05)							4.584	6.450	7.603	7.433	5.465	4.354
Standard Deviation							2.749	3.869	4.560	4.458	3.278	2.612
CV							55.33	52.27	66.39	57.09	42.79	35.54

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Pest Code							TOMATO	TOMATO	PEPPER	PEPPER	PEPPER
Rating Date							9/23/05		8/19/05	8/19/05	9/1/05
Rating Data Type							YIELD	TOT YIELD	YIELD	YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT	FRUIT/PL	KG/PLOT	FRUIT/PL
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	trifluralin	4	EC	1	lb ai/a	PPI	4.60	44.92	7.3	1.00	10.3
2	trifluralin	4	EC	1	lb ai/a	PPI	9.10	63.64	6.7	0.83	10.0
	metribuzin	75	DF	0.5	lb ai/a	PPI					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	3.45	25.25	3.0	0.29	6.3
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	3.82	41.68	12.7	1.69	17.7
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	1.58	15.15	1.0	0.08	4.7
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	3.84	34.49	9.0	1.04	12.7
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	5.99	41.18	7.3	0.68	11.0
	quizalofop	0.88	EC	0.034	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	5.53	39.24	4.0	0.35	8.3
	quizalofop	0.88	EC	0.069	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	6.29	40.96	4.7	0.41	6.3
	quizalofop	0.88	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
10	trifluralin	4	EC	1	lb ai/a	PPI	8.00	63.84	9.3	0.53	21.0
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	6.37	57.75	0.0	0.00	5.0
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
12	trifluralin	4	EC	1	lb ai/a	PPI	6.32	49.43	1.0	0.08	11.0
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	6.53	75.11	5.3	0.52	22.3
	clomazone	3	ME	0.5	lb ai/a	PRT					
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	clethodim	2	EC	0.094	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	8.42	62.81	9.0	0.83	31.3
	flumioxazin	51	WDG	0.032	lb ai/a	PRT					
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	clethodim	2	EC	0.094	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
15	untreated						3.42	46.37	7.3	0.82	10.0
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	11.16	65.52	18.7	2.20	32.3
LSD (P=.05)							3.894	26.452	8.59	1.044	12.70
Standard Deviation							2.336	15.865	5.15	0.626	7.62
CV							39.59	33.08	77.53	88.33	55.3

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER 9/1/05 YIELD KG/PLOT	PEPPER 9/15/05 YIELD FRUIT/PL	PEPPER 9/15/05 YIELD KG/PLOT	PEPPER 10/5/05 YIELD FRUIT/PL	PEPPER 10/5/05 YIELD KG/PLOT
	Pest Code										
	Rating Date						9/1/05	9/15/05	9/15/05	10/5/05	10/5/05
	Rating Data Type						YIELD	YIELD	YIELD	YIELD	YIELD
	Rating Unit						KG/PLOT	FRUIT/PL	KG/PLOT	FRUIT/PL	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	1.11	11.3	1.23	56.3	5.99
2	trifluralin	4	EC	1	lb ai/a	PPI	1.02	7.3	0.73	31.7	3.01
	metribuzin	75	DF	0.5	lb ai/a	PPI					
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	0.62	5.7	0.49	30.7	9.03
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	1.65	7.3	0.65	50.7	5.07
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	0.41	5.3	0.44	26.0	2.73
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	1.04	9.0	0.61	25.3	2.44
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	0.93	11.3	0.93	35.0	3.90
	quizalofop	0.88	EC	0.034	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	0.68	7.0	0.36	27.3	2.70
	quizalofop	0.88	EC	0.069	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	0.47	5.3	0.39	23.0	2.16
	quizalofop	0.88	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
10	trifluralin	4	EC	1	lb ai/a	PPI	2.03	13.3	1.15	30.0	2.79
	metribuzin	75	DF	0.25	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
11	trifluralin	4	EC	1	lb ai/a	PPI	0.44	7.3	0.67	22.7	2.67
	rimsulfuron	25	DF	0.031	lb ai/a	PO1					
	clethodim	2	EC	0.125	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
12	trifluralin	4	EC	1	lb ai/a	PPI	1.08	8.0	0.76	14.0	1.39
	sulfentrazone	4	F	0.14	lb ai/a	PO1					
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	2.04	18.3	1.60	50.3	4.98
	clomazone	3	ME	0.5	lb ai/a	PRT					
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	clethodim	2	EC	0.094	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	2.78	18.0	1.70	76.0	7.87
	flumioxazin	51	WDG	0.032	lb ai/a	PRT					
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	clethodim	2	EC	0.094	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
15	untreated						0.86	7.3	0.57	23.0	1.78
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	3.47	23.0	2.04	69.7	7.91
LSD (P=.05)							1.522	11.74	1.307	30.81	5.776
Standard Deviation							0.913	7.04	0.784	18.48	3.464
CV							70.84	68.27	87.62	49.97	83.46

Weed Control in Transplanted Pepper and Tomato - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	PEPPER TOT YIELD FRUIT/PL	PEPPER TOT YIELD KG/PLOT
	Pest Code						PEPPER	PEPPER
	Rating Date							
	Rating Data Type						TOT YIELD	TOT YIELD
	Rating Unit						FRUIT/PL	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	85.3	9.34
2	trifluralin	4	EC	1	lb ai/a	PPI	55.7	5.58
	metribuzin	75	DF	0.5	lb ai/a	PPI		
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PPI	45.7	10.43
4	s-metolachlor	7.62	EC	1.3	lb ai/a	POT	88.3	9.06
5	s-metolachlor II	7.64	EC	1.3	lb ai/a	PPI	37.0	3.66
6	s-metolachlor II	7.64	EC	1.3	lb ai/a	POT	56.0	5.12
7	halosulfuron	75	WG	0.031	lb ai/a	PRT	64.7	6.44
	quizalofop	0.88	EC	0.034	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
8	halosulfuron	75	WG	0.031	lb ai/a	PRT	46.7	4.09
	quizalofop	0.88	EC	0.069	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
9	halosulfuron	75	WG	0.031	lb ai/a	PRT	39.3	3.42
	quizalofop	0.88	EC	0.125	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
10	trifluralin	4	EC	1	lb ai/a	PPI	73.7	6.51
	metribuzin	75	DF	0.25	lb ai/a	PO1		
	clethodim	2	EC	0.125	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
11	trifluralin	4	EC	1	lb ai/a	PPI	35.0	3.77
	rimsulfuron	25	DF	0.031	lb ai/a	PO1		
	clethodim	2	EC	0.125	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
12	trifluralin	4	EC	1	lb ai/a	PPI	34.0	3.30
	sulfentrazone	4	F	0.14	lb ai/a	PO1		
13	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	96.3	9.14
	clomazone	3	ME	0.5	lb ai/a	PRT		
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
	clethodim	2	EC	0.094	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
14	s-metolachlor	7.62	EC	1.3	lb ai/a	PRT	134.3	13.17
	flumioxazin	51	WDG	0.032	lb ai/a	PRT		
	halosulfuron	75	WG	0.023	lb ai/a	PO1		
	clethodim	2	EC	0.094	lb ai/a	PO1		
	NIS		L	0.25	% v/v	PO1		
15	untreated						47.7	4.02
16	STRATEGY	2.1	SE	1.05	lb ai/a	POT	143.7	15.62
LSD (P=.05)							46.76	7.657
Standard Deviation							28.04	4.593
CV							41.42	65.21

Weed Control in Radish, Rutabaga, & Turnip - HTRC

Project Code: WC 118-05-01 **Location: HTRC Block 145**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 5/18/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 2.8%** **pH: 7.9**
Sand: 43% **Silt: 27%** **Clay: 30%** **CEC: 16.4**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	5/18/05	11:00 am	62/54	°F	Dry	9 SE	40	85% Cloudy	N
PRE	5/19/05	9:00 am	56/55	°F	Damp	3 S	60	100% Cloudy	Y
PO1	6/20/05	9:30 am	70/62	°F	Wet	2 W	66	Clear	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/20	Radish	4-5 in	6-7 leaf	
6/20	RUTABA = Rutabaga	3-5 in	5-7 leaf	
6/20	Turnip	8-12 in	8-9 leaf	

BYGR = barnyardgrass
GRFT = green foxtail
COLQ = common lambsquarters
CORW = common ragweed
LATH = ladysthumb
RRPW = redroot pigweed

Notes and Comments

1. Sprays applied with 5-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Planted 2 rows of radish and turnip per plot; planted 1 row of rutabaga per plot.
4. Crops and varieties: Radish – Reggae, Rutabaga – Laurentian, Turnip – Purple Top White Globe.

Weed Control in Radish, Rutabaga, & Turnip - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 118-05-01 Study Director: Michael Particka
Location: HTRC Block 145 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RADISH	RUTABA	TURNIP	BYGR	COLQ	CORW
Pest Code												
Description												
Rating Date							6/15/05	6/15/05	6/15/05	6/15/05	6/15/05	6/15/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	trifluralin	4	EC	1	lb ai/a	PPI	1.7	1.3	1.3	9.0	8.3	5.7
2	napropramide	50	DF	2	lb ai/a	PRE	2.3	2.0	1.7	9.3	8.0	1.3
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	2.7	2.0	2.0	10.0	9.7	7.7
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	2.3	3.0	2.7	10.0	10.0	10.0
5	flufenacet	60	DF	0.6	lb ai/a	PRE	6.7	4.7	8.0	10.0	9.3	10.0
6	clomazone	3	ME	0.25	lb ai/a	PRE	4.0	4.0	3.3	9.7	9.0	7.0
7	sulfentrazone	75	DF	0.14	lb ai/a	PRE	9.0	7.7	9.0	10.0	10.0	10.0
8	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.0	3.7	1.7	9.0	9.3	5.0
9	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	5.7	3.0	3.0	9.7	9.7	7.7
10	trifluralin	4	EC	1	lb ai/a	PPI	3.7	3.0	2.7	8.7	9.7	5.3
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	3.7	3.0	2.3	9.0	9.0	6.7
	sulfentrazone	75	DF	0.05	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
12	untreated						3.3	3.0	2.0	1.0	1.0	1.0
LSD (P=.05)							2.34	3.08	2.15	1.64	1.63	4.36
Standard Deviation							1.38	1.82	1.27	0.97	0.97	2.57
CV							35.28	54.18	38.49	11.03	11.25	39.92

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	LATH	RRPW	RADISH	RUTABA	TURNIP	GRFT
Pest Code												
Description												
Rating Date							6/15/05	6/15/05	6/27/05	6/27/05	6/27/05	6/27/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Rating Unit												
1	trifluralin	4	EC	1	lb ai/a	PPI	9.7	8.0	2.0	1.0	1.0	4.7
2	napropramide	50	DF	2	lb ai/a	PRE	8.7	2.3	3.0	1.3	1.7	4.0
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	9.7	9.3	4.3	3.7	2.7	9.7
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	10.0	2.7	1.7	2.0	9.7
5	flufenacet	60	DF	0.6	lb ai/a	PRE	10.0	9.3	7.3	2.7	7.7	7.7
6	clomazone	3	ME	0.25	lb ai/a	PRE	8.7	4.7	7.7	3.0	4.3	6.0
7	sulfentrazone	75	DF	0.14	lb ai/a	PRE	10.0	10.0	10.0	9.0	9.7	9.7
8	ethalfluralin	3	EC	0.75	lb ai/a	PRE	10.0	8.0	2.7	3.3	1.7	7.3
9	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	9.3	8.3	8.3	3.7	2.7	9.0
10	trifluralin	4	EC	1	lb ai/a	PPI	9.0	8.3	4.3	5.0	3.0	8.0
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	9.3	8.7	6.7	5.3	4.7	10.0
	sulfentrazone	75	DF	0.05	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
12	untreated						1.0	1.0	3.0	2.3	2.3	1.0
LSD (P=.05)							1.43	1.59	2.26	3.80	2.76	4.38
Standard Deviation							0.84	0.94	1.33	2.24	1.63	2.59
CV							9.6	12.84	25.82	64.08	45.07	35.83

