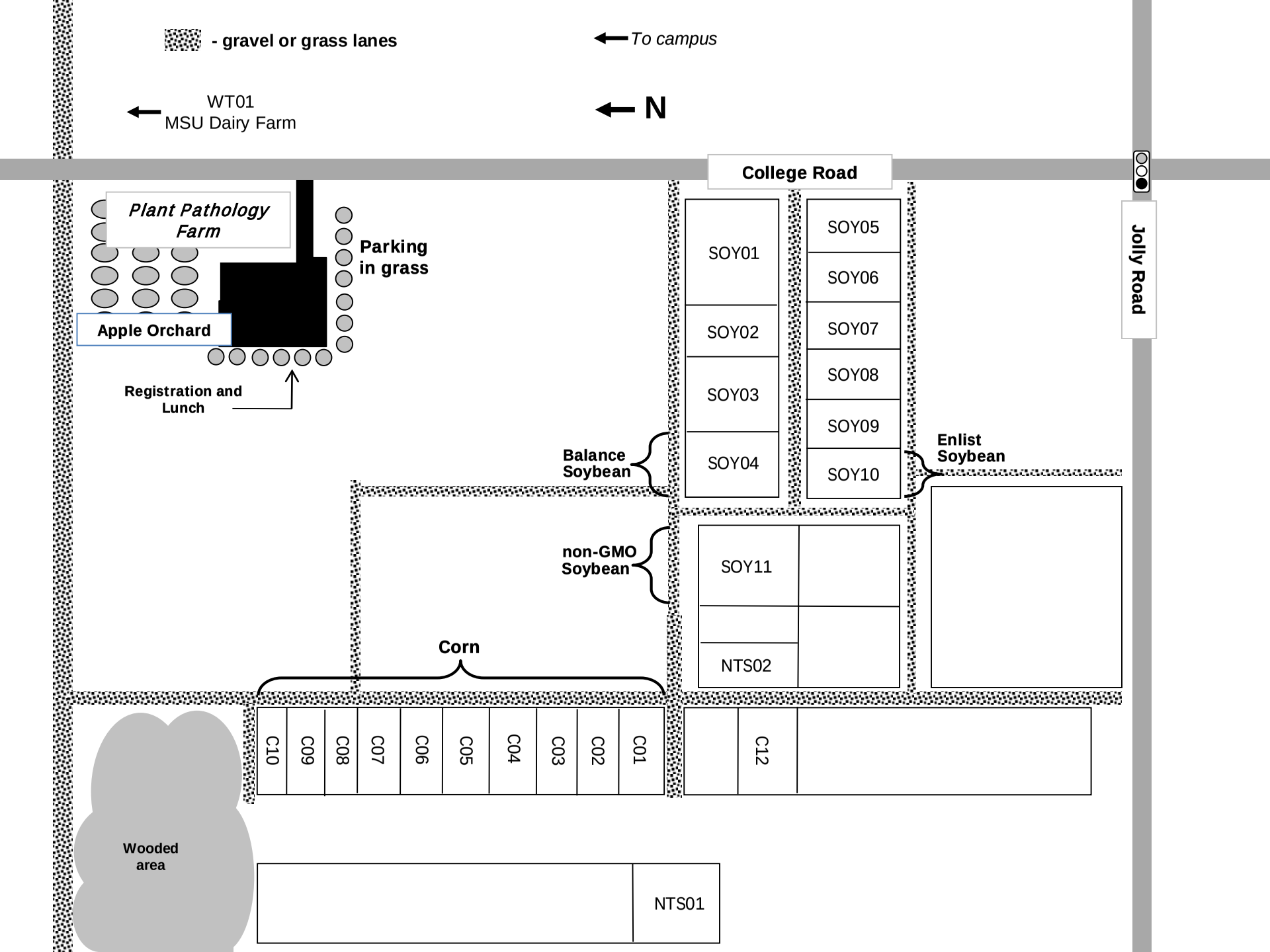
WEED SCIENCE TOUR:
Agronomic Crops
2018

Michigan State University
Department of Plant, Soil & Microbial Sciences


- gravel or grass lanes
To campus
WT01
MSU Dairy Farm
N
College Road
Jolly Road
Plant Pathology Farm
Parking in grass
Apple Orchard
Registration and Lunch
SOY01
SOY02
SOY03
SOY04
SOY05
SOY06
SOY07
SOY08
SOY09
SOY10
Balance Soybean
Enlist Soybean
non-GMO Soybean
SOY11
NTS02
Corn
C10
C09
C08
C07
C06
C05
C04
C03
C02
C01
C12
Wooded area
NTS01

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ADAMA
Amvac
BASF
Bayer
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Project GREEEN
SipcamAdvan
Syngenta
United Phosphorus, Inc.
Valent
West Central Dist LLC.
Winfield United

ABBREVIATIONS

bu/A = bushels per acre
gal pr/A = gallons of product per acre
GPA = gallons per acre
lb/A = pounds active ingredient per acre
oz/A = ounces active ingredient per acre
pt /A = pints of product per acre
AMS = ammonium sulfate
BP = backpack sprayer
COC = crop oil concentrate
CULT = cultivation
DA1CO = days after 1st collar corn
DAA = days after application
DACOT = days after cotyledon
DAEP = days after early postemergence
DALMP = days after late mid postemergence
DAMP = days after mid-post treatment
DAP = days after planting
DAPO = days after postemergence
DAPO2 = days after 2nd postemergence timing
DAPO3 = days after 3rd postemergence timing
DAPRE = days after preemergence treatment
DAT = days after treatment
DBPL = days before planting
EPOS = applied early postemergence
EPP = applied early pre plant
MPOS = applied postemergence
CUB = Cub Cadet Application tractor
NIS = nonionic surfactant
LPOS = applied late postemergence
POST = applied postemergence
PPI = applied preplant incorporated
PRE = applied preemergence
R.HOE = rotary hoe
spk = applied at corn spike stage
trif = trifoliate
unif = unifoliate
WAT = weeks after treatment

HERBACEOUS PLANTS

WSSA APPROVED CODE	COMMON NAME	BOTANICAL NAME
--	Canola (Volunteer)	Brassica napus
(ANGR)	Annual Grass	
ABUTH	Velvetleaf	Abutilon theophrasti
AGRRE	Quackgrass	Elytrigia repens
AMARE	Pigweed, Redroot	Amaranthus retroflexus
AMBEL	Ragweed, Common	Ambrosia artemisiifolia
APCCA	Hemp Dogbane	Apocynum cannabinum
APESV	Windgrass	Apera spica-venti
ARFMI	Burdock, Common	Arctium minus
BARVU	Rocket, Yellow	Barbarea vulgaris
BETVU	Sugarbeets	Beta vulgaris
BRAKA/SINAR	Mustard, Wild	Brassica kaber
CAPBP	Shepard's Purse	Capsella bursa-pastoris
CERVU	Chickweed, Mouse-ear	Cerastium vulgatum
CHEAL	Lambsquarters, Common	Chenopodium album
CIRAR	Thistle, Canada	Cirsium arvense
CYPES	Nutsedge, Yellow	Cyperus esculentus
DATST	Jimsonweed	Datura stramonium
DAUCA	Carrot, Wild	Daucus carota
DIGSA	Crabgrass, Large	Digitaria sanguinalis
ECHCG	Barnyardgrass	Echinochloa crus-galli
EPHES	Spurge, Leafy	Euphorbia esula
EPHHT	Spurge, Prostrate	Euphorbia humistrata
ERICA	Horseweed (Marestail)	Conyza canadensis
ERIST	Fleabane, Rough	Erigeron strigosus
ERYCH	Mustard, Wormseed	Erysimum cheiranthoides
EUPCP	Mayweed (dogfennel)	Anthemis cotula
GASPA	Galinsoga	Galinsoga parviflora
GLXMA	Soybeans	Glycine max
HIBTR	Mallow, Venice	Hibiscus trionum
LACSE	Prickly lettuce	Lactuca seriola
LAMAM	Henbit	Lamium amplexicaule
LAMPU	Purple Deadnettle	Lamium purpureum
MEDSA	Alfalfa	Medicago sativa
MELAL	Campion, White (White Cockle)	Silene alba
PANDI	Panicum, Fall	Panicum dichotomiflorum
PHYSU	Groundcherry, Smooth	Physalis subglabrata
PLAMA	Plantain, Broadleaf	Plantago major
POAAN	Bluegrass, Annual	Poa annua
POATR	Bluegrass, Roughstalk	Poa trivialis
POLCO	Buckwheat, Wild	Polygonum convolvulus
POLPY	Smartweed, Pennsylvania	Polygonum pensylvanicum
POROL	Purslane, Common	Portulaca oleracea
RUMCR	Dock, Curly	Rumex crispus
SETFA	Foxtail, Giant	Setaria faberi
SETLU	Foxtail, Yellow	Setaria lutescens
SETVI	Foxtail, Green	Setaria viridis
SOLPT	Nightshade, Black	Solanum ptycanthum
SOLSA	Nightshade, Hairy	Solanum sarrachoides
SONAR	Sowthistle, Perennial	Sonchus arvensis
STEME	Chickweed, Common	Stellaria media
TAROF	Dandelion, Common	Taraxacum officinale
THLAR	Pennycress, Field	Thlaspi arvense
TRFRE	Clover, White	Trifolium repens
VERPG	Purslane, Speedwell	Veronica peregrina
XANST	Cocklebur, Common	Xanthium strumarium
ZEAMX	Corn	Zea mays

HERBACEOUS PLANTS

COMMON NAME	WSSA APPROVED CODE	BOTANICAL NAME
Alfalfa	MEDSA	Medicago sativa
Annual Grass	(ANGR)	
Barnyardgrass	ECHCG	Echinochloa crus-galli
Bluegrass, Annual	POAAN	Poa annua
Bluegrass, Roughstalk	POATR	Poa trivialis
Buckwheat, Wild	POLCO	Polygonum convolvulus
Burdock, Common	ARFMI	Arctium minus
Campion, White (White Cockle)	MELAL	Silene alba
Canola (Volunteer)	--	Brassica napus
Carrot, Wild	DAUCA	Daucus carota
Chickweed, Common	STEME	Stellaria media
Chickweed, Mouse-ear	CERVU	Cerastium vulgatum
Clover, White	TRFRE	Trifolium repens
Cocklebur, Common	XANST	Xanthium strumarium
Corn	ZEAMX	Zea mays
Crabgrass, Large	DIGSA	Digitaria sanguinalis
Dandelion, Common	TAROF	Taraxacum officinale
Dock, Curly	RUMCR	Rumex crispus
Foxtail, Giant	SETFA	Setaria faberi
Fleabane, Rough	ERIST	Erigeron strigosus
Foxtail, Green	SETVI	Setaria viridis
Foxtail, Yellow	SETLU	Setaria lutescens
Galinsoga	GASPA	Galinsoga parviflora
Groundcherry, Smooth	PHYSU	Physalis subglabrata
Hemp Dogbane	APCCA	Apocynum cannabinum
Henbit	LAMAM	Lamium amplexicaule
Horseweed (Marestail)	ERICA	Conyza canadensis
Jimsonweed	DATST	Datura stramonium
Prickly Lettuce	LACSE	Latuca seriola
Lambsquarters, Common	CHEAL	Chenopodium album
Mallow, Venice	HIBTR	Hibiscus trionum
Mayweed (dogfennel)	EUPCP	Anthemis cotula
Mustard, Wild	BRAKA/SINAR	Brassica kaber
Mustard, Wormseed	ERYCH	Erysimum cheiranthoides
Nightshade, Black	SOLPT	Solanum ptycanthum
Nightshade, Hairy	SOLSA	Solanum sarrachoides
Nutsedge, Yellow	CYPES	Cyperus esculentus
Panicum, Fall	PANDI	Panicum dichotomiflorum
Pennycress, Field	THLAR	Thlaspi arvense
Pigweed, Redroot	AMARE	Amaranthus retroflexus
Plantain, Broadleaf	PLAMA	Plantago major
Purple Deadnettle	LAMPU	Lamium purpureum
Purslane, Common	POROL	Portulaca oleracea
Purslane, Speedwell	VERPG	Veronica peregrina
Quackgrass	AGRRE	Elytrigia repens
Ragweed, Common	AMBEL	Ambrosia artemisiifolia
Rocket, Yellow	BARVU	Barbarea vulgaris
Shepard's Purse	CAPBP	Capsella bursa-pastoris
Smartweed, Pennsylvania	POLPY	Polygonum pensylvanicum
Sowthistle, Perennial	SONAR	Sonchus arvensis
Soybeans	GLXMA	Glycine max
Spurge, Leafy	EPHES	Euphorbia esula
Spurge, Prostrate	EPHHT	Euphorbia humistrata
Sugarbeets	BETVU	Beta vulgaris
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Spurge, Prostrate	EPHHT	Euphorbia humistrata
Sugarbeets	BETVU	Beta vulgaris
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Velvetleaf	ABUTH	Abutilon theophrasti
Windgrass	APESV	Apera spica-venti

HERBICIDES AND ADJUVANTS

Trade Name	Common or Code Name	Manufacturer
AAtrex, AAtrex 90	atrazine	Syngenta
A-21472	S-metolachlor + dicamba	Syngenta
Abundit Edge	glyphosate	DuPont
Afforia	thifensulfuron + tribenuron + flumioxazin	DuPont
Accent, Accent Q	nicosulfuron + safener	DuPont
Accolade	flumetsulam	FMC
Acuron	mesotrione + bicyclopyrone + *s*-metolachlor + atrazine + safener	Syngenta
Acuron Flexi	mesotrione + bicyclopyrone + *s*-metolachlor	Syngenta
Affinity Broadspec	thifensulfuron + tribenuron	DuPont
Agri-dex	surfactant	Helena
Aim	carfentrazone	FMC
Anthem, Anthem Maxx	fluthiacet-methyl + pyroxasulfone	FMC
Anthem ATZ	fluthiacet-methyl + pyroxasulfone + atrazine	FMC
Anthem Flex	pyroxasulfone + carfentrazone	FMC
Armezon	topramezone	BASF
Armezon PRO	topramezone + dimethenamid-P	BASF
Assure II	quizalofop-p-ethyl	Dupont
Atrazine	atrazine	Various
Authority	sulfentrazone	FMC
Authority Assist	sulfentrazone + imazethapyr	FMC
Authority Elite	sulfentrazone + *s*-metolachlor	FMC
Authority First	sulfentrazone + cloransulam	FMC
Authority MTZ	sulfentrazone + metribuzin	FMC
Authority MAXX	sulfentrazone + chlorimuron	FMC
Authority Supreme	sulfentrazone + pyroxasulfone	FMC
Authority XL	sulfentrazone + chlorimuron-ethyl	FMC
Autumn	iodosulfuron	Bayer
Axial XL	pinoxaden	Syngenta
Balance Bean, Balance PRO	isoxaflutole	Bayer
Balance Flexx	isoxaflutole + safener	Bayer
Banvel	dicamba	BASF
Basagran	bentazon	Micro-Flo
Basis, Basis Blend	rimsulfuron + thifensulfuron	DuPont
Beacon	primisulfuron	Syngenta
Bellum	mesotrione	Sipcam
Betamix	desmedipham + phenmedipham	Bayer
Bicep II Magnum, Bicep Lite II Magnum	*s*-metolachlor + safener + atrazine	Syngenta
Bicyclopyrone	bicyclopyrone	Syngenta
Boundary	metribuzin + *s*-metolachlor	Syngenta
Breakfree	acetochlor + safener	Dupont