Weed Control in Radish, Rutabaga, & Turnip - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COLQ	RRPW	RADISH PLANT	TURNIP ROOT	TURNIP LEAF	RUTABA ROOT
Pest Code												
Description												
Rating Date							6/27/05	6/27/05	7/1/05	7/8/05	7/8/05	8/23/05
Rating Data Type							RATING	RATING	YIELD	YIELD	YIELD	YIELD
Rating Unit									KG/PLOT	KG/PLOT	KG/PLOT	NUMBER
1	trifluralin	4	EC	1	lb ai/a	PPI	9.0	7.3	11.57	15.90	21.47	56.3
2	napropramide	50	DF	2	lb ai/a	PRE	8.7	4.3	9.69	14.36	21.98	60.7
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	8.3	8.7	10.50	11.95	19.07	48.3
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	10.0	9.7	12.09	10.67	18.34	57.0
5	flufenacet	60	DF	0.6	lb ai/a	PRE	9.7	7.7	2.98	1.66	3.57	41.7
6	clomazone	3	ME	0.25	lb ai/a	PRE	9.3	4.0	2.53	12.15	17.76	50.3
7	sulfentrazone	75	DF	0.14	lb ai/a	PRE	10.0	9.7	0.10	0.63	1.38	7.7
8	ethalfluralin	3	EC	0.75	lb ai/a	PRE	9.3	8.7	6.61	10.51	14.02	41.0
9	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	9.7	7.7	3.28	10.13	12.32	38.7
10	trifluralin	4	EC	1	lb ai/a	PPI	10.0	8.0	7.73	12.05	17.97	36.3
	clopyralid	3	EC	0.125	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
11	trifluralin	4	EC	1	lb ai/a	PPI	10.0	9.3	6.01	10.17	15.81	41.3
	sulfentrazone	75	DF	0.05	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
12	untreated						1.3	1.0	4.63	6.24	9.65	19.0
LSD (P=.05)							1.40	2.04	5.342	5.888	9.124	33.01
Standard Deviation							0.83	1.20	3.155	3.477	5.388	19.49
CV							9.44	16.78	48.7	35.84	37.3	46.94

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RUTABA ROOT	RUTABA LEAF
Pest Code								
Description								
Rating Date							8/23/05	8/23/05
Rating Data Type							YIELD	YIELD
Rating Unit							KG/PLOT	KG/PLOT
1	trifluralin	4	EC	1	lb ai/a	PPI	5.65	5.25
2	napropramide	50	DF	2	lb ai/a	PRE	5.68	4.66
3	s-metolachlor	7.62	EC	1.3	lb ai/a	PRE	5.14	4.15
4	dimethenamid-p	6	EC	0.75	lb ai/a	PRE	7.63	6.72
5	flufenacet	60	DF	0.6	lb ai/a	PRE	3.36	4.45
6	clomazone	3	ME	0.25	lb ai/a	PRE	4.13	3.57
7	sulfentrazone	75	DF	0.14	lb ai/a	PRE	0.89	1.37
8	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.72	2.59
9	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	4.41	4.20
10	trifluralin	4	EC	1	lb ai/a	PPI	2.96	3.39
	clopyralid	3	EC	0.125	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
11	trifluralin	4	EC	1	lb ai/a	PPI	3.34	4.22
	sulfentrazone	75	DF	0.05	lb ai/a	PO1		
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1		
12	untreated						1.43	2.51
LSD (P=.05)							4.465	3.212
Standard Deviation							2.637	1.897
CV							66.84	48.34

Weed Control in Rhubarb - CHES

Project Code: WC 102-05-01 **Location: CHES**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Rhubarb **Variety: Valentine**
Planting Method: Root Divisions **Planting Date: 4/25/05**
Spacing: 4 FT **Row Spacing: 10 FT**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 5.3 ft wide x 20 ft long

Soil Type: Spinks Loamy Sand **OM: 1.6%** **pH: 6.3**
Sand: 51% **Silt: 37%** **Clay: 11%** **CEC: 6.3**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	4/4/05	3:00 pm	62/55	°F	Damp	4 SW	28	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	Rhubarb			
	CORW =common ragweed			
	FIPW = field pepperweed			
	MATA = marestail (horseweed)			
	MWCH = mayweed chamomile			
	ROFB = rough fleabane			
	SHPU = shepherdspurse			
	WICA = wild carrot			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. 4/4/05 applied 0.75 lb Gramoxone Max + 0.25% OSS to all plots.

Weed Control in Rhubarb - CHES

Dept. of Horticulture, MSU

Trial ID: WC 102-05-01 Study Director: Michael Particka
Location: Clarksville Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RHUBARB 5/5/05 RATING	SHPU 5/5/05 RATING	WICA 5/5/05 RATING	RHUBARB 6/2/05 RATING	FIPW 6/2/05 RATING	MATA 6/2/05 RATING
1	pronamide	50	WP	2	lb ai/a	PRE	2.3	1.7	1.0	1.0	3.0	1.0
2	diuron	80	DF	2	lb ai/a	PRE	3.7	7.0	9.3	2.3	9.0	5.0
3	clomazone	3	ME	0.5	lb ai/a	PRE	2.3	6.3	7.7	2.3	1.0	1.0
4	sulfentrazone	4	F	0.375	lb ai/a	PRE	2.7	1.7	4.7	1.7	6.0	1.0
5	flumioxazin	51	WDG	0.375	lb ai/a	PRE	2.0	3.7	5.0	2.3	5.0	1.0
6	imazamox	1	AS	0.1	lb ai/a	PRE	4.3	8.0	5.7	5.0	10.0	7.0
7	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	2.7	2.0	2.3	2.3	2.7	1.0
8	halosulfuron	75	WG	0.047	lb ai/a	PRE	2.7	8.3	7.3	3.3	10.0	10.0
9	mesotrione	4	SC	0.24	lb ai/a	PRE	3.7	10.0	9.7	2.7	9.0	10.0
10	untreated						3.3	1.0	3.3	4.3	3.0	1.7
LSD (P=.05)							3.01	2.65	3.31	2.25	2.85	3.07
Standard Deviation							1.76	1.54	1.93	1.31	1.66	1.79
CV							59.21	31.07	34.49	47.91	28.35	46.26

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	MWCH 6/2/05 RATING	SHPU 6/2/05 RATING	WHCA 6/2/05 RATING	RHUBARB 7/8/05 RATING	CORW 7/8/05 RATING	MATA 7/8/05 RATING	ROFB 7/8/05 RATING
1	pronamide	50	WP	2	lb ai/a	PRE	2.0	1.0	4.0	2.7	3.7	1.3	1.7
2	diuron	80	DF	2	lb ai/a	PRE	9.0	9.3	10.0	1.3	9.0	4.7	8.7
3	clomazone	3	ME	0.5	lb ai/a	PRE	4.7	7.3	5.0	2.0	2.0	1.0	3.7
4	sulfentrazone	4	F	0.375	lb ai/a	PRE	4.0	1.3	2.3	4.0	4.3	1.3	2.0
5	flumioxazin	51	WDG	0.375	lb ai/a	PRE	10.0	4.0	6.0	2.7	6.0	1.3	3.7
6	imazamox	1	AS	0.1	lb ai/a	PRE	10.0	5.0	4.0	4.3	6.0	7.7	8.3
7	s-metolachlor	7.62	EC	0.95	lb ai/a	PRE	4.0	1.7	3.3	4.0	1.7	1.7	1.7
8	halosulfuron	75	WG	0.047	lb ai/a	PRE	10.0	5.0	8.3	2.0	3.0	6.3	3.0
9	mesotrione	4	SC	0.24	lb ai/a	PRE	10.0	10.0	9.3	1.3	9.0	10.0	9.7
10	untreated						1.0	1.0	1.7	3.7	1.7	1.3	3.0
LSD (P=.05)							4.36	3.03	6.14	2.27	3.97	3.60	4.79
Standard Deviation							2.54	1.77	3.58	1.32	2.32	2.10	2.79
CV							39.29	38.69	66.3	47.17	50.0	57.16	61.61

Weed Control in Spinach - HTRC

Project Code: WC 109-05-03 **Location: HTRC Block 115**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Spinach **Variety: UniPack 151**
Planting Method: Seeded **Planting Date: 4/28/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 8 ft wide x 30 ft long

Soil Type: Capac Loam **OM: 2.9%** **pH: 6.4**
Sand: 60% **Silt: 24%** **Clay: 16%** **CEC: 5.9**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PPI	4/18/05	10:30 am	73/55	°F	Dry	6 W	41	10% Cloudy	N
PRE	4/29/05	11:00 am	47/46	°F	Damp	2 NE	28	20% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	spinach			
	WIRA = wild radish			

Notes and Comments

1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Planted 3 rows of spinach per plot.
4. Field was hand weeded twice.

Weed Control in Spinach - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 109-05-03 Study Director: Michael Particka
Location: HTRC Block 115 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SPINACH 5/25/05 RATING	WIRA 5/25/05 RATING	SPINACH 6/1/05 RATING	SPINACH 6/16/05 YIELD KG/PLOT
1	pyrazon	68	DF	2	lb ai/a	PRE	3.7	6.0	2.3	3.80
2	s-metolachlor	7.62	EC	0.32	lb ai/a	PRE	2.0	1.0	2.0	4.69
3	s-metolachlor	7.62	EC	0.64	lb ai/a	PRE	2.7	1.7	2.3	4.59
4	ethofumesate	4	SC	1	lb ai/a	PRE	5.0	4.3	4.0	2.15
5	dimethenamid-p	6	EC	0.5	lb ai/a	PRE	3.3	2.0	3.7	2.32
6	cycloate	6	EC	3	lb ai/a	PPI	2.3	2.0	1.0	4.54
7	linuron	50	DF	0.1	lb ai/a	PRE	2.0	1.3	1.7	5.52
8	EPTC	7	EC	2	lb ai/a	PPI	4.3	3.7	3.3	2.76
9	flufenacet	60	DF	0.3	lb ai/a	PRE	4.3	6.0	3.0	4.33
10	untreated					PRE	1.0	1.0	1.3	3.89
LSD (P=.05)							2.34	2.63	1.94	2.373
Standard Deviation							1.36	1.54	1.13	1.383
CV							44.51	52.97	45.96	35.84

Weed Control in Spinach – Mason Co.

Project Code: WC 109-05-02 **Location: Schwass Farm**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Spinach **Variety: Uni-pak 151**
Planting Method: Seeded **Planting Date: 5/1/05**
Spacing: 1 IN **Row Spacing: 7 IN**
Tillage Type: Conventional **Study Design: RCBD** **Replications: 3**
Plot Size: 6 ft wide x 30 ft long

Soil Type: Sandy Loam **OM: 2.2%** **pH: 5.3**
Sand: 61% **Silt: 26%** **Clay: 13%** **CEC: 9.8**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PO1	5/31/05	11:15 am	70/79	°F	Dry	3 NE	52	Clear	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	spinach			
	SHPU = shepherdspurse			

Notes and Comments
1. Sprays applied with 4-nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Harvested 2 m^2 from each plot.

Weed Control in Spinach – Mason Co.

Dept. of Horticulture, MSU

Trial ID: WC 109-05-02 Study Director: Michael Particka
Location: Schwass Farm Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SPINACH 6/9/05 RATING	SHPU 6/9/05 RATING	SPINACH 6/21/05 YIELD 2SQ M KG
1	dimethenamid-p	6	EC	0.5	lb ai/a	PO1	3.3	1.7	4.63
2	s-metolachlor	7.62	EC	0.75	lb ai/a	PO1	1.7	1.7	5.74
3	phenmedipham	1.3	L	1	lb ai/a	PO1	5.0	5.7	4.49
4	ethofumesate	4	SC	1	lb ai/a	PO1	3.0	4.3	5.19
5	desmedipham	1.3	EC	0.325	lb ai/a	PO1	5.0	5.7	4.73
6	BETAMIX	1.3	EC	0.325	lb ai/a	PO1	5.0	3.7	4.97
7	PROGRESS	1.8	L	0.33	lb ai/a	PO1	6.3	4.7	4.70
8	triflusulfuron	50	WDG	0.0156	lb ai/a	PO1	5.3	6.0	4.13
9	clopyralid	3	EC	0.125	lb ai/a	PO1	1.3	1.0	5.24
10	untreated						2.0	1.7	5.39
LSD (P=.05)							1.80	3.54	1.214
Standard Deviation							1.05	2.06	0.707
CV							27.55	57.35	14.38

Weed Control in Strawberries Fall Application - HTRC

Project Code: WC 126-05-01 **Location: HTRC Block 26**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Strawberry **Variety: Darselect**
Planting Method: Transplant **Planting Date: 6/3/04**
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	11/17/04	1:30 pm	55/49	°F	Damp	3 SW	78	100% Cloudy	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
	STBE = strawberry			
	ANBG = annual bluegrass			
	QUGR = quackgrass			
	COLQ = common lambsquarters			
	DAND = dandelion			
	MATA = marestail (horseweed)			
	MWCH = mayweed chamomile			
	SHPU = shepherdspurse			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. All plots had some fruit loss as a result of hot humid weather during harvest.

Weed Control in Strawberries Fall Application - HTRC

Dept. of Horticulture, MSU
Trial ID: WC 126-05-01 Study Director: Michael Particka
Location: HTRC Block 26 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 5/16/05 RATING	ANBG 5/16/05 RATING	QUGR 5/16/05 RATING	MWCH 5/16/05 RATING	SHPU 5/16/05 RATING	STBE 6/3/05 RATING
1	terbacil	80	WP	0.4	lb ai/a	FALL	4.3	5.0	6.3	9.0	10.0	3.3
2	sulfentrazone	75	DF	0.25	lb ai/a	FALL	4.0	7.3	5.0	7.3	9.7	2.7
3	sulfentrazone	75	DF	0.5	lb ai/a	FALL	4.3	4.7	6.3	10.0	10.0	3.3
4	flumioxazin	51	WDG	0.256	lb ai/a	FALL	6.3	8.7	6.0	10.0	10.0	4.0
5	flumioxazin	51	WDG	0.512	lb ai/a	FALL	6.7	7.0	8.7	10.0	10.0	5.7
6	oxyfluorfen	2	L	0.5	lb ai/a	FALL	4.3	8.3	7.7	9.3	10.0	3.3
7	dimethenamid-p	6	EC	0.98	lb ai/a	FALL	3.3	6.3	4.3	3.0	6.0	2.3
8	pendimethalin	3.3	EC	2	lb ai/a	FALL	2.3	4.0	5.0	6.7	7.3	1.3
9	pronamide	50	WP	2	lb ai/a	FALL	8.0	4.3	10.0	7.7	5.7	7.7
10	untreated					FALL	2.7	4.0	1.0	1.0	1.0	2.0
LSD (P=.05)							2.39	6.23	3.38	5.04	2.28	1.96
Standard Deviation							1.39	3.63	1.97	2.94	1.33	1.14
CV							30.04	60.88	32.7	39.69	16.72	32.01

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	ANBG 6/3/05 RATING	QUGR 6/3/05 RATING	COLQ 6/3/05 RATING	DAND 6/3/05 RATING	MATA 6/3/05 RATING	MWCH 6/3/05 RATING	SHPU 6/3/05 RATING
1	terbacil	80	WP	0.4	lb ai/a	FALL	9.0	9.7	4.7	6.7	10.0	7.7	10.0
2	sulfentrazone	75	DF	0.25	lb ai/a	FALL	6.0	9.0	10.0	7.3	9.7	7.3	9.0
3	sulfentrazone	75	DF	0.5	lb ai/a	FALL	8.3	8.7	10.0	10.0	10.0	8.3	10.0
4	flumioxazin	51	WDG	0.256	lb ai/a	FALL	10.0	9.0	10.0	10.0	10.0	10.0	10.0
5	flumioxazin	51	WDG	0.512	lb ai/a	FALL	10.0	10.0	10.0	9.3	10.0	10.0	10.0
6	oxyfluorfen	2	L	0.5	lb ai/a	FALL	8.3	8.0	7.7	10.0	10.0	5.3	8.7
7	dimethenamid-p	6	EC	0.98	lb ai/a	FALL	7.7	8.3	4.7	10.0	9.3	4.3	1.0
8	pendimethalin	3.3	EC	2	lb ai/a	FALL	6.0	9.0	9.7	4.3	5.3	4.0	4.3
9	pronamide	50	WP	2	lb ai/a	FALL	10.0	10.0	7.3	9.0	9.7	9.7	1.0
10	untreated					FALL	6.3	9.0	5.3	7.7	8.7	6.7	5.7
LSD (P=.05)							2.92	1.96	4.96	3.88	2.35	5.55	2.86
Standard Deviation							1.70	1.14	2.89	2.26	1.37	3.23	1.67
CV							20.85	12.61	36.45	26.82	14.8	44.09	23.91

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 6/14/05 YIELD G/PLOT	STBE 6/20/05 YIELD G/PLOT	STBE 6/23/05 YIELD G/PLOT	STBE TOT YLD G/PLOT
1	terbacil	80	WP	0.4	lb ai/a	FALL	1055.7	625.0	322.7	2003.3
2	sulfentrazone	75	DF	0.25	lb ai/a	FALL	1351.0	871.3	318.7	2541.0
3	sulfentrazone	75	DF	0.5	lb ai/a	FALL	1074.3	724.3	190.0	1988.7
4	flumioxazin	51	WDG	0.256	lb ai/a	FALL	518.7	341.7	99.7	960.0
5	flumioxazin	51	WDG	0.512	lb ai/a	FALL	450.7	232.3	108.7	791.7
6	oxyfluorfen	2	L	0.5	lb ai/a	FALL	1721.0	799.0	506.3	3026.3
7	dimethenamid-p	6	EC	0.98	lb ai/a	FALL	2373.3	1253.7	464.0	4091.0
8	pendimethalin	3.3	EC	2	lb ai/a	FALL	3031.7	1702.0	646.0	5379.7
9	pronamide	50	WP	2	lb ai/a	FALL	895.3	94.7	40.7	1030.7
10	untreated					FALL	1148.0	1076.3	347.3	2571.7
LSD (P=.05)							1818.77	1044.48	440.63	3073.91
Standard Deviation							1060.23	608.87	256.86	1791.89
CV							77.85	78.87	84.38	73.49

Weed Control in Strawberries – Spring Application - HTRC

Project Code: WC 126-05-02 **Location: HTRC Block 26**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Strawberry **Variety: Darselcet**
Planting Method: Transplant **Planting Date: 6/3/04**
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
PRE	4/6/05	9:00 am	59/48	°F	Damp	4 S	62	10% Cloudy	Y
PO1	5/17/05	9:00 am	60/50	°F	Damp	3 N	44	30% Cloudy	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
5/17	STBE = strawberry	5 in		
5/17	QUGR = quackgrass	4-8 in		
	ANBG = annual bluegrass			
	COCW = common chickweed			
	COLQ = common lambsquarters			
	DAND = dandelion			
	SHPU = shepherdspurse			

Notes and Comments

1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. All plots had some fruit loss as a result of hot, humid weather during harvest.

Weed Control in Strawberries – Spring Application - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 126-05-02 Study Director: Michael Particka
Location: HTRC Block 26 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 5/16/05 RATING	ANBG 5/16/05 RATING	QUGR 5/16/05 RATING	COCW 5/16/05 RATING	COLQ 5/16/05 RATING	SHPU 5/16/05 RATING
1	quizalofop	0.88	EC	0.041	lb ai/a	PO1	1.0	1.7	3.0	1.0	1.0	1.0
	COC		L	1	% v/v	PO1						
2	quizalofop	0.88	EC	0.083	lb ai/a	PO1	1.3	1.0	1.7	1.0	1.0	1.0
	COC		L	1	% v/v	PO1						
3	quizalofop	0.88	EC	0.041	lb ai/a	PO1	1.0	1.0	3.0	1.0	1.0	1.0
	NIS		L	0.25	% v/v	PO1						
4	quizalofop	0.88	EC	0.083	lb ai/a	PO1	1.3	1.0	1.0	1.0	1.0	1.0
	NIS		L	0.25	% v/v	PO1						
5	napropramide	50	DF	2	lb ai/a	PRE	1.3	3.3	4.7	9.3	10.0	1.7
	clethodim	2	EC	0.125	lb ai/a	PO1						
	COC		L	1	% v/v	PO1						
6	sulfentrazone	4	F	0.5	lb ai/a	PRE	4.0	8.3	8.7	10.0	10.0	10.0
7	flumioxazin	51	WDG	0.256	lb ai/a	PRE	2.7	3.7	3.7	10.0	10.0	7.7
8	flumioxazin	51	WDG	0.512	lb ai/a	PRE	3.3	5.7	4.3	10.0	10.0	10.0
9	terbacil	80	WP	0.4	lb ai/a	PRE	3.7	9.7	8.7	10.0	10.0	10.0
10	untreated						1.0	1.0	1.0	1.0	1.0	1.0
LSD (P=.05)							1.35	2.31	4.17	0.63	0.00	2.25
Standard Deviation							0.79	1.34	2.43	0.37	0.00	1.31
CV							38.05	37.0	61.33	6.72	0.0	29.54

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 6/3/05 RATING	ANBG 6/3/05 RATING	QUGR 6/3/05 RATING	COLQ 6/3/05 RATING	DAND 6/3/05 RATING	SHPU 6/3/05 RATING	STBE 6/14/05 YIELD G/PLOT
1	quizalofop	0.88	EC	0.041	lb ai/a	PO1	2.3	3.7	8.0	1.0	6.3	1.0	1181.0
	COC		L	1	% v/v	PO1							
2	quizalofop	0.88	EC	0.083	lb ai/a	PO1	2.3	4.0	8.3	1.7	6.7	1.0	1212.3
	COC		L	1	% v/v	PO1							
3	quizalofop	0.88	EC	0.041	lb ai/a	PO1	1.7	2.7	8.7	1.0	7.0	1.0	1795.0
	NIS		L	0.25	% v/v	PO1							
4	quizalofop	0.88	EC	0.083	lb ai/a	PO1	2.3	5.0	8.3	1.0	6.0	3.0	1048.0
	NIS		L	0.25	% v/v	PO1							
5	napropramide	50	DF	2	lb ai/a	PRE	2.3	4.3	8.7	3.3	7.7	1.0	1620.0
	clethodim	2	EC	0.125	lb ai/a	PO1							
	COC		L	1	% v/v	PO1							
6	sulfentrazone	4	F	0.5	lb ai/a	PRE	2.7	8.3	6.3	10.0	6.7	10.0	1464.3
7	flumioxazin	51	WDG	0.256	lb ai/a	PRE	2.7	4.7	5.0	10.0	8.0	9.7	1610.3
8	flumioxazin	51	WDG	0.512	lb ai/a	PRE	3.0	7.0	6.0	10.0	9.3	10.0	670.0
9	terbacil	80	WP	0.4	lb ai/a	PRE	2.7	9.0	9.0	10.0	7.3	10.0	1267.7
10	untreated						1.3	7.7	9.7	6.0	9.7	8.7	1884.3
LSD (P=.05)							1.57	3.12	2.88	2.62	6.47	1.95	1050.01
Standard Deviation							0.92	1.82	1.68	1.53	3.77	1.14	612.09
CV							39.3	32.28	21.5	28.33	50.49	20.55	44.51

Weed Control in Strawberries – Spring Application - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	STBE 6/20/05 YIELD G/PLOT	STBE 6/23/05 YIELD G/PLOT	STBE TOT YLD G/PLOT
1	quizalofop	0.88	EC	0.041	lb ai/a	PO1	1265.7	302.7	2749.3
	COC		L	1	% v/v	PO1			
2	quizalofop	0.88	EC	0.083	lb ai/a	PO1	1163.0	204.3	2579.7
	COC		L	1	% v/v	PO1			
3	quizalofop	0.88	EC	0.041	lb ai/a	PO1	1343.0	259.7	3397.7
	NIS		L	0.25	% v/v	PO1			
4	quizalofop	0.88	EC	0.083	lb ai/a	PO1	896.3	310.7	2255.0
	NIS		L	0.25	% v/v	PO1			
5	napropramide	50	DF	2	lb ai/a	PRE	1741.7	435.3	3797.0
	clethodim	2	EC	0.125	lb ai/a	PO1			
	COC		L	1	% v/v	PO1			
6	sulfentrazone	4	F	0.5	lb ai/a	PRE	555.3	320.0	2339.7
7	flumioxazin	51	WDG	0.256	lb ai/a	PRE	758.7	311.3	2680.3
8	flumioxazin	51	WDG	0.512	lb ai/a	PRE	361.0	192.7	1223.7
9	terbacil	80	WP	0.4	lb ai/a	PRE	1137.0	210.3	2615.0
10	untreated						1826.3	410.3	4121.0
LSD (P=.05)							1127.44	393.71	2396.01
Standard Deviation							657.22	229.51	1396.72
CV							59.49	77.61	50.32

Weed Control in Apple 1 - CHES

Project Code: WC 128-05-01 **Location: CHES**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Apple **Variety: Liberty, Empire, Ida Red**
Planting Method: Transplant **Planting Date:**
Spacing: 4 FT **Row Spacing: 15 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 32 ft long, 8 trees/plot

Soil Type: Lapeer Sandy Loam **OM: 1.2%** **pH: 7.0**
Sand: 63% **Silt: 25%** **Clay: 12%** **CEC: 7.0**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5/5/05	10:00 am	56/48	°F	Dry	7 SW	34	Clear	N
EPO	6/2/05	2:00 pm	80/76	°F	Dry	6 SE	32	15% Cloudy	N
LPO	7/20/05	2:00 pm	87/86	°F	Dry	7 SW	39	20% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
5/5	Apple		Bloom	
5/5	ANBG = annual bluegrass	4-6 in		moderate
5/5	MECW = mouseear chickweed	3-5 in	Flower	many
6/2	Apple		0.5″ Fruit	
6/2	ANBG = annual bluegrass	6-10 in		moderate
6/2	FIPC = field pennycress	15-20 in		few
6/2	MATA = marestail (horseweed)	8-10 in		few
6/2	PRLE = prickly lettuce	7-9 in		few
6/2	RSFI = redstem filaree	8-12 in		moderate
6/2	COGR = common groundsel	6-10 in	Flower	few
6/2	MECW = mouseear chickweed	3-6 in		moderate
6/2	SHPU = shepherdspurse	6-10 in	Flower	moderate
7/20	Apple		2″ Fruit	
7/20	LACG = large crabgrass	4-6 in		few
7/20	COPU = common purslane	2-6		moderate
	BHPL = buckhorn plantain			
	COLQ = common lambsquarters			
	REFE = red fescue			
	RRPW = redroot pigweed			
	WESA = western salsify			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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 1 - CHES