Trade Name	Common or Code Name	Manufacturer
Breakfree ATZ, Breakfree ATZ Lite, Breakfree NXT ATZ	acetochlor + safener + atrazine	Dupont
BroadAxe XC	sulfentrazone + *s*-metolachlor	Syngenta
Buccaneer, Buccaneer Plus	glyphosate	Tenkoz
Buctril	bromoxynil	Bayer
Buctril/Atrazine	bromoxynil + atrazine	Bayer
Butyrac 200	2,4-DB	various
Cadet	fluthiacet-methyl	FMC
Cadou	flufenacet	Bayer
Callisto	mesotrione	Syngenta
Callisto GT	mesotrione + glyphosate	Syngenta
Callisto Xtra	atrazine + mesotrione	Syngenta
Camix	mesotrione + metolachlor + safener	Syngenta
Canopy	metribuzin + chlorimuron	DuPont
Canopy EX	sulfentrazone + tribenuron	DuPont
Capreno	tembotrione + thiencarbazone-methyl + safener	Bayer
Cheetah	glufosinate	Nufarm
Cheetah Max	glufosinate + fomesafen	Nufarm
Cinch	metolachlor + safener	DuPont
Cinch ATZ	metolachlor + safener + atrazine	DuPont
Cinch ATZ Lite	metolachlor + safener + atrazine	DuPont
Clarity	dicamba	BASF
Class Act NG	adjuvant	Winfield Solutions
Class Act Ridion	adjuvant	Winfield Solutions
Classic	chlorimuron-ethyl	DuPont
CoAct+	adjuvant	Syngenta
Cobra	lactofen	Valent
COC	crop oil concentrate	Various
Command 3ME	clomazone	FMC
Corvus	isoxaflutole + thiencarbazone-methyl + safener	Bayer
Coyote	mesotrione + s-metolachlor	UPI
Degree Xtra	acetochlor + safener + atrazine	Monsanto
Destiny HC	methylated seed oil	Winfield Solutions
DiFlexx	dicamba + safener	Bayer
DiFlexx Duo	dicamba + tembotrione + safener	Bayer
Diligent	flumioxazin + rimsulfuron + chlorimuron	DuPont
Dual II Magnum	s-metolachlor + safener	Syngenta
Dual Magnum	s-metolachlor	Syngenta
Durango DMA	glyphosate	Dow AgroSciences
Elevore	halauxifen-methyl	Dow AgroSciences
Engenia	dicamba	BASF
Engenia PRO	dicamba + pyroxasulfone	BASF
Enlist Duo	glyphosate + 2,4-D choline	Dow AgroSciences
Enlist One	2,4-D	Dow AgroSciences

Trade Name	Common or Code Name	Manufacturer
Enlite	chlorimuron + flumioxazin + thiensulfuron	DuPont
Envive	chlorimuron + flumioxazin + thifensulfuron	DuPont
Eptam	EPTC	Gowan
Equip	foramsulfuron + iodosulfuron + safener	Bayer
ET	pyraflufen-ethyl	Nichino
Ethotron	ethofumesate	UPI
Expert	glyphosate + metolachlor + atrazine	Syngenta
Express	tribenuron	DuPont
Extreme	imazethapyr + glyphosate	BASF
EverpreX	s-metolachlor	DuPont
FeXapan	dicamba	DuPont
Fierce	pyroxasulfone + flumioxazin	Valent
Fierce MTZ	pyroxasulfone + flumioxazin + metribuzin	Valent
Fierce XLT	pyroxasulfone + flumioxazin + chlorimuron	Valent
FirstRate	cloransulam- methyl	Dow AgroSciences
Flexstar	fomesafen	Syngenta
Flexstar GT, Flexstar GT 3.5	fomesafen + glyphosate	Syngenta
Fultime	acetochlor + safener + atrazine	Syngenta
Fusilade DX	fluazifop	Syngenta
Fusion	fluazifop + fenoxaprop	Syngenta
Gangster	flumioxozin + cloransulam-methyl	Valent
GF 3335	2,4-D choline	Dow AgroSciences
G-Max Lite	dimethenamid + atrazine	BASF
Gramoxone 2 SL	paraquat	Syngenta
Guardsman, Guardsman Max	dimethenamid + atrazine	BASF
Halex GT	*s*-metolachlor + glyphosate + mesotrione	Syngenta
Harmony Extra	thifensulfuron + tribenuron	DuPont
Harmony SG	thifensulfuron	DuPont
Harness	acetochlor + safener	Monsanto
Harness Max	Acetochlor + mesotrione	Monsanto
Harness Xtra 5.6	acetochlor + safener + atrazine	Monsanto
Hornet WDG	flumetsulam + clopyralid	Dow AgroSciences
Huskie	pyrasulfotole + bromoxynil	Bayer
Impact	topramezone	Amvac
ImpactZ	topramezone + atrazine	Amvac
Impetro	surfactant + water conditioner	Monsanto
Induce	surfactant	Valent
Instigate	rimsulfuron + mesotrione	DuPont
Intact	drift reduction agent	Monsanto
Interline	glufosinate	UPI

Trade Name	Common or Code Name	Manufacturer
Interlock	drift reduction agent	Winfield
Keystone NXT, Keystone LA NXT	acetochlor + safener + atrazine	Dow AgroSciences
KFD-279-02		UPI
Laudis	tembotrione	Bayer
Laudis Flexx	tembotrione + dicamba	Bayer
Lexar EZ	*s*-metolachlor + atrazine + mesotrione + safener	Syngenta
Liberty	glufosinate	Bayer
Linex	linuron	NovaSource
Lumax EZ	*s*-metolachlor + atrazine + mesotrione + safener	Syngenta
Marksman	dicamba + atrazine	BASF
Marvel	fluthiacet + fomesafen	FMC
Matrix	rimsulfuron	DuPont
Metribuzin, Sencor, Tricor	metribuzin	Various
Moccasin MTZ	metribuzin + s-metolachlor	UPI
MON 76980	dicamba	Monsanto
MON 76981	dicamba + glyphosate	Monsanto
MSO	methylated seed oil	Various
Northstar	primsulfuron + dicamba	Syngenta
Nortron	ethofumesate	Bayer
N-Pak AMS	liquid AMS	Winfield Solutions
Olympus	Propoxycarbazone	Bayer
OnTarget	surfactant	Winfield Solutions
Optill	saflufenacil + imazethapyr	BASF
Optill PRO	saflufenacil + imazethapyr + dimethenamid-P (co-pack)	BASF
Option	foramsulfuron + safener	Bayer
Osprey	mesosulfuron-methyl	Bayer
Outlook	dimethenamid-P	BASF
Panoflex	tribenuron + thifensulfuron	DuPont
Parallel	metolachlor	Makhteshim Agan
Parallel Plus	metolachlor + atrazine	Makhteshim Agan
Permit	halosulfuron	Gowan
Permit Plus	halosulfuron + thifensulfuron	Gowan
Phoenix	lactofen	Valent
Poast	sethoxydim	Micro-Flo
PowerFlex HL	Pyroxsulam	Dow AgroSciencces
Preference	surfactant	Winfield
Prefix	metolachlor + fomesafen	Syngenta
Prequel	rimsulfuron + isoxaflutole	DuPont
Princep	simazine	Syngenta
Progress	desmedipham + phenmedipham + ethofumesate	Bayer
Prowl H2O	pendimethalin	BASF
Pursuit	imazethapyr	BASF
Pursuit Plus	imazethapyr + pendimethalin	BASF

Trade Name	Common or Code Name	Manufacturer
Python	Flumetsulam	Dow AgroSciences
Quelex	Halauxifen-methyl + florasulam	Dow AgroSciences
Raptor	imazamox	BASF
Realm Q	rimsulfuron + mesotrione + safener	DuPont
Reflex	fomesafen	Syngenta
Reglone	diquat dibromide	Syngenta
Resicore	acetochlor + mesotrione + clopyralid	Dow AgroSciences
Resolve, Matrix	rimsulfuron	DuPont
Resolve SG	rimsulfuron	DuPont
Resolve Q	rimsulfuron + thifensulfuron + safener	DuPont
Revulin Q	nicosulfuron + mesotrione + safener	DuPont
Resource	flumiclorac	Valent
Roundup WeatherMAX	glyphosate	Monsanto
Roundup PowerMAX	glyphosate	Monsanto
Rowel	flumioxazin	Monsanto
Rowel FX	flumioxazin + chlorimuron-ethyl	Monsanto
SA-066001		Sipcam
Satellite Hydrocap	pendimethalin	UPI
Scepter 70 DG	imazaquin	Amvac
Select, Select Max	clethodim	Valent
Sequence	s-metolachlor + glyphosate	Syngenta
SL 573	tolpyralate	ISK BioSciences
Sharpen	saflufenacil	BASF
Sonalan HFP	ethalfuralin	Dow AgroSciences
Sonic	sulfentrazone + cloransulam	Dow AgroSciences
Solstice	fluthiacet + mesotrione	FMC
Spartan	sulfentrazone	FMC
Stalwart C	metolachlor	Sipcam
Stanza	flumetsulam + clopyralid	FMC
Status	dicamba + diflufenzopyr + safener	BASF
Steadfast Q	nicosulfuron + rimsulfuron	DuPont
Stinger	clopyralid	Dow AgroSciences
Storm	bentazon + acifluorfen	UPI
SureStart II	acetochlor + clopyralid + flumetsulam + safener	Dow AgroSciences
Surpass NXT	acetochlor	Dow AgroSciences
Surveil	flumioxazin + cloransulam	Dow AgroSciences
Synchrony XP	chlorimuron + thifensulfuron	DuPont
Talinor	bicyclopyrone + bromoxynil	Syngenta
Targa	quizalofop-p-ethyl	Gowan
Touchdown Hi-Tech	glyphosate	Syngenta
Touchdown Total	glyphosate	Syngenta
Tricor 4F/75 DF	metribuzin	UPI
TripleFlex II	acetochlor + clopyralid + flumetsulam + safener	Monsanto

Trade Name	Common or Code Name	Manufacturer
Trivence	chlorimuron-ethyl + flumioxazin + metribuzin	DuPont
Tripzin ZC	metribuzin + pendimethalin	UPI
Ultra Blazer	acifluorfen	UPI
UpBeet	triflusulfuron	DuPont
V-10425		Valent
V-10446		Valent
V-10456		Valent
V-10463		Valent
Valor	flumioxazin	Valent
Valor XLT	flumioxazin + chlorimuron	Valent
Various	2,4-D Amine	Various
Varisto	bentazon + imazamox	BASF
Verdict	saflufenacil + dimethenamid-p	BASF
Vida	pyraflufen-ethyl	Gowan
Warrant	acetochlor	Monsanto
Warrant Ultra	acetochlor + fomesafen	Monsanto
WC211	adjuvant	West Central
WC221	adjuvant	West Central
WC232	adjuvant	West Central
WC239	adjuvant	West Central
WC301	adjuvant	West Central
WC317	adjuvant	West Central
WC318	adjuvant	West Central
WC319	adjuvant	West Central
XtendiMax	dicamba	Monsanto
Yukon	halosulfuron + dicamba	Gowan
Zemax	mesotrione + s-metolachlor	Syngenta
Zidua/ Zidua SC	pyroxasulfone	BASF
Zidua PRO	pyroxasulfone + saflufenacil	BASF

2018 PRECIPITATION DATA

MSU Horticultural Teaching and Research Center
East Lansing, MI

Date	April	May	June
1			0.07
2		0.01	
3	0.43	0.43	0.19
4	0.02	0.12	0.03
5			0.15
6	0.03		
7			
8			
9	0.24	0.16	0.32
10	0.06		
11		0.82	
12	0.12	0.62	
13	0.01	0.52	
14	0.89	0.09	
15	0.63	0.45	
16	0.12		0.07
17			
18	0.02	0.02	0.05
19		0.36	
20		0.02	0.23
21		0.48	-
22		0.04	-
23			-
24	0.02		-
25	0.02		-
26			-
27			-
28			-
29			-
30		0.74	-
31		0.09	-
Total	2.61	4.97	1.11

Commercial programs for weed control in corn

Trial ID: C01-18 Study Dir.: Burns, Stiles, Powell, Craft
Conducted: Campus T-17 Investigator: Erin Burns

Planting Date: 5/29/2018 **Row Spacing:** 30 IN
Variety: P9840 AM **No. of Reps:** 4
Population: 34600 seeds/A **% OM:** 3.7
Soil Type: LOAM **pH:** 6.6
Plot Size: 10 X 35 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B	C	D
Application Timing:	PRE	EPOS	POST	LPOST
Date Treated:	6/1/2018	6/21/2018		
Time Treated:	6:30 PM	2:30 PM		
% Cloud Cover:	80	80		
Air Temp., Unit:	80.3 F	77 F		
% Relative Humidity:	61.5	49		
Wind Speed/Unit/Dir:	3.3 MPH NE	7 MPH E		
Soil Temp, Unit:	76 F	76 F		
Leaf Moist/Dew Presence (Y/N):	4	4		
Soil Moist:	4	4		

Crop Stage at Each Application

	A	B	C	D
Crop 1 Name:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Height:				
Stage:		V3		

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height:		2 IN		
Stage:		6 L		
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height:		1 IN		
Stage:		8 L		
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height:		1 IN		
Stage:		6 L		
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height:		1 IN		
Stage:		6 L		
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height:		2 IN		
Stage:		5 L		

Weed Density

	1	2	3	4	5
Date:	6/21/2018	6/21/2018	6/21/2018	6/21/2018	6/21/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	2 FT2	3 FT2	1 FT2	1 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI
C										
D										

Comments:

Michigan State University

Commercial programs for weed control in corn

Trial ID: C01-18 Location: Campus T-17 Trial Year: 2018
Protocol ID: C01-18 Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Corvus	2.63	L	3.3	fl oz/a	PRE	A	101	211	319	411	
	Harness Xtra 5.6L	5.6	L	1.8	qt/a	PRE	A					
2	Acuron	3.44	L	3	qt/a	PRE	A	102	213	312	407	
3	Acuron Flexi	3.26	L	2.25	qt/a	PRE	A	103	205	308	418	
4	Armezon PRO	5.35	L	1	pt/a	EPOS	B	104	207	326	409	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Roundup PowerMax	4.5	SL	16	fl oz/a	EPOS	B					
	Surfactant		L	0.25	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
5	Degree Xtra	4	L	2	qt/a	EPOS	B	105	215	309	421	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
6	Capreno	3.45	L	3	fl oz/a	EPOS	B	106	208	317	401	
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
7	Anthem MAXX	4.3	L	2	fl oz/a	EPOS	B	107	201	314	419	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Callisto	4	L	2.5	fl oz/a	EPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	COC		L	1	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
8	Warrant	3	L	3	pt/a	EPOS	B	108	204	320	416	
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Roundup PowerMax (IFN)	4.5	SL	22	fl oz/a	LPOST	D					
	AMS (IFN)		WG	8.5	lb/100 gal	LPOST	D					
9	Harness Max	3.85	L	64	fl oz/a	EPOS	B	109	225	307	423	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
10	Zidua SC	4.17	L	3.2	fl oz/a	PRE	A	110	216	305	415	
	Sharpen	2.85	L	2	fl oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
11	Zidua SC	4.17	L	3.2	fl oz/a	PRE	A	111	221	322	424	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
12	Zidua SC	4.17	L	3.2	fl oz/a	PRE	A	112	220	310	408	
	Callisto	4	L	3	fl oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
13	Verdict	5.57	L	10	fl oz/a	PRE	A	113	224	301	412	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
14	Untreated							114	223	318	404	
15	Balance Flexx	2	L	4	fl oz/a	PRE	A	115	206	325	406	
	DiFlexx Duo	2.13	L	24	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					