Dept. of Horticulture, MSU

Trial ID: WC 128-05-01 Study Director: Michael Particka
Location: Clarksville Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	APPLE 6/2/05 RATING	ANBG 6/2/05 RATING	COGR 6/2/05 RATING	MECW 6/2/05 RATING	PRLE 6/2/05 RATING	RSFI 6/2/05 RATING
1	paraquat (A7813)	3	L	0.625	lb ai/a	EPO	1.0	3.0	1.0	1.0	4.0	1.0
	NIS		L	0.125	% v/v	EPO						
2	paraquat (A7813)	3	L	0.75	lb ai/a	EPO	1.0	3.7	4.0	4.0	7.0	3.0
	NIS		L	0.125	% v/v	EPO						
3	paraquat (A7813)	3	L	1	lb ai/a	EPO	1.0	1.3	4.0	4.0	7.0	1.0
	NIS		L	0.125	% v/v	EPO						
4	paraquat	3	L	1	lb ai/a	EPO	1.0	1.7	4.0	4.0	4.0	1.7
5	simazine	90	WDG	3	lb ai/a	EPO	2.0	1.0	1.0	1.0	1.0	1.0
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO						
	NIS		L	0.125	% v/v	EPO						
6	norflurazon	80	DF	2.36	lb ai/a	EPO	1.0	1.0	1.0	1.0	1.0	1.0
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO						
	NIS		L	0.125	% v/v	EPO						
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	1.0	9.7	10.0	10.0	10.0	10.0
	glyphosate	5	L	0.86	lb ai/a	LPRE						
8	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	2.0	9.7	10.0	10.0	10.0	9.0
	glyphosate	5	L	0.86	lb ai/a	LPRE						
9	halosulfuron	75	WG	0.047	lb ai/a	LPRE	1.3	9.3	10.0	10.0	10.0	10.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.047	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
10	halosulfuron	75	WG	0.094	lb ai/a	LPRE	1.0	10.0	10.0	9.0	10.0	9.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.094	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
11	halosulfuron	75	WG	0.188	lb ai/a	LPRE	1.0	10.0	10.0	10.0	10.0	10.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.188	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
12	untreated						1.0	1.7	1.0	4.0	4.0	1.7
LSD (P=.05)							1.01	2.51	3.98	4.59	5.25	1.89
Standard Deviation							0.59	1.48	2.35	2.71	3.10	1.11
CV							49.78	28.74	42.73	47.81	47.7	22.67

Weed Control in Apple 1 - CHES

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	SHPU 6/2/05 RATING	WESA 6/2/05 RATING	APPLE 7/20/05 RATING	LACG 7/20/05 RATING	BHPL 7/20/05 RATING	COLQ 7/20/05 RATING
1	paraquat (A7813)	3	L	0.625	lb ai/a	EPO	1.0	1.0	1.0	5.3	4.0	4.3
	NIS		L	0.125	% v/v	EPO						
2	paraquat (A7813)	3	L	0.75	lb ai/a	EPO	1.0	1.0	1.0	7.0	6.0	5.3
	NIS		L	0.125	% v/v	EPO						
3	paraquat (A7813)	3	L	1	lb ai/a	EPO	1.0	1.0	1.3	5.3	4.0	6.0
	NIS		L	0.125	% v/v	EPO						
4	paraquat	3	L	1	lb ai/a	EPO	1.0	1.0	1.0	8.3	3.7	5.3
5	simazine	90	WDG	3	lb ai/a	EPO	1.0	1.0	1.3	9.7	10.0	10.0
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO						
	NIS		L	0.125	% v/v	EPO						
6	norflurazon	80	DF	2.36	lb ai/a	EPO	1.0	1.0	1.0	10.0	9.7	8.3
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO						
	NIS		L	0.125	% v/v	EPO						
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	10.0	7.7	1.0	9.7	10.0	10.0
	glyphosate	5	L	0.86	lb ai/a	LPRE						
8	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	10.0	9.0	2.3	10.0	10.0	10.0
	glyphosate	5	L	0.86	lb ai/a	LPRE						
9	halosulfuron	75	WG	0.047	lb ai/a	LPRE	10.0	9.0	1.0	2.7	4.7	8.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.047	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
10	halosulfuron	75	WG	0.094	lb ai/a	LPRE	10.0	10.0	1.0	2.7	7.3	9.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.094	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
11	halosulfuron	75	WG	0.188	lb ai/a	LPRE	10.0	10.0	1.0	3.7	6.3	9.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.188	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
12	untreated						1.0	1.0	1.0	6.3	3.7	3.0
LSD (P=.05)							0.00	2.39	1.22	2.99	4.45	2.80
Standard Deviation							0.00	1.41	0.72	1.77	2.63	1.66
CV							0.0	32.14	61.52	26.27	39.71	21.99

Weed Control in Apple 1 - CHES

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	COPU	MATA	RRPW	RSFI	WESA
	Pest Code						COPU	MATA	RRPW	RSFI	WESA
	Rating Date						7/20/05	7/20/05	7/20/05	7/20/05	7/20/05
	Rating Data Type						RATING	RATING	RATING	RATING	RATING
1	paraquat (A7813)	3	L	0.625	lb ai/a	EPO	3.3	8.7	3.3	9.3	7.0
	NIS		L	0.125	% v/v	EPO					
2	paraquat (A7813)	3	L	0.75	lb ai/a	EPO	3.0	8.3	6.0	7.3	5.3
	NIS		L	0.125	% v/v	EPO					
3	paraquat (A7813)	3	L	1	lb ai/a	EPO	3.0	8.7	3.3	6.3	4.7
	NIS		L	0.125	% v/v	EPO					
4	paraquat	3	L	1	lb ai/a	EPO	2.3	9.0	7.3	6.3	9.0
5	simazine	90	WDG	3	lb ai/a	EPO	9.0	10.0	8.0	10.0	10.0
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO					
	NIS		L	0.125	% v/v	EPO					
6	norflurazon	80	DF	2.36	lb ai/a	EPO	10.0	9.7	9.7	10.0	7.7
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO					
	NIS		L	0.125	% v/v	EPO					
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	10.0	8.7	10.0	7.0	5.3
	glyphosate	5	L	0.86	lb ai/a	LPRE					
8	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	10.0	8.0	10.0	6.0	5.7
	glyphosate	5	L	0.86	lb ai/a	LPRE					
9	halosulfuron	75	WG	0.047	lb ai/a	LPRE	2.7	9.3	8.3	1.7	7.7
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.047	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
10	halosulfuron	75	WG	0.094	lb ai/a	LPRE	4.3	9.7	9.7	5.0	9.0
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.094	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
11	halosulfuron	75	WG	0.188	lb ai/a	LPRE	5.7	10.0	10.0	3.3	10.0
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.188	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
12	untreated						7.3	7.7	7.7	5.7	7.7
	LSD (P=.05)						2.22	1.96	2.35	5.18	5.50
	Standard Deviation						1.31	1.16	1.39	3.06	3.25
	CV						22.25	12.93	17.82	47.08	43.8

Weed Control in Apple 1 - CHES

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	APPLE 8/18/05 RATING	LACG 8/18/05 RATING	REFE 8/18/05 RATING	RRPW 8/18/05 RATING	OVERALL 8/18/05 RATING
	Pest Code										
	Rating Date										
	Rating Data Type										
1	paraquat (A7813)	3	L	0.625	lb ai/a	EPO	1.0	3.7	8.3	5.3	3.3
	NIS		L	0.125	% v/v	EPO					
2	paraquat (A7813)	3	L	0.75	lb ai/a	EPO	1.0	4.3	8.3	4.3	5.7
	NIS		L	0.125	% v/v	EPO					
3	paraquat (A7813)	3	L	1	lb ai/a	EPO	1.0	7.7	7.7	4.0	4.3
	NIS		L	0.125	% v/v	EPO					
4	paraquat	3	L	1	lb ai/a	EPO	1.3	7.0	7.0	5.7	4.0
5	simazine	90	WDG	3	lb ai/a	EPO	1.3	6.0	9.3	5.0	3.7
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO					
	NIS		L	0.125	% v/v	EPO					
6	norflurazon	80	DF	2.36	lb ai/a	EPO	1.3	6.3	9.7	5.7	6.3
	paraquat (A7813)	3	L	0.75	lb ai/a	EPO					
	NIS		L	0.125	% v/v	EPO					
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	1.7	6.7	5.0	4.7	5.0
	glyphosate	5	L	0.86	lb ai/a	LPRE					
8	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	1.7	7.3	6.0	2.7	3.3
	glyphosate	5	L	0.86	lb ai/a	LPRE					
9	halosulfuron	75	WG	0.047	lb ai/a	LPRE	1.3	4.0	5.7	4.0	2.7
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.047	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
10	halosulfuron	75	WG	0.094	lb ai/a	LPRE	1.0	5.3	8.3	3.7	4.0
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.094	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
11	halosulfuron	75	WG	0.188	lb ai/a	LPRE	1.0	6.0	6.3	6.3	4.3
	paraquat	3	L	1	lb ai/a	LPRE					
	NIS		L	0.25	% v/v	LPRE					
	halosulfuron	75	WG	0.188	lb ai/a	LPO					
	paraquat	3	L	1	lb ai/a	LPO					
	NIS		L	0.25	% v/v	LPO					
12	untreated						1.0	8.7	4.0	7.7	3.0
LSD (P=.05)							0.93	4.88	5.81	2.86	3.42
Standard Deviation							0.55	2.88	3.43	1.69	2.02
CV							44.85	47.37	48.03	34.37	48.76

Weed Control in Apple 2 - CHES

Project Code: WC 128-05-02 **Location: CHES**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Apple **Variety: Liberty, Empire, Ida Red**
Planting Method: Transplant **Planting Date:**
Spacing: 4 FT **Row Spacing: 15 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 32 ft long, 8 trees/plot

Soil Type: Lapeer Sandy Loam **OM: 1.1%** **pH: 6.9**
Sand: 44% **Silt: 39%** **Clay: 17%** **CEC: 6.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	4/19/05	3:00 pm	82/70	°F	Dry	10 SW	25	50% Cloudy	N
EPO	6/2/05	1:15 pm	78/70	°F	Dry	5 SE	32	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
4/19	Apple			
4/19	ANBG = annual bluegrass	2-3 in		many
4/19	MECW = mouseear chickweed	1-3 in		many
6/2	Apple			
6/2	ANBG = annual bluegrass	6-10 in		moderate
6/2	REFE = red fescue	20-24 in		moderate
6/2	FIPC = field pennycress	15-20		few
6/2	MATA = marestail (horseweed)	8-10		few
6/2	MECW = mouseear chickweed	6-8 in		moderate
6/2	RSFI = redstem filaree	8-12 in		moderate
	DOBR = downy brome			
	LACG = large crabgrass			
	BHPL = buckhorn plantain			
	COLQ = common lambsquarters			
	COPU = common purslane			
	RRPW = redroot pigweed			
	WESA = western salsify			

Notes and Comments
1. **Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.**
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 2 - CHES

Dept. of Horticulture, MSU
Trial ID: WC 128-05-02 Study Director: Michael Particka
Location: Clarksville Investigator: Dr. Bernard Zandstra

Pest Code							APPLE	ANBG	DOBR	MATA	MECW	RSFI	WESA
Rating Date							6/2/05	6/2/05	6/2/05	6/2/05	6/2/05	6/2/05	6/2/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage							
1	terbacil	80	WP	0.6	lb ai/a	EPRE	1.0	10.0	10.0	10.0	8.0	7.7	7.7
	diuron	80	DF	0.6	lb ai/a	EPRE							
	NIS		L	0.25	% v/v	EPRE							
2	terbacil	80	WP	0.8	lb ai/a	EPRE	1.0	10.0	10.0	10.0	6.7	10.0	7.0
	diuron	80	DF	0.8	lb ai/a	EPRE							
3	terbacil	80	WP	0.8	lb ai/a	EPRE	1.0	10.0	10.0	10.0	10.0	10.0	6.7
	diuron	80	DF	1.6	lb ai/a	EPRE							
4	terbacil	80	WP	1.2	lb ai/a	EPRE	1.0	10.0	10.0	10.0	10.0	10.0	9.0
	diuron	80	DF	2.4	lb ai/a	EPRE							
	NIS		L	0.25	% v/v	EPRE							
5	terbacil	80	WP	0.8	lb ai/a	EPRE	1.0	10.0	10.0	10.0	7.7	8.7	2.3
	NIS		L	0.25	% v/v	EPRE							
6	terbacil	80	WP	1.6	lb ai/a	EPRE	1.0	10.0	10.0	10.0	9.3	10.0	6.3
	NIS		L	0.25	% v/v	EPRE							
7	diuron	80	DF	3.8	lb ai/a	EPO	1.0	3.0	10.0	1.0	4.0	4.7	1.0
8	simazine	90	WDG	3	lb ai/a	EPO	1.0	2.0	7.0	1.0	1.0	4.0	1.0
	glyphosate	5.5	L	1	lb ai/a	EPO							
9	diclobenil	1.38	CS	2	lb ai/a	EPRE	1.0	9.3	4.0	6.0	10.0	1.0	4.0
10	diclobenil	1.38	CS	4	lb ai/a	EPRE	1.0	8.3	7.0	7.0	9.7	7.0	4.3
11	diclobenil	4	G	4	lb ai/a	EPRE	1.0	8.0	7.0	9.3	10.0	7.0	1.7
12	untreated						1.0	1.3	6.7	1.0	7.0	4.0	1.0
LSD (P=.05)							0.00	1.33	5.87	2.32	4.53	6.03	5.12
Standard Deviation							0.00	0.78	3.47	1.37	2.67	3.56	3.02
CV							0.0	10.22	40.94	19.26	34.38	50.86	69.72

Pest Code							APPLE	LACG	BHPL	COLQ	COPU	MATA
Rating Date							7/20/05	7/20/05	7/20/05	7/20/05	7/20/05	7/20/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	terbacil	80	WP	0.6	lb ai/a	EPRE	1.0	6.7	10.0	10.0	9.0	10.0
	diuron	80	DF	0.6	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
2	terbacil	80	WP	0.8	lb ai/a	EPRE	1.3	7.3	10.0	10.0	8.7	10.0
	diuron	80	DF	0.8	lb ai/a	EPRE						
3	terbacil	80	WP	0.8	lb ai/a	EPRE	1.3	9.7	10.0	10.0	10.0	10.0
	diuron	80	DF	1.6	lb ai/a	EPRE						
4	terbacil	80	WP	1.2	lb ai/a	EPRE	1.0	8.7	10.0	10.0	10.0	10.0
	diuron	80	DF	2.4	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
5	terbacil	80	WP	0.8	lb ai/a	EPRE	1.7	7.0	10.0	10.0	8.3	9.3
	NIS		L	0.25	% v/v	EPRE						
6	terbacil	80	WP	1.6	lb ai/a	EPRE	1.3	9.3	10.0	10.0	9.7	10.0
	NIS		L	0.25	% v/v	EPRE						
7	diuron	80	DF	3.8	lb ai/a	EPO	1.3	10.0	10.0	10.0	10.0	4.3
8	simazine	90	WDG	3	lb ai/a	EPO	1.7	10.0	10.0	10.0	10.0	8.0
	glyphosate	5.5	L	1	lb ai/a	EPO						
9	diclobenil	1.38	CS	2	lb ai/a	EPRE	1.0	3.0	10.0	10.0	4.3	2.7
10	diclobenil	1.38	CS	4	lb ai/a	EPRE	1.0	5.3	10.0	10.0	6.7	5.0
11	diclobenil	4	G	4	lb ai/a	EPRE	1.0	3.0	10.0	9.3	7.7	4.0
12	untreated						1.0	8.0	10.0	7.7	9.3	1.7
LSD (P=.05)							0.86	3.17	0.00	2.08	3.11	3.19
Standard Deviation							0.51	1.87	0.00	1.23	1.84	1.88
CV							41.32	25.57	0.0	12.59	21.27	26.61

Weed Control in Apple 2 - CHES

Dept. of Horticulture, MSU

Pest Code							RRPW	RSFI	WESA	APPLE	LACG	REFE
Rating Date							7/20/05	7/20/05	7/20/05	8/18/05	8/18/05	8/18/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	terbacil	80	WP	0.6	lb ai/a	EPRE	1.7	9.0	7.0	1.0	6.0	8.7
	diuron	80	DF	0.6	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
2	terbacil	80	WP	0.8	lb ai/a	EPRE	5.0	10.0	6.0	1.0	6.7	9.7
	diuron	80	DF	0.8	lb ai/a	EPRE						
3	terbacil	80	WP	0.8	lb ai/a	EPRE	3.0	8.0	7.0	1.0	6.7	8.3
	diuron	80	DF	1.6	lb ai/a	EPRE						
4	terbacil	80	WP	1.2	lb ai/a	EPRE	7.0	8.7	8.7	1.0	7.0	7.3
	diuron	80	DF	2.4	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
5	terbacil	80	WP	0.8	lb ai/a	EPRE	3.0	8.7	5.3	1.0	7.0	8.7
	NIS		L	0.25	% v/v	EPRE						
6	terbacil	80	WP	1.6	lb ai/a	EPRE	6.3	10.0	8.0	1.0	9.0	7.0
	NIS		L	0.25	% v/v	EPRE						
7	diuron	80	DF	3.8	lb ai/a	EPO	6.3	10.0	4.0	1.7	7.0	6.3
8	simazine	90	WDG	3	lb ai/a	EPO	7.0	10.0	10.0	1.3	7.7	10.0
	glyphosate	5.5	L	1	lb ai/a	EPO						
9	diclobenil	1.38	CS	2	lb ai/a	EPRE	3.0	1.0	2.7	1.3	8.0	9.0
10	diclobenil	1.38	CS	4	lb ai/a	EPRE	6.3	7.0	10.0	1.0	4.7	10.0
11	diclobenil	4	G	4	lb ai/a	EPRE	5.7	6.0	3.7	1.0	2.3	6.3
12	untreated						8.7	6.0	4.0	1.0	6.3	3.7
LSD (P=.05)							3.09	4.64	5.77	0.69	5.71	3.75
Standard Deviation							1.83	2.74	3.41	0.41	3.37	2.21
CV							34.78	34.83	53.53	36.46	51.67	27.97

Pest Code							BHPL	RRPW	RSFI	OVERALL
Rating Date							8/18/05	8/18/05	8/18/05	8/18/05
Rating Data Type							RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	terbacil	80	WP	0.6	lb ai/a	EPRE	7.0	9.0	7.0	5.0
	diuron	80	DF	0.6	lb ai/a	EPRE				
	NIS		L	0.25	% v/v	EPRE				
2	terbacil	80	WP	0.8	lb ai/a	EPRE	6.3	8.3	9.0	6.3
	diuron	80	DF	0.8	lb ai/a	EPRE				
3	terbacil	80	WP	0.8	lb ai/a	EPRE	6.7	5.3	7.3	4.3
	diuron	80	DF	1.6	lb ai/a	EPRE				
4	terbacil	80	WP	1.2	lb ai/a	EPRE	4.7	5.7	10.0	4.0
	diuron	80	DF	2.4	lb ai/a	EPRE				
	NIS		L	0.25	% v/v	EPRE				
5	terbacil	80	WP	0.8	lb ai/a	EPRE	8.7	4.7	4.7	3.3
	NIS		L	0.25	% v/v	EPRE				
6	terbacil	80	WP	1.6	lb ai/a	EPRE	10.0	7.0	9.0	7.0
	NIS		L	0.25	% v/v	EPRE				
7	diuron	80	DF	3.8	lb ai/a	EPO	7.0	7.0	4.7	5.7
8	simazine	90	WDG	3	lb ai/a	EPO	10.0	10.0	3.0	8.0
	glyphosate	5.5	L	1	lb ai/a	EPO				
9	diclobenil	1.38	CS	2	lb ai/a	EPRE	9.3	7.7	9.0	7.3
10	diclobenil	1.38	CS	4	lb ai/a	EPRE	9.3	10.0	10.0	7.0
11	diclobenil	4	G	4	lb ai/a	EPRE	6.7	6.3	10.0	4.3
12	untreated						4.0	7.0	2.7	1.0
LSD (P=.05)							5.61	5.00	5.16	4.58
Standard Deviation							3.31	2.95	3.05	2.70
CV							44.32	40.27	42.37	51.19

Weed Control in Blueberry - HTRC

Project Code: WC 127-05-02 **Location: HTRC Block 114**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Blueberry **Variety: Jersey**
Planting Method: Transplant **Planting Date: 1991**
Spacing: 4 FT **Row Spacing: 10 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 6 ft wide x 40 ft long

Soil Type: Capac Loam **OM: 5.0%** **pH: 5.2**
Sand: 61% **Silt: 15%** **Clay: 24%** **CEC: 16.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5/6/04	1:30 pm	71/55	°F	Dry	5 SW	20	35% Cloudy	N
LPO	6/30/05	8:15 am	78/73	°F	Dry	Clam	80	85% Cloudy	Y

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density

BLBE = blueberry
GRFT = green foxtail
LACG = large crabgass
QUGR = quackgrass
YEFT = yellow foxtail
MATA = marestail (horseweed)
REFE = red fescue
VICR = Virginia creeper
WICA = wild carrot

Notes and Comments
1. Sprays applied with 2 nozzle boom FF11002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
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. 5 plants per plot

Weed Control in Blueberry - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 127-05-01 Study Director: Michael Particka
Location: HTRC Block 114 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	BLBE 6/6/05 RATING	QUGR 6/6/05 RATING	REFE 6/6/05 RATING	VICR 6/6/05 RATING	WICA 6/6/05 RATING	BLBE 7/11/05 RATING	GRFT 7/11/05 RATING
1	diclobenil	1.38	CS	2	lb ai/a	LPRE	1.0	8.7	10.0	6.0	9.0	1.0	6.7
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
2	diclobenil	1.38	CS	3	lb ai/a	LPRE	1.3	9.3	10.0	6.3	8.7	1.0	6.0
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
3	diclobenil	1.38	CS	4	lb ai/a	LPRE	1.0	8.7	9.7	7.7	10.0	1.0	8.3
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
4	diclobenil	4	G	4	lb ai/a	LPRE	1.0	9.0	10.0	10.0	10.0	1.0	5.0
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
5	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	1.0	9.0	10.0	7.0	10.0	1.0	7.3
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
6	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	1.0	9.0	9.0	10.0	10.0	1.0	8.0
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
7	halosulfuron	75	WG	0.047	lb ai/a	LPRE	1.0	4.7	8.0	7.0	7.0	1.0	7.7
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
	halosulfuron	75	WG	0.047	lb ai/a	LPO							
	paraquat	3	L	1	lb ai/a	LPO							
	NIS		L	0.25	% v/v	LPO							
8	halosulfuron	75	WG	0.094	lb ai/a	LPRE	1.0	7.7	9.3	4.7	9.0	1.0	8.7
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
	halosulfuron	75	WG	0.094	lb ai/a	LPO							
	paraquat	3	L	1	lb ai/a	LPO							
	NIS		L	0.25	% v/v	LPO							
9	halosulfuron	75	WG	0.188	lb ai/a	LPRE	1.0	7.0	9.3	8.7	10.0	1.0	8.3
	paraquat	3	L	1	lb ai/a	LPRE							
	NIS		L	0.25	% v/v	LPRE							
	halosulfuron	75	WG	0.188	lb ai/a	LPO							
	paraquat	3	L	1	lb ai/a	LPO							
	NIS		L	0.25	% v/v	LPO							
10	untreated						1.0	1.0	1.7	6.3	7.0	1.0	1.0
LSD (P=.05)							0.34	2.82	1.67	6.78	4.02	0.00	3.35
Standard Deviation							0.19	1.64	0.97	3.95	2.34	0.00	1.95
CV							18.74	22.19	11.19	53.68	25.84	0.0	29.14

Weed Control in Blueberry - HTRC

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	QUGR 7/11/05 RATING	MATA 7/11/05 RATING	VICR 7/11/05 RATING	BLBE 9/1/05 RATING	LACG 9/1/05 RATING	YEFT 9/1/05 RATING
1	diclobenil	1.38	CS	2	lb ai/a	LPRE	7.0	9.3	7.0	1.0	6.0	5.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
2	diclobenil	1.38	CS	3	lb ai/a	LPRE	8.7	10.0	5.0	1.0	6.0	5.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
3	diclobenil	1.38	CS	4	lb ai/a	LPRE	8.3	9.7	8.7	1.0	7.7	4.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
4	diclobenil	4	G	4	lb ai/a	LPRE	8.0	10.0	8.7	1.0	3.7	5.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
5	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	6.7	10.0	7.0	1.0	7.0	5.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
6	flumioxazin	51	WDG	0.765	lb ai/a	LPRE	4.3	9.0	10.0	1.0	8.0	6.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
7	halosulfuron	75	WG	0.047	lb ai/a	LPRE	8.7	9.0	10.0	1.0	5.7	4.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.047	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
8	halosulfuron	75	WG	0.094	lb ai/a	LPRE	8.7	10.0	8.3	1.0	6.3	6.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.094	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
9	halosulfuron	75	WG	0.188	lb ai/a	LPRE	9.3	10.0	7.7	1.0	7.3	7.7
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.188	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
10	untreated						1.0	7.0	4.0	1.0	1.0	1.0
LSD (P=.05)							1.63	3.23	5.26	0.00	3.32	3.82
Standard Deviation							0.95	1.88	3.07	0.00	1.93	2.23
CV							13.42	20.05	40.19	0.0	32.95	42.86

Weed Control in Cherry - CHES

Project Code: WC 128-05-03 **Location: CHES**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cherry **Variety: Balaton, Montmorency**
Planting Method: Transplant **Planting Date: 1986**
Spacing: 15 FT **Row Spacing: 20 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 50 ft long

Soil Type: Dryden Sandy Loam **OM: 1.6%** **pH: 6.8**
Sand: 46% **Silt: 40%** **Clay: 14%** **CEC: 7.2**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
EPRE	4/19/05	2:00 pm	80/61	°F	Dry	10 SW	24	20% Cloudy	N
LPRE	5/5/05	11:30 pm	60/50	°F	Dry	7 SW	28	Clear	N
PO1	7/20/05	3:00 pm	86/84	°F	Dry	7 SW	39	30% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
4/19	Cherry		bud swell	
4/19	ANBG = annual bluegrass	1-4 in		moderate
4/19	QUGR = quackgrass	3-5 in		moderate
4/19	DAND = dandelion	1-4 in		few
4/19	WICA = wild carrot	1-2 in		moderate
5/5	Cherry		late bloom	
5/5	ANBG = annual bluegrass	4-6 in		moderate
5/5	QUGR = quackgrass	6-8 in		moderate
5/5	DAND = dandelion	6-8 in	60% flower	moderate
5/5	WICA = wild carrot	3-4 in		moderate
7/20	MATA = marestail (horseweed)	30-40 in		moderate
7/20	PRLE = prickly lettuce	30-40 in		moderate
	DOBR = downy bromegrass			
	LACG = large crabgrass			
	COGR = common groundsel			
	RRPW = redroot pigweed			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.