Michigan State University

Commercial programs for weed control in corn

Trial ID: C01-18 Location: Campus T-17 Trial Year: 2018
Protocol ID: C01-18 Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
16	SureStart II	4.16	L	1.25	qt/a	PRE	A	116	203	311	422	
	Keystone NXT	5.6	L	1.25	qt/a	PRE	A					
	Durango DMA	4	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
17	Resicore	3.29	L	2.25	qt/a	PRE	A	117	210	323	403	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Durango DMA	4	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
18	Keystone NXT	5.6	L	2	qt/a	PRE	A	118	222	302	410	
	Instigate	45.8	WG	5.2	oz/a	PRE	A					
	Durango DMA	4	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
19	Keystone NXT	5.6	L	2	qt/a	PRE	A	119	217	306	426	
	Realm Q	38.75	WG	4	oz/a	POST	C					
	Durango DMA	4	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
20	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	120	212	321	414	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Callisto	4	L	2.5	fl oz/a	POST	C					
	Atrazine	90	WG	0.55	lb/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
21	Degree Xtra	4	L	2	qt/a	PRE	A	121	219	315	420	
	Status	56	WG	2	oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
22	TripleFLEX II	4.16	L	1	qt/a	PRE	A	122	209	316	413	
	Degree Xtra	4	L	1.5	qt/a	PRE	A					
	Roundup PowerMax (IFN)	4.5	SL	22	fl oz/a	POST	C					
	AMS (IFN)		WG	8.5	lb/100 gal	POST	C					
23	Acuron	3.44	L	1.5	qt/a	PRE	A	123	226	324	405	
	Halex GT	4.38	L	3.6	pt/a	POST	C					
	Surfactant		L	0.25	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
24	Acuron	3.44	L	1.5	qt/a	PRE	A	124	218	303	425	
	Acuron	3.44	L	1.5	qt/a	POST	C					
	Roundup PowerMax	4.5	SL	26	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
25	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	A	125	214	304	417	
	Halex GT	4.38	L	3.6	pt/a	POST	C					
	Surfactant		L	0.25	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
26	Weed Free							126	202	313	402	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
	Roundup PowerMax	4.5	SL	32	fl oz/a	LPOST	D					
	AMS		WG	8.5	lb/100 gal	LPOST	D					

Sort Order: Replicate 1

Soil-applied (PRE) weed control programs in corn

Trial ID: C02-18 Study Dir.: Burns, Stiles, Powell, Craft
Conducted: Campus T-17 Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: P9840AM
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed: spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual Grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A
Application Timing:	PRE
Date Treated:	6/1/2018
Time Treated:	1:00 PM
% Cloud Cover:	60
Air Temp., Unit:	85 F
% Relative Humidity:	45
Wind Speed/Unit/Dir:	5.5 MPH NE
Soil Temp, Unit:	76 F
Leaf Moist/Dew Presence (Y/N):	3
Soil Moist:	4

Crop Stage at Each Application

	A
Crop 1 Name:	ZEAMX
Height:	
Stage:	

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	
Stage:	
Weed 2 Name:	CHEAL
Height:	
Stage:	
Weed 3 Name:	AMAPO
Height:	
Stage:	
Weed 4 Name:	AMBEL
Height:	
Stage:	
Weed 5 Name:	ABUTH
Height:	
Stage:	

Weed Density

	1	2	3	4	5
Date:	6/1/2018	6/1/2018	6/1/2018	6/1/2018	6/1/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	2 FT2	1 FT2	1 FT2	2 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:

Michigan State University

Soil-applied (PRE) weed control programs in corn

Trial ID: C02-18 Location: Campus T-17 Trial Year: 2018
Protocol ID: C02-18 Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Corvus	2.63	L	5.6	fl oz/a	PRE	A	101	206	307	402	
	Atrazine	90	WG	0.825	lb/a	PRE	A					
	Harness	7	L	2.25	pt/a	PRE	A					
2	Corvus	2.63	L	5.6	fl oz/a	PRE	A	102	207	304	406	
	Atrazine	90	WG	0.825	lb/a	PRE	A					
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
3	Corvus	2.63	L	5.6	fl oz/a	PRE	A	103	202	301	409	
	Atrazine	90	WG	0.825	lb/a	PRE	A					
	Outlook	6	L	1	pt/a	PRE	A					
4	Corvus	2.63	L	5.6	fl oz/a	PRE	A	104	209	302	408	
	Degree Xtra	4	L	2	qt/a	PRE	A					
5	Untreated							105	201	303	404	
6	Acuron	3.44	L	2.5	qt/a	PRE	A	106	203	305	401	
7	Lumax	3.67	L	2.7	qt/a	PRE	A	107	208	309	407	
8	Resicore	3.29	L	2.5	qt/a	PRE	A	108	204	308	403	
	Atrazine	90	WG	0.825	lb/a	PRE	A					
9	Harness MAX	3.85	L	75	fl oz/a	PRE	A	109	205	306	405	
	Atrazine	90	WG	0.825	lb/a	PRE	A					

Sort Order: Replicate 1

Comparison of two-pass weed control systems in corn

Trial ID: C03-18_Updated
Conducted: Campus T-17
Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: P9840AM
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mostly foxtail species	Annual grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	6/1/2018	
Time Treated:	11:40 AM	
% Cloud Cover:	80	
Air Temp., Unit:	85 F	
% Relative Humidity:	48	
Wind Speed/Unit/Dir:	4 MPH NE	
Soil Temp, Unit:	75 F	
Leaf Moist/Dew Presence (Y/N):	3	
Soil Moist:	4	

Crop Stage at Each Application

	A	B
Crop 1 Name:	ZEAMX	ZEAMX
Height:		
Stage:		

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		
Stage:		
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMAPO	AMAPO
Height:		
Stage:		
Weed 4 Name:	AMBEL	AMBEL
Height:		
Stage:		
Weed 5 Name:	ABUTH	ABUTH
Height:		
Stage:		

Weed Density

	1	2	3	4	5
Date:	6/1/2018	6/1/2018	6/1/2018	6/1/2018	6/1/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	4 FT2	1 FT2	1 FT2	2 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B										

Comments:

Michigan State University

Comparison of two-pass weed control systems in corn

Trial ID: C03-18_Updated Location: Campus T-17 Trial Year: 2018
Protocol ID: C03-18_Updated Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Corvus	2.63	L	4.5	fl oz/a	PRE	A	101	204	306	407	
	Atrazine	90	WG	1.65	lb/a	PRE	A					
	DiFlexx Duo	2.13	L	1.5	pt/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
2	Balance Flexx	2	L	4	fl oz/a	PRE	A	102	203	302	406	
	Atrazine	90	WG	1.65	lb/a	PRE	A					
	Capreno	3.45	L	3	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
3	Corvus	2.63	L	4.5	fl oz/a	PRE	A	103	205	303	409	
	Atrazine	90	WG	1.65	lb/a	PRE	A					
	DiFlexx Duo	2.13	L	1.5	pt/a	POST	B					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
4	Balance Flexx	2	L	4	fl oz/a	PRE	A	104	206	305	402	
	Atrazine	90	WG	1.65	lb/a	PRE	A					
	Capreno	3.45	L	3	fl oz/a	POST	B					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
5	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	105	208	309	404	
	DiFlexx Duo	2.13	L	1.5	pt/a	POST	B					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
6	Untreated							106	209	308	403	
7	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	107	201	307	401	
	Laudis	3.5	L	3	fl oz/a	POST	B					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Buctril	2	L	6	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
8	Harness Xtra	5.6	L	1.2	qt/a	PRE	A	108	202	304	405	
	Yukon	67.5	WG	4	oz/a	POST	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	B					
	Surfactant		L	0.125	% v/v	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
9	Harness Xtra	5.6	L	1.2	qt/a	PRE	A	109	207	301	408	
	Yukon	67.5	WG	4	oz/a	POST	B					
	Callisto	4	L	3	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	B					
	Surfactant		L	0.125	% v/v	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					

Sort Order: Replicate 1

Corn tolerance to early postemergence (EPOS) tank-mixtures with DiFlexx Duo

Trial ID: C04-18_Updated
Conducted: Campus T-17
Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: P9840AM
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A
Application Timing:	EPOS
Date Treated:	6/15/2018
Time Treated:	8:15 AM
% Cloud Cover:	10
Air Temp., Unit:	72.4 F
% Relative Humidity:	48.9
Wind Speed/Unit/Dir:	2.5 MPH NW
Soil Temp, Unit:	67.8 F
Leaf Moist/Dew Presence (Y/N):	4
Soil Moist:	4

Crop Stage at Each Application

	A
Crop 1 Name:	ZEAMX
Height:	
Stage:	V1-V2

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	1 IN
Stage:	4 L
Weed 2 Name:	CHEAL
Height:	0.5 IN
Stage:	4 L
Weed 3 Name:	AMAPO
Height:	
Stage:	
Weed 4 Name:	AMBEL
Height:	0.5 IN
Stage:	4 L
Weed 5 Name:	ABUTH
Height:	1 IN
Stage:	4 L

Weed Density

	1	2	3	4	5
Date:	6/15/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	3 FT2	1 FT2	1 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:

Michigan State University

Corn tolerance to early postemergence (EPOS) tank-mixtures with DiFlexx Duo

Trial ID: C04-18_Updated Location: Campus T-17 Trial Year: 2018
Protocol ID: C04-18_Updated Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	DiFlexx Duo	2.13	L	2	pt/a	EPOS	A	101	206	308	407	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
2	DiFlexx Duo	2.13	L	1.5	pt/a	EPOS	A	102	209	303	406	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
3	DiFlexx Duo	2.13	L	1.5	pt/a	EPOS	A	103	210	304	402	
	Liberty	2.34	L	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
4	Capreno	3.45	L	3	fl oz/a	EPOS	A	104	202	307	410	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
5	Halex GT	4.38	L	3.6	pt/a	EPOS	A	105	203	309	401	
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	Surfactant		L	0.25	% v/v	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
6	Untreated							106	205	301	404	
7	Armezon Pro	5.35	L	1	pt/a	EPOS	A	107	204	302	408	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
8	Armezon	4	L	0.57	fl oz/a	EPOS	A	108	207	306	405	
	Status	56	WG	3	oz/a	EPOS	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Atrazine	90	WG	0.55	lb/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
9	DiFlexx Duo	2.13	L	1.5	pt/a	EPOS	A	109	201	310	409	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
	Degree Xtra	4	L	2	qt/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					
10	DiFlexx Duo	2.13	L	1.5	pt/a	EPOS	A	110	208	305	403	
	Liberty	2.34	L	32	fl oz/a	EPOS	A					
	Degree Xtra	4	L	2	qt/a	EPOS	A					
	AMS		WG	8.5	lb/100 gal	EPOS	A					

Sort Order: Replicate 1

Liberty-based weed control programs in corn

Trial ID: C05-18_Updated
Conducted: Campus T-17

Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: P9840AM
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT

Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	6/1/2018	
Time Treated:	12:30 PM	
% Cloud Cover:	60	
Air Temp., Unit:	85 F	
% Relative Humidity:	45	
Wind Speed/Unit/Dir:	5.5 MPH NE	
Soil Temp, Unit:	76 F	
Leaf Moist/Dew Presence (Y/N):	3	
Soil Moist:	4	

Crop Stage at Each Application

	A	B
Crop 1 Name:	ZEAMX	ZEAMX
Height:		
Stage:		

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		
Stage:		
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMAPO	AMAPO
Height:		
Stage:		
Weed 4 Name:	AMBEL	AMBEL
Height:		
Stage:		
Weed 5 Name:	ABUTH	ABUTH
Height:		
Stage:		

Weed Density

	1	2	3	4	5
Date:	6/1/2018	6/1/2018	6/1/2018	6/1/2018	6/1/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	2 FT2	3 FT2	1 FT2	1 FT2	2 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B										

Comments:

Michigan State University

Liberty-based weed control programs in corn

Trial ID: C05-18_Updated Location: Campus T-17 Trial Year: 2018
Protocol ID: C05-18_Updated Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Balance Flexx	2	L	4	fl oz/a	PRE	A	101	204	301	409	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Capreno	3.45	L	3	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
2	Corvus	2.63	L	3.5	fl oz/a	PRE	A	102	201	307	402	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	DiFlexx Duo	2.13	L	24	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
3	Harness MAX	3.85	L	40	fl oz/a	PRE	A	103	205	304	406	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
4	Harness MAX	3.85	L	40	fl oz/a	PRE	A	104	202	309	405	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
5	Resicore	3.29	L	2.4	qt/a	PRE	A	105	211	302	411	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Durango DMA	4.0	SL	32	fl oz/a	POST	B					
	Resolve Q	22.4	WG	1.25	oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
6	Untreated							106	207	311	410	
7	Resicore	3.29	L	2.4	qt/a	PRE	A	107	209	303	401	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Resolve Q	22.4	WG	1.25	oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
8	Verdict	5.57	L	14	fl oz/a	PRE	A	108	203	310	403	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Armezon	4	L	0.75	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
9	Verdict	5.57	L	14	fl oz/a	PRE	A	109	206	308	404	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Armezon	4	L	0.75	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
10	Acuron	3.44	L	2.5	qt/a	PRE	A	110	208	306	407	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Status	56	WG	2.5	oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
11	Acuron	3.44	L	2.5	qt/a	PRE	A	111	210	305	408	
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Status	56	WG	2.5	oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					

Sort Order: Replicate 1

Comparison of weed control systems in corn

Trial ID: C06-18_Updated
Conducted: Campus T-17

Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: DKC48-56 SS
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT

Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	6/1/2018	
Time Treated:	6:15 PM	
% Cloud Cover:	60	
Air Temp., Unit:	86 F	
% Relative Humidity:	57.2	
Wind Speed/Unit/Dir:	3.2 MPH NE	
Soil Temp, Unit:	75 F	
Leaf Moist/Dew Presence (Y/N):	4	
Soil Moist:	2	

Crop Stage at Each Application

	A	B
Crop 1 Name:	ZEAMX	ZEAMX
Height:		
Stage:		

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		
Stage:		
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMAPO	AMAPO
Height:		
Stage:		
Weed 4 Name:	AMBEL	AMBEL
Height:		
Stage:		
Weed 5 Name:	ABUTH	ABUTH
Height:		
Stage:		

Weed Density

	1	2	3	4	5
Date:	6/1/2018	6/1/2018	6/1/2018	6/1/2018	6/1/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	4 FT2	1 FT2	1 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B										

Comments:

Michigan State University

Comparison of weed control systems in corn

Trial ID: C06-18_Updated Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	TripleFLEX II	4.25	L	1	qt/a	PRE	A	101	209	302	407	
	Harness MAX	3.85	L	40	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
2	Harness Xtra 5.6 L	5.6	L	1.75	qt/a	PRE	A	102	212	303	401	
	Harness MAX	3.85	L	40	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
3	Harness Xtra	6	L	1.5	qt/a	PRE	A	103	210	309	412	
	Harness MAX	3.85	L	40	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
4	Degree Xtra	4	L	2.25	qt/a	PRE	A	104	205	308	414	
	Harness MAX	3.85	L	40	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
5	Harness MAX	3.85	L	64	fl oz/a	PRE	A	105	215	307	403	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	DiFlexx	4	L	1	pt/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
6	Harness MAX	3.85	L	75	fl oz/a	PRE	A	106	201	311	408	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
7	Acuron	3.44	L	1.5	qt/a	PRE	A	107	214	306	409	
	Halex GT	4.38	L	3.625	pt/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
8	Untreated							108	202	310	404	
9	Bicep II Magnum	5.5	L	3.5	pt/a	PRE	A	109	206	313	410	
	Halex GT	4.38	L	3.625	pt/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
10	Lexar EZ	3.7	L	1.5	qt/a	PRE	A	110	208	316	402	
	Halex GT	4.38	L	1.8	qt/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
11	Keystone NXT	5.6	L	1.75	qt/a	PRE	A	111	207	314	415	
	Resicore	3.35	L	1.25	qt/a	POST	B					
	Durango DMA	4	SL	36	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
12	Surestart II	4.25	L	1	qt/a	PRE	A	112	213	312	405	
	Resicore	3.35	L	2.5	qt/a	POST	B					
	Durango DMA	4	SL	36	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
13	Resicore	3.35	L	2.5	qt/a	PRE	A	113	203	305	413	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Durango DMA	4	SL	36	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
14	Armezon PRO	5.35	L	1.25	pt/a	PRE	A	114	216	315	416	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Status	56	WG	5	oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
15	Harness Xtra 5.6 L	5.6	L	1.75	qt/a	PRE	A	115	211	304	406	