Weed Control in Cherry - CHES

Dept. of Horticulture, MSU

Trial ID: WC 128-05-03 Study Director: Michael Particka
Location: Clarksville Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CHERRY 6/2/05 RATING	DOBR 6/2/05 RATING	QUGR 6/2/05 RATING	COGR 6/2/05 RATING	PRLE 6/2/05 RATING	CHERRY 7/14/05 RATING
1	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	1.0	10.0	10.0	10.0	10.0	1.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
2	rimsulfuron	25	DF	0.0625	lb ai/a	EPRE	1.0	10.0	10.0	10.0	9.7	1.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
3	rimsulfuron	25	DF	0.125	lb ai/a	EPRE	1.0	10.0	10.0	10.0	9.7	1.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
4	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	1.0	9.3	10.0	10.0	9.3	1.0
	oryzalin	4	AS	4	lb ai/a	EPRE						
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
5	flumioxazin	51	WDG	0.383	lb ai/a	EPRE	1.0	10.0	10.0	10.0	10.0	1.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
6	glyphosate	5.5	L	1	lb ai/a	EPRE	1.0	7.7	9.7	7.0	7.0	1.0
	NIS		L	0.25	% v/v	EPRE						
7	simazine	90	WDG	4	lb ai/a	EPRE	1.0	10.0	10.0	10.0	6.3	1.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
8	halosulfuron	75	WG	0.047	lb ai/a	LPRE	1.0	9.3	10.0	9.7	2.3	1.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.047	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
9	halosulfuron	75	WG	0.094	lb ai/a	LPRE	1.0	9.3	9.7	10.0	2.7	1.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.094	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
10	halosulfuron	75	WG	0.188	lb ai/a	LPRE	1.0	8.7	10.0	10.0	6.0	1.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.188	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
11	untreated						1.0	1.0	4.0	1.0	1.0	1.0
LSD (P=.05)							0.00	2.15	2.67	2.70	3.95	0.00
Standard Deviation							0.00	1.26	1.57	1.58	2.32	0.00
CV							0.0	14.55	16.71	17.85	34.51	0.0

Weed Control in Cherry - CHES

Dept. of Horticulture, MSU

Pest Code							DAND	MATA	PRLE	CHERRY	LACG	MATA
Rating Date							7/14/05	7/14/05	7/14/05	8/18/05	8/18/05	8/18/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	10.0	10.0	9.0	1.0	7.3	9.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
2	rimsulfuron	25	DF	0.0625	lb ai/a	EPRE	10.0	9.7	9.7	1.0	9.3	9.7
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
3	rimsulfuron	25	DF	0.125	lb ai/a	EPRE	10.0	10.0	9.3	1.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
4	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	9.3	10.0	6.3	1.0	9.0	10.0
	oryzalin	4	AS	4	lb ai/a	EPRE						
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
5	flumioxazin	51	WDG	0.383	lb ai/a	EPRE	9.7	10.0	9.3	1.0	8.0	10.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
6	glyphosate	5.5	L	1	lb ai/a	EPRE	8.7	6.7	3.3	1.0	3.3	7.0
	NIS		L	0.25	% v/v	EPRE						
7	simazine	90	WDG	4	lb ai/a	EPRE	5.3	9.3	8.0	1.0	4.7	9.0
	glyphosate	5.5	L	1	lb ai/a	EPRE						
	NIS		L	0.25	% v/v	EPRE						
8	halosulfuron	75	WG	0.047	lb ai/a	LPRE	4.3	3.3	4.7	1.0	8.3	4.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.047	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
9	halosulfuron	75	WG	0.094	lb ai/a	LPRE	7.7	3.3	5.7	1.0	8.3	6.3
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.094	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
10	halosulfuron	75	WG	0.188	lb ai/a	LPRE	9.0	8.3	3.7	1.0	9.7	10.0
	paraquat	3	L	1	lb ai/a	LPRE						
	NIS		L	0.25	% v/v	LPRE						
	halosulfuron	75	WG	0.188	lb ai/a	LPO						
	paraquat	3	L	1	lb ai/a	LPO						
	NIS		L	0.25	% v/v	LPO						
11	untreated						1.3	2.7	2.7	1.0	3.7	1.7
LSD (P=.05)							3.38	3.73	2.62	0.00	4.01	3.72
Standard Deviation							1.99	2.19	1.54	0.00	2.35	2.19
CV							25.61	28.9	23.58	0.0	31.69	27.75

Weed Control in Cherry - CHES

Dept. of Horticulture, MSU

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	RRPW 8/18/05 RATING	OVERALL 8/18/05 RATING
1	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	9.7	6.7
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
2	rimsulfuron	25	DF	0.0625	lb ai/a	EPRE	10.0	8.7
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
3	rimsulfuron	25	DF	0.125	lb ai/a	EPRE	10.0	8.7
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
4	rimsulfuron	25	DF	0.047	lb ai/a	EPRE	10.0	8.0
	oryzalin	4	AS	4	lb ai/a	EPRE		
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
5	flumioxazin	51	WDG	0.383	lb ai/a	EPRE	10.0	8.0
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
6	glyphosate	5.5	L	1	lb ai/a	EPRE	8.7	3.7
	NIS		L	0.25	% v/v	EPRE		
7	simazine	90	WDG	4	lb ai/a	EPRE	6.3	5.3
	glyphosate	5.5	L	1	lb ai/a	EPRE		
	NIS		L	0.25	% v/v	EPRE		
8	halosulfuron	75	WG	0.047	lb ai/a	LPRE	10.0	6.0
	paraquat	3	L	1	lb ai/a	LPRE		
	NIS		L	0.25	% v/v	LPRE		
	halosulfuron	75	WG	0.047	lb ai/a	LPO		
	paraquat	3	L	1	lb ai/a	LPO		
	NIS		L	0.25	% v/v	LPO		
9	halosulfuron	75	WG	0.094	lb ai/a	LPRE	10.0	7.3
	paraquat	3	L	1	lb ai/a	LPRE		
	NIS		L	0.25	% v/v	LPRE		
	halosulfuron	75	WG	0.094	lb ai/a	LPO		
	paraquat	3	L	1	lb ai/a	LPO		
	NIS		L	0.25	% v/v	LPO		
10	halosulfuron	75	WG	0.188	lb ai/a	LPRE	10.0	9.7
	paraquat	3	L	1	lb ai/a	LPRE		
	NIS		L	0.25	% v/v	LPRE		
	halosulfuron	75	WG	0.188	lb ai/a	LPO		
	paraquat	3	L	1	lb ai/a	LPO		
	NIS		L	0.25	% v/v	LPO		
11	untreated						5.7	1.3
LSD (P=.05)							2.81	3.72
Standard Deviation							1.65	2.19
CV							18.09	32.8

Weed Control in 2nd Year Cherry and Peach - HTRC

Project Code: WC 128-05-04 **Location: HTRC Block 76**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cherry, Peach **Variety: Montmorency, Coral Star**
Planting Method: Transplant **Planting Date: 4/28/04**
Spacing: 15 FT **Row Spacing: 18 FT**
Tillage Type: **Study Design: RCB** **Replications: 3**
Plot Size: 11 ft wide x 45 ft long

Soil Type: Marlette Fine Sandy Loam **OM: 2.2%** **pH: 7.4**
Sand: 56% **Silt: 24%** **Clay: 19%** **CEC: 13.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
LPRE	5/5/05	1:30 pm	61/56	°F	Dry	6 SE	17	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
5/5	Cherry		pre bloom	
5/5	Peach		pre bloom	
5/5	DAND = dandelion	3-5 in		moderate
5/5	WHCA = white campion	3-6 in		moderate
	BYGR = barnyardgrass			
	FAPA = fall panicum			
	GRFT = green foxtail			
	LACG = large crabgrass			
	QUGR = quackgrass			
	YENS = yellow nutsedge			
	CATH = Canada thistle			
	CUDO = curly dock			
	CORW = common ragweed			
	MATA = marestail (horseweed)			
	RRPW = redroot pigweed			

Notes and Comments
1. Sprays applied with 4 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 backpack sprayer.
2. Crop and weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Cherry and peach trees alternated by row.
4. Cherry trees suffered from deer browsing.

Weed Control in 2nd Year Cherry and Peach - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 128-05-04 Study Director: Michael Particka
Location: HTRC Block 76-77 Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CHERRY 6/6/05 RATING	PEACH 6/6/05 RATING	QUGR 6/6/05 RATING	YENS 6/6/05 RATING	CATH 6/6/05 RATING	CUDO 6/6/05 RATING	CORW 6/6/05 RATING
1	terbacil	80	WP	0.4	lb ai/a	LPRE	1.0	1.0	9.7	5.3	10.0	9.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
2	terbacil	80	WP	0.8	lb ai/a	LPRE	1.0	1.0	10.0	10.0	10.0	6.3	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
3	terbacil	80	WP	1.6	lb ai/a	LPRE	3.0	1.0	10.0	8.3	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
4	oryzalin	4	AS	2	lb ai/a	LPRE	1.5	1.0	10.0	4.0	10.0	10.0	3.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
5	simazine	90	WDG	4	lb ai/a	LPRE		1.0	9.3	6.0	10.0	7.7	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
6	diuron	80	DF	3	lb ai/a	LPRE	1.0	1.0	7.7	5.0	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	1.0	1.0	10.0	2.3	10.0	10.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
8	untreated					LPRE	1.0	1.5	6.0	4.7	7.0	10.0	3.0
LSD (P=.05)							0.98	1.64	3.88	4.89	3.22	3.17	2.48
Standard Deviation							0.38	0.47	2.21	2.79	1.84	1.80	1.41
CV							27.85	44.02	24.38	48.96	19.09	19.72	17.14

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	DAND 6/6/05 RATING	MATA 6/6/05 RATING	CHERRY 7/11/05 RATING	PEACH 7/11/05 RATING	GRFT 7/11/05 RATING	YENS 7/11/05 RATING	CORW 7/11/05 RATING
1	terbacil	80	WP	0.4	lb ai/a	LPRE	8.3	10.0	2.5	1.0	4.0	1.3	9.3
	glyphosate	5.5	L	1	lb ai/a	LPRE							
2	terbacil	80	WP	0.8	lb ai/a	LPRE	9.3	10.0	3.0	1.0	8.0	8.3	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
3	terbacil	80	WP	1.6	lb ai/a	LPRE	10.0	7.0	3.0	1.5	10.0	9.7	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
4	oryzalin	4	AS	2	lb ai/a	LPRE	8.0	10.0	4.0	1.0	4.7	1.0	1.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
5	simazine	90	WDG	4	lb ai/a	LPRE	9.0	10.0		1.3	1.7	1.7	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
6	diuron	80	DF	3	lb ai/a	LPRE	9.0	10.0	2.5	2.0	8.7	2.3	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	10.0	10.0	2.0	1.0	8.3	1.3	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE							
8	untreated					LPRE	1.0	1.0	1.0	1.5	5.0	2.0	6.3
LSD (P=.05)							1.92	3.22	5.09	2.94	4.21	1.47	3.04
Standard Deviation							1.09	1.84	1.96	0.84	2.41	0.84	1.74
CV							13.53	21.61	76.14	64.68	38.25	24.34	20.85

Weed Control in 2nd Year Cherry and Peach - HTRC

Dept. of Horticulture, MSU

Pest Code							DAND	MATA	RRPW	CHERRY	PEACH	BYGR
Rating Date							7/11/05	7/11/05	7/11/05	8/19/05	8/19/05	8/19/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	terbacil	80	WP	0.4	lb ai/a	LPRE	8.0	8.7	3.7	2.0	2.0	4.7
	glyphosate	5.5	L	1	lb ai/a	LPRE						
2	terbacil	80	WP	0.8	lb ai/a	LPRE	3.3	10.0	10.0	3.0	1.0	5.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
3	terbacil	80	WP	1.6	lb ai/a	LPRE	9.7	10.0	10.0	2.0	1.0	10.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
4	oryzalin	4	AS	2	lb ai/a	LPRE	1.7	9.0	8.0	4.0	1.0	7.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
5	simazine	90	WDG	4	lb ai/a	LPRE	6.0	10.0	6.3		2.3	4.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	diuron	80	DF	3	lb ai/a	LPRE	7.0	10.0	9.0	1.5	1.0	6.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	5.7	3.0	9.3	1.5	2.0	5.7
	glyphosate	5.5	L	1	lb ai/a	LPRE						
8	untreated					LPRE	3.3	1.0	4.3	5.0	1.5	8.0
LSD (P=.05)							3.13	1.93	4.90	2.81	2.66	4.75
Standard Deviation							1.79	1.10	2.80	1.08	0.76	2.71
CV							32.02	14.33	36.89	39.79	51.17	42.27

Pest Code							FAPA	LACG	YENS	MATA	RRPW	OVERALL
Rating Date							8/19/05	8/19/05	8/19/05	8/19/05	8/19/05	8/19/05
Rating Data Type							RATING	RATING	RATING	RATING	RATING	RATING
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	terbacil	80	WP	0.4	lb ai/a	LPRE	1.7	9.0	5.0	9.3	5.7	2.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
2	terbacil	80	WP	0.8	lb ai/a	LPRE	3.7	3.0	7.7	10.0	7.0	4.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
3	terbacil	80	WP	1.6	lb ai/a	LPRE	8.0	9.3	9.3	10.0	7.7	7.7
	glyphosate	5.5	L	1	lb ai/a	LPRE						
4	oryzalin	4	AS	2	lb ai/a	LPRE	4.3	7.3	2.7	10.0	8.0	2.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
5	simazine	90	WDG	4	lb ai/a	LPRE	1.7	8.7	4.7	10.0	7.3	1.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
6	diuron	80	DF	3	lb ai/a	LPRE	6.3	8.3	4.0	10.0	5.3	6.0
	glyphosate	5.5	L	1	lb ai/a	LPRE						
7	flumioxazin	51	WDG	0.383	lb ai/a	LPRE	9.0	10.0	5.0	2.3	9.0	5.3
	glyphosate	5.5	L	1	lb ai/a	LPRE						
8	untreated					LPRE	5.7	7.3	7.3	4.3	9.3	2.7
LSD (P=.05)							2.68	3.47	2.97	1.24	3.30	2.00
Standard Deviation							1.53	1.98	1.70	0.71	1.89	1.14
CV							30.3	25.19	29.7	8.57	25.42	29.15

Matrix Carryover in Cucumber, Snapbean, and Sugarbeet - HTRC

Project Code: WC 101-03-05 **Location: HTRC Block 66**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: Cucumber, Snapbean, Sugarbeet **Variety: Vlaspik, Hercules, E-17**
Planting Method: seeded **Planting Date: 5/4/05**
Spacing: 3 IN **Row Spacing: 14 IN**
Tillage Type: Conventional **Study Design: RCB** **Replications: 3**
Plot Size: 20 ft wide x 50 ft long

Soil Type: Capac Loam **OM: 1.8%** **pH: 6.5**
Sand: 48% **Silt: 27%** **Clay: 25%** **CEC: 8.7**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
	8/21/03	11:00 am	85/74	°F	Dry	5 SW	61	10% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/28	SNBE = Snapbean			
6/28	CUKE = Cucumber			
6/28	SUBE = Sugarbeet			

Notes and Comments

1. Sprays applied with 16 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 tractor mounted sprayer.
2. Weed injury ratings on scale of 1-10: 1 = no injury, 10 = complete kill.
3. Herbicide treatments applied in August of 2003.
4. Cucumber, snapbean, and sugarbeet planted across 2003 plots.
5. Harvested 12 ft of three 14 inch rows of cucumber, snapbean, and sugarbeet.
6. 2005 weed control snapbean 1.3 lb Dual Mag. PRE; cucumber 1.05 lb Strategy; sugarbeet 0.6 lb Dual Mag PRE (5/6) fb. 0.094 lb Stinger + 0.125 lb Nortron + 0.5 lb Betamix + 0.125 lb Select + 0.25% NIS POST (8/3).
7. This was the third year of the trial.

Matrix Carryover in Cucumber, Snapbean, and Sugarbeet - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 101-03-05 Study Director:
Location: HTRC Investigator: Dr. Bernard Zandstra

Description							SNBE	SUBE	CUCU	CUKE VINE	CUKE FRUIT
Rating Date							6/28/04	6/28/04	6/28/04	7/30/04	7/30/04
Rating Data Type							RATING	RATING	RATING	YIELD	YIELD
Rating Unit										KG/12 FT	KG/12 FT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	untreated						2.5	1.3	2.0	7.27	10.55
2	rimsulfuron	25	DF	0.032	lb ai/a		3.0	1.3	1.3	6.99	7.51
3	rimsulfuron	25	DF	0.063	lb ai/a		2.0	1.3	1.3	6.83	8.49
4	rimsulfuron	25	DF	0.125	lb ai/a		2.0	4.7	1.3	8.51	9.33
5	rimsulfuron	25	DF	0.25	lb ai/a		3.0	6.3	2.7	6.79	8.87
6	halosulfuron	75	WG	0.047	lb ai/a		3.5	6.0	1.7	6.03	7.87
7	halosulfuron	75	WG	0.094	lb ai/a		1.3	6.3	1.0	10.07	12.44
8	sulfentrazone	4	F	0.25	lb ai/a		2.0	6.3	3.3	6.99	9.00
9	flumioxazin	51	WDG	0.096	lb ai/a		5.0	4.3	2.0	6.00	6.77
10	metribuzin	75	DF	0.5	lb ai/a		1.3	4.0	1.0	9.71	10.65
LSD (P=.05)							3.10	3.96	2.31	4.512	6.948
Standard Deviation							1.79	2.30	1.35	2.630	4.050
CV							69.88	54.76	76.33	34.99	44.28

Description							CUKE 1'S	CUKE 2'S	CUKE 3'S	CUKE OS
Rating Date							7/30/04	7/30/04	7/30/04	7/30/04
Rating Data Type							NO. 1 SIZE	NO. 2 SIZE	NO. 3 SIZE	OVER SIZE
Rating Unit							GRAMS	GRAMS	GRAMS	GRAMS
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	untreated						255.7	751.7	3533.3	5935.3
2	rimsulfuron	25	DF	0.032	lb ai/a		333.7	606.0	2692.0	3762.3
3	rimsulfuron	25	DF	0.063	lb ai/a		252.0	911.0	2783.3	4420.0
4	rimsulfuron	25	DF	0.125	lb ai/a		315.3	1045.3	2965.7	4830.7
5	rimsulfuron	25	DF	0.25	lb ai/a		230.3	873.0	2833.0	4858.7
6	halosulfuron	75	WG	0.047	lb ai/a		196.0	552.3	3174.7	3856.7
7	halosulfuron	75	WG	0.094	lb ai/a		380.7	1622.7	3812.0	6430.7
8	sulfentrazone	4	F	0.25	lb ai/a		362.7	1314.0	3681.7	3446.7
9	flumioxazin	51	WDG	0.096	lb ai/a		218.7	883.3	2084.0	3501.7
10	metribuzin	75	DF	0.5	lb ai/a		280.7	1046.0	4114.7	5084.7
LSD (P=.05)							167.34	692.73	2688.97	4373.41
Standard Deviation							97.55	403.82	1567.49	2549.41
CV							34.52	42.04	49.49	55.27

Matrix Carryover in Cucumber, Snapbean, and Sugarbeet - HTRC

Dept. of Horticulture, MSU

Description						SNAPBEAN	BEAN PLANT	BEAN FRUIT	SUBE	SUBE
Rating Date						8/5/04	8/5/04	8/5/04	10/22/04	10/22/04
Rating Data Type						PLANT	BIOMASS	YIELD	COUNT	YIELD
Rating Unit						COUNT	KG/PLOT	KG/PLOT	BEETS	KG/12FT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	untreated						52.0	2.65	3.69	45.0	12.65
2	rimsulfuron	25	DF	0.032	lb ai/a		47.7	1.82	2.53	44.3	10.98
3	rimsulfuron	25	DF	0.063	lb ai/a		45.7	2.09	2.80	32.0	6.74
4	rimsulfuron	25	DF	0.125	lb ai/a		55.3	3.17	3.91	32.3	6.47
5	rimsulfuron	25	DF	0.25	lb ai/a		51.3	2.51	3.79	25.0	6.06
6	halosulfuron	75	WG	0.047	lb ai/a		40.0	2.13	3.91	21.7	2.45
7	halosulfuron	75	WG	0.094	lb ai/a		61.3	4.08	4.87	11.3	2.04
8	sulfentrazone	4	F	0.25	lb ai/a		63.7	3.88	4.75	25.3	7.03
9	flumioxazin	51	WDG	0.096	lb ai/a		43.7	1.85	3.00	38.7	13.18
10	metribuzin	75	DF	0.5	lb ai/a		60.7	2.68	3.09	39.3	7.61
LSD (P=.05)							28.78	2.157	2.583	15.84	5.568
Standard Deviation							16.78	1.246	1.492	9.23	3.246
CV							32.18	46.39	41.06	29.31	43.16

Description						CUKE VINE	CUKE FRUIT	BEAN PLANT	BEAN FRUIT
Rating Date						7/18/05	7/18/05	7/18/05	7/18/05
Rating Data Type						PLANT WT.	YIELD	PLANT WT.	YIELD
Rating Unit						KG/PLOT	KG/PLOT	G/PLOT	KG/PLOT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	untreated						10.06	4.41	1.63	5.43
2	rimsulfuron	25	DF	0.032	lb ai/a		6.05	2.92	1.84	4.78
3	rimsulfuron	25	DF	0.063	lb ai/a		13.71	5.14	1.56	4.22
4	rimsulfuron	25	DF	0.125	lb ai/a		17.48	6.58	2.22	5.16
5	rimsulfuron	25	DF	0.25	lb ai/a		13.61	5.95	2.16	5.09
6	halosulfuron	75	WG	0.047	lb ai/a		12.28	5.41	1.77	5.21
7	halosulfuron	75	WG	0.094	lb ai/a		18.36	6.78	2.79	5.13
8	sulfentrazone	4	F	0.25	lb ai/a		7.77	3.57	2.21	5.39
9	flumioxazin	51	WDG	0.096	lb ai/a		14.93	6.09	2.41	5.65
10	metribuzin	75	DF	0.5	lb ai/a		17.69	6.67	2.98	5.16
LSD (P=.05)							9.849	3.281	1.486	2.948
Standard Deviation							5.741	1.913	0.866	1.718
CV							43.52	35.74	40.15	33.56

Description						SUBE	SUBE
Rating Date						10/6/05	10/6/05
Rating Data Type						COUNT	YIELD
Rating Unit						BEETS	KG/12FT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	untreated						26.0	7.08
2	rimsulfuron	25	DF	0.032	lb ai/a		27.3	7.39
3	rimsulfuron	25	DF	0.063	lb ai/a		41.7	11.49
4	rimsulfuron	25	DF	0.125	lb ai/a		29.0	8.72
5	rimsulfuron	25	DF	0.25	lb ai/a		38.0	10.96
6	halosulfuron	75	WG	0.047	lb ai/a		31.3	11.34
7	halosulfuron	75	WG	0.094	lb ai/a		30.7	11.47
8	sulfentrazone	4	F	0.25	lb ai/a		24.3	6.97
9	flumioxazin	51	WDG	0.096	lb ai/a		27.7	9.99
10	metribuzin	75	DF	0.5	lb ai/a		34.7	10.09
LSD (P=.05)							17.84	9.394
Standard Deviation							10.40	5.476
CV							33.47	57.33

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Project Code: WC 108-04-01 **Location: HTRC Block 137 & 143**

Personnel: Bernard H. Zandstra, Michael Particka
Crop: See notes **Variety: See notes**
Planting Method: Seeded **Planting Date: 6-4-04**
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: Capac Loam **OM: 2.3%** **pH: 6.4**
Sand: 52% **Silt: 29%** **Clay: 19%** **CEC: 8.1**

Herbicide Application Information

Timing	Date	Time	Air/Soil	T	Soil Surf	Wind	RH	Sky	Dew
PRE	6/7/04	12:00 pm	80/73	°F	80/73	5 SW	57	5% Cloudy	N
PO1	6/28/04	3:30 pm	71/72	°F	71/72	4 W	50	40% Cloudy	N

Crop and Weed Information at Application

Date	Crop or Weed	Height or Diameter	Growth Stage	Density
6/28	PUMP = Pumpkin	4-6 in	2-4 leaf	
6/28	CUKE = Cucumber	2-4 in	2-4 leaf	
6/28	Squash	2-4 in	2 leaf	
6/28	LACG = Large crabgrass	1-2 in		Few
6/28	COLQ = Common lambsquarters	0.25-1 in	cot-4 leaf	Moderate
6/28	COPU = Common purslane		cot-4 leaf	Many
6/28	EBNS = Eastern black nightshade	0.25-0.75 in	cot-4 leaf	Moderate
6/28	LATH = Ladysthumb	0.5-2 in	cot-4 leaf	Few
6/28	RRPW = Redroot pigweed	0.25-0.75 in	cot-4 leaf	
6/28	SHPU = Shepherdspurse			

Notes and Comments

1. Sprays applied with 16 nozzle boom FF8002, 20 gpa, 30 psi, 3.2 mph, CO_2 tractor mounted sprayer.
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 – Golden Hubbard
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. Harvested all fruit in 40 ft plot.
7. Red winter wheat was planted in entire filed in fall of 2004.
8. Harvested 2 meter^2 of wheat plants June 8, 2005.