Michigan State University

Comparison of weed control systems in corn

Trial ID: C06-18_Updated
Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
	Balance Flexx	2	L	3	fl oz/a	PRE	A					
	DiFlexx	4	L	1	pt/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
16	Corvus	2.63	L	5.6	fl oz/a	PRE	A	116	204	301	411	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	DiFlexx	4	L	1	pt/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					

Sort Order: Replicate 1

Sequential weed control programs in corn

Trial ID: C07-18 Study Dir.: Burns, Stiles, Powell, Craft
Conducted: Campus T-17 Investigator: Erin Burns

Planting Date: 5/29/2018 **Row Spacing:** 30 IN
Variety: DKC 48-56 SS **No. of Reps:** 4
Population: 34600 seeds/A **% OM:** 3.7
Soil Type: LOAM **pH:** 6.6
Plot Size: 10 X 35 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	6/1/2018	6/18/2018
Time Treated:	4:20 PM	9:30 AM
% Cloud Cover:	70	70
Air Temp., Unit:	83 F	87 F
% Relative Humidity:	51	69
Wind Speed/Unit/Dir:	2.4 MPH NE	9 MPH SW
Soil Temp, Unit:	74 F	77 F
Leaf Moist/Dew Presence (Y/N):	4	4
Soil Moist:	4	4

Crop Stage at Each Application

	A	B
Crop 1 Name:	ZEAMX	ZEAMX
Height:		
Stage:		V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		1.5 IN
Stage:		5 L
Weed 2 Name:	CHEAL	CHEAL
Height:		1 IN
Stage:		6 L
Weed 3 Name:	AMAPO	AMAPO
Height:		1 IN
Stage:		4 L
Weed 4 Name:	AMBEL	AMBEL
Height:		1.5 IN
Stage:		6 L
Weed 5 Name:	ABUTH	ABUTH
Height:		1.5 IN
Stage:		5 L

Weed Density

	1	2	3	4	5
Date:	6/18/2018	6/18/2018	6/18/2018	6/18/2018	6/18/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	1 FT2	1 FT2	1 FT2	3 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIRX	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIRX	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:

Michigan State University

Sequential weed control programs in corn

Trial ID: C07-18 Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Verdict	5.57	L	10	fl oz/a	PRE	A	101	203	301	409	
	Armezon PRO	5.35	L	16	fl oz/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
2	Verdict	5.57	L	13	fl oz/a	PRE	A	102	201	306	403	
	Status	56	WG	3	oz/a	POST	B					
	Callisto	4	L	3	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
3	Acuron	3.44	L	1.75	qt/a	PRE	A	103	206	303	407	
	Callisto	4	L	3	fl oz/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
4	Resicore	3.29	L	1.25	qt/a	PRE	A	104	205	309	406	
	Resicore	3.29	L	1.25	qt/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
5	Untreated							105	202	304	408	
6	Harness MAX	3.85	L	40	fl oz/a	PRE	A	106	204	308	405	
	Harness MAX	3.85	L	40	fl oz/a	POST	B					
	Atrazine	90	WG	0.55	lb/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
7	Verdict	5.57	L	10	fl oz/a	PRE	A	107	208	307	402	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Status	56	WG	3	oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
8	Armezon PRO	5.35	L	16	fl oz/a	PRE	A	108	209	302	401	
	Callisto	4	L	3	fl oz/a	PRE	A					
	Atrazine	90	WG	0.55	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
9	Zidua SC	4.17	L	3.2	fl oz/a	PRE	A	109	207	305	404	
	Callisto	4	L	3	fl oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Surfactant		L	0.25	% v/v	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					

Sort Order: Replicate 1

Weed control programs with Anthem Maxx in corn

Trial ID: C08-18_Updated
Conducted: Campus T-17
Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: DKC 48-56 SS
Population: 34600 seed/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B	C
Application Timing:	PRE	EPOS	POST
Date Treated:	6/1/2018	6/15/2018	
Time Treated:	4:40 AM	9:10 AM	
% Cloud Cover:	70	10	
Air Temp., Unit:	83 F	77 F	
% Relative Humidity:	51	56	
Wind Speed/Unit/Dir:	2.6 MPH NE	5.1 MPH E	
Soil Temp, Unit:	74 F	68 F	
Leaf Moist/Dew Presence (Y/N):	4	4	
Soil Moist:	4	4	

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	ZEAMX	ZEAMX	ZEAMX
Height:			
Stage:		V2	

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height:		2 IN	
Stage:		5 L	
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height:		0.5 IN	
Stage:		2 L	
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height:			
Stage:			
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height:		1 IN	
Stage:		4 L	
Weed 5 Name:	ABUTH	ABUTH	ABUTH
Height:			
Stage:			

Weed Density

	1	2	3	4	5
Date:	6/15/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	3 FT2	1 FT2	1 FT2	1 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI
C										

Comments:

Michigan State University

Weed control programs with Anthem Maxx in corn

Trial ID: C08-18_Updated Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	101	202	308	404	
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Callisto	4	L	3	fl oz/a	POST	C					
	Atrazine	90	WG	1.1	lb/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
2	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	102	203	306	410	
	Callisto	4	L	5	fl oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Status	56	WG	3	oz/a	POST	C					
	Atrazine	90	WG	1.1	lb/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	103	205	304	402	
	Balance Flexx	2	L	3	fl oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Callisto	4	L	2.5	fl oz/a	POST	C					
	Atrazine	90	WG	0.55	lb/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
4	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	104	210	303	409	
	Hornet	68.5	WG	4	oz/a	PRE	A					
	Atrazine	90	WG	1.1	lb/a	PRE	A					
	Callisto	4	L	2.5	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	Anthem MAXX	4.3	L	4	fl oz/a	EPOS	B	105	207	305	408	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Callisto	4	L	3	fl oz/a	EPOS	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	B					
	COC		L	1	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
6	Untreated							106	208	309	401	
7	Anthem MAXX	4.3	L	4	fl oz/a	EPOS	B	107	204	302	406	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Balance Flexx	2	L	3	fl oz/a	EPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	COC		L	1	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
8	Anthem MAXX	4.3	L	4	fl oz/a	EPOS	B	108	209	310	405	
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	Hornet	68.5	WG	4	oz/a	EPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	COC		L	1	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
9	Halex GT	4.38	L	3.6	pt/a	EPOS	B	109	206	301	407	
	Surfactant		L	0.25	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
10	Acuron	3.44	L	2	qt/a	EPOS	B	110	201	307	403	
	Roundup PowerMax	4.5	SL	22	fl oz/a	EPOS	B					
	COC		L	1	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					

Sort Order: Replicate 1

Evaluation of ImpactZ and Impact programs for crop safety and weed control in corn

Trial ID: C09-18_Updated
Conducted: Campus T-17
Study Dir.: Burns, Stiles, Powell, Craft
Investigator: Erin Burns

Planting Date: 5/29/2018
Variety: DKC 48-56 SS
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B	C
Application Timing:	PRE	EPOS	POST
Date Treated:	6/1/2018	6/21/2018	
Time Treated:	8:00 AM	3:00 PM	
% Cloud Cover:	20	85	
Air Temp., Unit:	76 F	77 F	
% Relative Humidity:	68	49	
Wind Speed/Unit/Dir:	2.1 MPH NE	7 MPH E	
Soil Temp, Unit:	73 F	76 M	
Leaf Moist/Dew Presence (Y/N):	4	4	
Soil Moist:	2	4	

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	ZEAMX	ZEAMX	ZEAMX
Height:			
Stage:		V4	

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height:		2 IN	
Stage:		4-6 L	
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height:		1 IN	
Stage:		6 L	
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height:		2 IN	
Stage:		8 L	
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height:		1.5 IN	
Stage:		5 L	
Weed 5 Name:	ABUTH	ABUTH	ABUTH
Height:		1 IN	
Stage:		6 L	

Weed Density

	1	2	3	4	5
Date:	6/21/2018	6/21/2018	6/21/2018	6/21/2018	6/21/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	3 FT2	1 FT2	1 FT2	1 FT2	2 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI
C										

Comments:

Michigan State University

Evaluation of ImpactZ and Impact programs for crop safety and weed control in corn

Trial ID: C09-18_Updated
Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Harness Xtra 5.6	5.6	L	3.6	pt/a	PRE	A	101	204	303	405	
2	Harness Xtra 5.6	5.6	L	3.6	pt/a	PRE	A	102	205	308	402	
	ImpactZ	4.26	L	10.7	fl oz/a	POST	C					
	MSO		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Harness Xtra 5.6	5.6	L	3.6	pt/a	PRE	A	103	201	306	404	
	ImpactZ	4.26	L	8	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C					
	MSO		L	0.5	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
4	Harness Xtra 5.6	5.6	L	3.6	pt/a	PRE	A	104	206	301	407	
	ImpactZ	4.26	L	8	fl oz/a	POST	C					
	Liberty	2.34	L	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	Untreated							105	208	302	403	
6	Harness	7	L	1.87	pt/a	EPOS	B	106	203	307	406	
	Impact	2.8	L	1	fl oz/a	EPOS	B					
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	MSO		L	0.25	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
7	Harness	7	L	1.87	pt/a	EPOS	B	107	202	305	401	
	Impact	2.8	L	0.75	fl oz/a	EPOS	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	B					
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	MSO		L	0.25	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
8	Halex GT	4.39	L	3.6	pt/a	EPOS	B	108	207	304	408	
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	Surfactant		L	0.25	% v/v	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					

Sort Order: Replicate 1

Weed control with SA-0660001 programs in corn

Trial ID: C10-18 Study Dir.: Burns, Stiles, Powell, Craft
Conducted: Campus T-17 Investigator: Erin Burns

Planting Date:
Variety: DKC 48-56 SS
Population: 34600 seeds/A
Soil Type: LOAM
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.7
pH: 6.6
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A
Application Timing:	PRE
Date Treated:	6/1/2018
Time Treated:	8:45 AM
% Cloud Cover:	80
Air Temp., Unit:	76 F
% Relative Humidity:	57
Wind Speed/Unit/Dir:	2.1 MPH SW
Soil Temp, Unit:	72 F
Leaf Moist/Dew Presence (Y/N):	4
Soil Moist:	2

Crop Stage at Each Application

	A
Crop 1 Name:	ZEAMX
Height:	
Stage:	

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	
Stage:	
Weed 2 Name:	CHEAL
Height:	
Stage:	
Weed 3 Name:	AMAPO
Height:	
Stage:	
Weed 4 Name:	AMBEL
Height:	
Stage:	
Weed 5 Name:	ABUTH
Height:	
Stage:	

Weed Density

	1	2	3	4	5
Date:	6/1/2018	6/1/2018	6/1/2018	6/1/2018	6/1/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	1 FT2	1 FT2	1 FT2	2 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:

Michigan State University

Weed control with SA-0660001 programs in corn

Trial ID: C10-18 Location: Campus T-17
Investigator: Erin Burns
Study Director: Burns, Stiles, Powell, Craft

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	SA-0660001	4.17	L	0.96	pt/a	PRE	A	101	209	308	407	
2	SA-0660001	4.17	L	1.44	pt/a	PRE	A	102	212	307	409	
3	SA-0660001	4.17	L	1.92	pt/a	PRE	A	103	205	304	402	
4	SA-0660001	4.17	L	2.88	pt/a	PRE	A	104	207	301	404	
5	SA-0660001	4.17	L	1.44	pt/a	PRE	A	105	203	310	412	
	Stalwart C	7.8	L	1.67	pt/a	PRE	A					
6	Atrazine	90	WG	0.55	lb/a	PRE	A	106	214	311	414	
7	Atrazine	90	WG	0.825	lb/a	PRE	A	107	201	302	406	
8	Untreated							108	211	313	408	
9	Atrazine	90	WG	1.1	lb/a	PRE	A	109	208	305	411	
10	Atrazine	90	WG	1.65	lb/a	PRE	A	110	204	314	403	
11	Atrazine	90	WG	1.65	lb/a	PRE	A	111	206	309	401	
	Stalwart C	7.8	L	1.67	pt/a	PRE	A					
12	Stalwart 3W	3.578	L	3	qt/a	PRE	A	112	213	303	410	
13	SA-0070128	2.918	L	3	qt/a	PRE	A	113	202	306	405	
14	SA-0070129	2.918	L	3	qt/a	PRE	A	114	210	312	413	

Sort Order: Replicate 1

Weed control programs in Enlist corn

Trial ID: C12-18 Study Dir.: Burns, Stiles, Powell, Craft
Conducted: Campus T-16 Investigator: Erin Burns

Planting Date: 5/30/2018 **Row Spacing:** 30 IN
Variety: MY00T28 SS DOW **No. of Reps:** 4
Population: 34600 **% OM:** 3.7
Soil Type: LOAM **pH:** 6.6
Plot Size: 10 X 35 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer: 300lbs/A urea incorporated
150lbs/A 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	ZEAMX	Corn

Application Description

	A	B	C
Application Timing:	PRE	EPOS	POST
Date Treated:	6/1/2018	6/15/2018	
Time Treated:	7:45 PM	9:40 AM	
% Cloud Cover:	30	10	
Air Temp., Unit:	75 F	83 F	
% Relative Humidity:	67	35	
Wind Speed/Unit/Dir:	5.3 MPH NE	3 MPH E	
Soil Temp, Unit:	73 F	69 F	
Leaf Moist/Dew Presence (Y/N):	4	4	
Soil Moist:	4	4	

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	ZEAMX	ZEAMX	ZEAMX
Height:			
Stage:		V2	

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height:		1 IN	
Stage:		2 L	
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height:		0.5 IN	
Stage:		2 L	
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height:			
Stage:			
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height:		0.25 IN	
Stage:		4 L	
Weed 5 Name:	ABUTH	ABUTH	ABUTH
Height:			
Stage:			

Weed Density

	1	2	3	4	5
Date:	6/15/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1 FT2	2 FT2	1 FT2	1 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI
C										

Comments:

Michigan State University

Weed control programs in Enlist corn

Trial ID: C12-18 Location: Campus T-16 Trial Year: 2018
Protocol ID: C12-18 Investigator: Erin Burns
Project ID: Study Director: Burns, Stiles, Powell, Craft
Sponsor Contact:

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Cinch ATZ	5.5	L	1	qt/a	PRE	A	101	210	309	411	
	Revulin Q	51.2	WG	3.4	oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
2	Cinch ATZ	5.5	L	1	qt/a	PRE	A	102	203	304	403	
	Resolve Q	22.4	WG	1.25	oz/a	POST	C					
	Abundit Edge	4.5	SL	36	fl oz/a	POST	C					
	COC		L	1	% v/v	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Resicore	3.29	L	1.25	qt/a	EPOS	B	103	205	301	402	
	Atrazine	90	WG	1.1	lb/a	EPOS	B					
	Abundit Edge	4.5	SL	36	fl oz/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
4	Resicore	3.29	L	1.25	qt/a	PRE	A	104	209	311	404	
	Keystone NXT	5.6	L	1	qt/a	PRE	A					
	Abundit Edge	4.5	SL	36	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	SureStart II	4.16	L	2	pt/a	PRE	A	105	201	307	401	
	Enlist Duo	3.13	L	3.5	pt/a	POST	C					
	N-Pak AMS liquid		L	2.5	% v/v	POST	C					
6	Untreated							106	211	303	410	
7	SureStart II	4.16	L	2	pt/a	PRE	A	107	202	308	406	
	Enlist Duo	3.13	L	4.6	pt/a	POST	C					
	N-Pak AMS liquid		L	2.5	% v/v	POST	C					
8	SureStart II	4.16	L	2	pt/a	EPOS	B	108	206	302	405	
	Enlist Duo	3.13	L	3.5	pt/a	EPOS	B					
	N-Pak AMS liquid		L	2.5	% v/v	EPOS	B					
9	SureStart II	4.16	L	2	pt/a	EPOS	B	109	204	306	409	
	Enlist Duo	3.13	L	4.6	pt/a	EPOS	B					
	N-Pak AMS liquid		L	2.5	% v/v	EPOS	B					
10	Anthem MAXX	4.3	L	4	fl oz/a	PRE	A	110	207	310	408	
	Atrazine	90	WG	0.55	lb/a	PRE	A					
	Enlist Duo	3.13	L	3.5	pt/a	POST	C					
	N-Pak AMS liquid		L	2.5	% v/v	POST	C					
11	Anthem MAXX	4.3	L	4	fl oz/a	EPOS	B	111	208	305	407	
	Atrazine	90	WG	0.55	lb/a	EPOS	B					
	Enlist Duo	3.13	L	3.5	pt/a	EPOS	B					
	N-Pak AMS liquid		L	2.5	% v/v	EPOS	B					