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Trial ID: WC 108-04-01 Study Director:
Location: HTRC Investigator: Dr. Bernard Zandstra

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	CUKE 6/28/04 RATING	PUMP 6/28/04 RATING	SQUASH 6/28/04 RATING	GRFT 6/28/04 RATING	COLQ 6/28/04 RATING	COPU 6/28/04 RATING
1	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.3	1.0	2.0	8.0	8.3	8.0
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	1.7	1.7	2.3	9.7	9.3	9.7
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.3	1.3	2.0	10.0	10.0	10.0
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	clomazone	3	ME	0.25	lb ai/a	PRE	2.0	1.0	2.0	10.0	10.0	10.0
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.3	3.0	4.7	10.0	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
6	clomazone	3	ME	0.25	lb ai/a	PRE	2.0	2.0	3.7	10.0	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	2.0	2.0	2.3	10.0	10.0	10.0
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	2.3	1.0	4.0	10.0	10.0	10.0
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.0	1.7	3.3	10.0	9.3	9.7
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	V10146	3.3	F	0.1	lb ai/a	PRE	2.7	3.3	4.0	10.0	10.0	10.0
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	8.3	4.7	3.0	10.0	10.0	10.0
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.3	1.0	2.3	1.0	1.0	1.0
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	V10146	3.3	F	0.1	lb ai/a	PO1	1.3	1.3	2.3	1.0	1.0	1.0
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	1.0	1.0	2.0	1.0	1.0	1.0
15	weeded control						1.7	1.7	2.0	1.0	1.0	1.0
16	untreated											
LSD (P=.05)							1.02	1.15	2.29	0.78	0.99	0.55
Standard Deviation							0.61	0.69	1.37	0.47	0.59	0.33
CV							25.82	37.35	48.92	6.26	8.02	4.43

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Description							EBNS	SHPU	CUKE	PUMP	SQUASH	GRFT	COLQ
Rating Date							6/28/04	6/28/04	7/6/04	7/6/04	7/6/04	7/6/04	7/6/04
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	ethalfluralin	3	EC	0.75	lb ai/a	PRE	8.7	7.7	1.3	1.0	1.0	5.0	7.3
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	8.7	8.7	1.7	1.3	1.3	10.0	7.0
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	9.7	10.0	1.7	1.0	1.0	10.0	10.0
	clomazone	3	ME	0.25	lb ai/a	PRE							
4	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	10.0	1.3	1.3	1.0	10.0	10.0
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	6.7	10.0	2.0	3.0	4.0	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE							
6	clomazone	3	ME	0.25	lb ai/a	PRE	9.3	10.0	2.0	3.0	3.0	10.0	10.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE							
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	10.0	10.0	1.7	1.3	1.3	10.0	10.0
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	10.0	3.0	1.0	3.7	10.0	10.0
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.7	7.3	3.0	3.3	4.3	10.0	7.0
	halosulfuron	75	WG	0.023	lb ai/a	PO1							
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1							
	NIS		L	0.25	% v/v	PO1							
10	V10146	3.3	F	0.1	lb ai/a	PRE	4.0	10.0	2.3	3.0	4.7	9.3	10.0
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	10.0	10.0	8.3	4.0	1.0	9.3	10.0
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.0	1.0	2.3	3.0	3.0	7.7	5.3
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1							
	NIS		L	0.25	% v/v	PO1							
13	V10146	3.3	F	0.1	lb ai/a	PO1	1.0	1.0	2.7	1.7	2.3	7.0	1.3
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	1.0	1.0	8.3	4.7	3.7	6.3	9.7
15	weeded control						1.0	1.0	1.0	1.0	1.0	8.7	7.7
16	untreated												
LSD (P=.05)							2.93	2.39	1.00	1.18	2.00	3.98	2.92
Standard Deviation							1.75	1.43	0.60	0.71	1.20	2.38	1.75
CV							28.04	19.95	20.96	31.45	49.4	26.78	20.9

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Description							COPU	EBNS	RRPW	SHPU	CUKE	CUKE 1'S
Rating Date							7/6/04	7/6/04	7/6/04	7/6/04	7/28/04	7/28/04
Rating Data Type							RATING	RATING	RATING	RATING	YIELD	NO. 1 SIZE
Rating Unit											KG/PLOT	KG
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	ethalfluralin	3	EC	0.75	lb ai/a	PRE	6.7	6.3	7.3	6.3	21.09	1.199
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	7.7	4.3	6.0	5.3	20.39	1.171
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	10.0	8.0	8.7	10.0	21.68	1.517
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	6.3	7.3	10.0	19.62	1.122
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	10.0	4.0	10.0	10.0	27.77	1.174
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
6	clomazone	3	ME	0.25	lb ai/a	PRE	10.0	7.7	10.0	10.0	30.13	1.572
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	10.0	7.3	9.0	10.0	17.93	1.300
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	10.0	9.3	9.0	10.0	23.36	0.980
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	9.0	3.3	10.0	10.0	22.83	0.962
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	V10146	3.3	F	0.1	lb ai/a	PRE	10.0	2.7	10.0	10.0	25.87	1.595
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	9.3	9.7	9.7	10.0	0.31	0.051
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.0	1.0	10.0	10.0	17.23	1.129
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	V10146	3.3	F	0.1	lb ai/a	PO1	5.0	1.0	10.0	10.0	11.73	1.028
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	4.7	10.0	10.0	6.7	2.33	0.306
15	weeded control						7.0	6.0	6.7	8.3	16.89	1.099
16	untreated											
LSD (P=.05)							1.99	3.13	1.78	3.06	8.445	0.4400
Standard Deviation							1.19	1.87	1.06	1.83	5.050	0.2631
CV							14.84	32.23	11.94	20.09	27.14	24.36

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

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Description							CUKE 2'S	CUKE 3'S	CUKE OS	GRN PUMP	GRN PUMP
Rating Date							7/28/04	7/28/04	7/28/04	10/1/04	10/1/04
Rating Data Type							NO. 2 SIZE	NO. 3 SIZE	OVER SIZE	YIELD	YIELD
Rating Unit							KG	KG	KG	NUMBER	KG
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	ethalfluralin	3	EC	0.75	lb ai/a	PRE	3.899	9.508	2.283	3.7	17.93
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	4.012	11.407	3.334	2.7	9.68
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	4.314	12.282	3.217	2.0	10.79
	clomazone	3	ME	0.25	lb ai/a	PRE					
4	clomazone	3	ME	0.25	lb ai/a	PRE	3.620	10.893	3.510	4.3	15.13
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	4.433	16.297	5.346	3.3	12.61
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
6	clomazone	3	ME	0.25	lb ai/a	PRE	5.046	16.211	6.520	5.0	17.46
	halosulfuron	75	WG	0.023	lb ai/a	PRE					
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	4.405	11.943	3.589	3.7	17.26
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	3.786	13.150	4.936	2.7	7.38
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	4.307	13.206	3.817	3.3	22.19
	halosulfuron	75	WG	0.023	lb ai/a	PO1					
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
10	V10146	3.3	F	0.1	lb ai/a	PRE	4.664	14.305	4.686	3.0	9.83
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	0.080	0.154	0.000	7.3	29.39
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	3.377	9.358	2.923	6.3	34.05
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1					
	NIS		L	0.25	% v/v	PO1					
13	V10146	3.3	F	0.1	lb ai/a	PO1	3.494	6.139	0.665	3.3	8.91
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	0.691	0.948	0.303	7.7	36.34
15	weeded control						3.099	9.249	3.121	3.7	16.46
16	untreated										
LSD (P=.05)							1.8220	4.9653	2.3553	3.55	17.312
Standard Deviation							1.0896	2.9694	1.4085	2.12	10.353
CV							30.71	28.73	43.79	51.3	58.51

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Description							ORN PUMP	ORN PUMP	SQUASH	SQUASH	WHEAT	WHEAT
Rating Date							10/1/04	10/1/04	10/1/04	10/1/04	5/13/05	5/13/05
Rating Data Type							YIELD	YIELD	YIELD	YIELD	RATING	RATING
Rating Unit							NUMBER	KG	NUMBER	KG	STAND	VIGOR
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage						
1	ethalfluralin	3	EC	0.75	lb ai/a	PRE	21.7	125.29	15.7	20.75	1.7	2.3
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	23.0	123.45	14.7	19.58	1.7	2.0
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	20.7	130.45	26.3	36.15	1.7	2.0
	clomazone	3	ME	0.25	lb ai/a	PRE						
4	clomazone	3	ME	0.25	lb ai/a	PRE	26.3	155.21	27.0	43.33	1.3	1.7
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	18.0	94.41	12.7	18.43	2.0	3.3
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
6	clomazone	3	ME	0.25	lb ai/a	PRE	19.3	99.79	26.3	35.87	1.7	2.0
	halosulfuron	75	WG	0.023	lb ai/a	PRE						
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	23.3	173.72	24.0	39.34	1.0	1.7
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	31.3	185.44	20.7	32.86	1.7	1.7
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	19.7	129.31	13.0	23.75	2.0	2.3
	halosulfuron	75	WG	0.023	lb ai/a	PO1						
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
10	V10146	3.3	F	0.1	lb ai/a	PRE	13.3	64.29	6.0	9.17	1.7	2.7
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	23.3	113.48	35.3	59.10	1.3	1.7
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	13.7	100.90	13.7	25.57	2.0	1.7
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1						
	NIS		L	0.25	% v/v	PO1						
13	V10146	3.3	F	0.1	lb ai/a	PO1	26.0	154.26	10.3	13.77	1.0	1.7
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	19.3	120.55	20.3	30.09	1.3	1.7
15	weeded control						19.0	115.40	11.7	19.09	2.0	2.0
16	untreated											
LSD (P=.05)							8.58	56.019	11.45	20.786	1.35	1.47
Standard Deviation							5.13	33.500	6.85	12.430	0.81	0.88
CV							24.2	26.64	36.98	43.68	50.48	43.52

Carryover in Wheat following Weed Control in Cucumber, Pumpkin and Squash - HTRC

Dept. of Horticulture, MSU

Description							WHEAT	WHEAT	WHEAT
Rating Date							5/13/05	6/1/05	6/1/05
Rating Data Type							RATING	FRESH WT.	DRY WT.
Rating Unit							COLOR	KG/2 SQ M	KG/2 SQ M
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	ethalfluralin	3	EC	0.75	lb ai/a	PRE	3.0	4.91	1.66
2	ethalfluralin	3	EC	1.13	lb ai/a	PRE	3.0	4.93	1.51
3	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.3	6.01	1.77
	clomazone	3	ME	0.25	lb ai/a	PRE			
4	clomazone	3	ME	0.25	lb ai/a	PRE	2.0	6.22	1.82
5	ethalfluralin	3	EC	0.75	lb ai/a	PRE	3.3	5.45	1.58
	halosulfuron	75	WG	0.023	lb ai/a	PRE			
6	clomazone	3	ME	0.25	lb ai/a	PRE	2.0	6.41	1.88
	halosulfuron	75	WG	0.023	lb ai/a	PRE			
7	STRATEGY	2.1	SE	0.79	lb ai/a	PRE	2.0	6.01	1.80
8	STRATEGY	2.1	SE	1.05	lb ai/a	PRE	2.7	5.77	1.79
9	ethalfluralin	3	EC	0.75	lb ai/a	PRE	2.3	5.19	1.57
	halosulfuron	75	WG	0.023	lb ai/a	PO1			
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
	NIS		L	0.25	% v/v	PO1			
10	V10146	3.3	F	0.1	lb ai/a	PRE	2.7	5.13	1.51
11	sulfentrazone	75	DF	0.141	lb ai/a	PRE	2.0	5.98	1.82
12	halosulfuron	75	WG	0.023	lb ai/a	PO1	1.7	4.99	1.48
	sethoxydim	1.53	EC	0.19	lb ai/a	PO1			
	NIS		L	0.25	% v/v	PO1			
13	V10146	3.3	F	0.1	lb ai/a	PO1	1.7	5.49	1.69
14	sulfentrazone	75	DF	0.141	lb ai/a	PO1	1.3	5.28	1.66
15	weeded control						2.3	4.37	1.30
16	untreated							9.08	2.53
LSD (P=.05)							1.34	1.515	0.383
Standard Deviation							0.80	0.909	0.230
CV							35.12	15.94	13.42