Sort Order: Replicate 1

Economics of Roundup Ready/Xtend soybean weed control programs

Trial ID: SOY01-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-10 Investigator: Christy Sprague

Planting Date:	5/7/18	**Row Spacing:**	30 IN
Variety:	P24A80X	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	2.8
Soil Type:	SCL sandy clay loam	**pH:**	7.7
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plow; spring soil finish twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti
6	SINAR	mustard, wild	Sinapis arvensis

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B	C	D	E	F
Application Timing:	PPI	PRE	EPOS	POST I	POST	LPOS
Date Treated:	5/7/18	5/7/18	5/31/18	6/7/18	6/12/18	6/21/18
Time Treated:	10:45 AM	3:30 PM	3:30 PM	3:00 PM	5:30 PM	4:00 PM
% Cloud Cover:	0	0	35	30	45	90
Air Temp., Unit:	62 F	75 F	83 F	79 F	82 F	78 F
% Relative Humidity:	38	25	55	47	55	46
Wind Speed/Unit/Dir:	1 mph N	0 mph	9.5 mph SW	6 mph NW	5 mph S	6 mph E
Soil Temp, Unit:	48 F	58 F	80 F	75 F	77 F	78 F
Leaf Moist/Dew Presence (Y/N):	4	5	5	5	5	5
Soil Moist:	3	3	2	5	3	5

Crop Stage at Each Application

	A	B	C	D	E	F
Crop 1 Name:	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Height:			4 "	5 "	6-8 " (7)	8-10 " (9)
Stage:			V1	V2	V3	V5

Weed Stage at Each Application

	A	B	C	D	E	F
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR	ANGR	ANGR
Height:			1-4 " (2.5)	2-4 " (3)	2-4 " (3)	2-4 " (3)
Stage:			2-5L	2-4L	2-4L	2-4L
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL
Height:			0.5-2 " (1.25)	2 "		
Stage:			4-7L	6-8L		
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO	AMAPO	AMAPO
Height:			1-1 " (1)	1-3 " (2)		
Stage:			2-5L	4-8L		
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL
Height:			0.5-2 " (1.25)	1-3 " (2)	2-4 " (3)	2-4 " (3)
Stage:			2-5L	4-6L	4-6L	4-6L
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Height:						
Stage:						
Weed 6 Name:	SINAR	SINAR	SINAR	SINAR	SINAR	SINAR
Height:				6-8 " (7)		
Stage:				4-5L		

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 psi
B	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 psi
C	CUB	3.8 mph	TTI	11003	22 "	20 "	100 "	19 GAL/AC	WATER	25 psi
D	CUB	3.8 mph	TTI	11003	24 "	20 "	100 "	19 GAL/AC	WATER	25 psi
E	CUB	3.8 mph	TTI	11003	24 "	20 "	100 "	19 GAL/AC	WATER	25 psi
F	CUB	3.8 mph	AIXR	11003	26 "	20 "	100 "	19 GAL/AC	WATER	30 psi

Comments:

Economics of Roundup Ready/Xtend soybean weed control programs
Trial ID: SOY01-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Sonalan HFP	3	L	2	pt/a	PPI	A	101	202	301	402	
	Dual II Magnum	7.64	L	1	pt/a	PPI	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
2	Sonalan HFP	3	L	2	pt/a	PPI	A	102	201	302	401	
	Metribuzin	75	WG	5	oz/a	PPI	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
3	Valor EZ	4	L	3	fl oz/a	PRE	B	103	208	304	430	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
4	Warrant Ultra	3.45	L	50	fl oz/a	POST1	D	104	210	321		
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST1	D					
	AMS		WG	17	lb/100 gal	POST1	D					
5	Authority XL	70	WG	4	oz/a	PRE	B	105	213	323	413	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	8.5	lb/100 gal	POST	E					
6	Fierce	76	WG	3	oz/a	PRE	B	106	215	319	415	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
7	Untreated							107	214	313	422	
8	Zidua PRO	4.09	L	4.5	fl oz/a	PRE	B	108	218	317	403	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
9	Engenia	5	SL	12.8	fl oz/a	POST1	D	109	223	328		
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST1	D					
	Induce		L	0.25	% v/v	POST1	D					
10	Authority MTZ	40	WG	14	oz/a	PRE	B	110	219	330	411	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	8.5	lb/100 gal	POST	E					
11	Verdict	5.57	L	5	fl oz/a	PRE	B	111	207	315	409	
	Metribuzin	75	WG	6	oz/a	PRE	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
12	Zidua PRO	4.09	L	4.5	fl oz/a	PRE	B	112	209	318	418	
	Metribuzin	75	WG	6	oz/a	PRE	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
13	EverpreX	7.62	L	1	pt/a	POST1	D	113	220	324		
	Fexapan	2.9	SL	22	fl oz/a	POST1	D					
	Abundit Edge	4.5	SL	32	fl oz/a	POST1	D					
	Intact		L	0.5	% v/v	POST1	D					
14	Surveil	48	WG	2.8	oz/a	PRE	B	114	222	307	419	
	Metribuzin	75	WG	4	oz/a	PRE	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
15	Envive	41.3	WG	3.5	oz/a	PRE	B	115	203	322	429	
	Metribuzin	75	WG	4	oz/a	PRE	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
16	Afforia	50.8	WG	2.5	oz/a	PRE	B	116	228	312	405	
	Metribuzin	75	WG	4	oz/a	PRE	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	E					

Economics of Roundup Ready/Xtend soybean weed control programs
Trial ID: SOY01-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
	AMS		WG	17	lb/100 gal	POST	E					
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST1	D	117	230	308		
	AMS		WG	17	lb/100 gal	POST1	D					
18	BroadAxe XC	7	L	25	fl oz/a	PRE	B	118	205	329	420	
	Flexstar GT	2.82	L	3.5	pt/a	POST	E					
	MSO		L	1	% v/v	POST	E					
	AMS		WG	8.5	lb/100 gal	POST	E					
19	Valor	51	WG	2	oz/a	PRE	B	119	211	303	424	
	Warrant Ultra	3.45	L	50	fl oz/a	POST	E					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	AMS		WG	17	lb/100 gal	POST	E					
20	Boundary	6.5	L	1.8	pt/a	PRE	B	120	206	305	404	
	Prefix	5.29	L	2	pt/a	POST	E					
	Roundup PowerMax	4.5	SL	26	fl oz/a	POST	E					
	AMS		WG	8.5	lb/100 gal	POST	E					
21	Authority First	70	WG	4	oz/a	PRE	B	121	204	327	408	
	XtendiMax	2.9	SL	22	fl oz/a	POST	E					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	Intact		L	0.5	% v/v	POST	E					
22	Warrant	3	L	3	pt/a	PRE	B	122	226	309	414	
	Metribuzin	75	WG	6	oz/a	PRE	B					
	XtendiMax	2.9	SL	22	fl oz/a	POST	E					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	Intact		L	0.5	% v/v	POST	E					
23	Prefix	5.29	L	2	pt/a	PRE	B	123	229	311	407	
	Sequence	5.25	L	3	pt/a	POST	E					
	XtendiMax	2.9	SL	22	fl oz/a	POST	E					
	Intact		L	0.5	% v/v	POST	E					
	Class Act Ridion		L	1	% v/v	POST	E					
24	Boundary	6.5	L	1.8	pt/a	PRE	B	124	216	325	421	
	Prefix	5.29	L	2	pt/a	POST	E					
	XtendiMax	2.9	SL	22	fl oz/a	POST	E					
	Roundup PowerMax	4.5	SL	26	fl oz/a	POST	E					
	Intact		L	0.5	% v/v	POST	E					
	Class Act Ridion		L	1	% v/v	POST	E					
25	Valor	51	WG	2	oz/a	PRE	B	125	221	320	412	
	Warrant	3	L	3	pt/a	POST	E					
	XtendiMax	2.9	SL	22	fl oz/a	POST	E					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E					
	Intact		L	0.5	% v/v	POST	E					
26	Warrant Ultra	3.45	L	50	fl oz/a	EPOS	C	126	225	314	416	
	XtendiMax	2.9	SL	22	fl oz/a	EPOS	C					
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	C					
	Intact		L	0.5	% v/v	EPOS	C					
27	Engenia PRO	4.54	L	16	fl oz/a	EPOS	C	127	217	310	426	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	C					
	Induce		L	0.25	% v/v	EPOS	C					
28	XtendiMax	2.9	SL	22	fl oz/a	EPOS	C	128	227	326	410	
	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	C					
	Intact		L	0.5	% v/v	EPOS	C					
	Cobra	2	L	10	fl oz/a	LPOS	F					
	Roundup PowerMax	4.5	SL	32	fl oz/a	LPOS	F					
	AMS		WG	17	lb/100 gal	LPOS	F					
29	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	C	129	224	316	406	
	AMS		WG	17	lb/100 gal	EPOS	C					
	Roundup PowerMax	4.5	SL	32	fl oz/a	LPOS	F					

Economics of Roundup Ready/Xtend soybean weed control programs
Trial ID: SOY01-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
	AMS		WG	17	lb/100 gal	LPOS	F					
30	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	E	130	212	306	423	
	AMS		WG	17	lb/100 gal	POST	E					

Sort Order: Replicate 1

Comparison of different microencapsulated formulations of Fierce

Trial ID: SOY02-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-10 Investigator: Christy Sprague

Planting Date: 5/7/18
Variety: P24A80X
Population: 156000 seeds/A
Soil Type: SCL sandy clay loam
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 2.8
pH: 7.7
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1			

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A
Application Timing:	PRE
Date Treated:	5/7/18
Time Treated:	5:45 PM
% Cloud Cover:	0
Air Temp., Unit:	68 F
% Relative Humidity:	26
Wind Speed/Unit/Dir:	0 mph
Soil Temp, Unit:	62 F
Leaf Moist/Dew Presence (Y/N):	4
Soil Moist:	4

Crop Stage at Each Application

	A
Crop 1 Name:	GLXMA
Height:	
Stage:	

Weed Stage at Each Application

	A
Weed 1 Name:	
Height:	
Stage:	

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 psi

Comments:

Comparison of different microencapsulated formulations of Fierce

Trial ID: SOY02-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Untreated							101	207	304	403	
2	Valor SX	51	WG	1.96	oz/a	PRE	A	102	201	305	407	
3	Valor EZ	4	L	1.96	oz/a	PRE	A	103	205	302	401	
4	Fierce	76	WG	3	oz/a	PRE	A	104	208	301	404	
5	V-10425 2002	1.52	CS	12	fl oz/a	PRE	A	105	203	306	408	
6	V-10425 2078	1.52	CS	12	fl oz/a	PRE	A	106	202	308	402	
7	V-10425 2079	1.52	CS	12	fl oz/a	PRE	A	107	206	303	405	
8	V-10425 2080	1.52	CS	12	fl oz/a	PRE	A	108	204	307	406	

Sort Order: Replicate 1

Economics of weed control in LibertyLink soybean

Trial ID: SOY03-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-10 Investigator: Christy Sprague

Planting Date:		**Row Spacing:**	30 IN
Variety:	C2312 LL	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	2.9
Soil Type:	SCL sandy clay loam	**pH:**	7.2
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed: spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B	C
Application Timing:	PRE	EPOS	POST
Date Treated:	5/7/18	5/31/18	6/12/18
Time Treated:	6:20 PM	3:30 PM	5:00 PM
% Cloud Cover:	0	35	100
Air Temp., Unit:	70 F	83 F	75 F
% Relative Humidity:	24	55	72
Wind Speed/Unit/Dir:	3 mph SE	9.5 mph SW	7 mph S
Soil Temp, Unit:	64 F	80 F	76 F
Leaf Moist/Dew Presence (Y/N):	4	5	5
Soil Moist:	4	2	4

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	GLXMA	GLXMA	GLXMA
Height:		4 "	6-8 " (7)
Stage:		V1	V2

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height:		1-4 " (2.5)	2-4 " (3)
Stage:		2-5L	2-4L
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height:		0.5-2 " (1.25)	
Stage:		4-7L	
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height:		1 "	
Stage:		2-5L	
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height:		0.5-2 " (1.25)	2-4 " (3)
Stage:		2-5L	4-6L

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	22 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
C	CUB	3.8 mph	AIXR	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

Economics of weed control in LibertyLink soybean
Trial ID: SOY03-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Fierce	76	WG	3	oz/a	PRE	A	101	207	318	409	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
2	Boundary	6.5	L	2	pt/a	PRE	A	102	201	317	404	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Authority Elite	7	L	25	fl oz/a	PRE	A	103	213	308	416	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
4	Zidua PRO	4.09	L	4.5	fl oz/a	PRE	A	104	206	310	407	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	Untreated							105	204	315	414	
6	Fierce MTZ	2.64	L	16	fl oz/a	PRE	A	106	202	316	401	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
7	Fierce	76	WG	3.75	oz/a	PRE	A	107	210	302	408	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
8	Authority Supreme	4.16	L	7.7	fl oz/a	PRE	A	108	205	309	413	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Authority MTZ	45	WG	14	oz/a	PRE	A	109	203	304	405	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
10	Authority First	70	WG	6.4	oz/a	PRE	A	110	218	312	411	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
11	Authority XL	70	WG	4	oz/a	PRE	A	111	212	305	417	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
12	Moccasin MTZ	4.5	L	32	fl oz/a	PRE	A	112	208	307	402	
	Interline	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
13	Moccasin MTZ	4.5	L	40	fl oz/a	PRE	A	113	214	303	418	
	Interline	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
14	Tripzin ZC	4	L	42	fl oz/a	PRE	A	114	209	311	415	
	Interline	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
15	Boundary	6.5	L	1.8	pt/a	PRE	A	115	211	314	403	
	Prefix	5.29	L	2	pt/a	POST	C					
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
16	Authority XL	70	WG	3	oz/a	PRE	A	116	217	301	410	
	Warrant	3	L	3	pt/a	POST	C					
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
17	Liberty	2.34	L	32	fl oz/a	EPOS	B	117	215	313	406	
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					

Economics of weed control in LibertyLink soybean
Trial ID: SOY03-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
18	Fierce EZ	3.04	L	6	fl oz/a	PRE	A	118	216	306	412	
	Liberty	2.34	L	32	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					

Sort Order: Replicate 1

Weed control systems in Balance GT/LL soybean - "STEWARDED"

Trial ID: SOY04-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-10 Investigator: Christy Sprague

Planting Date:	5/8/18	**Row Spacing:**	30 IN
Variety:	FG 72-LL MGL 3172	**No. of Reps:**	4
Population:	91000 seeds/A	**% OM:**	2.9
Soil Type:	SCL sandy clay loam	**pH:**	7.2
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	5/8/18	6/14/18
Time Treated:	9:00 AM	3:00 PM
% Cloud Cover:	0	80
Air Temp., Unit:	50 F	82 F
% Relative Humidity:	70	26
Wind Speed/Unit/Dir:	6 mph S	6.5 mph W
Soil Temp, Unit:	58 F	80 F
Leaf Moist/Dew Presence (Y/N):	4	5
Soil Moist:	3	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		6-8 " (7)
Stage:		V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:	2-4 " (3)	
Stage:	2-4L	
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMAPO	AMAPO
Height:		
Stage:		
Weed 4 Name:	AMBEL	AMBEL
Height:	2-4 " (3)	
Stage:	4-6L	

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

Weed control systems in Balance GT/LL soybean - "STEWARDED"
Trial ID: SOY04-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B	101	209	313	401	
	AMS		WG	8.5	lb/100 gal	POST	B					
2	Liberty	2.34	L	32	fl oz/a	POST	B	102	201	302	410	
	AMS		WG	8.5	lb/100 gal	POST	B					
3	Liberty	2.34	L	32	fl oz/a	POST	B	103	215	303	408	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
4	Untreated							104	203	306	409	
5	Balance Bean	4	L	3	fl oz/a	PRE	A	105	208	315	403	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
6	Balance Bean	4	L	3	fl oz/a	PRE	A	106	202	311	413	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
7	Balance Bean	4	L	3	fl oz/a	PRE	A	107	211	309	405	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
8	Balance Bean	4	L	3	fl oz/a	PRE	A	108	210	304	406	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Prefix	5.29	L	2	pt/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
9	Balance Bean	4	L	3	fl oz/a	PRE	A	109	214	312	411	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Prefix	5.29	L	2	pt/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
10	Balance Bean	4	L	3	fl oz/a	PRE	A	110	205	307	415	
	Metribuzin	75	WG	6	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Prefix	5.29	L	2	pt/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
11	Balance Bean	4	L	2	fl oz/a	PRE	A	111	204	301	402	
	Boundary	6.5	L	2	pt/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
12	Balance Bean	4	L	2	fl oz/a	PRE	A	112	207	314	407	
	Warrant Ultra	3.45	L	50	fl oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
13	Balance Bean	4	L	2	fl oz/a	PRE	A	113	212	305	412	
	Authority MTZ	45	WG	14	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
14	Balance Bean	4	L	2	fl oz/a	PRE	A	114	206	308	414	
	Authority First	70	WG	6.4	oz/a	PRE	A					
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					
15	Balance Bean	4	L	2	fl oz/a	PRE	A	115	213	310	404	
	Authority Supreme	4.16	L	9.8	fl oz/a	PRE	A					

Weed control systems in Balance GT/LL soybean - "STEWARDED"

Trial ID: SOY04-18 Location: Campus, T-10
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
	Liberty	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	8.5	lb/100 gal	POST	B					

Sort Order: Replicate 1

Evaluation of combinations of non-AMS water conditioners with Engenia and OnTarget

Trial ID: SOY05-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:	5/7/18	**Row Spacing:**	30 IN
Variety:	P24A80X	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	3.6
Soil Type:	CL clay loam	**pH:**	6.7
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plow; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMBEL	ragweed, common	Ambrosia artemisiifolia
4	SINAR	mustard, wild	Sinapis arvensis

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A
Application Timing:	PRE
Date Treated:	6/7/18
Time Treated:	2:00 PM
% Cloud Cover:	5
Air Temp., Unit:	78 F
% Relative Humidity:	48
Wind Speed/Unit/Dir:	6 mph NW
Soil Temp, Unit:	75 F
Leaf Moist/Dew Presence (Y/N):	5
Soil Moist:	5

Crop Stage at Each Application

	A
Crop 1 Name:	GLXMA
Height:	4 "
Stage:	V2

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	4-6 " (6)
Stage:	2-4L
Weed 2 Name:	CHEAL
Height:	3-4 " (4)
Stage:	4-6L
Weed 3 Name:	AMBEL
Height:	3-4 " (4)
Stage:	4-6L
Weed 4 Name:	SINAR
Height:	6-8 " (6)
Stage:	flower

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	TTI	11003	24 "	20 "	100 "	19 GAL/AC	WATER	25 PSI

Comments:

Michigan State University

Evaluation of combinations of non-AMS water conditioners with Engenia and OnTarget

Trial ID: SOY05-18 Location: Campus, T-12

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	A	101	203	309	404	
	Engenia	5	SL	12.8	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
2	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	A	102	208	301	402	
	Engenia	5	SL	12.8	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	Class Act Ridion		L	0.5	% v/v	POST	A					
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	A	103	202	306	408	
	Engenia	5	SL	12.8	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	Class Act Ridion		L	1	% v/v	POST	A					
4	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	A	104	205	310	403	
	Engenia	5	SL	12.8	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	AG18047		L	0.5	% v/v	POST	A					
5	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	A	105	201	303	410	
	Engenia	5	SL	12.8	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	AG18047		L	1	% v/v	POST	A					
6	Untreated							106	204	308	401	
7	Roundup PowerMax	4.5	SL	11	fl oz/a	POST	A	107	206	302	409	
	Engenia	5	SL	6.4	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
8	Roundup PowerMax	4.5	SL	11	fl oz/a	POST	A	108	209	305	407	
	Engenia	5	SL	6.4	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	Class Act Ridion		L	0.5	% v/v	POST	A					
9	Roundup PowerMax	4.5	SL	11	fl oz/a	POST	A	109	207	311	405	
	Engenia	5	SL	6.4	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	Class Act Ridion		L	1	% v/v	POST	A					
10	Roundup PowerMax	4.5	SL	11	fl oz/a	POST	A	110	211	304	411	
	Engenia	5	SL	6.4	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	AG18047		L	0.5	% v/v	POST	A					
11	Roundup PowerMax	4.5	SL	11	fl oz/a	POST	A	111	210	307	406	
	Engenia	5	SL	6.4	fl oz/a	POST	A					
	OnTarget		L	0.5	% v/v	POST	A					
	AG18047		L	1	% v/v	POST	A					

Sort Order: Replicate 1

Weed control with Engenia PRO in RR2 Xtend soybean

Trial ID: SOY06-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:		**Row Spacing:**	30 IN
Variety:	P24A80X	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	3.6
Soil Type:	CL clay loam	**pH:**	6.7
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMBEL	ragweed, common	Ambrosia artemisiifolia
4	SINAR	mustard, wild	Sinapis arvensis

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B	C	D
Application Timing:	PRE	EPOS	POST	LPOS
Date Treated:	5/7/18	5/29/18	6/12/18	6/21/18
Time Treated:	8:00 PM	3:45 PM	7:00 PM	4:30 PM
% Cloud Cover:	0	10	45	90
Air Temp., Unit:	68 F	91 F	78 F	78 F
% Relative Humidity:	26	39	55	46
Wind Speed/Unit/Dir:	1 mph E	7 mph E	5 mph S	6 mph E
Soil Temp, Unit:	62 F	62 F	77 F	79 F
Leaf Moist/Dew Presence (Y/N):	4	5	5	5
Soil Moist:	4	4	3	5

Crop Stage at Each Application

	A	B	C	D
Crop 1 Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height:		2 "	6-8 " (7)	8-10 " (9)
Stage:		VC	V3	V5

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height:		2-3 " (2.5)	6-8 " (7)	4-6 " (4)
Stage:		2-4L	4-6L	2-4L
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height:		0.5-1 " (0.75)	1-3 " (2)	2-4 " (3)
Stage:		2L	2-4L	6-8L
Weed 3 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height:		0.5-1 " (0.75)	1-3 " (2)	2-4 " (3)
Stage:		2L	2-4L	8-10L
Weed 4 Name:	SINAR	SINAR	SINAR	SINAR
Height:		2-3 " (2.5)	2-4 " (3)	4-6 " (6)
Stage:		4L	2-4L	8-10L

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	TTI	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	TTI	11003	22 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
C	CUB	3.8 mph	TTI	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
D	CUB	3.8 mph	TTI	11003	26 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

Weed control with Engenia PRO in RR2 Xtend soybean
Trial ID: SOY06-18 Location: Campus, T-12
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	101	203	305	411	
2	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	102	212	307	403	
	Flexstar GT	2.82	L	3.5	pt/a	LPOS	D					
	Agri-dex		L	1	% v/v	LPOS	D					
	AMS		WG	12	lb/100 gal	LPOS	D					
3	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	103	201	312	406	
	Flexstar GT	2.82	L	3.5	pt/a	LPOS	D					
	Outlook	6	L	10	fl oz/a	LPOS	D					
	Agri-dex		L	1	% v/v	LPOS	D					
	AMS		WG	12	lb/100 gal	LPOS	D					
4	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	104	210	303	401	
	Roundup PowerMax	4.5	L	32	fl oz/a	LPOS	D					
	AMS		WG	12	lb/100 gal	LPOS	D					
5	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	105	209	302	412	
	Roundup PowerMax	4.5	L	32	fl oz/a	LPOS	D					
	Outlook	6	L	10	fl oz/a	LPOS	D					
	AMS		WG	12	lb/100 gal	LPOS	D					
6	Untreated							106	202	301	409	
7	Zidua PRO	4.09	L	4.5	fl oz/a	PRE	A	107	204	310	402	
	Engenia PRO	4.54	L	16	fl oz/a	POST	C					
	Roundup PowerMax	4.5	L	32	fl oz/a	POST	C					
	Induce		L	0.25	% v/v	POST	C					
8	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	108	205	309	410	
	Engenia	5	SL	12.8	fl oz/a	POST	C					
	Roundup PowerMax	4.5	L	32	fl oz/a	POST	C					
	Induce		L	0.25	% v/v	POST	C					
9	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	109	206	304	407	
	Engenia PRO	4.54	L	16	fl oz/a	POST	C					
	Roundup PowerMax	4.5	L	32	fl oz/a	POST	C					
	Induce		L	0.25	% v/v	POST	C					
10	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	110	207	306	404	
	Engenia	5	SL	12.8	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	L	32	fl oz/a	POST	C					
	Outlook	6	L	10	fl oz/a	POST	C					
	AMS		WG	12	lb/100 gal	POST	C					
11	Engenia	5	SL	12.8	fl oz/a	PRE	A	111	208	311	408	
	Pursuit	2	L	3	fl oz/a	PRE	A					
	Zidua SC	4.17	L	3.3	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	L	32	fl oz/a	POST	C					
	Outlook	6	L	10	fl oz/a	POST	C					
	AMS		WG	12	lb/100 gal	POST	C					
12	Engenia PRO	4.54	L	16	fl oz/a	EPOS	B	112	211	308	405	
	Engenia PRO	4.54	L	16	fl oz/a	LPOS	D					
	Roundup PowerMax	4.5	L	32	fl oz/a	LPOS	D					
	Induce		L	0.25	% v/v	LPOS	D					

Sort Order: Replicate 1

Weed control systems using FeXapan in RR2 Xtend soybean

Trial ID: SOY07-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:	5/7/18	**Row Spacing:**	30 IN
Variety:	P24A80X	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	3.6
Soil Type:	CL clay loam	**pH:**	6.7
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMBEL	ragweed, common	Ambrosia artemisiifolia
4	SINAR	mustard, wild	Sinapis arvensis

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	5/7/18	6/12/18
Time Treated:	1:15 PM	7:20 PM
% Cloud Cover:	0	90
Air Temp., Unit:	65 F	76 F
% Relative Humidity:	31	55
Wind Speed/Unit/Dir:	2 mph N	5 mph S
Soil Temp, Unit:	63 F	77 F
Leaf Moist/Dew Presence (Y/N):	4	5
Soil Moist:	4	4

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		6-8 " (7)
Stage:		V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		3-5 " (4)
Stage:		2-4L
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMBEL	AMBEL
Height:		
Stage:		
Weed 4 Name:	SINAR	SINAR
Height:		2-4 " (3)
Stage:		4-6L

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	TTI	11003	26 "	20 "	100 "	19 GAL/AC	WATER	25 PSI

Comments:

Weed control systems using FeXapan in RR2 Xtend soybean
Trial ID: SOY07-18 Location: Campus, T-12
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Envive (3.5 oz/A)	41.3	WG	3.5	oz/a	PRE	A	101	206	309	403	
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
2	Envive	41.3	WG	3.5	oz/a	PRE	A	102	208	303	407	
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	FeXapan	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
3	Envive	41.3	WG	3.5	oz/a	PRE	A	103	202	304	401	
	EverpreX	7.62	L	1	pt/a	POST	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	FeXapan	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
4	Untreated							104	210	306	404	
5	Trivence	61.3	WG	8	oz/a	PRE	A	105	207	310	409	
	EverpreX	7.62	L	1	pt/a	POST	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	FeXapan	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
6	Surveil	48	WG	3.5	oz/a	PRE	A	106	204	307	402	
	EverpreX	7.62	L	1	pt/a	POST	B					
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	FeXapan	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
7	EverpreX	7.62	L	1	pt/a	POST	B	107	203	301	405	
	Abundit Edge	4.5	SL	32	fl oz/a	POST	B					
	FeXapan	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
8	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	108	209	308	406	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	Engenia	5.5	SL	12.8	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
9	Authority MTZ	45	WG	14	oz/a	PRE	A	109	205	302	408	
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	XtendiMax	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					
10	Authority MTZ	45	WG	14	oz/a	PRE	A	110	201	305	410	
	Anthem MAXX	4.3	L	3	fl oz/a	POST	B					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
	XtendiMax	2.9	SL	22	fl oz/a	POST	B					
	Intact		L	0.5	% v/v	POST	B					

Sort Order: Replicate 1

Weed control and soybean tolerance with increasing rates of Metribuzin

Trial ID: SOY08-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:	5/7/18	**Row Spacing:**	30 IN
Variety:	P24A80X	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	3.6
Soil Type:	CL clay loam	**pH:**	6.7
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	SINAR	mustard, wild	Sinapis arvensis

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	5/7/18	6/7/18
Time Treated:	1:50 PM	3:00 PM
% Cloud Cover:	0	30
Air Temp., Unit:	65 F	79 F
% Relative Humidity:	31	47
Wind Speed/Unit/Dir:	3 mph N	6 mph NW
Soil Temp, Unit:	63 F	75 F
Leaf Moist/Dew Presence (Y/N):	4	5
Soil Moist:	4	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		4 "
Stage:		V2

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		2-4 " (3)
Stage:		2-4L
Weed 2 Name:	CHEAL	CHEAL
Height:		2-4 " (3)
Stage:		4-6L
Weed 3 Name:	AMAPO	AMAPO
Height:		2-4 " (3)
Stage:		4-6L
Weed 4 Name:	AMBEL	AMBEL
Height:		2-4 " (3)
Stage:		4-6L
Weed 5 Name:	SINAR	SINAR
Height:		2-4 " (3)
Stage:		8L

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments: A blanket treatment of Roundup PowerMax at 32 fl oz/A + AMS 17 lb/!00 gal was applied postemergence on 6/12/18.

Michigan State University

Weed control and soybean tolerance with increasing rates of Metribuzin

Trial ID: SOY08-18 Location: Campus, T-12
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Untreated							101	204	305	406	
2	Metribuzin	75	WG	4	oz/a	PRE	A	102	203	302	401	
3	Metribuzin	75	WG	6	oz/a	PRE	A	103	205	307	405	
4	Metribuzin	75	WG	8	oz/a	PRE	A	104	206	303	402	
5	Metribuzin	75	WG	10	oz/a	PRE	A	105	201	304	403	
6	Metribuzin	75	WG	12	oz/a	PRE	A	106	207	301	404	
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B	107	202	306	407	

Sort Order: Replicate 1

West Central adjuvants for use with Liberty in LibertyLink soybean

Trial ID: SOY09-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:	5/7/18	**Row Spacing:**	30 IN
Variety:	C2312LL	**No. of Reps:**	4
Population:	156000 seeds/A	**% OM:**	3.7
Soil Type:	CL clay loam	**pH:**	6.8
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plow; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMBEL	ragweed, common	Ambrosia artemisiifolia
4	SINAR	mustard, wild	Sinapis arvensis
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A
Application Timing:	POST
Date Treated:	6/12/18
Time Treated:	5:30 PM
% Cloud Cover:	90
Air Temp., Unit:	74 F
% Relative Humidity:	77
Wind Speed/Unit/Dir:	5 mph S
Soil Temp, Unit:	74 F
Leaf Moist/Dew Presence (Y/N):	5
Soil Moist:	4

Crop Stage at Each Application

	A
Crop 1 Name:	GLXMA
Height:	8 "
Stage:	V2

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	8-10 L (9)
Stage:	4-6L
Weed 2 Name:	CHEAL
Height:	2-8 " (5)
Stage:	6-22L
Weed 3 Name:	AMBEL
Height:	4-12 " (8)
Stage:	6-8L
Weed 4 Name:	SINAR
Height:	12 "
Stage:	Flower
Weed 5 Name:	ABUTH
Height:	2 "
Stage:	2L

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	30 "	20 "	100 "	19 GAL/AC	WATER	30 psi

Comments:

West Central adjuvants for use with Liberty in LibertyLink soybean

Trial ID: SOY09-18 Location: Campus, T-12
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Liberty	2.34	L	16	fl oz/a	POST	A	101	205	301	409	
2	Liberty	2.34	L	16	fl oz/a	POST	A	102	206	315	414	
	AMS (Liquid)		L	3.5	pt/a	POST	A					
3	Liberty	2.34	L	16	fl oz/a	POST	A	103	208	310	405	
	AMS (Liquid)		L	7	pt/a	POST	A					
4	Liberty	2.34	L	16	fl oz/a	POST	A	104	214	307	415	
	WC109		L	3.5	pt/a	POST	A					
5	Liberty	2.34	L	16	fl oz/a	POST	A	105	209	314	407	
	WC221		L	0.25	% v/v	POST	A					
	AMS (Liquid)		L	3.5	pt/a	POST	A					
6	Liberty	2.34	L	16	fl oz/a	POST	A	106	202	308	402	
	WC221		L	0.5	% v/v	POST	A					
7	Liberty	2.34	L	16	fl oz/a	POST	A	107	210	311	403	
	WC221		L	0.75	% v/v	POST	A					
8	Untreated							108	207	316	411	
9	Liberty	2.34	L	16	fl oz/a	POST	A	109	216	309	410	
	WC225		L	0.25	% v/v	POST	A					
	AMS (Liquid)		L	3.5	pt/a	POST	A					
10	Liberty	2.34	L	16	fl oz/a	POST	A	110	213	304	406	
	WC225		L	0.5	% v/v	POST	A					
11	Liberty	2.34	L	16	fl oz/a	POST	A	111	215	306	408	
	WC383		L	0.25	% v/v	POST	A					
	AMS (Liquid)		L	3.5	pt/a	POST	A					
12	Liberty	2.34	L	16	fl oz/a	POST	A	112	201	303	412	
	WC383		L	0.5	% v/v	POST	A					
13	Liberty	2.34	L	16	fl oz/a	POST	A	113	204	302	404	
	WC395		L	0.5	% v/v	POST	A					
14	Liberty	2.34	L	16	fl oz/a	POST	A	114	203	313	416	
	WC396		L	0.5	% v/v	POST	A					
15	Liberty	2.34	L	16	fl oz/a	POST	A	115	212	305	401	
	WC239		L	0.5	% v/v	POST	A					
16	Liberty	2.34	L	16	fl oz/a	POST	A	116	211	312	413	
	WC115		L	0.75	% v/v	POST	A					

Sort Order: Replicate 1

Weed control systems in Enlist soybean - "STEWARDED"

Trial ID: SOY10-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-12 Investigator: Christy Sprague

Planting Date:	5/8/18	**Row Spacing:**	30 IN
Variety:	Enlist E3	**No. of Reps:**	4
Population:	130000 seeds/A	**% OM:**	3.7
Soil Type:	CL clay loam	**pH:**	6.8
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed; spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMBEL	ragweed, common	Ambrosia artemisiifolia
4	SINAR	mustard, wild	Sinapis arvensis
5	ABUTH	velvetleaf	Abutilon theophrasti

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	5/8/18	6/12/18
Time Treated:	2:15 PM	6:00 PM
% Cloud Cover:	0	90
Air Temp., Unit:	69 F	74 F
% Relative Humidity:	30	77
Wind Speed/Unit/Dir:	3 mph S	5 mph S
Soil Temp, Unit:	60 F	73.8 F
Leaf Moist/Dew Presence (Y/N):	4	5
Soil Moist:	4	4

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		8 "
Stage:		V2

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		6-8 " (6)
Stage:		2-4L
Weed 2 Name:	CHEAL	CHEAL
Height:		
Stage:		
Weed 3 Name:	AMBEL	AMBEL
Height:		2-4 " (3)
Stage:		4-6L
Weed 4 Name:	SINAR	SINAR
Height:		
Stage:		
Weed 5 Name:	ABUTH	ABUTH
Height:		
Stage:		

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	26 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

Weed control systems in Enlist soybean - "STEWARDED"
Trial ID: SOY10-18 Location: Campus, T-12
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Sonic	70	WG	4.5	oz/a	PRE	A	101	204	308	402	
	Durango DMA	4	SL	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
2	Sonic	70	WG	4.5	oz/a	PRE	A	102	212	307	406	
	Enlist Duo	3.33	SL	3.5	pt/a	POST	B					
	AMS		L	17	lb/100 gal	POST	B					
3	Sonic	70	WG	4.5	oz/a	PRE	A	103	205	303	408	
	Enlist Duo	3.33	SL	4.67	pt/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
4	Sonic	70	WG	4.5	oz/a	PRE	A	104	210	309	411	
	Enlist One	3.8	SL	24	fl oz/a	POST	B					
	Durango DMA	4	SL	24	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
5	Sonic	70	WG	4.5	oz/a	PRE	A	105	208	301	412	
	Enlist One	3.8	SL	32	fl oz/a	POST	B					
	Durango DMA	4	SL	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
6	Untreated							106	211	305	409	
7	Sonic	70	WG	4.5	oz/a	PRE	A	107	209	311	403	
	Glufosinate	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
8	Sonic	70	WG	4.5	oz/a	PRE	A	108	202	312	401	
	Enlist One	3.8	SL	24	fl oz/a	POST	B					
	Glufosinate	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
9	Sonic	70	WG	4.5	oz/a	PRE	A	109	206	310	407	
	Enlist One	3.8	SL	32	fl oz/a	POST	B					
	Glufosinate	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
10	Moccasin MTZ	4.5	L	32	fl oz/a	PRE	A	110	201	304	405	
	Enlist One	3.8	SL	32	fl oz/a	POST	B					
	Interline	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
11	Moccasin MTZ	4.5	L	40	fl oz/a	PRE	A	111	207	306	410	
	Enlist One	3.8	SL	32	fl oz/a	POST	B					
	Interline	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					
12	Tripzin ZC	4	L	42	fl oz/a	PRE	A	112	203	302	404	
	Enlist One	3.8	SL	32	fl oz/a	POST	B					
	Interline	2.34	L	32	fl oz/a	POST	B					
	AMS		WG	17	lb/100 gal	POST	B					

Sort Order: Replicate 1

Weed management systems in non-GMO soybean

Trial ID: SOY11-18 Study Dir.: Sprague. Powell, Stiles
Conducted: Campus, T-11 Investigator: Christy Sprague

Planting Date:	6/5/18	**Row Spacing:**	30 IN
Variety:	ZFS 1320	**No. of Reps:**	4
Population:	155000 seeds/A	**% OM:**	2.8
Soil Type:	L loam	**pH:**	6.8
Plot Size:	10 X 35 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring disked; soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1			

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A
Application Timing:	PRE
Date Treated:	6/5/18
Time Treated:	7:15 PM
% Cloud Cover:	20
Air Temp., Unit:	66 F
% Relative Humidity:	50
Wind Speed/Unit/Dir:	6 mph N
Soil Temp, Unit:	73 F
Leaf Moist/Dew Presence (Y/N):	5
Soil Moist:	5

Crop Stage at Each Application

	A
Crop 1 Name:	GLXMA
Height:	
Stage:	

Weed Stage at Each Application

	A
Weed 1 Name:	
Height:	
Stage:	

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	22 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

Weed management systems in non-GMO soybean
Trial ID: SOY11-18 Location: Campus, T-11
Investigator: Christy Sprague
Study Director: Sprague. Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Metribuzin	75	WG	6	oz/a	PRE	A	101	205	309	420	
2	Boundary	6.5	L	2.4	pt/a	PRE	A	102	211	304	408	
3	BroadAxe XC	7	L	32	fl oz/a	PRE	A	103	202	315	413	
4	Sonic	70	WG	6	oz/a	PRE	A	104	206	317	404	
	Boundary	6.5	L	1.5	pt/a	PRE	A					
5	Surveil	48	WG	3.5	oz/a	PRE	A	105	218	316	411	
	Metribuzin	75	WG	6	oz/a	PRE	A					
6	Untreated							106	204	310	417	
7	Valor	51	WG	2.5	oz/a	PRE	A	107	219	305	418	
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
8	Fierce	76	WG	3	oz/a	PRE	A	108	209	307	421	
9	Fierce MTZ	2.64	L	16	fl oz/a	PRE	A	109	201	320	416	
10	Valor XLT	40.3	WG	3	oz/a	PRE	A	110	217	321	419	
11	Valor XLT	40.3	WG	2	oz/a	PRE	A	111	212	308	412	
	Valor	51	WG	1.5	oz/a	PRE	A					
12	Authority MTZ	45	WG	14	oz/a	PRE	A	112	220	301	409	
	Flexstar	1.88	L	1	pt/a	POST	A					
	SelectMax	0.97	L	12	fl oz/a	POST	A					
	Crop oil concentrate		L	1	% v/v	POST	A					
	AMS		WG	2.5	lb/a	POST	A					
13	Authority Supreme	4.16	L	9.8	fl oz/a	PRE	A	113	207	319	407	
	Flexstar	1.88	L	1	pt/a	POST	A					
	SelectMax	0.97	L	12	fl oz/a	POST	A					
	Crop oil concentrate		L	1	% v/v	POST	A					
	AMS		WG	2.5	lb/a	POST	A					
14	Authority MTZ	45	WG	14	oz/a	PRE	A	114	203	306	401	
	Command 3ME	3	L	1	pt/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	A					
	SelectMax	0.97	L	12	fl oz/a	POST	A					
	Crop oil concentrate		L	1	% v/v	POST	A					
	AMS		WG	2.5	lb/a	POST	A					
15	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	115	216	318	414	
16	Afforia	50.8	WG	2.5	oz/a	PRE	A	116	208	303	410	
	Metribuzin	75	WG	5	oz/a	PRE	A					
17	Trivence	61.3	WG	8	oz/a	PRE	A	117	214	311	415	
18	Prefix	5.29	L	2	pt/a	PRE	A	118	221	314	402	
	Metribuzin	75	WG	6	oz/a	PRE	A					
19	Warrant Ultra	3.45	L	50	fl oz/a	PRE	A	119	215	313	405	
	Metribuzin	75	WG	6	oz/a	PRE	A					
20	Authority MTZ	45	WG	14	oz/a	PRE	A	120	213	312	403	
	Cadet	0.91	L	0.6	fl oz/a	POST	A					
	Flexstar	1.88	L	1	pt/a	POST	A					
	SelectMax	0.97	L	12	fl oz/a	POST	A					
	Crop oil concentrate		L	1	% v/v	POST	A					
	AMS		WG	2.5	lb/a	POST	A					
21	Authority MTZ	45	WG	14	oz/a	PRE	A	121	210	302	406	
	Anthem MAXX	4.3	L	3.25	fl oz/a	POST	A					

Weed management systems in non-GMO soybean
Trial ID: SOY11-18 Location: Campus, T-11
Investigator: Christy Sprague
Study Director: Sprague. Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
	Flexstar	1.88	L	1	pt/a	POST	A					
	SelectMax	0.97	L	12	fl oz/a	POST	A					
	Crop oil concentrate		L	1	% v/v	POST	A					
	AMS		WG	2.5	lb/a	POST	A					

Sort Order: Replicate 1

Planting soybean "green" in cereal rye

Trial ID: NTS01-18 Study Dir.: Hill, Powell, Stiles, Sprague
Conducted: Campus T-18 Investigator: Christy Sprague

Planting Date:	11/22/17	**Row Spacing:**	7.5 IN
Variety:	AG2035 RR	**No. of Reps:**	4
Population:	152000 seeds/A	**% OM:**	3.1
Soil Type:	L loam	**pH:**	5.9
Plot Size:	10 X 40 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: No-tilled in to 'Wheeler' cereal rye planted on 11/22/17 at 120 lb/A.
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	CAPBP	Shepherd's purse	Capsella bursa-pastoris
2	LAMAM	henbit	Lamium amplexicaule
3	TAROF	dandelion	Taraxacum officinale
4	ANGR	mainly foxtail species	Annual grass
5	CHEAL	lambsquarters, common	Chenopodium album
6	AMAPO	amaranth, Powell	Amaranthus powellii
7	ERICA	horseweed	Conyza canadensis
Crop	**Code**	**Common Name**	
1	GLXMA	Soybean	

Application Description

	A	B	C	D
Application Timing:	Feekes 6.5	Feekes 9	Feekes 10.5	POST
Date Treated:	5/18/18	5/24/18	5/29/18	6/18/18
Time Treated:	9:00 AM	11:30 AM	7:00 PM	8:30 AM
% Cloud Cover:	10	5	20	90
Air Temp., Unit:	53 F	80 F	88 F	90 F
% Relative Humidity:	55	36	41	77
Wind Speed/Unit/Dir:	6 mph ENE	1 mph W	6 mph SE	4.8 mph SW
Soil Temp, Unit:	54 F	62 F	76 F	76 F
Leaf Moist/Dew Presence (Y/N):	3	3	5	5
Soil Moist:	3	3	5	5

Crop Stage at Each Application

	A	B	C	D
Crop 1 Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height:		1 "	2-3 " (2)	5-7 " (6)
Stage:		VE	VC	V3

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	CAPBP	CAPBP	CAPBP	CAPBP
Height:	6-8 " (7)	6-8 " (7)	6-8 " (7)	
Stage:	many	many	many	
Weed 2 Name:	LAMAM	LAMAM	LAMAM	LAMAM
Height:	6-8 " (7)	6-8 " (7)	6-8 " (7)	
Stage:	8-10L	8-10 L	8-10 L	
Weed 3 Name:	TAROF	TAROF	TAROF	TAROF
Height:	6 "	8 "	10 "	
Stage:	10-12L	10-14L	10-14L	
Weed 4 Name:	ANGR	ANGR	ANGR	ANGR
Height:	4-6 " (5)	4-6 " (5)	4-6 " (5)	
Stage:	many	many	many	
Weed 5 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height:	0.5 "	1 "	1 "	3-4 " (3.5)
Stage:	4-6L	6-8L	8-10L	4-6L
Weed 6 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height:				2-3 " (2.5)
Stage:				8-10L
Weed 7 Name:	ERICA	ERICA	ERICA	ERICA
Height:				2-6 " (3)
Stage:				

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	35 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	42 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
C	CUB	3.8 mph	AIXR	11003	42 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
D	WILMAR	6.5 mph	AIXR	11004	30 "	20 "	60 '	19 GAL/AC	WATER	60 psi

Planting soybean "green" in cereal rye

Trial ID:	NTS01-18	Study Dir.:	Hill, Powell, Stiles, Sprague
Conducted:	Campus T-18	Investigator:	Christy Sprague

Comments: Roundup PowerMax at 32 fl oz/A + AMS at 17 lb/100 gal was broadcast applied postemgence on June 16, 2018.

Planting soybean "green" in cereal rye
Trial ID: NTS01-18 Location: Campus T-18
Investigator: Christy Sprague
Study Director: Hill, Powell, Stiles, Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Cereal rye 'Wheeler'							101	205	306	402	
	Nitrogen 0 lb/A											
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					
2	Cereal rye 'Wheeler'							102	209	307	411	
	Nitrogen 0 lb/A											
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 9	C					
	AMS		WG	17	lb/100 gal	Feekes 9	C					
3	Cereal rye 'Wheeler'							103	207	311	410	
	Nitrogen 0 lb/A											
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 10.5	D					
	AMS		WG	17	lb/100 gal	Feekes 10.5	D					
4	No rye							104	212	308	404	
	Nitrogen 0 lb/A											
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					
5	Cereal rye 'Wheeler'							105	210	303	406	
	Nitrogen 20 lb/A (Urea)		WG	43.5	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					
6	Cereal rye 'Wheeler'							106	202	310	401	
	Nitrogen 20 lb/A (Urea)		WG	43.5	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 9	C					
	AMS		WG	17	lb/100 gal	Feekes 9	C					
7	Cereal rye 'Wheeler'							107	203	302	409	
	Nitrogen 20 lb/A (Urea)		WG	43.5	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 10.5	D					
	AMS		WG	17	lb/100 gal	Feekes 10.5	D					
8	No rye							108	204	312	408	
	Nitrogen 20 lb/A (Urea)		WG	43.5	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					
9	Cereal rye 'Wheeler'							109	201	305	407	
	Nitrogen 40 lb/A (Urea)		WG	87	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					
10	Cereal rye 'Wheeler'							110	211	301	403	
	Nitrogen 40 lb/A (Urea)		WG	87	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 9	C					
	AMS		WG	17	lb/100 gal	Feekes 9	C					
11	Cereal rye 'Wheeler'							111	206	309	405	
	Nitrogen 40 lb/A (Urea)		WG	87	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 10.5	D					
	AMS		WG	17	lb/100 gal	Feekes 10.5	D					
12	No rye							112	208	304	412	
	Nitrogen 40 lb/A (Urea)		WG	87	lb/a	Greenup	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	Feekes 6.5	B					
	AMS		WG	17	lb/100 gal	Feekes 6.5	B					

Sort Order: Replicate 1

No-till weed control in Roundup Ready 2 Xtend soybean

Trial ID: NTS02-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus, T-11 Investigator: Christy Sprague

Planting Date: 5/8/18
Variety: AG26X8
Population: 156000 seeds/A
Soil Type: L loam
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 2.8
pH: 6.8
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: No-till
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	STEME	chickweed, common	Stellaria media
Crop	**Code**	**Common Name**	
1	GLXMA	Soybean	

Application Description

	A
Application Timing:	PRE
Date Treated:	5/8/18
Time Treated:	6:30 PM
% Cloud Cover:	20
Air Temp., Unit:	86 F
% Relative Humidity:	28
Wind Speed/Unit/Dir:	8 mph E
Soil Temp, Unit:	65 F
Leaf Moist/Dew Presence (Y/N):	5
Soil Moist:	3

Crop Stage at Each Application

	A
Crop 1 Name:	GLXMA
Height:	
Stage:	

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height:	2 "
Stage:	many
Weed 2 Name:	STEME
Height:	5-6 " (5.5)
Stage:	many

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	TTI	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

No-till weed control in Roundup Ready 2 Xtend soybean
Trial ID: NTS02-18 Location: Campus, T-11
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	XtendiMax	2.9	SL	22	fl oz/a	PRE	A	101	203	301	407	
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
2	Zidua PRO	4.09	L	6	fl oz/a	PRE	A	102	208	303	405	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
3	Valor EZ	4	L	2.5	fl oz/a	PRE	A	103	209	302	401	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
4	Fierce	76	WG	3	oz/a	PRE	A	104	210	306	410	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
5	Fierce	76	WG	3.75	oz/a	PRE	A	105	201	304	402	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
6	Fierce MTZ	2.64	L	1	pt/a	PRE	A	106	204	305	408	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
7	Untreated							107	202	307	409	
8	Authority Supreme	4.16	L	7.7	fl oz/a	PRE	A	108	205	309	404	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					

No-till weed control in Roundup Ready 2 Xtend soybean
Trial ID: NTS02-18 Location: Campus, T-11
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
9	Authority MTZ	45	WG	11	oz/a	PRE	A	109	207	308	403	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					
10	Fierce EZ	3.04	L	6	fl oz/a	PRE	A	110	206	310	406	
	XtendiMax	2.9	SL	22	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	PRE	A					
	Induce		L	0.25	% v/v	PRE	A					
	Intact		L	0.5	% v/v	PRE	A					
	XtendiMax	2.9	SL	22	fl oz/a	POST	A					
	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	A					
	Induce		L	0.25	% v/v	POST	A					
	Intact		L	0.5	% v/v	POST	A					

Sort Order: Replicate 1

Roughstalk bluegrass control in winter wheat

Trial ID: WT01-18 Study Dir.: Sprague, Powell, Stiles
Conducted: Campus Investigator: Christy Sprague

Planting Date: 9/29/17
Variety: Starburst
Population: 1800000 seeds/A
Soil Type:
Plot Size: 10 X 30 FT
Row Spacing: 7.5 IN
No. of Reps: 4
% OM:
pH:
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Previous Crop-Wheat. Chisel plowed; soil finished.
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	POATR	Rough-stalk bluegrass	Poa trivialis
2	STEME	chickweed, common	Stellaria media
Crop	**Code**	**Common Name**	
1	TRZAW	Winter Wheat	

Application Description

	A	B	C	D
Application Timing:	PRE	FALL	EPOS	POST
Date Treated:	9/29/17	10/20/17	4/26/18	5/8/18
Time Treated:	11:15 AM	12:00 PM	12:10 PM	12:00 PM
% Cloud Cover:	60	0	5	0
Air Temp., Unit:	62 F	68 F	53 F	69 F
% Relative Humidity:	62	47	24	35
Wind Speed/Unit/Dir:	7 mph NW	5 mph SW	3 mph SW	7 mph SSW
Soil Temp, Unit:	60 F	58 F	49 F	59 F
Leaf Moist/Dew Presence (Y/N):	5	5	4	4
Soil Moist:	4	4	3	3

Crop Stage at Each Application

	A	B	C	D
Crop 1 Name:	TRZAW	TRZAW	TRZAW	TRZAW
Height:		4 "	5 "	12 "
Stage:		Feekes 2	Feekes 4	Feekes 4

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	POATR	POATR	POATR	POATR
Height:		0.25-0.5 " (0.375)	2 "	4 "
Stage:		1-2L	many	headin
Weed 2 Name:	STEME	STEME	STEME	STEME
Height:				5 "
Stage:				

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 mph	AIXR	11003	23 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	21 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
C	CUB	3.8 mph	AIXR	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
D	CUB	3.8 mph	AIXR	11003	24 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

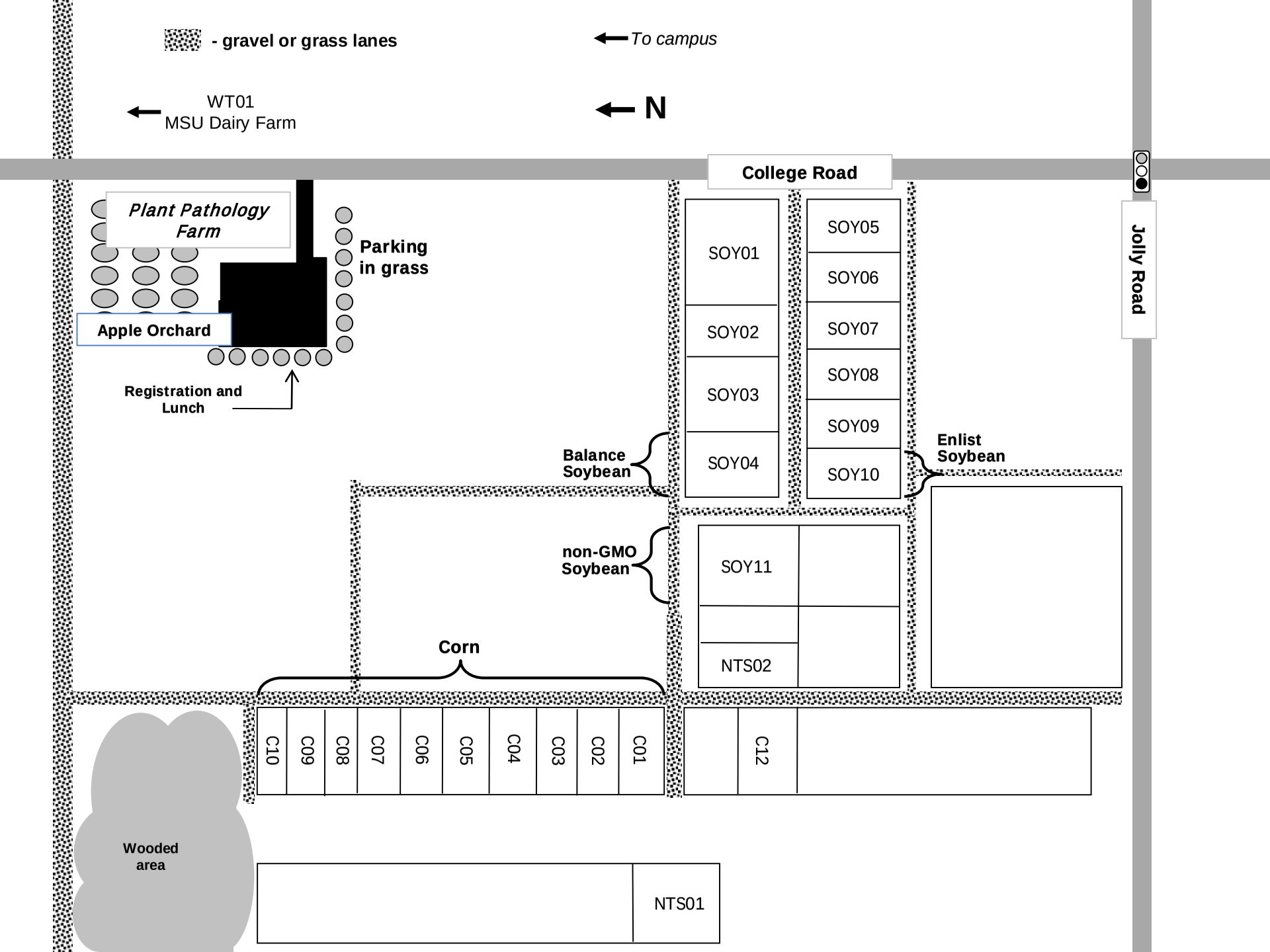
Roughstalk bluegrass control in winter wheat
Trial ID: WT01-18 Location: Campus
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	Zidua	85	WG	1	oz/a	PRE	A	101	206	303	408	
2	Zidua	85	WG	2	oz/a	PRE	A	102	205	304	407	
3	Untreated							103	215	311	402	
4	Osprey	4.5	WG	4.75	oz/a	FALL	B	104	209	319	413	
	Surfactant		L	0.5	% v/v	FALL	B					
	AMS		WG	3	lb/a	FALL	B					
5	PowerFlex HL	13	WG	2	oz/a	FALL	B	105	211	310	411	
	Surfactant		L	0.5	% v/v	FALL	B					
	AMS		WG	3	lb/a	FALL	B					
6	Axial XL	0.42	L	16.4	fl oz/a	FALL	B	106	219	305	415	
7	Olympus	70	WG	0.9	oz/a	FALL	B	107	216	312	420	
	Surfactant		L	0.5	% v/v	FALL	B					
8	Osprey	4.5	WG	4.75	oz/a	EPOS	C	108	214	313	416	
	Surfactant		L	0.5	% v/v	EPOS	C					
	AMS		WG	3	lb/a	EPOS	C					
9	PowerFlex HL	13	WG	2	oz/a	EPOS	C	109	202	315	403	
	Surfactant		L	0.5	% v/v	EPOS	C					
	AMS		WG	3	lb/a	EPOS	C					
10	Axial XL	0.42	L	16.4	fl oz/a	EPOS	C	110	218	302	405	
11	Osprey	4.5	WG	4.75	oz/a	POST	D	111	220	306	412	
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
12	PowerFlex HL	13	WG	2	oz/a	POST	D	112	203	320	410	
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
13	Axial XL	0.42	L	16.4	fl oz/a	POST	D	113	207	301	419	
14	Huskie	2.06	L	13.5	fl oz/a	POST	D	114	201	308	418	
	Osprey	4.5	WG	4.75	oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
15	Huskie	2.06	L	13.5	fl oz/a	POST	D	115	210	318	409	
	PowerFlex HL	13	WG	2	oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
16	Huskie	2.06	L	13.5	fl oz/a	POST	D	116	212	316	417	
	Axial XL	0.42	L	16.4	fl oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
17	Talinor	2.67	L	13.7	fl oz/a	POST	D	117	208	314	404	
	Co-Act+		L	2.75	fl oz/a	POST	D					
	Osprey	4.5	WG	4.75	oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
18	Talinor	2.67	L	13.7	fl oz/a	POST	D	118	204	317	414	
	Co-Act+		L	2.75	fl oz/a	POST	D					
	PowerFlex HL	13	WG	2	oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
19	Talinor	2.67	L	13.7	fl oz/a	POST	D	119	217	309	406	
	Co-Act+		L	2.75	fl oz/a	POST	D					
	Axial XL	0.42	L	16.4	fl oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					

Roughstalk bluegrass control in winter wheat
Trial ID: WT01-18 Location: Campus
Investigator: Christy Sprague
Study Director: Sprague, Powell, Stiles

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
20	Quelex	20	WG	0.75	oz/a	POST	D	120	213	307	401	
	Osprey	4.5	WG	4.75	oz/a	POST	D					
	Surfactant		L	0.5	% v/v	POST	D					
	AMS		WG	3	lb/a	POST	D					
21	Frost-seeded medium red clover							121	225	323	425	
	Quelex	20	WG	0.75	oz/a	FALL	B					
	Crop oil concentrate		L	1	% v/v	FALL	B					
22	Frost-seeded medium red clover							122	221	324	423	
	Talinor	2.67	L	13.7	fl oz/a	FALL	B					
	Co-Act+		L	2.75	fl oz/a	FALL	B					
	Crop oil concentrate		L	1	% v/v	FALL	B					
23	Frost-seeded medium red clover							123	224	321	422	
	Talinor	2.67	L	16	fl oz/a	FALL	B					
	Co-Act+		L	3.2	fl oz/a	FALL	B					
	Crop oil concentrate		L	1	% v/v	FALL	B					
24	Frost-seeded medium red clover							124	223	325	424	
	Huskie	2.06	L	13.5	fl oz/a	FALL	B					
	Surfactant		L	0.5	% v/v	FALL	B					
	AMS		WG	3	lb/a	FALL	B					
25	Frost-seeded medium red clover							125	222	322	421	
	Untreated											

Sort Order: Replicate 1


- gravel or grass lanes
To campus
WT01
MSU Dairy Farm
N
College Road
Jolly Road
Plant Pathology Farm
Parking in grass
Apple Orchard
Registration and Lunch
SOY01
SOY02
SOY03
SOY04
SOY05
SOY06
SOY07
SOY08
SOY09
SOY10
Balance Soybean
Enlist Soybean
non-GMO Soybean
SOY11
NTS02
Corn
C10
C09
C08
C07
C06
C05
C04
C03
C02
C01
C12
Wooded area
NTS01